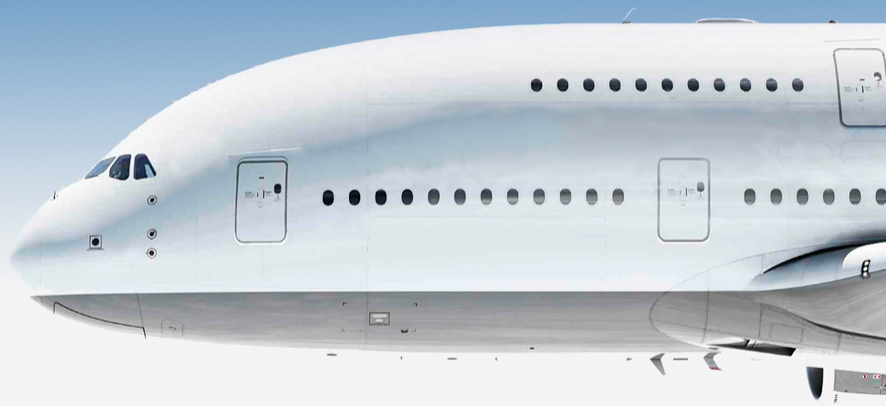
SAFETY & AIR NAVIGATION OVERVIEW - IMPLEMENTATION



Erwin Lassooij

Chief Programmes Coordination and Implementation Section,
Air Navigation Bureau, ICAO

AFI Aviation Safety Symposium

16 July 2018, Niamey, Niger

Overview

- Global Picture and the challenges we are facing
- Global Plans and the 13th Air Navigation Conference
- Global, Regional and National Implementation

Global Overview

GLOBAL PICTURE AND THE CHALLENGES WE ARE FACING

A Global Picture

4.1 BILLION
PASSENGERS
carried by airlines
(7.1% increase
from **2016**)

53 MILLION
TONNES OF FREIGHT
carried by airlines
(4.0% increase
from 2015)

35 MILLION
SCHEDULED COMMERCIAL FLIGHTS
flown by airlines
(3.7% increase
from 2015)

62.7 MILLION
JOBS SUPPORTED

54,000
ROUTES WORLDWIDE
(over 2,000 new
routes from 2015)

49 BILLION
KILOMETRES FLOWN
by airlines
(5.3% increase
from 2015)

76 MILLION
HOURS FLOWN
by airlines
(5.0% increase
from 2015)

3.5 PER CENT
OF GDP SUPPORTED

$2.7 TRILLION
ECONOMIC IMPACT

*Source: **Aviation Benefits 2017** (https://www.icao.int/sustainability/Pages/IHLG.aspx)*

