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Project RLA/09/801 — Multi-Regional Civil Aviation Assistance Programme (MCAAP)

Third Meeting of the RLA/09/801 Project Evaluation Commission (MCAAP/PEC/3)

ICAO NACC Regional Office, Mexico City, Mexico, 13 to 17 May 2019

NACC Challenges and Opportunities -> Consideration for Project RLA/09/801

Julio Siu, NACC Deputy Regional Director



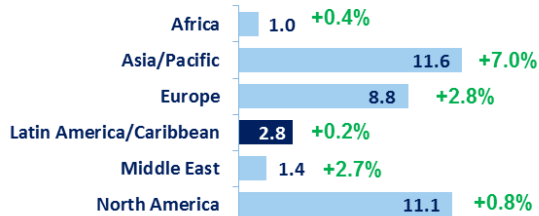


Outline

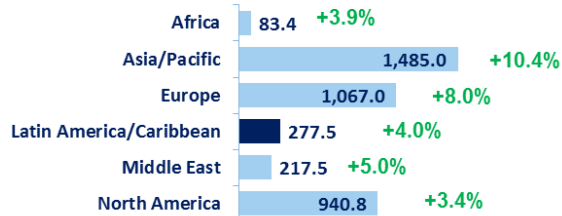
- Aviation Challenges
- Planning considerations
- Implementation mechanism in the NAM/CAR Regions
- Implementation Priorities
- MCAAP Project Opportunities

State of Air Transport in Latin America in 2017

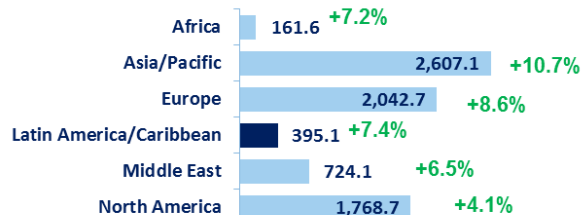
Aircraft departures (million)



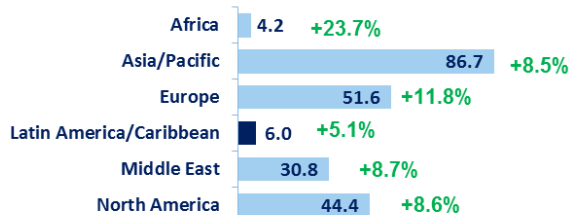
Passengers carried (million)



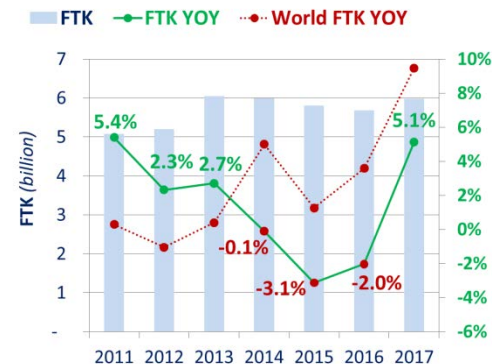
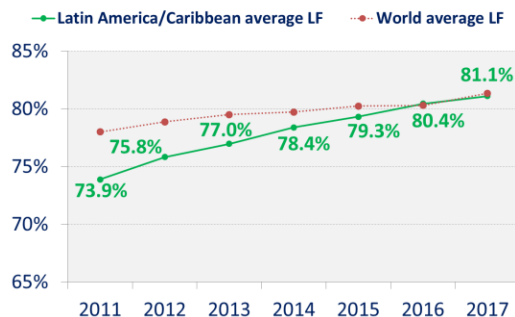
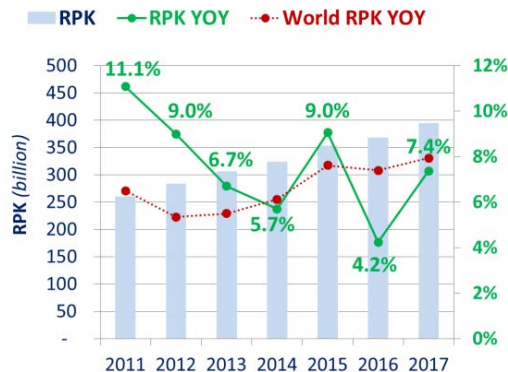
Revenue Passenger-Kilometres (billion)



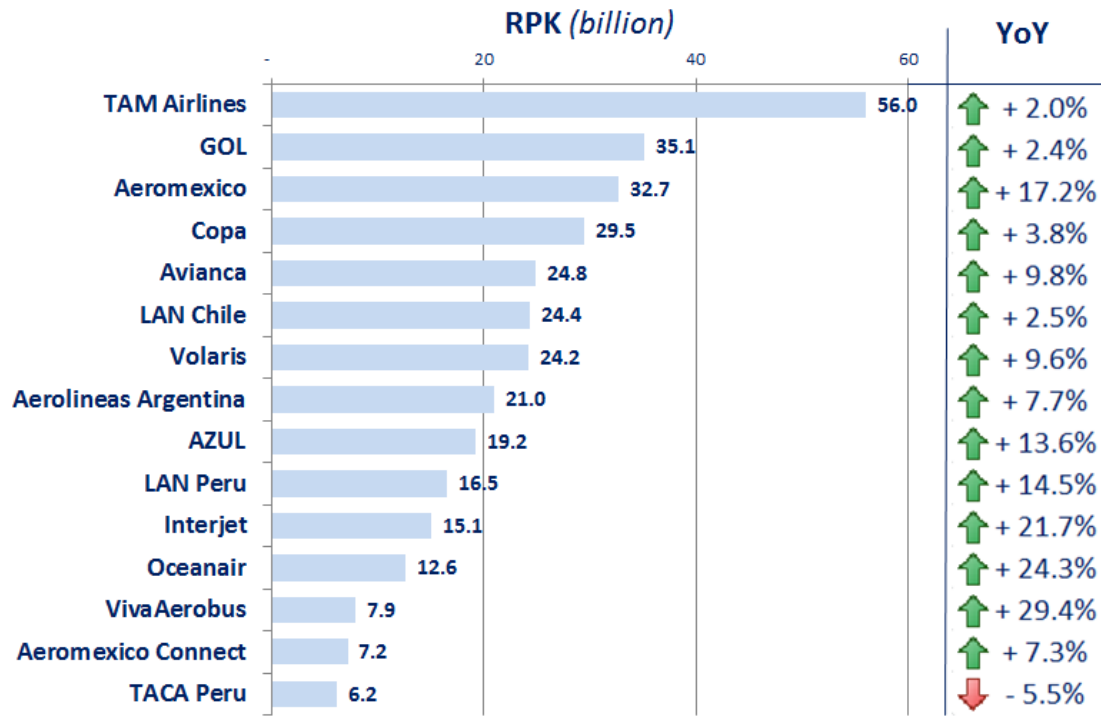
Freight Tonne-Kilometres (billion)



