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APANPIRG/29 – Flimsy 01

# SAFETY & AIR NAVIGATION OVERVIEW - IMPLEMENTATION

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



APANPIRG/29 (3-5 September)  
RASG-APAC/8 (6-7 September)  
Bangkok, Thailand

# Overview

- **Global Picture and the challenges we are facing**
- **Global Plans and the 13<sup>th</sup> Air Navigation Conference**
- **Global, Regional and National Implementation**





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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

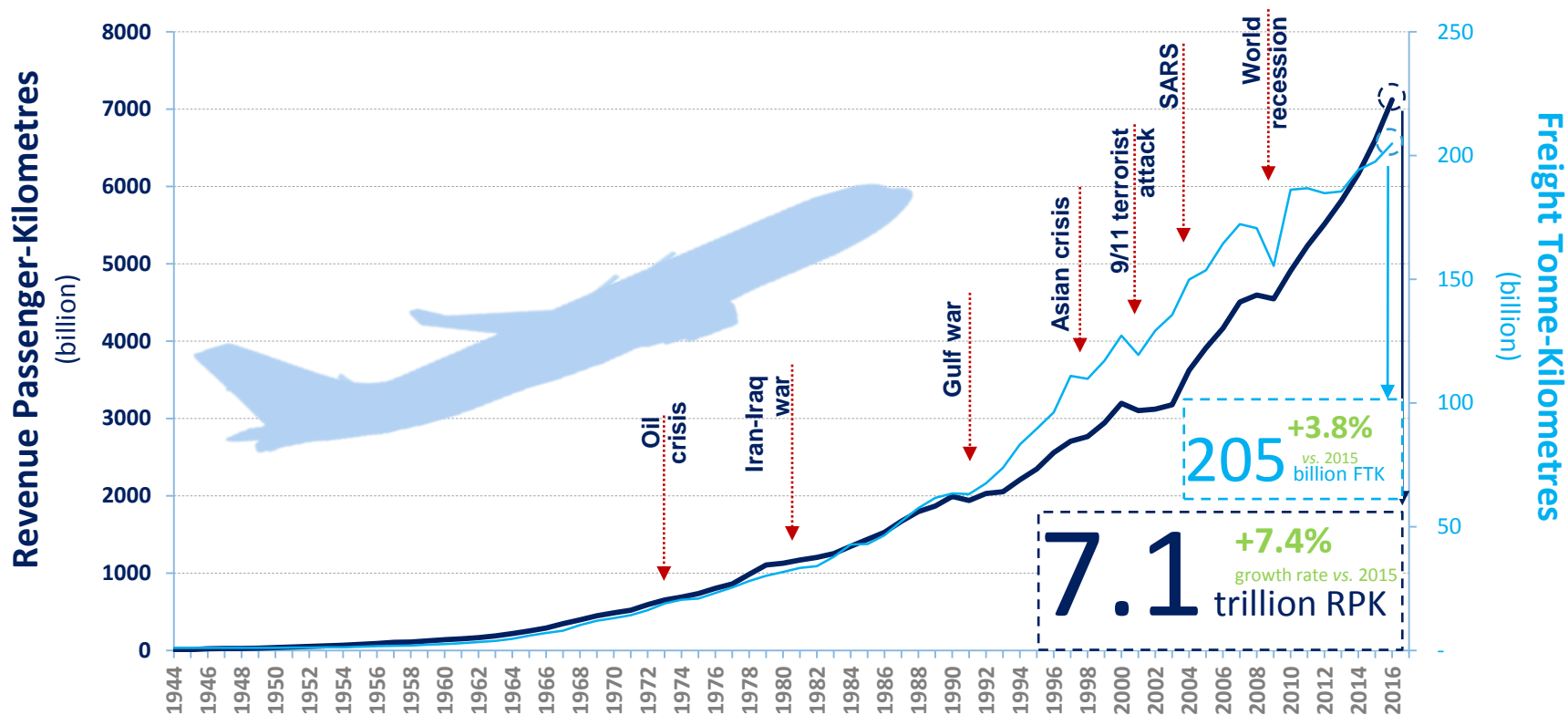




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# Growth of Air Transport



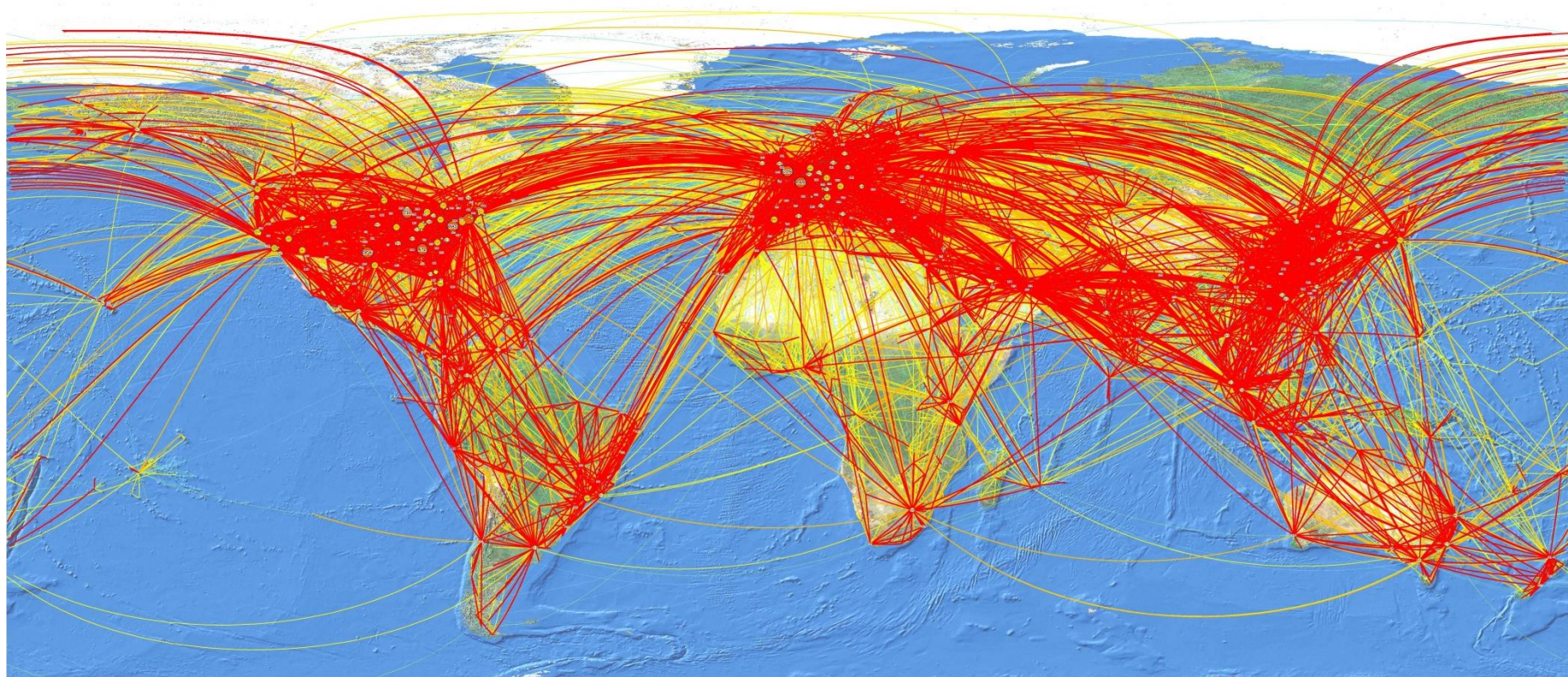


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# TRAFFIC DENSITY

2040





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Global Overview

# GLOBAL PLANS AND THE 13TH AIR NAVIGATION CONFERENCE



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# 39th

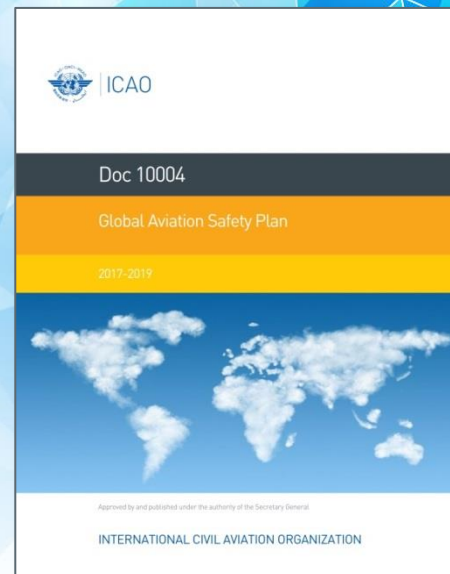
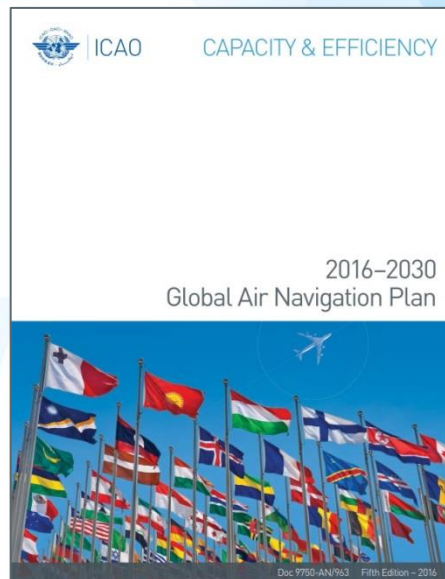
## TRIENNIAL ASSEMBLY

