# & AIR NAVIGATION SAFETY & AIR NAVIGATION UPDATES

**P/07** 



Seventh Meeting of the North American, Central American and Caribbean Directors of Civil Aviation (NACC/DCA/07)

19 – 21 September 2017, Washington DC, United States

18 September 2017



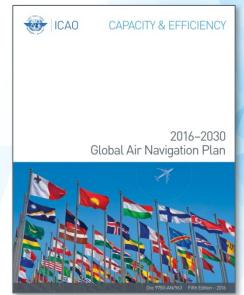
# GLOBAL PLANS – VISIONS OF THE FUTURE

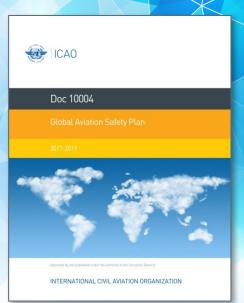
# 39th

#### TRIENNIAL ASSEMBLY

ICAO HQ, MONTREAL, 27 SEP-07 OCT 2016







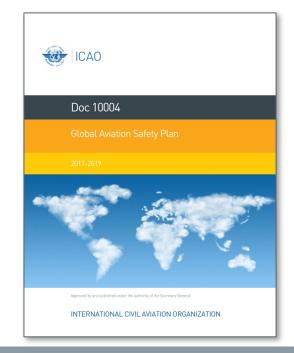
### 2017-2019 Global Aviation Safety Plan (GASP)

#### 2017-2019 Edition

- Maintains the framework, objectives and safety performance enablers of the 2014-2016 edition
- New global aviation safety roadmap ensures that safety initiatives deliver the intended benefits associated with the GASP objectives through enhanced coordination
  - Reducing inconsistencies and duplication of efforts

#### Cooperative, collaborative, and coordinated approach

 Together with all stakeholders and under the leadership of ICAO, the GASP offers a long-term vision in developing a harmonized safety strategy.



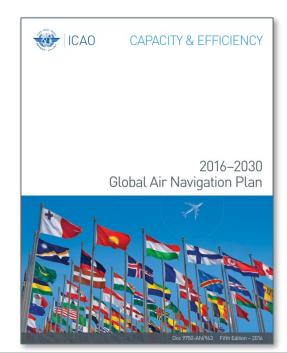
## 2016-2030 Global Air Navigation Plan (GANP)

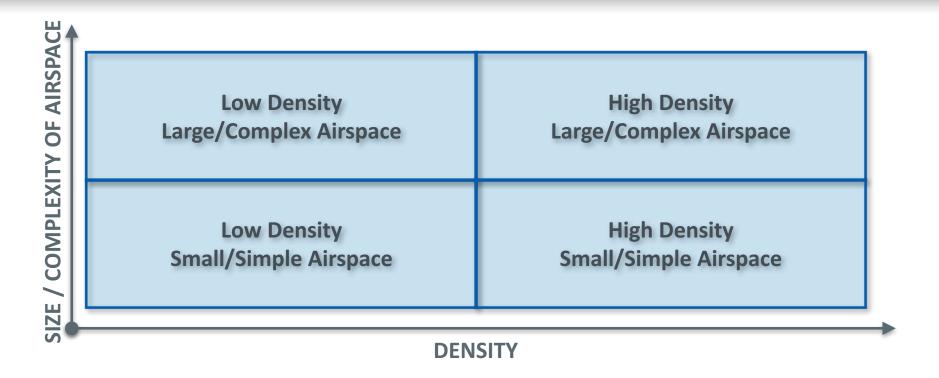
#### 5<sup>th</sup> Edition of the GANP (2016-2030)

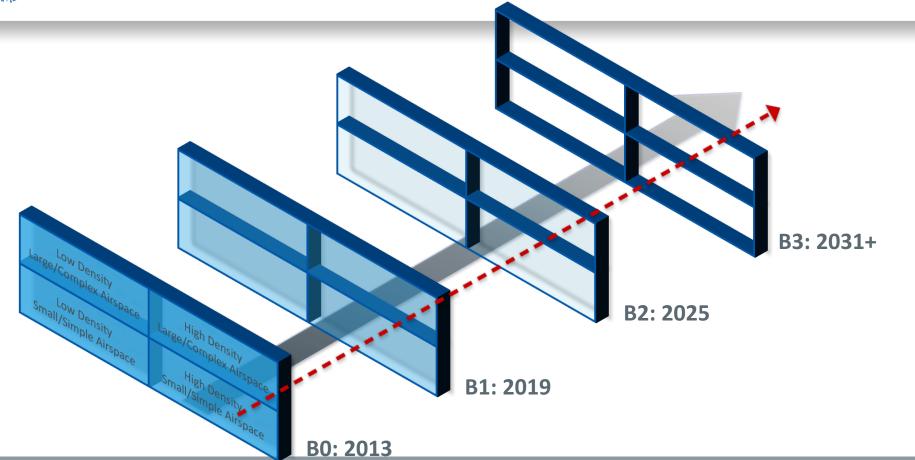
- Includes the 2016 edition of the Aviation System Block Upgrades (ASBU) document
- Stability