State of Air Transport in Latin America in 2017

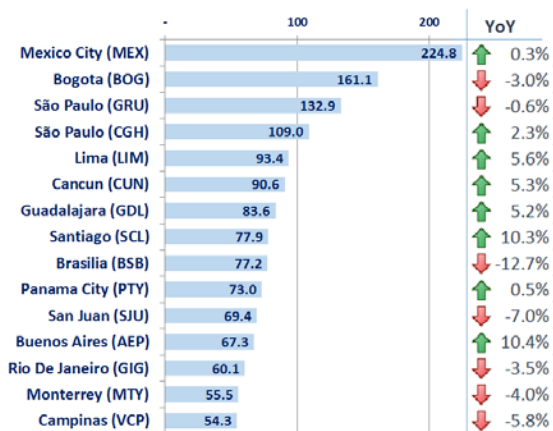


Top Airlines in Latin America in 2017

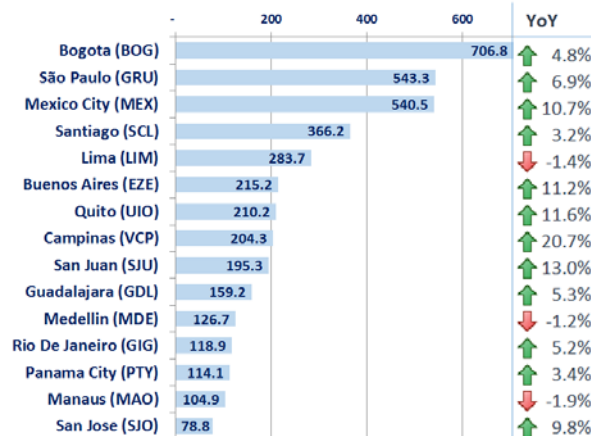


Top Airports in Latin America in 2017

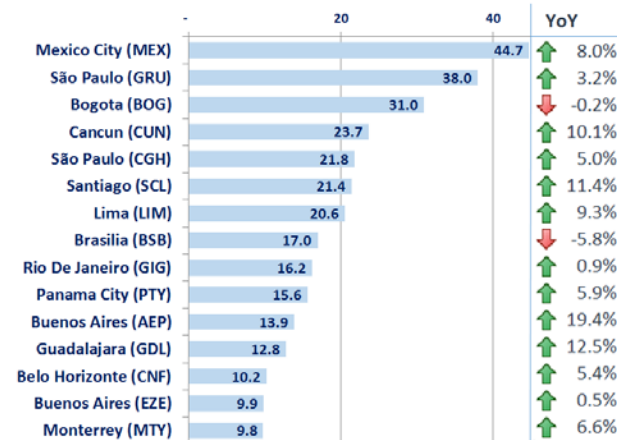
Departures (thousand)



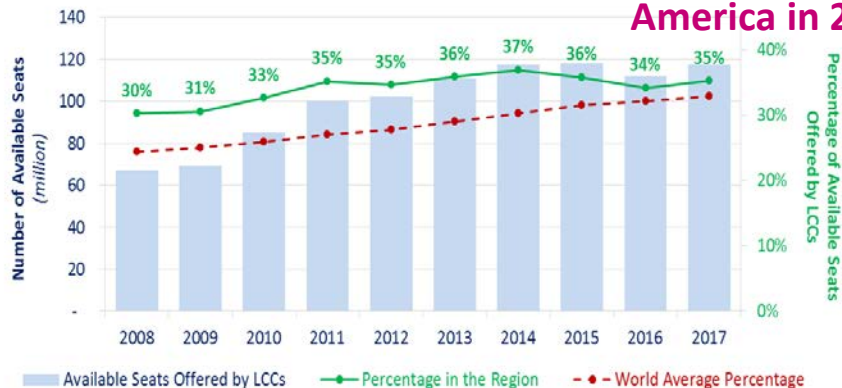
Freight Tonnes (thousand)



Passenger (million)

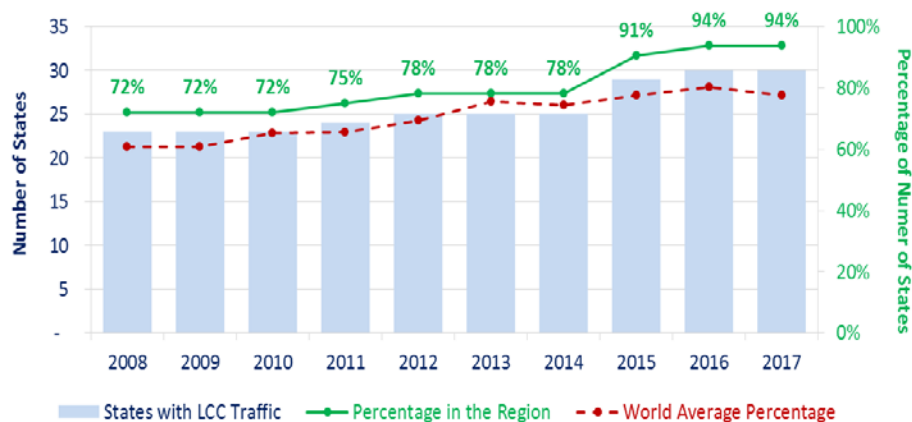


LCC Traffic Intra Region



Low Cost Carriers in Latin America in 2017

Number of States with LCC Traffic in the Region



Latin America and the Caribbean had the second highest LCC capacity share among all regions in 2017, after Europe; 35% of the available seats within the region were offered by LCCs in 2017, +2 percentage points higher than the world average LCC share.