ICAO HQ, MONTREAL, 27 SEP-07 OCT 2016



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Global Aviation

2017-2019



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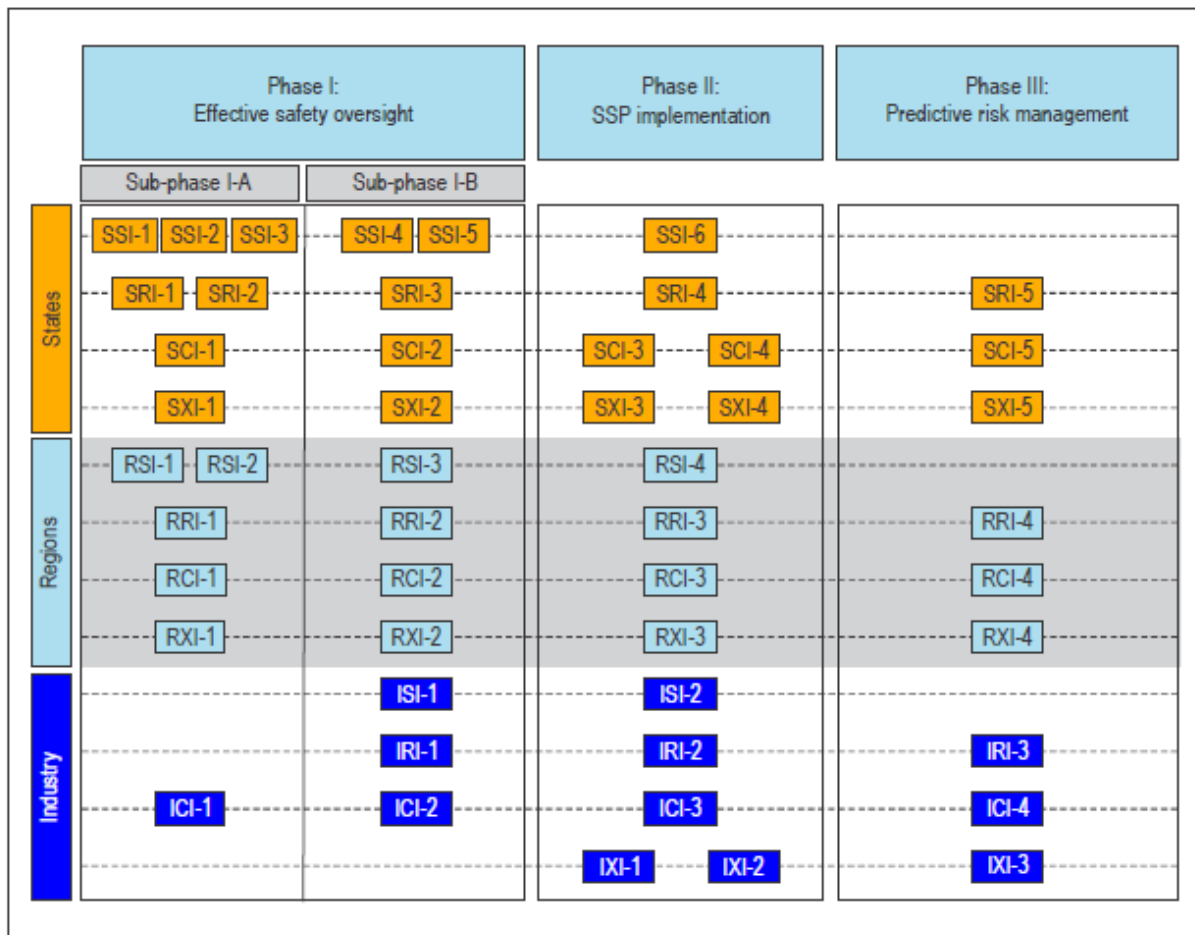
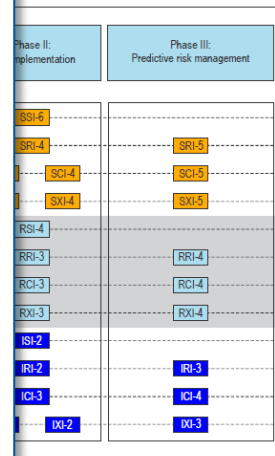