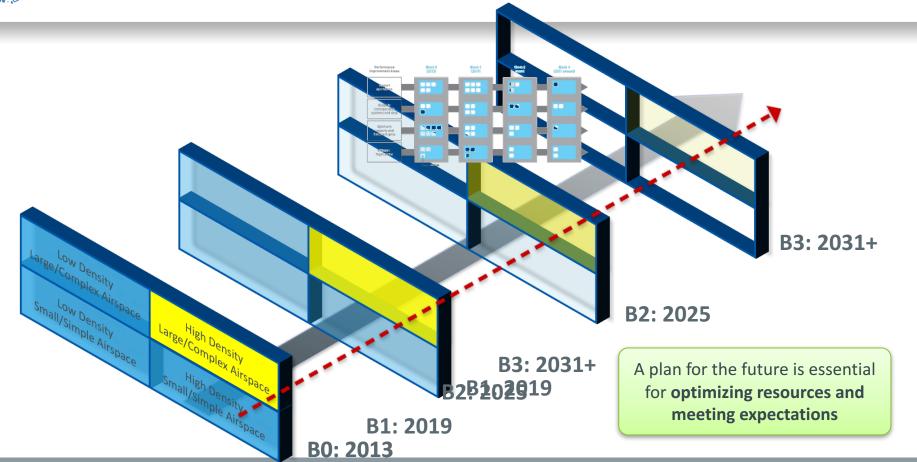
#### • Included improvements:

- Six-year cycle for the Blocks to align with Assembly cycles
- Update of the ASBU framework and all technical roadmaps
- Concept of performance-based approach as foundation for implementation strategies
- Notion of minimum path
- ATM logical architecture
- Creation of GANP webpage











Global Aviation Safety & Air Navigation Updates

#### **GLOBAL STATUS**

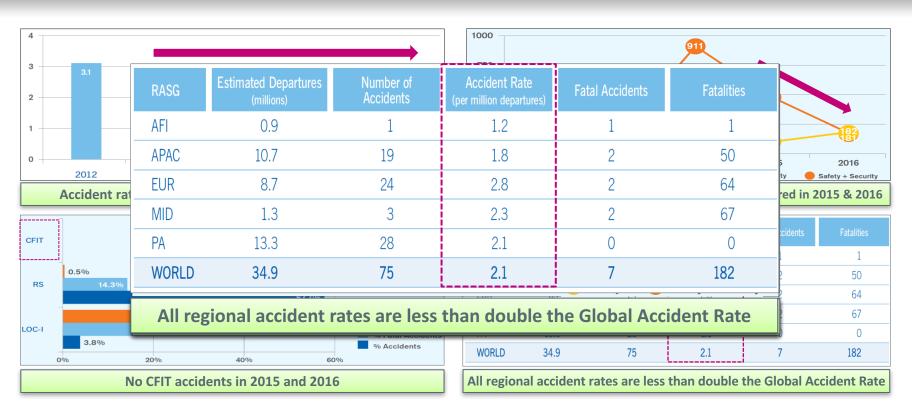


Source: 2017 Safety Report (https://www.icao.int/safety/Pages/Safety-Report.aspx)

18 September 2017

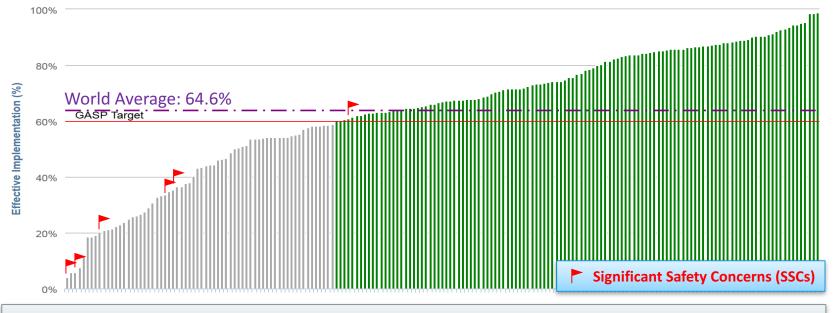
#### ICAO UNITING AVIATION

#### **STATE OF AVIATION SAFETY**

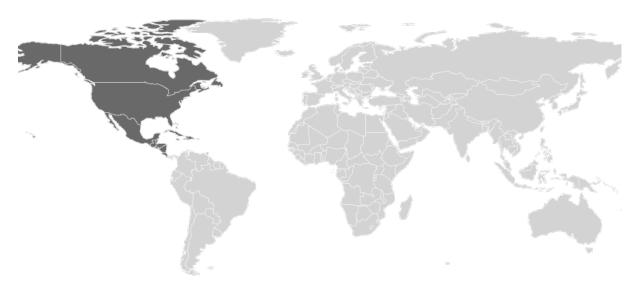


Source: 2017 Safety Report (https://www.icao.int/safety/Pages/Safety-Report.aspx)