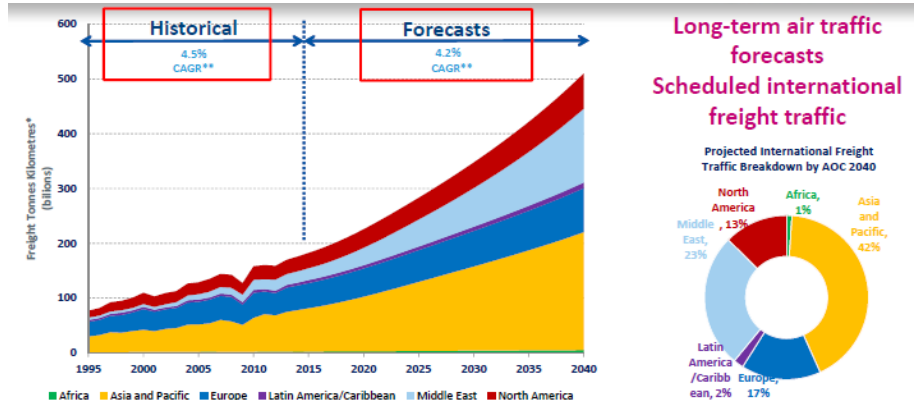
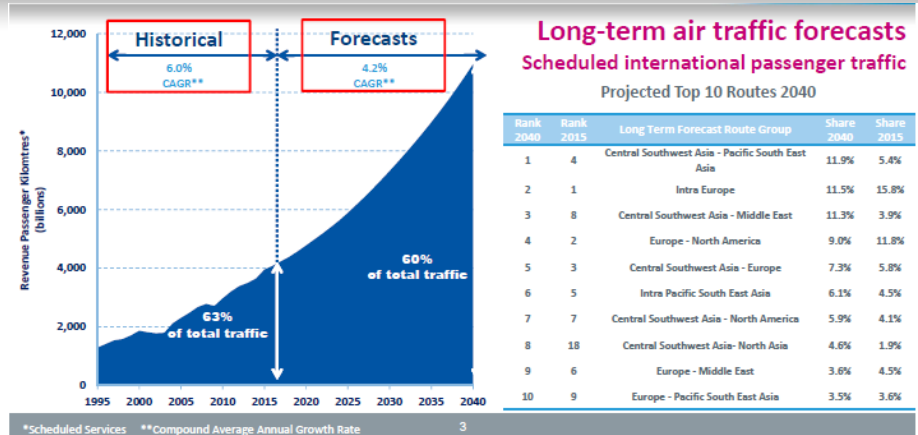
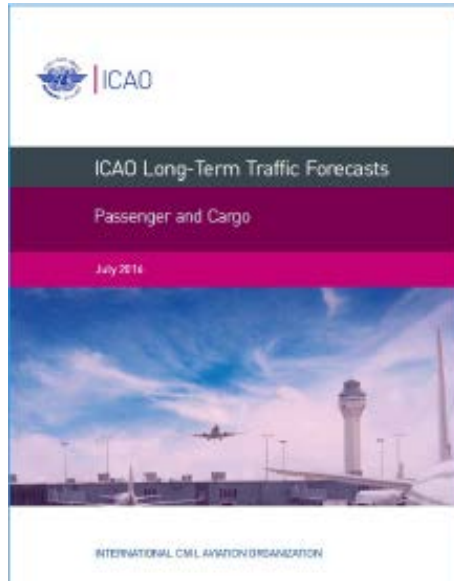
The number of seats offered by LCCs within the Latin America and the Caribbean market has grown from 67 million in 2008 to 117 million in 2017. In 2017, an increase of 5.5 million seats was observed compared to 2016.

This region had a higher penetration of LCCs than the world average. In 2017, 94% of the States in the region had LCC traffic, +16 percentage points higher than the world average.

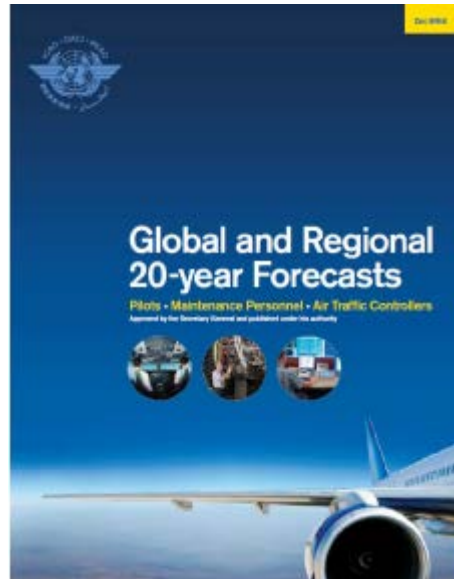
The number of States having LCC traffic in the region has been relatively stable in the last ten years, with a significant increase in the last three years. In 2008, 23 States in the region had LCC traffic, and in 2017, there were 30 States that had LCC traffic.

The percentage of States in the region with LCC traffic has increased from 72% in 2008 to 94% in 2017, +22 percentage points. This growth is higher than the world average growth.

AIR TRAFFIC FORECAST



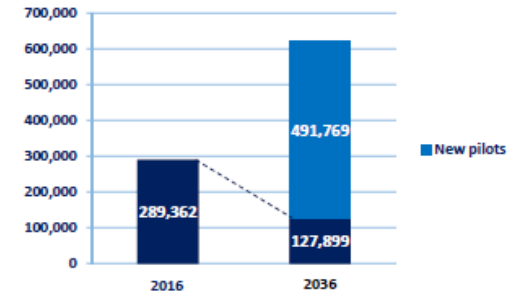
AVIATION PERSONNEL NEED FORECAST



Pilot forecasts for 2036

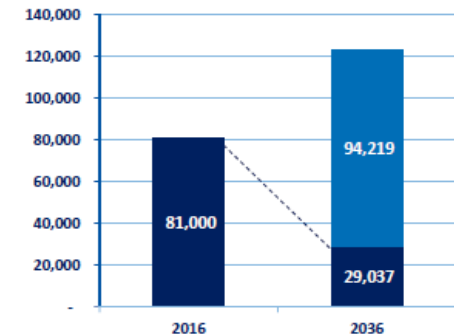
| Region | Pilots 2016* | Pilots 2036* |
|---------------|--------------|--------------|
| Africa | 7,251 | 18,533 |
| Asia-Pacific | 84,211 | 306,268 |
| Europe | 66,542 | 114,299 |
| Latin America | 24,965 | 32,827 |
| Middle East | 18,816 | 45,776 |
| North America | 87,577 | 101,966 |
| World | 289,362 | 619,668 |

Pilots Forecast 2016-2036



Air traffic controllers forecasts for 2036

| | Air Traffic controllers 2016 | Air Traffic controllers 2036 |
|---------------|------------------------------|------------------------------|
| Africa | 4,860 | 7,050 |
| Asia/Pacific | 25,110 | 48,993 |
| Europe | 23,490 | 29,589 |
| Latin America | 6,480 | 8,878 |
| Middle East | 5,670 | 8,434 |
| North America | 15,390 | 20,313 |
| World | 81,000 | 123,256 |





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PLANNING CONSIDERATIONS

NACC OVERALL REGIONAL PLANNING

ICAO Global Aviation
Safety Plan
(GASP)

Global Air
Navigation Plan
(GANP)

ICAO Global Aviation
Security Plan
(GASeP)