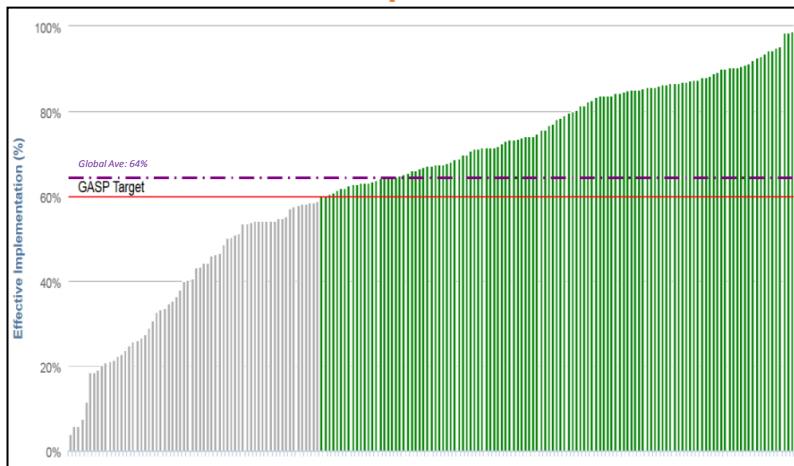
Figure A-2. Global aviation safety roadmap diagram