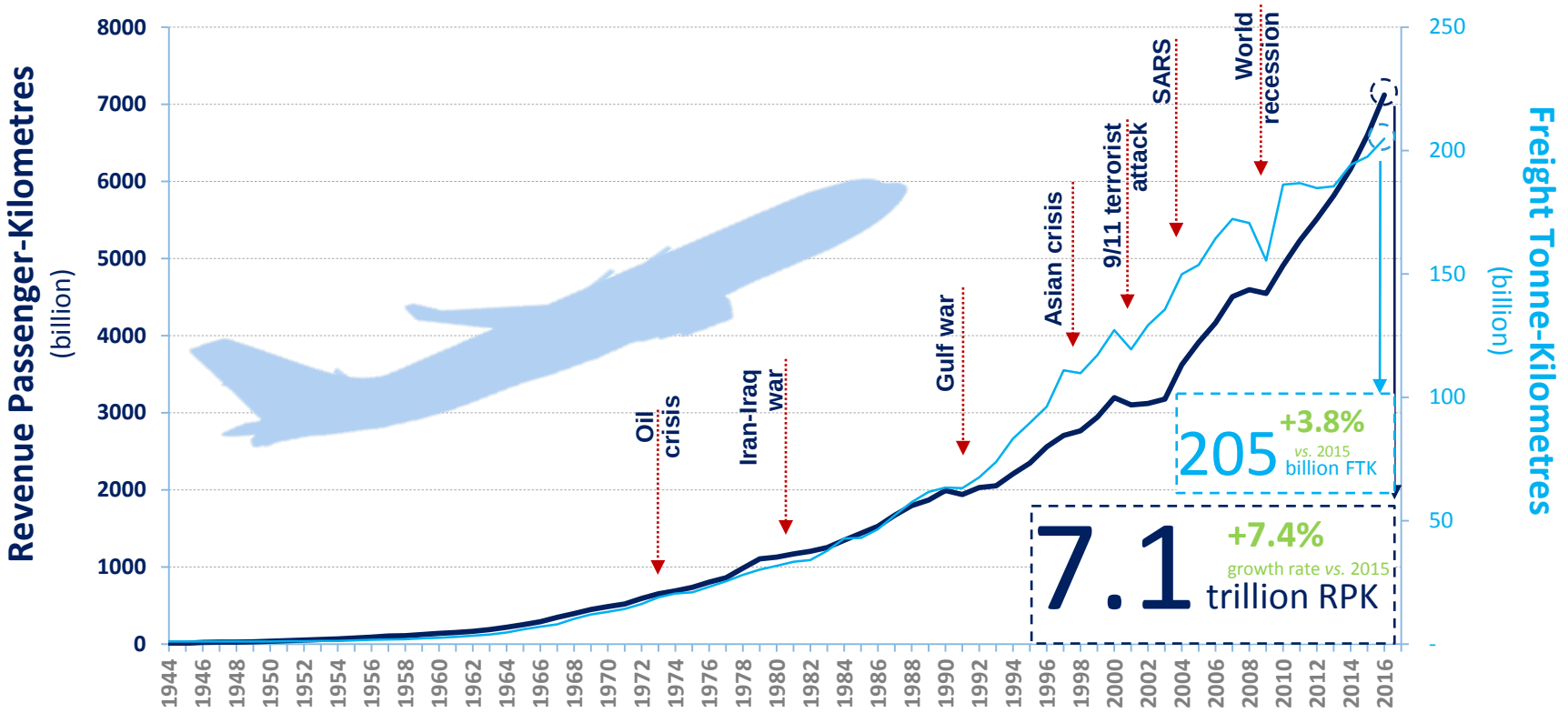
ICAO and UN SDGs

- ICAO's Strategic Objectives are strongly linked to **15 of the 17** United Nations Sustainable Development Goals (SDGs).
- ICAO is fully committed to work in close cooperation with States and other UN Bodies to support related targets

Source: https://www.icao.int/about-icao/aviation-development/Pages/SDG.aspx

ICAO UNITING AVIATION

Growth of Air Transport



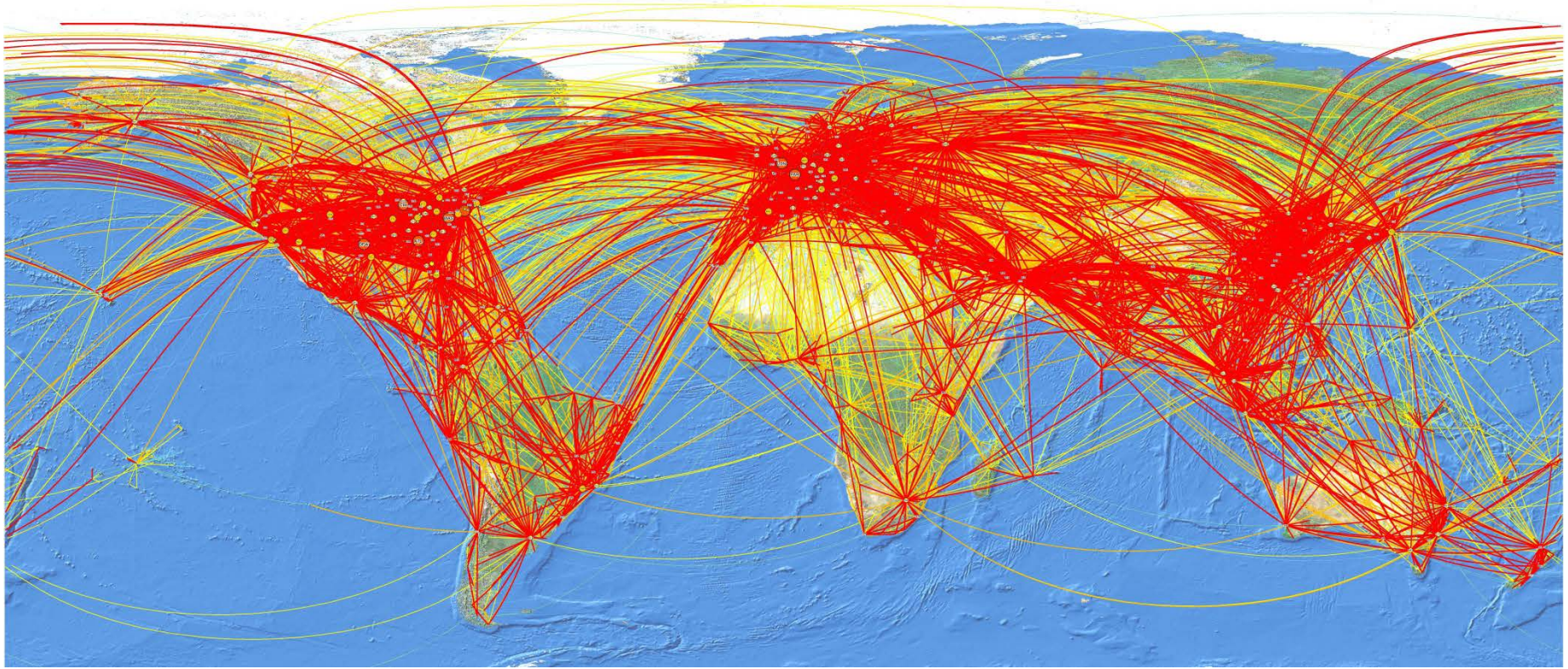
Source: ICAO Annual Report of the Council