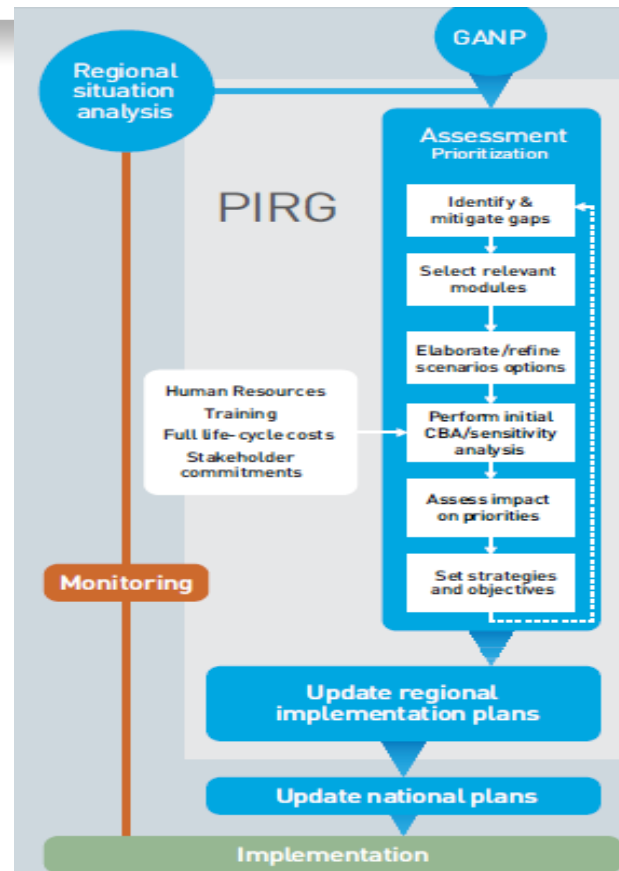
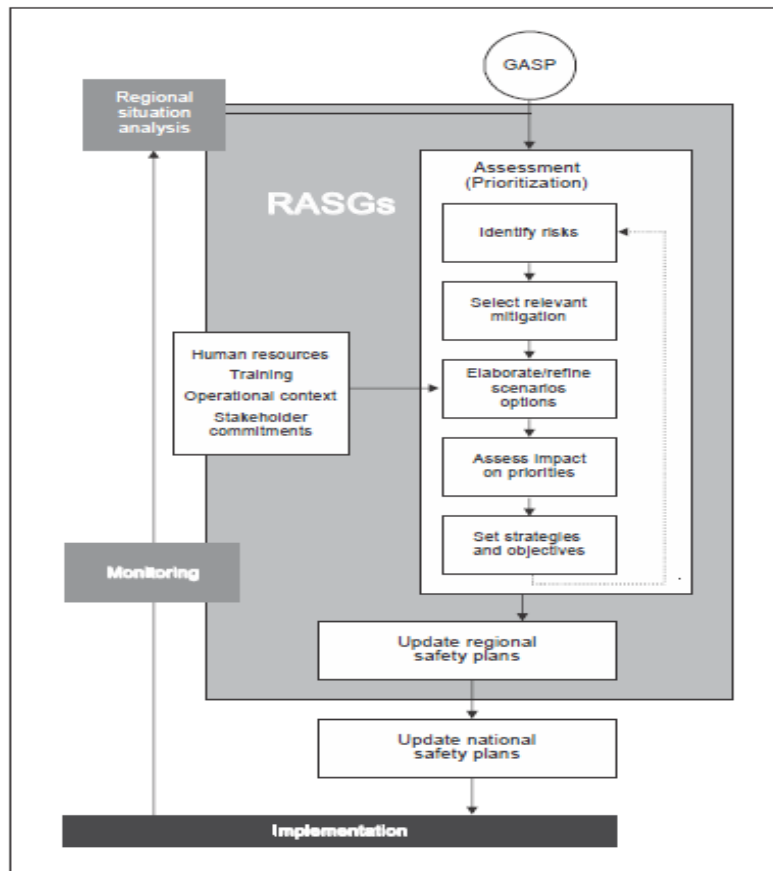
NACC Systematic
Assistance
Programme: USOAP
goals and priorities

SSP/SMS Regional
Implementation
Strategy

Update RPBANIP-
ANS target,
timelines and work
programmes

Pan-american
Roadmap: USAP
goals and priorities

Planning on GASP/ GANP





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PLANNING CONSIDERATIONS- GASP

Doc 10004
Global Aviation Safety Plan (GASP)
2020-2022

PURPOSE: continually
reduce fatalities, and
the risk of fatalities:

guiding the
development of a
harmonized aviation
safety strategy and

the development and
implementation of
regional and national
aviation safety plans

THE STRATEGY FOR THE CONTINUOUS IMPROVEMENT OF GLOBAL AVIATION SAFETY

Basic Principles for GASP 2020-2022 Edition

- Contains vision, mission and values
- Restructured in different parts
- Clearly delineates responsibilities
- Aspirational Goal + Goals, Targets & indicators
- Applies risk-based approach (HRC)
- Roadmap more predominant



GASP 2020 – 2022 The way forward

Goals, targets and indicators

- Achieve a continuous reduction of operational safety risks
- Strengthen States' safety oversight capabilities
- Implement effective State safety programmes (SSPs)
- Increase collaboration at the regional level
- Expand the use of industry programmes
- Ensure the appropriate infrastructure is available to support safe operations