### **Effective Implementation of State Safety Oversight**



Effective implementation (%) results through USOAP CMA



Global Aviation Safety & Air Navigation Updates

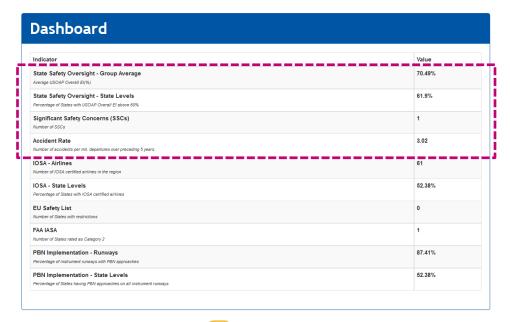
#### **REGIONAL STATUS – NACC**

Source: iSTARS 3.0 – MAP Builder (https://portal.icao.int/space)

18 September 2017

# **Regional Safety Briefing**



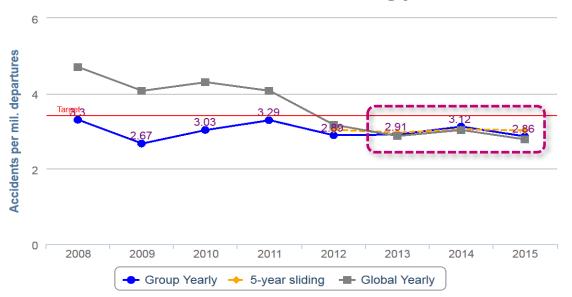


Source: iSTARS 3.0 - Regional Safety Briefing (https://portal.icao.int/space)

18 September 2017

#### **Global and NACC Accident Rates**

Scheduled commercial above 5700kg for 2008 - 2015

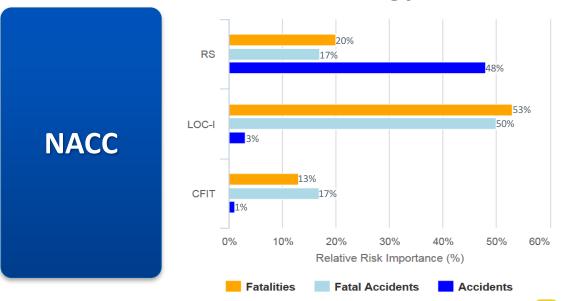


Accident rate for **NACC** has been **slightly above** the global since 2013

Source: iSTARS 3.0 – Regional Safety Briefing (https://portal.icao.int/space)

## Risk Distribution for the Top 3 Safety Priorities

Scheduled commercial above 5 700kg for 2012 - 2016

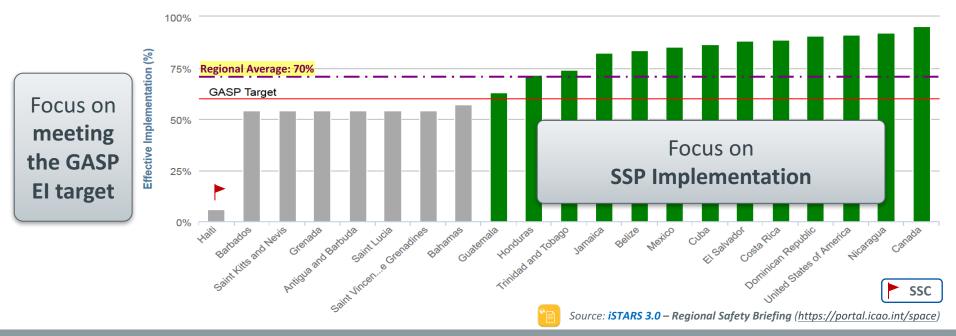


Continue focus
on the
Top 3 Safety Priorities
(RS, CFIT, LOCI)

Source: iSTARS 3.0 – ADREP et al. (https://portal.icao.int/space)

#### **ICAO Safety Audit Results for NACC**

Effective implementation of safety oversight systems by State (global average 64.6%)



#### Significant Safety Concerns (SSCs)

SSCs indicate that a State is not providing sufficient safety oversight to ensure the effective implementation of applicable ICAO Standards. SSCs may be issued in the area of operations, air navigation services, aerodromes, airworthiness or licensing.

NACC has 1 State with 1 SSC.

				SSC Areas			
State	SSCs	Airworthiness	Operations	Licensing	Aerodromes	Air Navigation	

2013

Haiti

1

Focus on the resolution of

Significant Safety Concerns (SSCs)

and ensure that

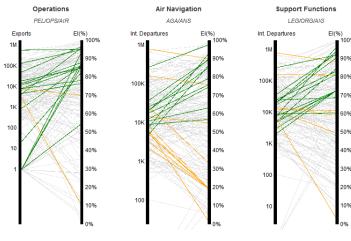
'No Country is Left Behind'



Source: iSTARS 3.0 - Regional Safety Briefing (https://portal.icao.int/space)

### **Regional Priorities**

- The States are prioritized by considering the level of FL as well as the related activity at risk in operations, air navigation and support functions
- The profile of each State is benchmarked against all other ICAO member States
- Priority is given to the least performing areas in ascending order