Scheduled commercial traffic
Total (international and domestic) services

ICAO UNITING AVIATION

TRAFFIC DENSITY

2040



Global Overview

GLOBAL PLANS AND THE 13TH AIR NAVIGATION CONFERENCE

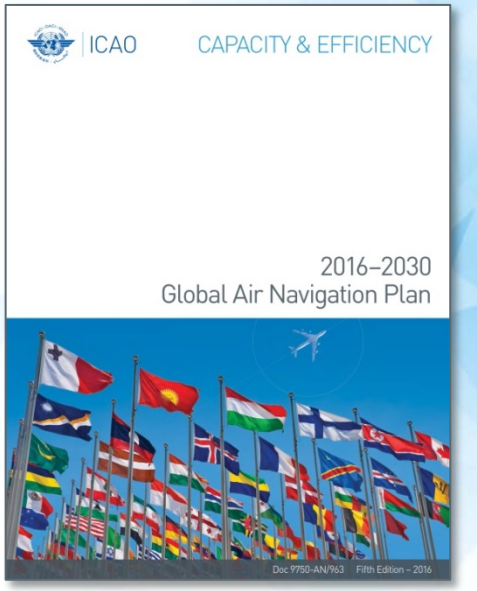
39th

TRIENNIAL ASSEMBLY

ICAO HQ, MONTREAL, 27 SEP-07 OCT 2016

ICAO

UNITING AVIATION



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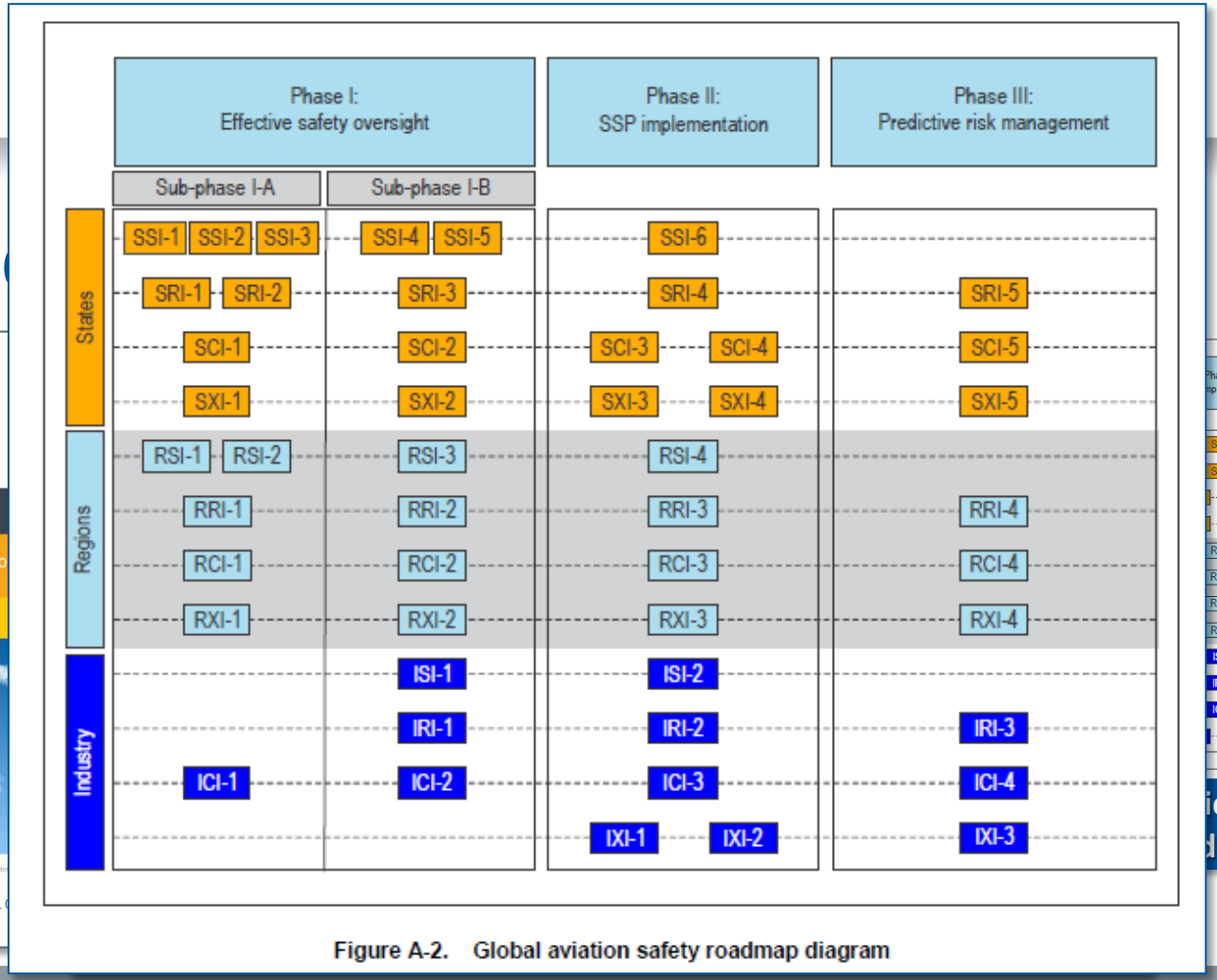
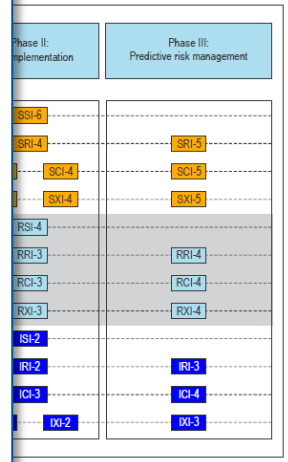