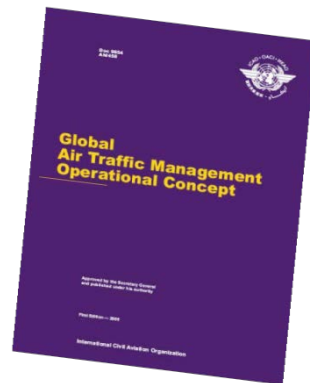
GASP 2020 – 2022 The way forward

| ICAO Aspirational Safety Goal "Zero fatalities by 2030 and beyond" | | |
|---|--|--|
| Goal | Target | Indicators |
| Goal 1: Achieve a continuous reduction of operational safety risks | 1.1 Maintain a decreasing trend of global accident rate | <ul style="list-style-type: none"> Number of accidents Number of accidents per million departures (accident rate) Number of fatal accidents Number of fatal accidents per million departures (fatal accident rate) Number of fatalities Number of fatalities per passengers carried (fatality rate) % of occurrences related to high risk categories (HRCs) |
| Goal 2: Strengthen States' safety oversight capabilities | 2.1 All States to improve their score for the effective implementation (EI) of the critical elements (CEs) of the State's safety oversight system (with focus on priority PQs) as follows: By 2022 – 75% By 2026 – 85% By 2030 – 95% | <ul style="list-style-type: none"> Overall global EI score Overall EI score per State Overall regional EI score Number of States that met the EI score as per the timelines Number of States that have fully implemented the priority PQs related to a safety oversight system % of priority PQs implemented by a State % of each priority PQs implemented globally Number of States timely updating the filing of differences % of required CAPs submitted by States (using OLF) % of completed CAP per State (using OLF) |
| | 2.2 By 2022, all States to reach a positive safety oversight margin, in all categories | <ul style="list-style-type: none"> Number of States maintaining a positive safety oversight margin in all categories % of States maintaining a positive safety oversight margin in all categories % of each category with positive safety oversight margin globally Safety oversight margin per State, per category |
| Goal 3: Implement effective State safety programmes (SSPs) | 3.1 By 2022, all States to implement the foundation of an SSP | <ul style="list-style-type: none"> Number of States having implemented the foundation of an SSP % of each subject area implemented globally % of satisfactory SSP foundational PQs % of required CAPs related to the SSP foundational PQs submitted by States (using OLF) % of required CAPs related to the SSP foundational PQs completed per State (using OLF) |
| | 3.2 By 2025, all States to implement an effective SSP, as appropriate to their aviation system complexity | <ul style="list-style-type: none"> Number of States having implemented an effective SSP Level of maturity achieved in Annex 19 PQs, per State Number of States that require applicable service providers under their authority to implement an SMS Number of States that have implemented a |

| | | |
|--|--|---|
| | | national aviation safety plan |
| Goal 4: Increase collaboration at the regional level | 4.1 By 2020, States that need support in categories with safety oversight margins below zero, to use a regional safety oversight mechanism another State or other safety oversight organization's ICAO-recognized functions | <ul style="list-style-type: none"> Number of States requiring assistance/support Number of States actively seeking assistance Number of States that received assistance Number of States offering assistance |
| | 4.2 By 2022, all States to contribute information on safety risks, including SSP safety performance indicators (SPIs), to their respective regional aviation safety group (RASGs) | <ul style="list-style-type: none"> Number of States contributing information on safety risks to RASGs Number of States that are sharing their SSP SPIs with RASGs Number of States forwarding information on safety matters to States, RASGs or other stakeholders |
| | 4.3 By 2022, all States with a positive safety oversight margin, and an effective SSP, to actively lead RASGs' safety risk management activities | <ul style="list-style-type: none"> Number of States, with a positive safety oversight margin, and an effective SSP, leading RASGs' safety risk management activities Number of RASGs that have a regional aviation safety plan |
| Goal 5: Expand the use of industry programmes | 5.1 By 2020, all service providers to use globally harmonized SPIs as part of their safety management system (SMS) | <ul style="list-style-type: none"> Number of service providers using globally harmonized metrics for their SPIs |
| | 5.2 By 2022, increase the number of service providers participating in the corresponding ICAO-recognized industry assessment programmes | <ul style="list-style-type: none"> Number of service providers participating in the corresponding ICAO-recognized industry assessment programmes |
| Goal 6: Ensure the appropriate infrastructure is available to support safe operations | 6.1 By 2022, all States to implement the air navigation and airport core infrastructure | <ul style="list-style-type: none"> Number of States having implemented the air navigation and airport core infrastructure elements |

Implementation of Air Navigation Systems

- Global ATM Operational Concept (Doc 9854) ————— Global vision
- GANP (Doc 9750) ————— Global Strategic Planning
- CAR/SAM eANP (Doc 8733)/RPBANIP ————— Regional action
- National Planning ————— National action



Regional Implementation *Air Navigation*





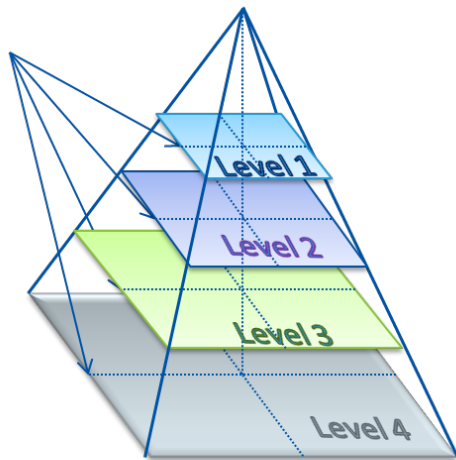
Main Goals of the 2019 GANP

- **Evolution of the global air navigation system**
 - Promote investment in **innovation** through research and development activities
 - Align Regional **Research and Development Programmes**
- **Support implementation**
 - **ASBU framework**
 - Alignment global, regional and national planning
 - **Performance-based** decision making method
 - Optimize **allocation and use of resources** for air navigation