Haiti	<b>Haiti</b>	Haiti		
Safety margin: -55,64%	Safetv margin: -48.59%	Safetv margin: -53,37%		
Guatemala	Bahamas	United States of America		
Safety margin: -1.41%	Safety margin: -32.28%	Safety margin: -11.02%		
Bahamas	Antigua and Barbuda	Trinidad and Tobago		
Safety margin: 0.27%	Safety margin: -31.3%	Safety margin: -2.21%		
United States of America	Saint Kitts and Nevis	<b>Guatemala</b>		
Safety margin: 3.16%	Safety margin: -27.94%	Safety margin: -1.57%		
Belize	Saint Lucia	<b>Mexico</b>		
Safety margin: 3.89%	Safety margin: -26.19%	Safety margin: -1.5%		

Source: iSTARS 3.0 - Regional Safety Briefing (https://portal.icao.int/space)

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#### **Current and Emerging Issues**





Global Aviation Safety & Air Navigation Updates

# **EVOLVING OUR APPROACH**

# **Evolving Standardization**

- Innovation starts on the flight deck, at the control position and on the tarmac
  - People using the tools are the first to know how they can be improved



# **Evolving Standardization**

- SARPs-ready proposals from Standards-making organizations and other aviation stakeholders
- Currently looking at candidates for further proof-of-concept work



# **Standards Roundtable**

- Interface between standards-making organizations and ICAO
- Standardization roadmap
- Increase referencing of industry standards
- Support performance-based standards



# **Evolving Safety Performance**

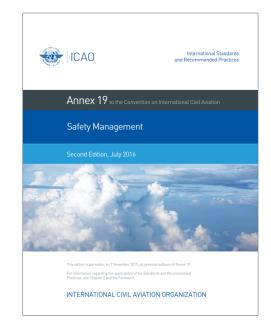
- iMPLEMENT is a data-driven decision making process that:
  - Assesses the current status of aviation (Safety Briefings)
  - Identifies the best solutions in order to maintain or improve the aviation capability of the State (Solution Center)
  - Evaluates the needs of the aviation system
     (money, people, infrastructure) (CAA HR Tools, PAINT/iAID, etc.)
  - Identifies resources through existing national, regional, or global mechanisms (ASIAP, SAFE Fund, etc.)
  - Showcases the real added value of air transport and the socio-economic return on investment of aviation



#### **Amendment 1 to Annex 19**



- ✓ The applicability for the existing safety management provisions as originally introduced continue to apply.
- ✓ The new applicability date only relates to the changes introduced with Annex 19, Amendment 1.
- ✓ States are encouraged to begin working to address Amendment 1 Annex 19 as soon as possible, to ensure implementation is achieved by the applicability date.



# Safety Management Manual, 4th ed

#### **Published Document:**

- Supporting guidance for Amendment 1 to Annex 19
- ✓ Expanded guidance on **Annex 19 scope and applicability**, including discretionary SMS applicability
- ✓ Expanded guidance for the development of safety intelligence
- ✓ Less prescriptive and more focused on the intended outcomes
- ✓ Emphasis on importance of system description and interfaces.

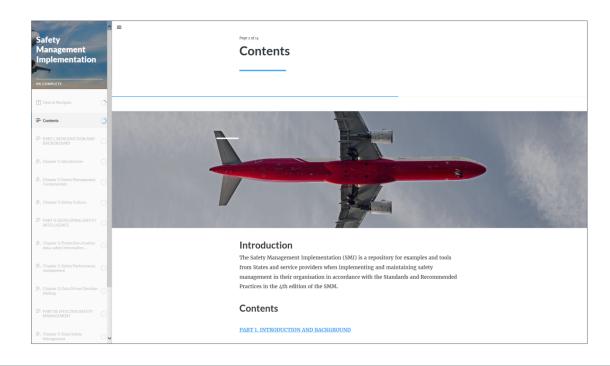




## **Safety Management Implementation Website**

# To complement the 4th edition of the SMM; SMI Website:

- Will include the some examples currently found in the SMM 3rd edition; and
- Provide a mechanism for the sharing of additional examples to support effective implementation of SSP/SMS.



## **Updated SSP Tools**

- ✓ SSP Gap Analysis Questions to be harmonized with USOAP SSP-related PQs which will reflect Annex 19 Amendment 1 and 4<sup>th</sup> edition of the *Safety Management Manual*
- ✓ Feature to allow work on SSP Gap Analysis Tool to be imported to the USOAP Online Framework SSP self-assessment
- ✓ To be linked to Pre-requisites App in order to identify the REAL GAP

USOAP PQ Prerequisites							#	Subject		
									1	Primary aviation legislation
									2	Specific operating regulations
									3	State system functions
									4	Qualified technical personnel
									5	Accident and incident investigation

#### **ICAO Safety Management Training Programme (SMTP)**

#### **Safety Management Online Training**

<u>Phase 1</u> - Released in September 2016, reflected the Amendment 1 to Annex 19