ion safety  
diagram



## Effective Implementation

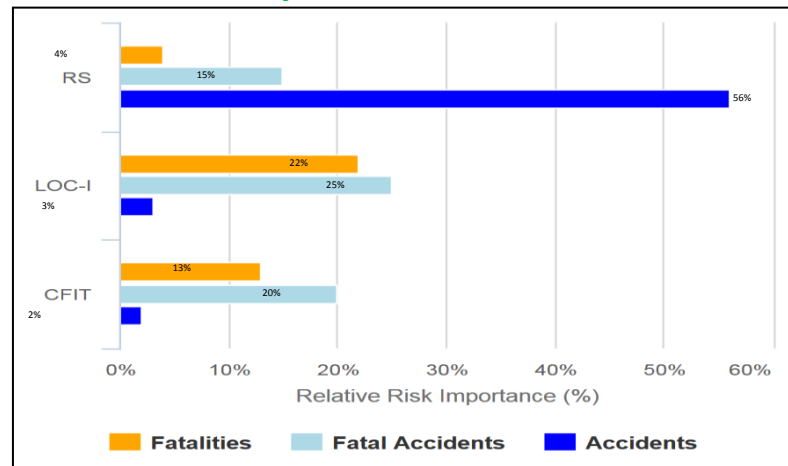


USOAP Audit Results



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



## Effective Implementation

## BBBs

## Operational Risks

States that need support in areas with safety margins below zero, to use a RSOO mechanism or another recognized	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 RASG	All States with a positive safety margin, and an Effective SSP, to actively engage in RASG's risk management
<b>TARGET 4.1</b>	<b>TARGET 2.1</b>	<b>TARGET 2.2</b>	<b>TARGET 3.1</b>	<b>TARGET 3.2</b>	<b>TARGET 6.1</b>	<b>TARGET 1.1</b>	<b>TARGET 5.1</b>	<b>TARGET 5.2</b>	<b>TARGET 4.2</b>	<b>TARGET 4.3</b>
ICAO Recognized functions	Implement Safety Oversight	Positive Safety Margin	Sustainable SSP	Effective SSP	Appropriate Infrastructure	Reduced Accident rate	INDUSTRY assessment programmes	Harmonized KPIs in SMS	Safety risk information to RASG	RASG Risk mgmt. activities
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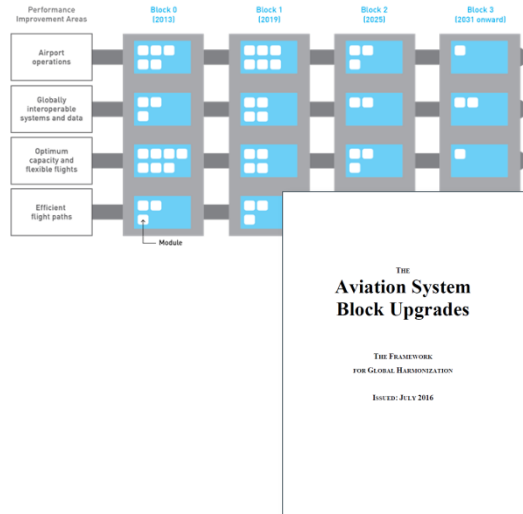
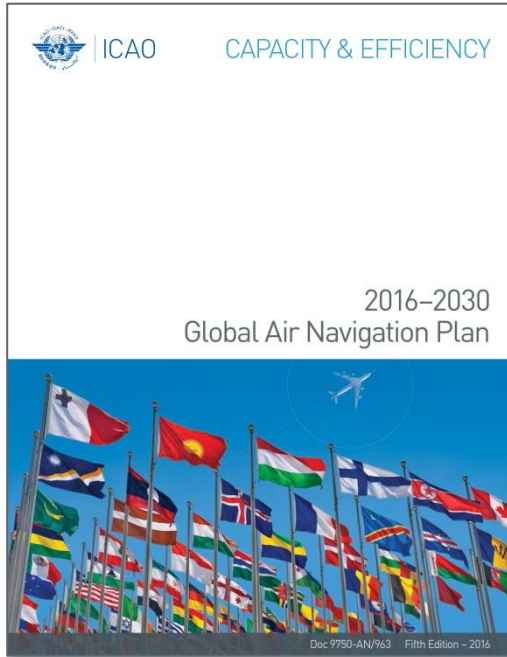
# GASP Goals, Targets & Indicators