2019 Update of the GANP

Multilayer Structure

LAYERS



COMPONENTS



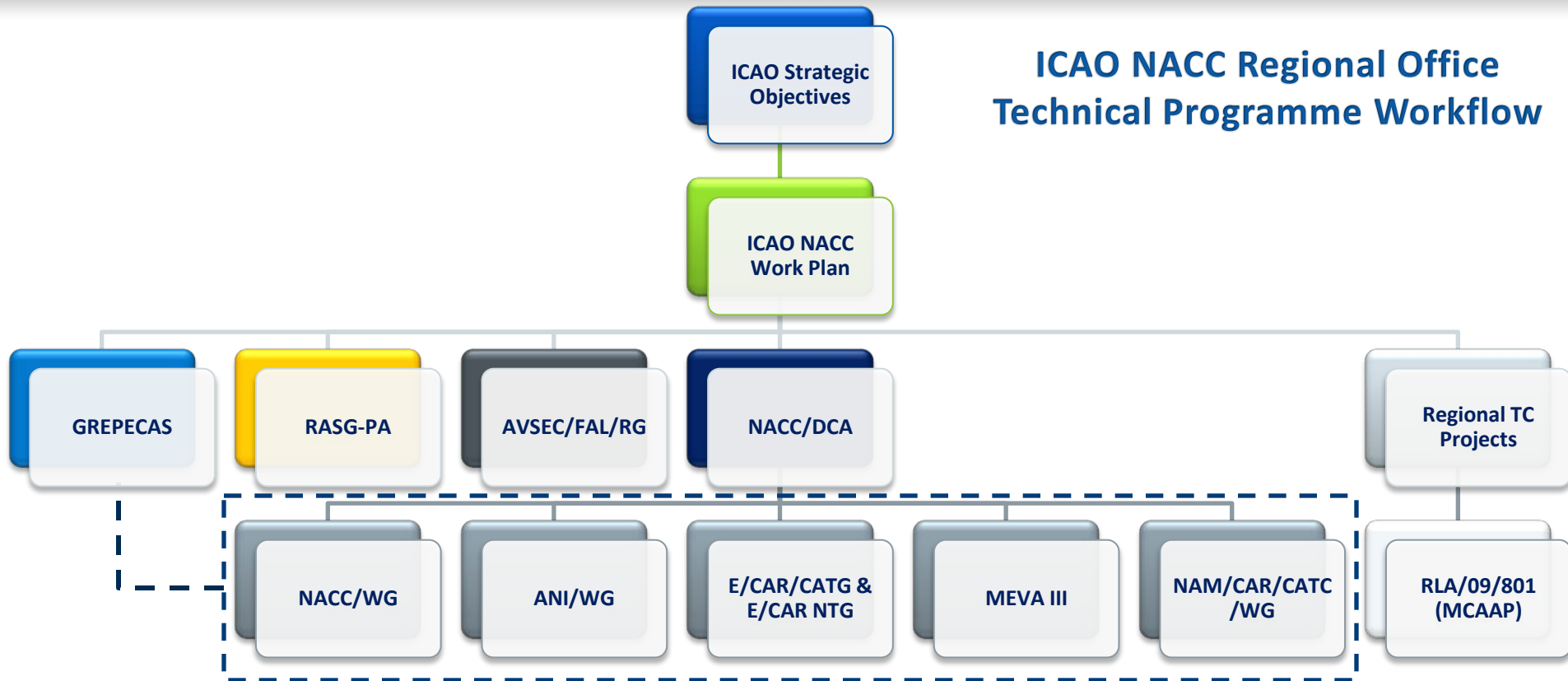


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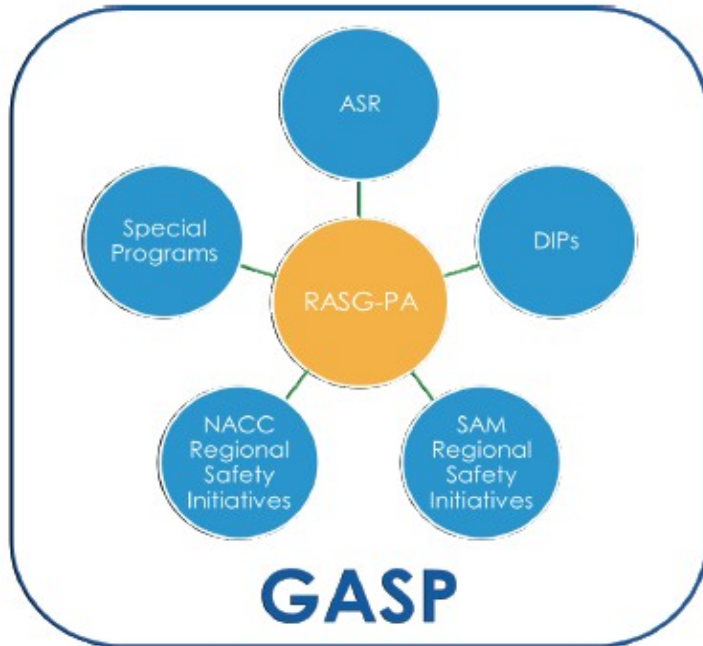
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IMPLEMENTATION MECHANISM IN THE NAM/CAR REGIONS

ICAO NACC Regional Office Technical Programme Workflow



RASG-PA Framework



- **DIP: benefits for airlines, States (CAAs) and other air carriers**
- Safety hotspots identified->ANIWG Infrastructure/ procedure solution ej. AIDC
- MAC DIP– GTE: LHD solutions/ mitigation actions
- RST- RE Group coordination: Aruba experience
- MAC DIP- ATM coordination for Callsign designation coordination

Effective Safety Oversight: NAM/ CAR Regions

NACC Systemic Assistance Programme (SAP)

| Political Commitment Completed/ On-going I | Data Gathering and Analysis 100% of States II | Joint State/ICAO Action Plan Development 100% of States III | Implementation and Monitoring 2018 Objective: 100% of States IV | Follow-up and Sustainability 2019 Objective: 100% of States V |
|--|--|---|--|---|
| <ul style="list-style-type: none"> Establish strategy to implement NCLB initiative High Level Government Outreach (Ministerial Level) Paradigm shift in assistance methodology (more hand-holding), direct engagement at the technical level Root cause approach | <ul style="list-style-type: none"> Analyse all available ICAO data on deficiencies of each NACC State Notify the State of its deficiencies and compliance status Mutual communication for agreement (Technical teleconferences) | <ul style="list-style-type: none"> Multidisciplinary or High Level visits – Some States did not need a visit Develop joint action implementation plan <ul style="list-style-type: none"> Who? What? When? Agreement of State Action Plan priorities at General and Regional Director level | <ul style="list-style-type: none"> Monthly teleconference NACC & CAA technical teams Quarterly Videoconference Brief to Regional Director & DG/Minister Annual implementation progress review Continuous adjustment of action plan based on audit results RD seeks engagement of financial institutions | <ul style="list-style-type: none"> Continuity of Phase IV Prioritization of SSP, SMS and SeMS in Action Plans Tracking of AAs institutional strength Greater emphasis in political will and commitment Set air transport in the political agenda of the States ICAO involvement in high level regional meetings |

<https://www.icao.int/NACC/Pages/nacc-nclb.aspx>

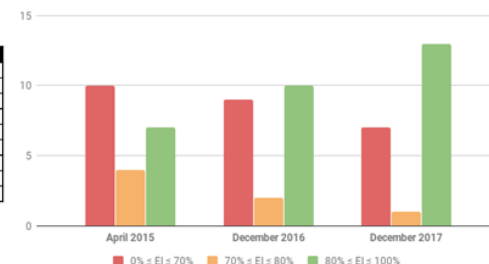


Major deficient areas and Critical Element (CE) challenges: AGA (CE-6), ANS (CE-4) and AIG (CE-5)

| USOAP EI(%) | States | % Total |
|---------------|--|--------------|
| April 2015 | 0% ≤ EI ≤ 70% 70% ≤ EI ≤ 80% 80% ≤ EI ≤ 100% | 10 4 7 |
| December 2016 | 0% ≤ EI ≤ 70% 70% ≤ EI ≤ 80% 80% ≤ EI ≤ 100% | 9 2 10 |
| December 2017 | 0% ≤ EI ≤ 70% 70% ≤ EI ≤ 80% 80% ≤ EI ≤ 100% | 7 1 13 |