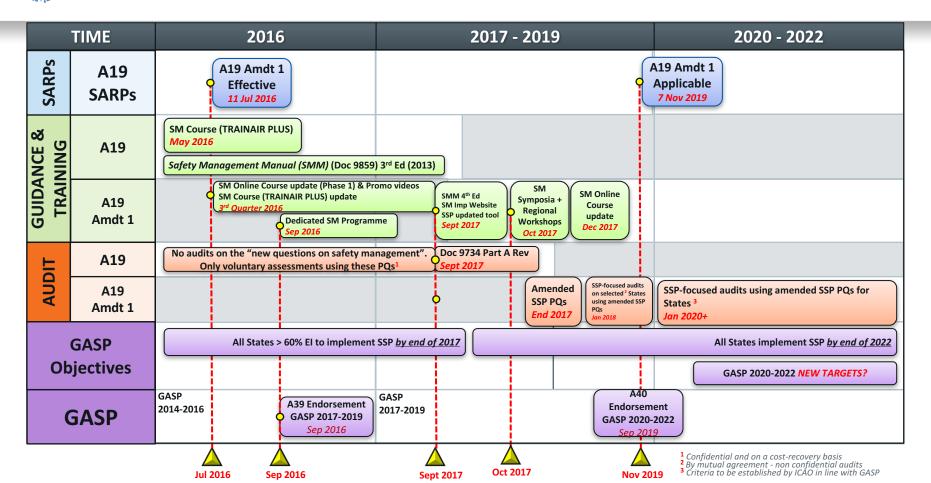
<u>Phase 2</u> - Expected by end of 2017 to further reflect the 4<sup>th</sup> edition of the SMM

#### Safety Management for Practitioners (SMxP) – Classroom

- Comprehensive application
- ✓ Practical examples of SMS
- ✓ Use of IT tools







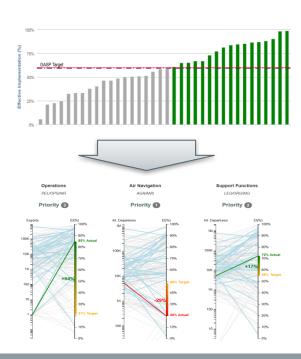
#### **Evolution of RASGs**

 RASGs as the leaders for the management of regional operational risk environment, as reflected in the Global Aviation Safety Plan (GASP)



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- RASGs as the leaders for the management of regional operational risk environment, as reflected in the Global Aviation Safety Plan (GASP)
- RASGs to assist States in identifying hazards and defining their own specific targets
  - From 60% El to an acceptable Safety Margin for each State
  - Mapping the risk



#### **Evolution of RASGs**

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- RASGs to assist States in identifying hazards and defining their own specific targets
  - From 60% El to an acceptable Safety Margin for each State
  - Mapping the risk
- RASGs to harmonize and avoid overlaps
  - Between States
  - Between RASGs





# Cyber

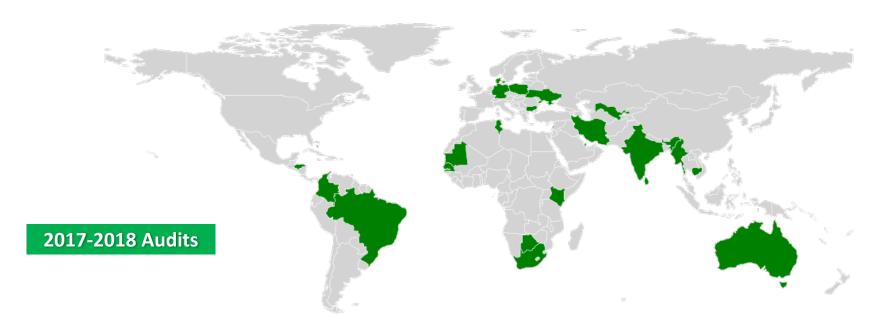
- Joint effort between Security and Safety teams
  - ICAO Assembly Resolution A39-19
  - Alignment of Panel cybersecurity work
- Focus on enabling connectivity and interoperability in the aviation system



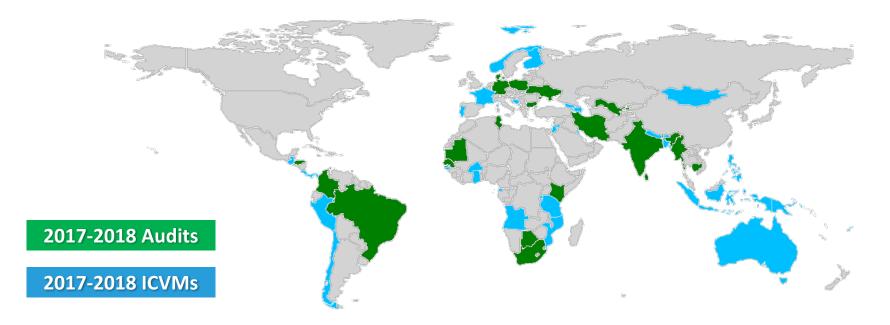


- A Joint ICAO Aviation Safety and Security Event (Dubai, 4-6 April 2017)
- The way forward:
  - Establish a Cyber Regulatory Framework (Safety and Security)
  - Identify current and future threats, and implementing risk mitigation
  - Enable a global SWIM
  - Identify Cross-domains impacts
  - Promote Cyber culture
- Will be presented to GANIS this December