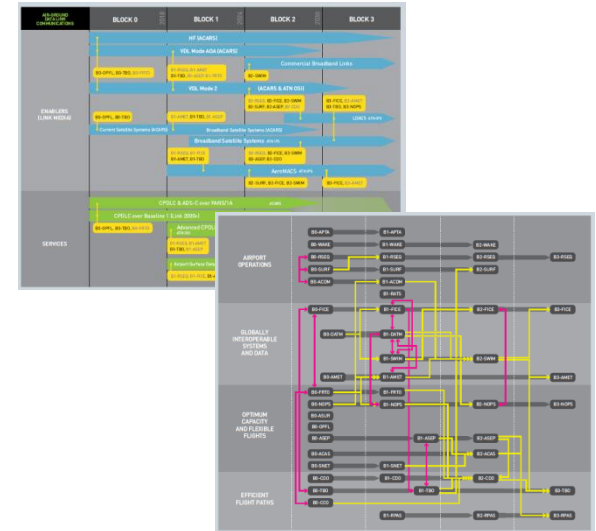
# National, Regional and Global HRC



# Contents of the 2016-2030 GANP

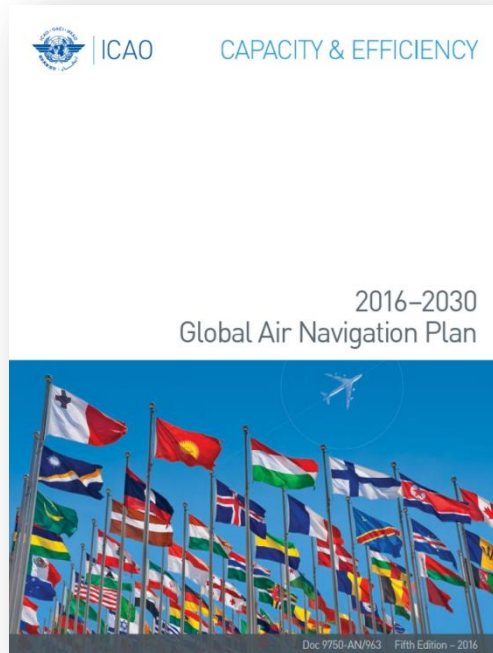


Aviation System Block Upgrades (ASBU) Methodology



Technology Roadmaps and Module Dependencies

# The Global Air Navigation Plan (GANP)



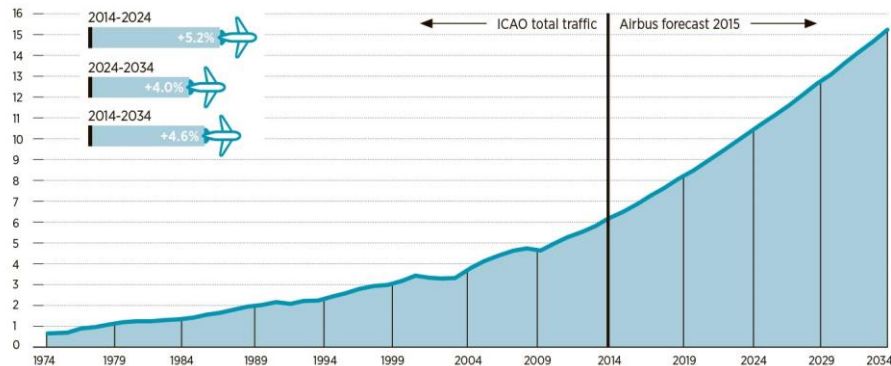
- Strategy to achieve a global interoperable air navigation system offering safe, secure and efficient air transport for people and goods worldwide, while limiting the impact of aviation on the environment.
- The GANP serves as a worldwide reference to transform the air navigation system in an evolutionary and inclusive manner so that no State or Stakeholder is left behind.

# A NEW ERA IN AVIATION

- Demand, including new entrants

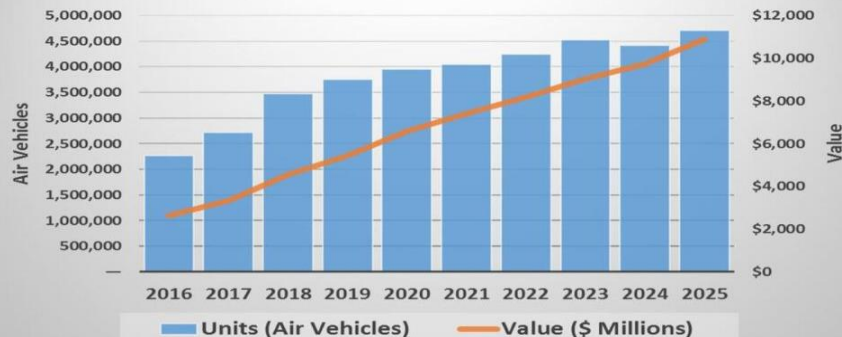
## GLOBAL AIR TRAFFIC (TRILLION REVENUE PASSENGER KILOMETRES)

Traffic is expected to double in the next 15 years



Source: International Civil Aviation Organization (ICAO)/Airbus 2015

## World Civil UAS Production Forecast



# A NEW ERA IN AVIATION

- Technology and information
  - Full connectivity

**“ANYTHING THAT CAN BE  
CONNECTED, WILL BE CONNECTED”**





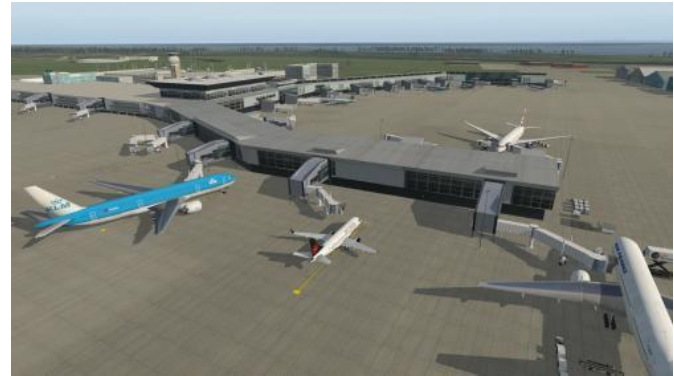
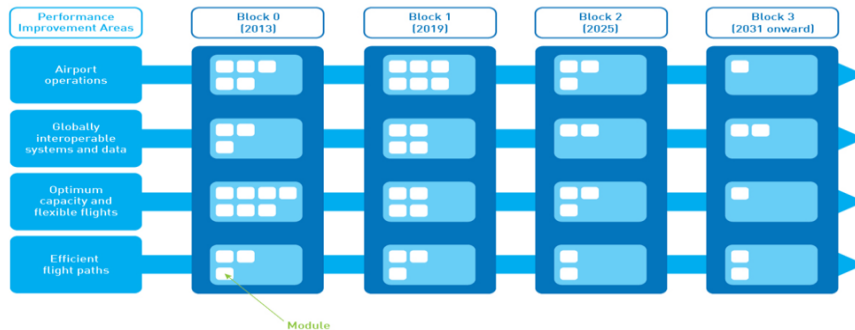
# A high-performing Air Navigation System