Figure A-2. Global aviation safety roadmap diagram

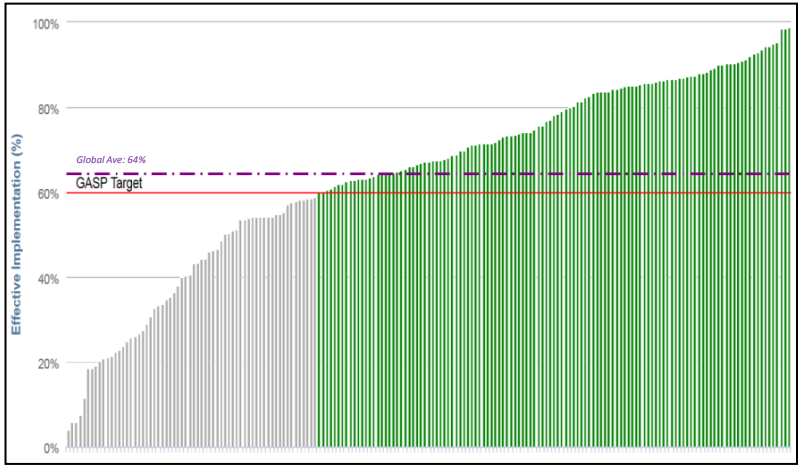


ion safety
diagram

ICAO UNITING AVIATION

PROPOSAL FOR NEXT GASP

Effective Implementation



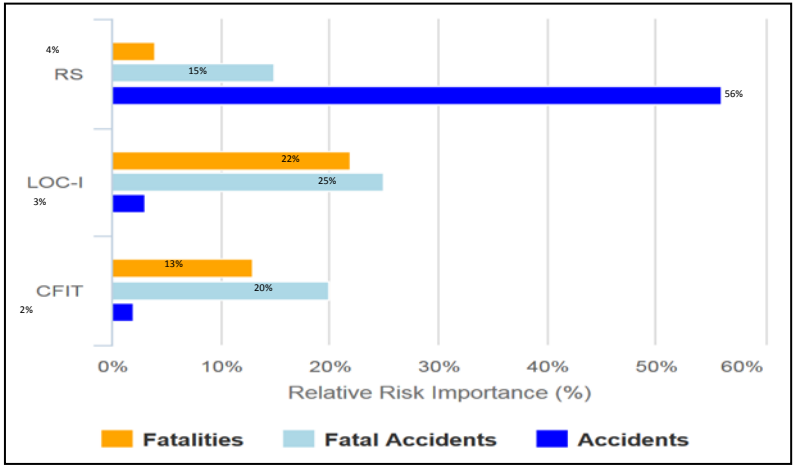
USOAP Audit Results

GANP

ASBU

BBBs

Operational Risks



Scheduled Commercial flights on airplanes above 5.7t 2012-2016

TARGET 4.1	TARGET 2.1	TARGET 2.2	TARGET 3.1	TARGET 3.2	TARGET 6.1	TARGET 1.1	TARGET 5.1	TARGET 5.2	TARGET 4.2	TARGET 4.3
ICAO **Recognized** functions	Implement **Safety Oversight**	Positive **Safety Margin**	Sustainable **SSP**	Effective **SSP**	Appropriate **Infra-structure**	Reduced **Accident rate**	**INDUSTRY** assessment programmes	Harmonized KPIs in **SMS**	Safety risk information to **RASG**	**RASG** Risk mgmt. activities
2020	2022+	2022	2022	2025	2022	**Yearly**	2020	2022	2022	2022