## **USOAP Activity Plan (EB 2017/35)**



## **USOAP Activity Plan (EB 2017/35)**





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## 2<sup>nd</sup> RPAS Symposium

19-21 Sep, ICAO HQ

- A forum for participants to exchange ideas and implementation experiences related to remote pilot training and licensing
- Also highlighting RPAS operator responsibilities for conducting safe operations and an understanding of RPAS in the ATM environment
  - Annex 1 SARPs and PANS-Training provisions are anticipated for adoption in March 2018; this symposium will provide the first opportunity for regulators, training facilities, and all aviation professionals to share information on this rapidly evolving new aviation sector





## **UAS2017**

## DRONE ENABLE, ICAO's Unmanned Aircraft Systems (UAS) Industry Symposium

ICAO Headquarters, Montréal, Canada, 22-23 September 2017

- Response to A39 request for expansion of ICAO's scope to harmonize domestic regulations for UAS operations
- Invitation for States, industry and academia to present best solutions to identified problem statement - Unmanned Aircraft System Traffic Management System (UTM)



## UNITING AVIATION























## 2<sup>nd</sup> Global Runway Safety Symposium

(20-22 Nov, Lima, Peru)

- Co-organised with the Runway Safety Programme Partners
- Hosted by the Direccion General de Aeronautica Civil de Peru
- Event in English/Spanish, with 300 participants expected
- **Objectives:** 
  - provide a global forum to exchange information on best practices in improving runway safety through the use of effective and innovative strategies, tools, technology and practices
  - promote improved runway safety worldwide through global collaboration and sharing strategies and best practices;
  - promote the ICAO-led collaborative new Runway Safety Programme Action Plan for supporting and strengthening runway safety initiatives;
  - promote the participation of stakeholders in regional initiatives related to runway safety; and
  - increase the number and improve the effectiveness of airport Runway Safety Teams (RSTs) under a risk-based approach in relation to airport safety management systems (SMS).





18 September 2017



### Articulating a worldwide perspective to support regional implementation

- Drawing on worldwide expertise to advance regional implementation
- Organized in collaboration with CANSO, Eurocontrol, the FAA, and IATA with the support of Singapore CAAS.
- 1st ICAO Conference builds on series of ATFM global events previously organized every two years
- Focus on :
  - Long range solutions and measures; international cooperation
  - Collaborate to managing flows from the airport to cruising altitudes and beyond.
- Look ahead: and innovation
  - A look into the immediate future: advanced flow management:
  - Broadening the scope: innovative flow management.



## **NEXT GENERATION OF AVIATION PROFESSIONALS**

# **GLOBAL SUMMIT**

ICAO HQ MONTRÉAL, 27-28 NOV 2017



 Provides a unique opportunity to promote coordination and cooperation amongst the aviation community, education and labour sectors for the development of strategies and tools to engage and retain the next generation of aviation professionals.

#### Event Objectives:

- Continue to raise awareness regarding the impending shortage of aviation professionals and encourage CAAs to communicate and cooperate with government education and labour bodies to promote aviation as a profession.
- Promote cooperation and coordination for the development of common NGAP guidelines or standards for use by all aviation stakeholders (i.e. civil aviation authorities, industry, international organizations and academia).
- Promote the exchange of knowledge, ideas, best practices and experiences regarding NGAP related activities amongst States, industry, international organizations and academia.
- Promote collaboration between States and the aviation community to identify long-term human resource needs and establish strategies to attract, educate and retain aviation professionals, considering gender equality.

## **Safety Management Regional Symposia and Workshops**



- EUR/NAT Hosted by EC & Estonian Presidency in Tallinn / 16-18 October 2017
- NACC and SAM Hosted by Peru in Lima / 12 16 March 2018
- APAC and MID Hosted by Singapore / 23 26 April 2018
- ESAF and WACAF 2018 (exact dates and location to be confirmed)

Note: 4 Workshops to be delivered with Symposia plus additional planned



- Second Global Air Navigation Industry Symposium (GANIS/2)
- Safety and Air Navigation
   Implementation Symposium (SANIS)