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

# Aviation System Block Upgrades Framework

- Global interoperable scalable implementation enabled by technological innovation

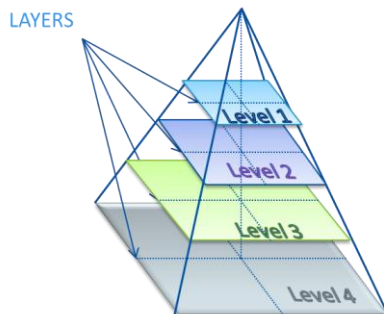
*“ONE SIZE DOES NOT FIT ALL”*



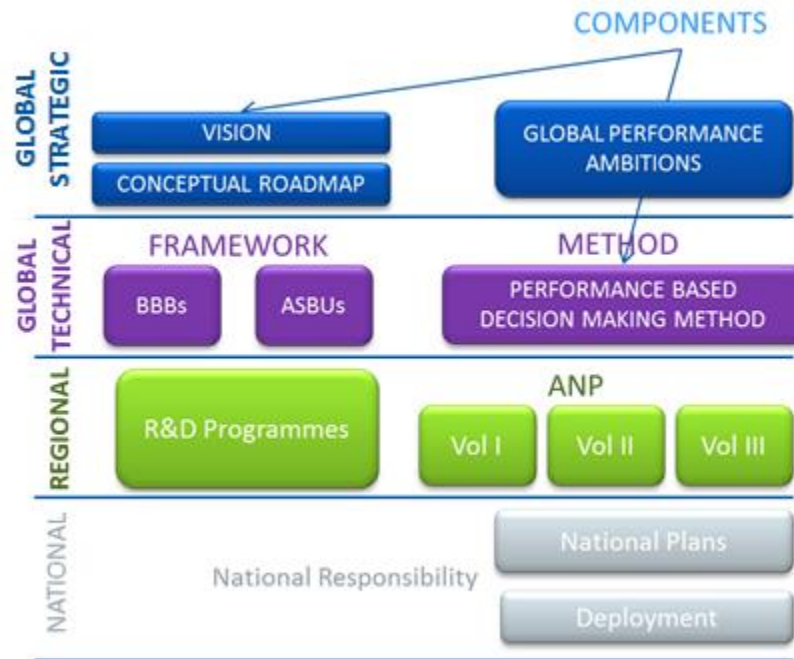
# Proposals for Enhancement

2019 Update of GANP:

## Creating a Multilayer Structure



<https://www4.icao.int/ganportal>



# 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)



# 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 <u>14 August 2018</u>	Submissions <u>between</u> <u>14 August and 14 September</u> <u>2018</u>	Submissions <u>after</u> <u>14 September 2018</u>
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)

- 1: Air navigation global strategy
- 2: Enabling the global air navigation system
- 3: Enhancing the global air navigation system
- 4: Implementing the global air navigation system and the role of planning and implementation regional groups (PIRGs)
- 5: Emerging issues

## Aviation Safety Committee (Committee B)

- 6: Organizational safety issues
- 7: Operational safety risks
- 8: Emerging safety issues



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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