ICAO UNITING AVIATION

PROPOSAL FOR NEXT GASP

Effective Implementation

BBBs

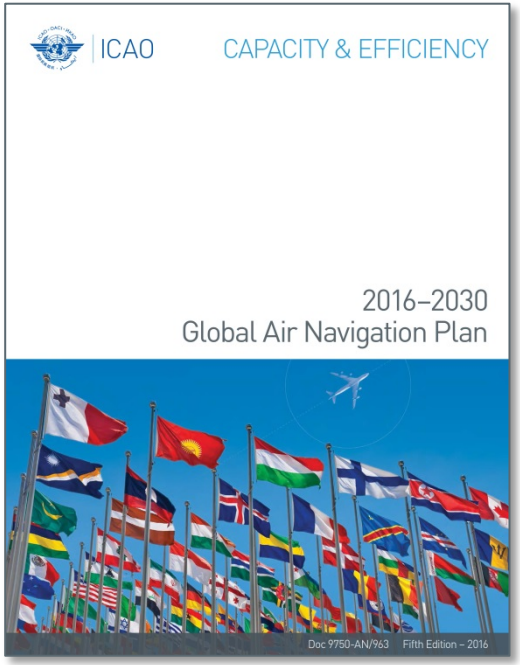
Operational Risks

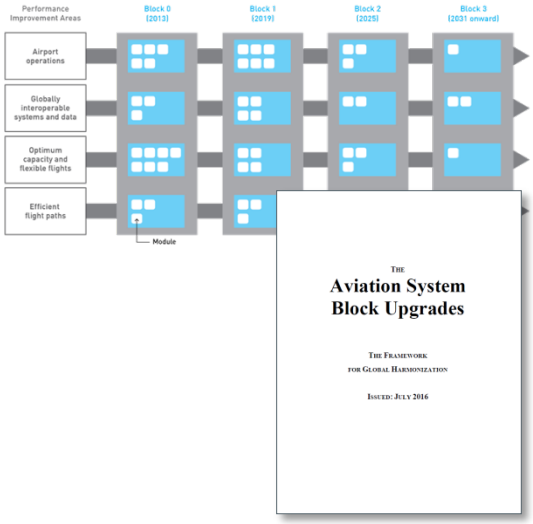
TARGET 4.1	TARGET 2.1	TARGET 2.2	TARGET 3.1	TARGET 3.2	TARGET 6.1	TARGET 1.1	TARGET 5.1	TARGET 5.2	TARGET 4.2	TARGET 4.3
States that need support in areas with safety margins below zero, to use a RSOO mechanism or another	All States to improve their score for the effective implementation (EI) of the critical elements (CEs) of the State's safety oversight system as follows:	All States to reach a positive safety margin, in all categories	All States to implement the foundation of a State Safety Programme (SSP)	All States to implement an Effective SSP, as appropriate to their aviation system complexity	All States to implement the air navigation and airport core infrastructure	Maintain a decreasing trend of global accident rate	Increase the number of service providers participating in the corresponding, ICAO-recognized industry	All service providers to use globally harmonized SPIs, as part of their safety management systems (SMS)	All States to contribute information on safety risks, including SSP safety performance indicators (SPIs), to their respective Regional	All States with a positive safety margin, and an Effective SSP, to actively engage in RASGs'
recognized	By 2030 – 95%								(RASGs)	management
ICAO **Recognized** functions	Implement **Safety Oversight**	Positive **Safety Margin**	Sustainable **SSP**	Effective **SSP**	Appropriate **Infra-structure**	Reduced **Accident rate**	**INDUSTRY** assessment programmes	Harmonized KPIs in **SMS**	Safety risk information to **RASG**	**RASG** Risk mgmt. activities
2020	2022+	2022	2022	2025	2022	Yearly	2020	2022	2022	2022

GASP Goals, Targets & Indicators

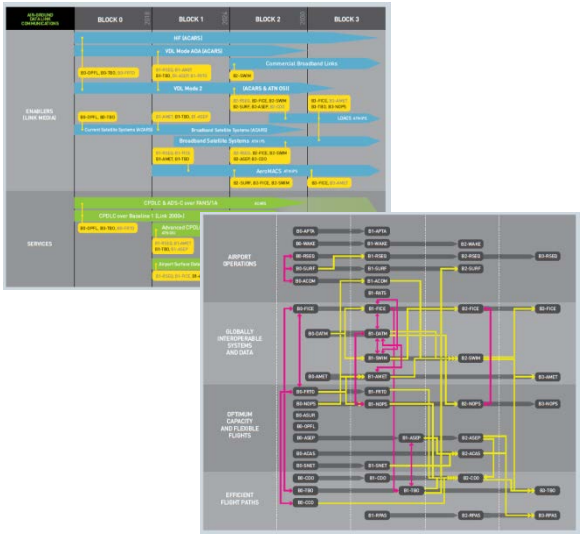
National, Regional and Global HRC

Contents of the 2016-2030 GANP



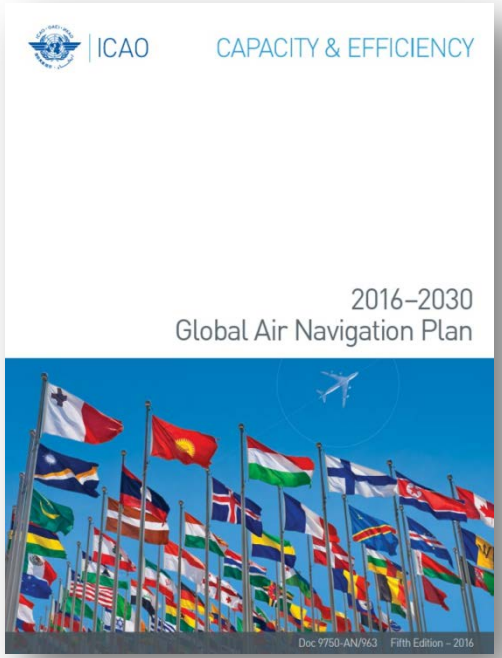


Aviation System Block Upgrades (ASBU) Methodology



Technology Roadmaps and Module Dependencies

The Global Air Navigation Plan (GANP)