After NACC SAP, the number of States with an EI ≥ 80% almost doubled

USOAP Effective Implementation (%) in NAM/CAR



- NCMC Group to support
- Tailored committed State Action Plans
- Enhancement of RSOOs: ACSA, CASSOS
- Champion State initiative



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SAFETY

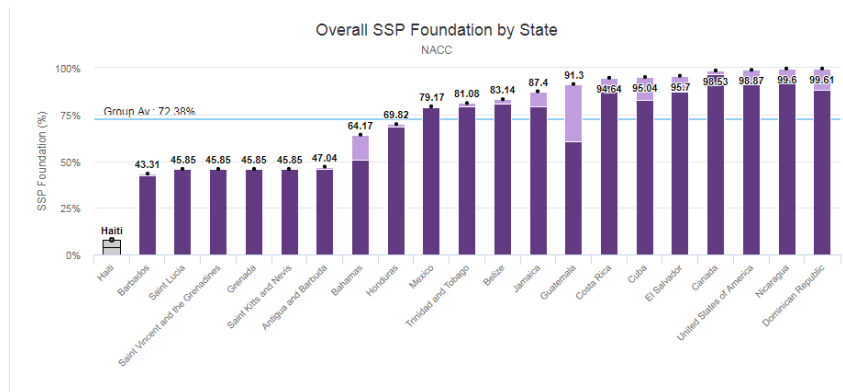
NO COUNTRY LEFT BEHIND



National Continuous Monitoring Coordinators (NCCMC) Meeting

- Action Plan- Deliverables
- Website
- Evaluate EI impact- support
- Best lessons- Implement App
- 2019 Workshop
- More CBT completed

NACC SSP Regional Implementation Strategy



- **Tier 1:** States that currently have a SSP Foundation Index Above 95% -> to implement SSP by 2020;
 - **Tier 2:** States that have a SSP Foundation Index Above 85% -> to implement SSP by 2021;
 - **Tier 3:** States that have a SSP Foundation Index Above 75% -> to implement SSP by 2022;
 - **Tier 4:** States that have a SSP Foundation Index Above 60% -> to implement SSP by 2023;
- ☐ Agreement on Action Plan and commitment on assistance and implementation
 - ☐ NAM/CAR States that complete any phase of the SSP implementation can be considered as Champion States to support other States in the implementation of the phases that have already implemented



Aviation has become:

- ✈ A Catalyst for economic development
- ✈ A vital engine of global socio-economic growth
- ✈ One of the greatest contributors to the advancement of modern Society.



Aviation creates cost-effective access to global markets worldwide and destinations to small and rural communities



Aviation currently moves over 80 per cent of tourists to Small Island Development States (SIDs)



70% of firms consider air services to be critical for business travel
(Source: ATAG, "The Economic & Social benefits of air transport" 2014)

Countries to place Aviation as a National Priority

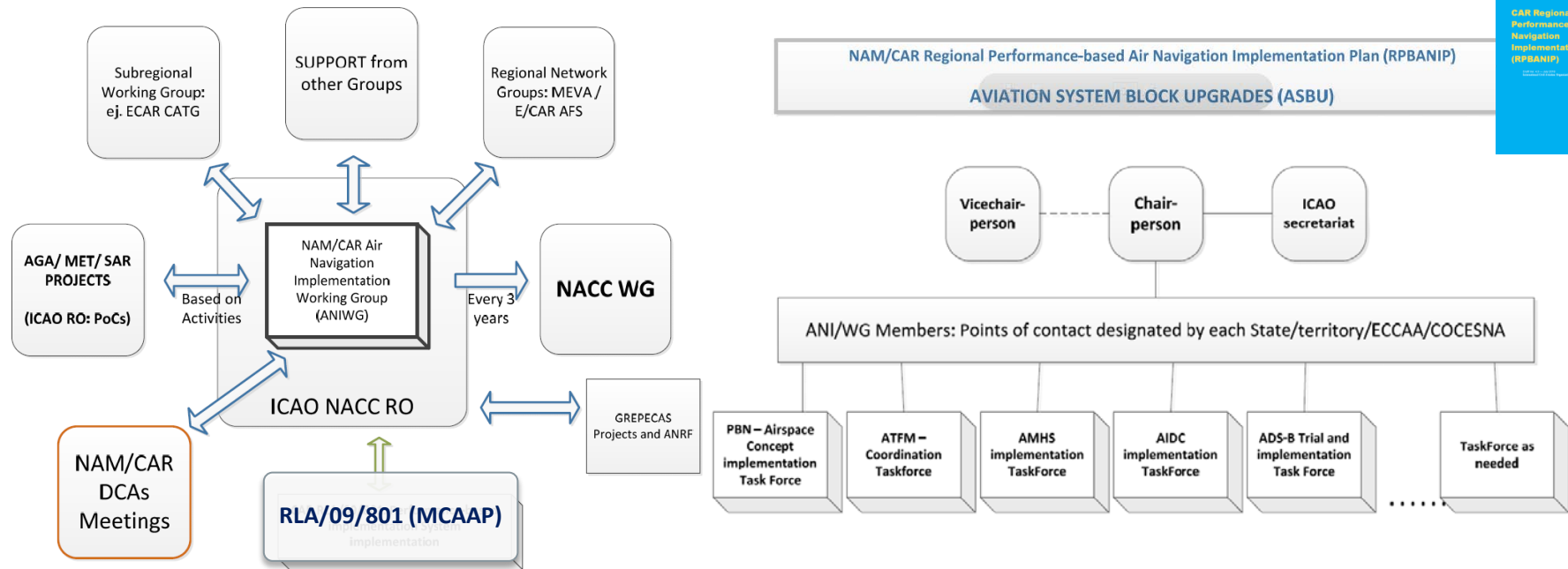


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IMPLEMENTATION MECHANISM IN THE NAM/CAR REGIONS

Air Navigation Performance-based Implementation Air Navigation Implementation Working Group (ANI/WG)





SAFETY PRIORITIES FOR 2019

- **SSP implementation:**
 - Action Plan for Group 1
 - Workshop/ Meeting 2019
 - Continue awareness assistance
- **Promotion and use of SM Electronic Tools (Implement, SIMS, etc.)**
- ✈ **SM support to States:**
 - ✈ ATS SMS focused
 - ✈ Continue awareness assistance for SM updates
- ✈ **RST implementation-measure effectiveness:**
6 more States



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IMPLEMENTATION PRIORITIES

SAFETY PRIORITIES FOR 2019

- **RASG-PA:**

- Support Secretariat
- Look for Projects / SEI
- Risk Identification
- Continue awareness assistance
- PA-RAST / ESC