ICAO Headquarters, Montréal, Canada, 11 to 15 December 2017

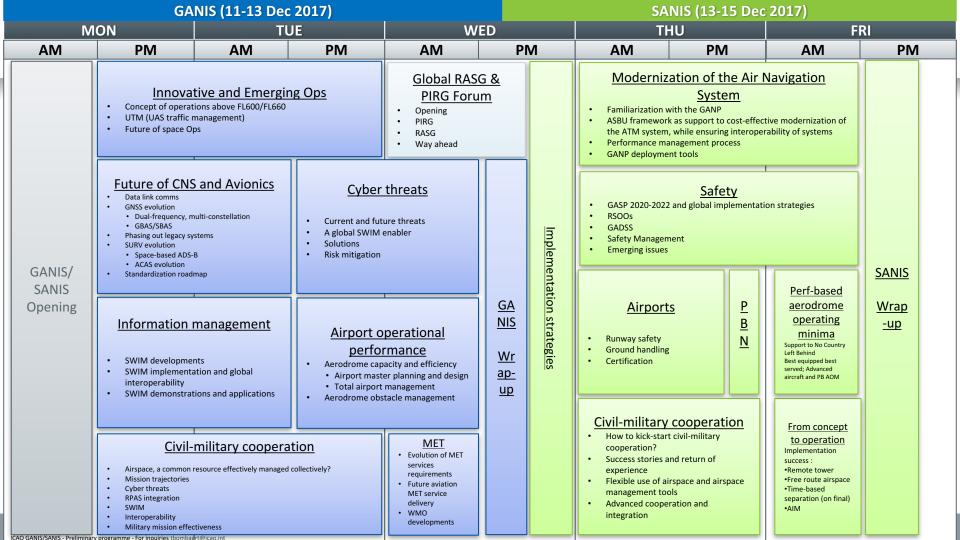
Global Aviation Safety & Air Navigation Updates

# GANIS/SANIS – GLOBAL PLANNING FOR THE 40<sup>TH</sup> ASSEMBLY

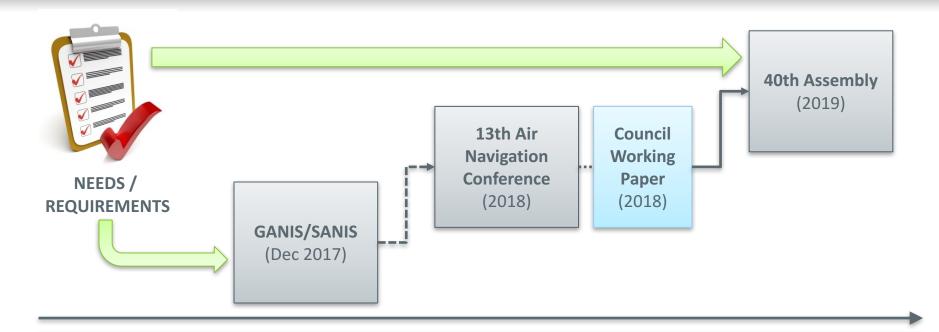
## GANIS/SANIS 2017

# Sustainability and enhancement of safety and air navigation system performance

- Two back-to-back symposiums from 11 15 December 2017 in Montréal, Canada
  - 2nd Global Air Navigation Industry Symposium (GANIS) to discuss issues and chart next steps to achieve a seamless global aviation system
  - 1st Safety and Air Navigation Implementation Symposium (SANIS) to offer a performance-based implementation methodology including the first Global RASG/PIRG Forum
- Includes an Industry exhibition of current and emerging technologies
  - Showcase solutions which will provide a snapshot of the global air navigation industry
  - Provide insight on how all stakeholders can work together to address technical, operational, regulatory and economic challenges
- A crucial networking and knowledge-sharing opportunity
  - Presentations from ICAO, international and regional organizations, standards-making organizations and leading industry stakeholders
- Will lay the foundation for the 13th AN-Conference in 2018



## GANIS/SANIS 2017



GANIS/SANIS will facilitate the planning of technical work for AN-Conf/13, and also the budget discussions leading up to A40





## REFERENCE SLIDES

18 September 2017 5<sup>-7</sup>

## **207th Session of the Council**

TOPICS	AFFECTED		APPLICABILITY
	ANNEX	Other	APPLICABILITY
Health education and the medical assessment process, and safety management principles to the medical assessment process	1		8 Nov 2018
Enhanced global reporting format for assessing and reporting runway surface conditions	3, 6 (I,II), 8, 14 (I) 15	PANS-ATM, PANS-AERO	5 Nov 2020
Fatigue management approaches	6 (I), 11		A6: 10 Nov 2016 A11: 5 Nov 2020
Protection of flight recorder recordings in normal operations;  Independence of accident and incident investigations;  Protection of accident and incident investigation records;	6 (I,II,III), 13		A6: 8 Nov 2018 A13: 10 Nov 2016
Safety management	6 (I, III), 8, 19		A8: 10 Nov 2016 A6: 7 Nov 2019 A19: 7 Nov 2019

## 210th Session of the Council

TOPICS	AFFECTED		APPLICABILITY
	ANNEX	Other	APPLICABILITY
Automatic validation of licences by States party to a formal agreement under common licensing regulations	1		Nov 2017
Practical implementation of normal tracking provisions	6 (Part I)		Nov 2018



# Health promotion and safety management principles to the medical assessment process

### • Improvements:

- Increase the emphasis on health promotion, and upgrading of a Recommendation to a Standard of a provision on basic safety management principles in the medical assessment process.
- Replacement of a current Recommendation relating to health education and prevention of ill-health in Class 1 applicants under 40 years of age by means of a new Standard addressing similar principles but with wider application

### • Expected Benefits:

 Improve flight safety by reducing the incidence of ill-health conditions in licence holders