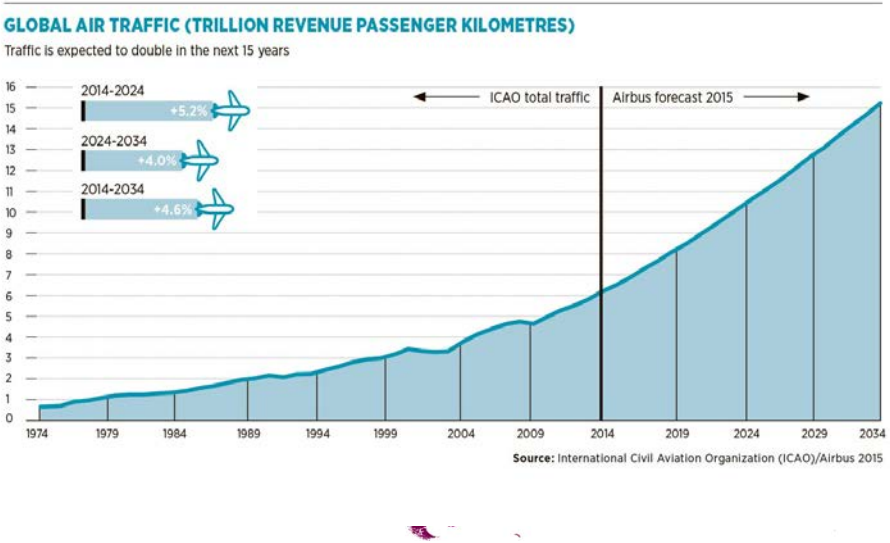


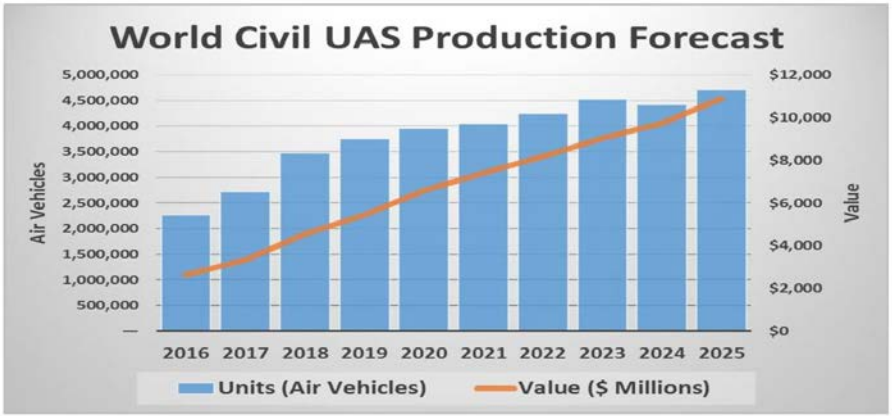
- Strategy to achieve a global interoperable air navigation system offering safe, secure and efficient air transport for people and goods worldwide, while limiting the impact of aviation on the environment.

- The GANP serves as a worldwide reference to transform the air navigation system in an evolutionary and inclusive manner so that no State or Stakeholder is left behind.

A NEW ERA IN AVIATION

- Demand, including new entrants





A NEW ERA IN AVIATION

- Technology and information
  - Full connectivity

“ANYTHING THAT CAN BE CONNECTED, WILL BE CONNECTED”

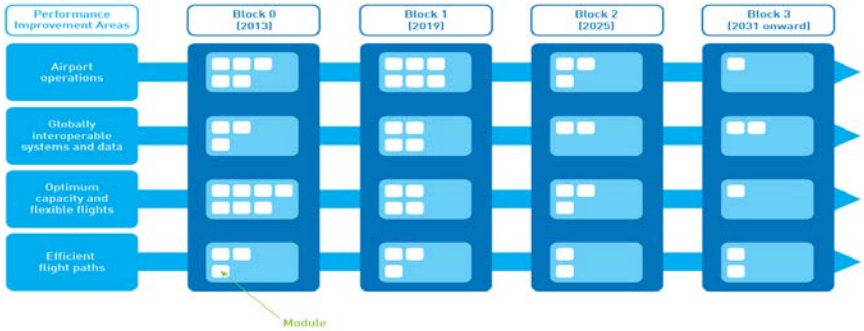
A high-performing Air Navigation System

Global interoperability	Ensure global interoperability
Access and equity	Access and equity to all airspace users
Capacity	Capacity to accommodate forecast demand
Efficiency	Increase efficiency of air operations
Flexibility and predictability	Enable flexibility to meet arrival times
Sustainability	Secure air navigation system sustainability
Resilience	Resilience to cope with system disruptions

Aviation System Block Upgrades Framework

- Global interoperable scalable implementation enabled by technological innovation

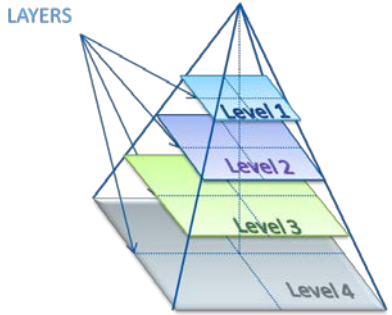
"ONE SIZE DOES NOT FIT ALL"