- ✈ **AIG:**

- ✈ Improvements- EI
- ✈ MOU/ Training

- ✈ **Operational Safety:**

- ✈ Implement App
- ✈ SIMS
- ✈ Other Ops Safety



SAFETY PRIORITIES FOR 2019

- **USOAP:**

- SSC Resolution
- Honduras, Cuba, OECS, Barbados and Bahamas
- New PH; TL for FS/RO
- Implement ISO Process

- ✈ **RSOO enhancement:**

- ✈ CASSOS enhancement plan
- ✈ COCESNA/ACSA assistance
- ✈ Transnational inspectors exchange

- ✈ **RAIO Projects:**

- ✈ RAIOC development
- ✈ GRIAA deployment
- ✈ Engagement with other parties



SAFETY PRIORITIES FOR 2019

- **Development of training by NAM/CAR CATC/WG:**
 - Develop MOU actions
 - Structured a mid term Training Plan
 - Enhance activities
 - Establish foundation agreements/ deliverables
 - Meeting in ICCAE



CAPACITY AND EFFICIENCY PRIORITIES FOR 2019

- **Contingency- Emergency Response Centre:**
 - Facility
 - Procedures
 - MoUs
- **AMET:**
 - Targets
 - OPMET/SIGMET Performance
- ✈ **AIM:**
 - ✈ PANS-AIM
 - ✈ AIM Tracking – Implementing
- ✈ **Infrastructure focused:**
 - ✈ GNSS
 - ✈ ADS-B implementation- Critical 2020
 - ✈ CPDLC oceanic



CAPACITY AND EFFICIENCY PRIORITIES FOR 2019

- **Contingency plans (State/ Regional)**
- **PBN Implementation:**
 - Complete PBN Airspace concept
 - ATS routes optimization- planning (as agreed/applicable)
 - FPP Agreements
 - RPAS/ UAS assistance
 - APTA introduction- assess
- ✈ **SWIM promotion:**
 - ✈ AIM targets completion tasks
 - ✈ MET targets completion tasks
 - ✈ Workshop and ideas exchanged for action plan
- ✈ **Infrastructure focused:**
 - ✈ GNSS based on new PBN Airspace Concept
 - ✈ ADS-B implementation
 - ✈ CPDLC oceanic
 - ✈ ASBU B1 assessment



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IMPLEMENTATION PRIORITIES

CAPACITY AND EFFICIENCY PRIORITIES FOR 2019

- **Aerodrome certification:**
 - 6 more aerodromes certified
 - 20 new aerodromes initiated certification process
 - Airport Safety improvements
 - PANS AGA
 - A-CDM assessment
- ✈ **ATFM – Military / Civil Coordination :**
 - ✈ Implementation
 - ✈ MoUs
- ✈ **SAR organization**
 - ✈ EI Improvement Impact
 - ✈ GADSS
 - ✈ MOU- maritime



SECURITY / FACILITATION PRIORITIES FOR 2019

- **AVSEC:**

- AVSEC/FAL/SG Improvements
- GAsEP Implementation-targets
- USAP based assistance
- SSeC Resolution- mitigation action
- Risk management promotion

- ✈ **DEV:**

- ✈ Support HQ events
- ✈ Air Transport events- ICAN, etc.
- ✈ Dom. Rep Study Project

- ✈ **Environment Protection:**

- ✈ CORSIA workshop
- ✈ MRV initiative
- ✈ CO2 Action Plan Assistance-IFSET State support



CAPACITY AND EFFICIENCY PRIORITIES FOR 2019

- **ANS planning:**

- Work plan based on RPBANIP
- BBB assessment
- Development of CAR/SAM Vol III
- Continue Implementation of National AN Plans
- NAM ANP Vol II and Vol III

- ✈ **Projects:**

- ✈ Post-hurricane infrastructure assessment
- ✈ E/CAR Radar Sharing
- ✈ Harmonization of regulatory Frame work
- ✈ MASA/ Caribbean Air Transport development/ Implementation
- ✈ CASSOS Enhancement

Sustainable Development Goals (SDGs)

Attainment of the SDGs relies on advances in sustainable air transport, which is a driver of sustainable development.



Sustainable Development Goals (SDGs)

- Many of the SDGs are directly and indirectly connected to sustainable air transport (especially SDG 9, 8, 11 and 13)
- Progress towards the goals needs to be monitored and evaluated by adequate and quality data
- **SDG Target 9.1** – Develop quality, reliable, sustainable and resilient infrastructure with a focus on affordable and equitable access for all
 - ICAO is a **custodial agency** responsible for collecting traffic data and sharing the information with the UN system to support the agreed global indicator (*passenger and freight volumes by mode of transport*)



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MCAAP PROJECT OPPORTUNITIES

Increase number of States attendance to ICAO events

Increase effectiveness of Regional Implementation mechanisms

Cost-effective regional collaboration mechanism

Speed up implementation by assistance missions, deliverable development, enhance SME participation

Enhance qualifications and knowledge of State representatives

Training provision

Champion State concept

Promote best practices

Joint / complementary support with other regional Supports (EU-LAC Project, Safe fund Projects, NGO Project supports, etc.)

Provision of infrastructure for implementation



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MCAAP PROJECT OPPORTUNITIES

NACC Initiatives

Maximization of CASSOS oversight activities: funding for CASSOS State oversight missions

Regional Capacity and infrastructure development for Transnational Inspectors

System and Surveillance training System Software and hardware infrastructure implementation within CASSOS but for use, implementation and benefit of each Member

Reorganizational Analysis of the Central American Flight Information Region (FIR) Airspace (ARESAC)

Regional Contingency Plan and enhancement of State/ Region capability for Emergency response

Increase Safety, Security and Air Navigation Effective Implementation at the Lesser Caribbean Islands (OECS and Barbados)

Performance Based Navigation Implementation in the Western Hemisphere/ TBO

ATFM Enhancement assistance/ NOPS Implementation

ASBU GAP Analysis

Safety Oversight Supporting TEAM (EASA, FAA-IASA- USOP)



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MCAAP PROJECT OPPORTUNITIES

NACC Initiatives

Post Hurricane Assessment and implementation of Aviation Infrastructure /Systems for the Caribbean Region

Harmonization of Regulatory Framework

Enhancement of the AIG Regional Accident and Incident Investigation Organization (RAIO) in Central America:
Regional Aviation Accident Investigation Group (GRIAA)

Flight Procedure Design Programme (FPP)

PBN and Operation improvements initiative

GSI Training and Safety oversight training

Cyber resilience and cybersecurity State enhancement

Enhancement of ATS Situational Awareness in the E/CAR Region



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