#### Affected Documents

Annex 1, Manual of Civil Aviation Medicine

## **Timelines**

- February 2016
  - Reviewed by ICAO Council
- 8 November 2018
  - Applicability of amendment(s)



# Enhanced global reporting format for assessing and reporting runway surface conditions

#### • **Improvements**:

 Reduction of runway excursions through the use of a global reporting format for effective runway surface condition assessment and reporting

#### • Expected Benefits:

- A globally harmonized methodology for runway surface condition assessment and reporting will provide reports that are directly related to the performance of the aircraft.
- Aerodrome operators will be provided with clear guidelines on maintaining runway friction and assessing conditions for reporting purposes.
- New techniques for the assessment of braking action on contaminated surfaces are now available or under development, and need to be incorporated in ICAO provisions.
   These initiatives are expected to result in a reduction in runway excursions on contaminated runways.

#### Affected Documents

Annexes 3, 6 (I and II), 8, 14 (Vol. I), and 15; PANS-ATM, PANS-AERO

- February 2016
  - Reviewed by ICAO
     Council
- 5 November 2020
  - Applicability of amendment(s)



## **Fatigue Management Approaches**

#### • <u>Improvements</u>:

- Annex 11: Fatigue management Standards for Air Traffic Controllers (ATCs) that address prescriptive duty limitation regulations and Fatigue Risk Management Systems (FRMS)
- Annex 6, Part I: Consequential amendments as a result of amendments proposed for Annex 11 and reference to updated and retitled supporting guidance material (Doc 9966).

### • Expected Benefits:

- Reduced risk of fatigue-affected performance decline among ATCs
- Establishment of hours of work regulations and scheduling practices for ATCs based on science and risk assessment
- Increased operational flexibility while maintaining or enhancing safety margins in air traffic control services
- Improved oversight of fatigue management approaches in different aviation industry sectors

#### Affected Documents

- Annex 6 (Part I), and Annex 11
- Manual for the Oversight of Fatigue Management Approaches (Doc 9966)

## **Timelines**

- February 2016
  - Reviewed by ICAO Council
- 10 November 2016
  - Applicability of Annex 6 Part I amendment(s)
- 5 November 2020
  - Applicability of Annex 11 amendment(s)



## Protection of flight recorder recordings in normal operations

#### • <u>Improvements</u>:

 Proposes that outside Annex 13-type investigations, use of CVRs, AIRs and FDRs should be limited to safety-related purposes with appropriate safeguards, for inspections of flight recorder systems, operations of FDAP, or when associated recordings or transcripts are sought for criminal proceedings

### • Expected Benefits:

 Close the existing gap in the protection of flight recorder recordings by according proper protection during routine operations, i.e. outside the context of Annex 13

#### Affected Documents

Annex 6 (Parts I, II, III)

## **Timelines**

- February 2016
  - Reviewed by ICAO
     Council
- 8 November 2018
  - Applicability of amendment(s)



## **Safety Management**

### Improvements and Expected Benefits:

- Integration of the State safety oversight (SSO) system critical elements (CEs)
   and the State safety programme (SSP) provisions
  - Provides streamlined State safety management SARPs while keeping the CEs visible.
- Enhancement of safety management system (SMS) provisions to support uniform implementation, including the extension of an SMS to organizations responsible for the type design and/or manufacture of engines and propellers
  - Support effective SMS implementation and contribute to effective oversight of SMS.
  - Reflects current industry practice of issuing a separate Type Certificate for engines and propellers.
- Protection of safety data, safety information and related sources
  - Enabler of safety management that is critical to ensure the continued availability of safety data and safety information.

### Affected Annexes

Annex 6 (Parts I and III), 8, 19

- February 2016
  - Reviewed by ICAO Council
- 10 November 2016
  - Applicability of Annex 8 amendment(s)
- 7 November 2019
  - Applicability of
     Annex 6 Parts I & III,
     Annex 19 amendment(s)



# Automatic validation of licences by States party to a formal agreement under common licensing regulations

## • <u>Improvements</u>:

 Optional implementation that will allow flexibility for licensed personnel and surveillance efficiencies for States.

## Expected Benefits:

- Reduces costs of inter-lease agreements (South America)
- Benefits States and regions that want to improve the mobility of licensed personnel (South America, Europe, MID, Asia [AirAsia,...])

## Affected Documents

Annex 1, Doc 9379

- February 2017
  - Reviewed by ICAO Council
- 9 November 2017
  - Applicability of amendment(s)



## Practical implementation of normal tracking provisions

## • **Improvements**:

 Allows flights that are lacking elements of normal aircraft tracking requirements (i.e. automation and specific interval) to commence under certain circumstances which are acceptable to the State of Operator

## Expected Benefits:

- Permits the practical implementation of the Normal Aircraft Tracking SARPs adopted in 2015.
- Prevents the aircraft tracking provisions from imposing an unacceptably high burden on operators

## Affected Documents

Annex 6, Part I

- February 2017
  - Reviewed by ICAO Council
- 8 November 2018
  - Applicability of amendment(s)