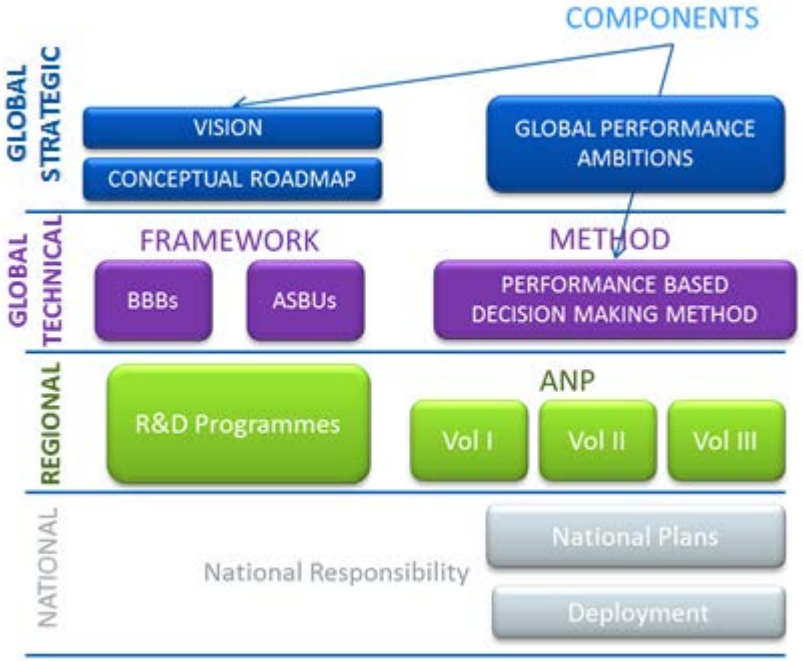


Proposals for Enhancement

2019 Update of GANP:

Creating a Multilayer Structure





https://www4.icao.int/ganpportal

13th Air Navigation Conference (AN-Conf/13)

9 – 19 October 2018, Montréal, Canada

- **Theme:** ***From development to implementation***
- **State letter 2017/54 sent out on 28 April 2017 to propose the need, agenda, date, organization, site and languages for AN-Conf/13**
  - **46 replies received**: 41 States and 5 International Organizations
  - Principal subjects circulated from the State letter as basis of meeting agenda
- **Invitation State letter 2017/120 sent out on 15 December 2017**
- **2 Committee structure working in parallel and reporting back to Plenary**
  - Air Navigation Committee (Committee A)
  - Aviation Safety Committee (Committee B)

Tel.: +1 514-954-5872

Ref.: ST 14/1-17/54 28 April 2017

Subject: Proposed Thirteenth Air Navigation Conference (AN-Conf/13) (2018)

Action required: Comments to reach Montreal by 28 July 2017

Sir/Madam,

1. I have the honour to inform you that the Air Navigation Commission, at the seventh and eighth meetings of its 204th Session on 7 and 9 March 2017, agreed that Contracting States and appropriate international organizations be consulted on the convening of the Thirteenth Air Navigation Conference (AN-Conf/13) to cover all of the air navigation system elements and specific safety matters. Details on the need, theme, benefits and expectations, timing and organization for the proposed AN-Conf/13 are elaborated in Attachment A.

2. In preparation for AN-Conf/13, the Second Global Air Navigation Industry Symposium (GANIS/2) will be held from 11 to 13 December 2017. While emphasizing the need for global harmonization, the symposium will identify ways and means to ensure interoperability and to maximize utilization of available and emerging technologies and concepts of operations to be further discussed at the AN-Conf/13.

3. The AN-Conf/13 will be a forum for detailed technical discussions leading to agreement on a set of high-level recommendations. These will be submitted for approval to the ICAO Council which will subsequently invite endorsement thereon by the 40th Session of the Assembly. This approach allows the Assembly to focus on strategic issues based on sound technical advice. In this respect, it is important to note the recent decision of the ICAO Council regarding the Organization's practice in convening high-level meetings and how they inform Assembly sessions (C-DEC 210/6 refers). Considering the variety of subjects to be discussed at AN-Conf/13, inclusion of appropriate technical experts in your delegation will be essential.

4. With a focus on harmonization and efficiency leading to operational improvements, an initial list of possible subjects for consideration at AN-Conf/13 has been prepared. This list is presented in Attachment B and background information on the origin and purpose of the subjects is contained in Attachment C. To facilitate the preparation of your reply, its subsequent consolidation with other replies,

13th Air Navigation Conference (AN-Conf/13)

9 – 19 October 2018, Montréal, Canada

- Secretariat Working Papers published as early as **30 May 2018**

		Submissions before 14 August 2018	Submissions between 14 August and 14 September 2018	Submissions after 14 September 2018
States	Working Papers (WPs)	Translated by ICAO and published in six languages.	Published in the language(s)* in which they are submitted.	**Will not be processed**
	Information Papers (IPs)	Published in the language(s)* in which they are submitted.		
International Organizations (IOs)	Working Papers (WPs)	Published in the language(s)* in which they are submitted.		
	Information Papers (IPs)	Published in the language(s)* in which they are submitted.		

* English version should be included as a minimum.

13th Air Navigation Conference (AN-Conf/13)

9 – 19 October 2018, Montréal, Canada

Air Navigation Committee (Committee A)	Aviation Safety Committee (Committee B)
1: Air navigation global strategy	6: Organizational safety issues
2: Enabling the global air navigation system	7: Operational safety risks
3: Enhancing the global air navigation system	8: Emerging safety issues
4: Implementing the global air navigation system and the role of planning and implementation regional groups (PIRGs)	
5: Emerging issues	

Implementation

GLOBAL, REGIONAL AND NATIONAL IMPLEMENTATION

Project Planning for improved Implementation of GANP and GASP to achieve tangible benefits

- Project oriented from start to finish
  - (from Need to implementation)
- More Involvement all from the beginning
- Multidisciplinary
- Implementation driven
  - Global and Regional views
  - Different Implementation packages

Implementation and feedback

- Tailored implementation packages
- Regions'/State priority following KPI
- Implementation support
  - RO/HQ
- PIRGs/RASGs plan and follow-up
- Feedback from reports and dashboards
- National master plan
- Support UNSDG

ICAO UNITING AVIATION

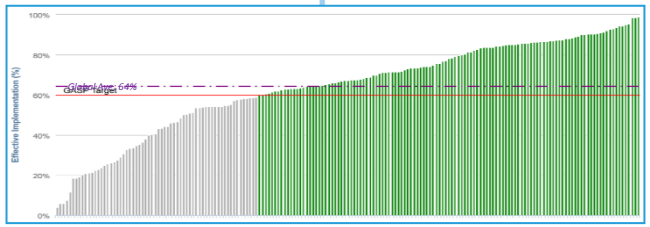
Alignment with Global Plans

GASP

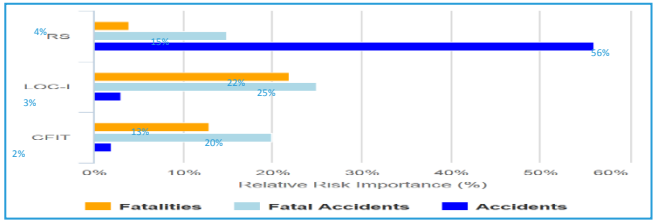
ROADMAP

REGIONS

Effective Implementation



Operational Risks

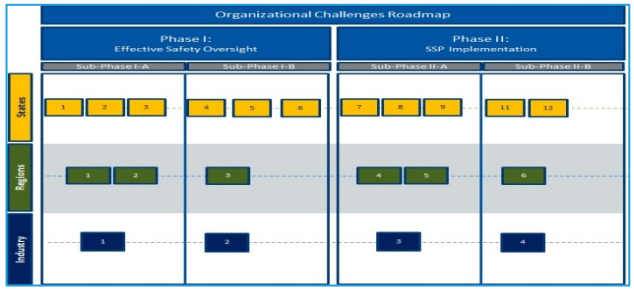


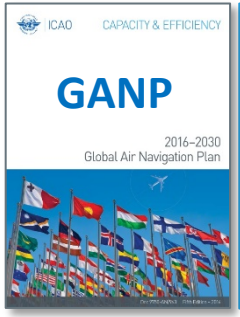
INFRA-STRUCTURE

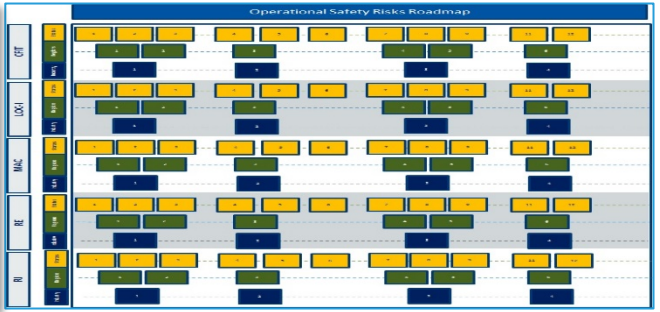
BBBs

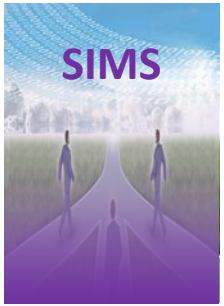
Performance Monitoring

DATA









Organizational - EI

INFRA

Operational Risks

Performance Monitoring

Project Implementation/Reporting

Regional planning mapped to the Global plans, prioritized to Regional needs

ICAO mechanism for implementation to achieve benefits

Why (Problem Statement)
SARPs
Guidance material
Symposia

Individual Regional Implementation Strategies

- Regional/State plans
- Training
- Workshops
- Symposia
- Go-Teams
- Implementation assistance

Benefits

Safety, Capacity, Efficiency, Economy, Environment Protection

Pilot Project: PBN

- **Problem:** No Regulatory framework to capitalize on modern A/C Capabilities
- **SARPs developed to support the framework**
- **Guidance Material**
- **Recognition**

Implementation support

- Guidance Material
- Workshops and Symposia
- Training
- Go Teams
- FPPs

Planning support

- Regional and National Plan

For each region

Benefits

Stabilized approach
Improved accessibility
Better fuel efficiency
Shorter routes
Environmental friendly
Lower cost navaids

Conclusion

- Global overview importance to define future path
- GANP and GASP developed need to be implemented
- GANP/GASP Interlinkage for implementation
- One Global Strategy for seamless implementation:
  - Tailored for each Region (Regional prioritization)
  - Coordination of regional initiatives through Regional Mechanisms (systematic reporting):
    - Regional Offices, DCA, PIRGs/RASGs and their Sub Groups, FPPs, RAIO, RSOO, COSCAPs, IFAIMA, etc.
- Through project management
  - **Multi-disciplinary**
  - **Implementation driven**
- Many projects in pipe line (e.g. AIM, Conflict zone (Doc 10084), etc.)