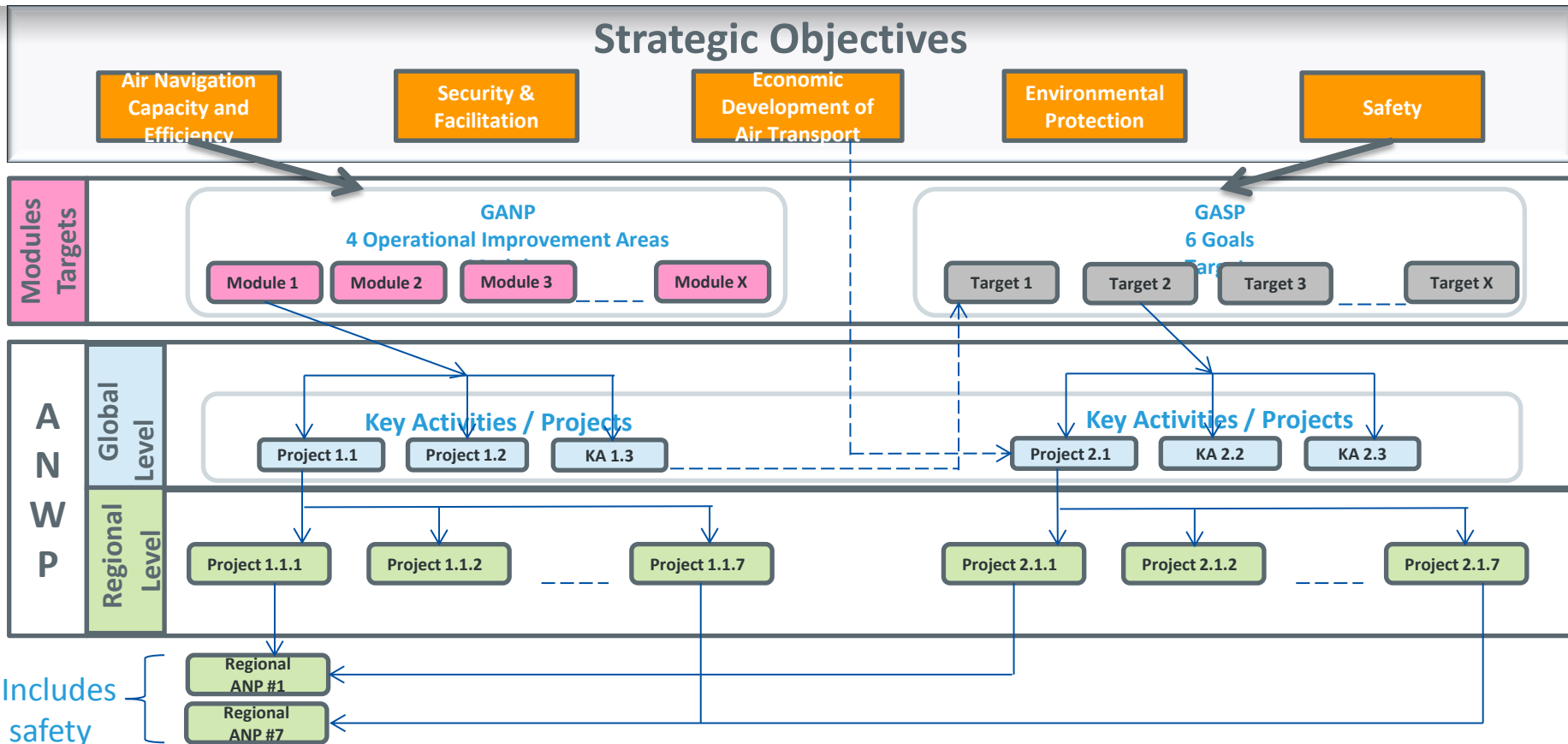
- Tailored implementation packages
- Regions'/State priority following KPI
- Implementation support
  - RO/HQ
- PIRGs/RASGs/EASPG plan and follow-up
- Feedback from reports and dashboards
- National master plan
- Support UNSDG

PIRGs and RASGs  
plan/follow up  
implementation

PIRGs and RASGs  
Report

Input from  
implementation  
Dashboards

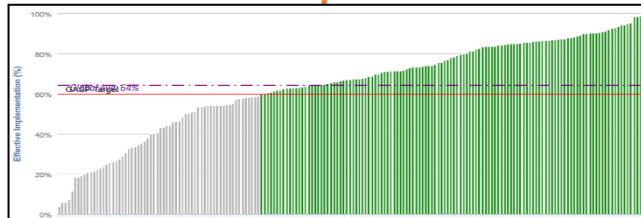
ANC review and  
Council Decide





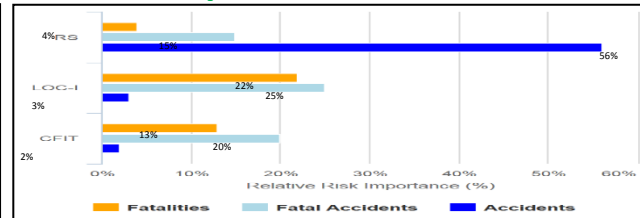
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## Effective Implementation



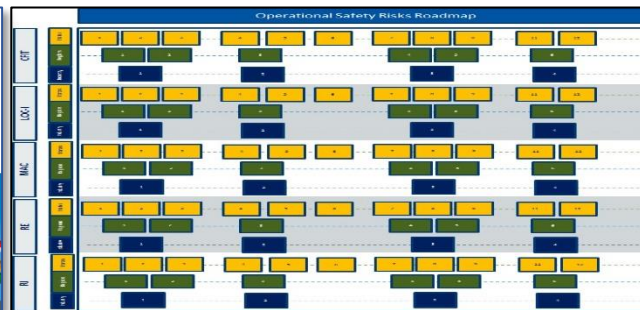
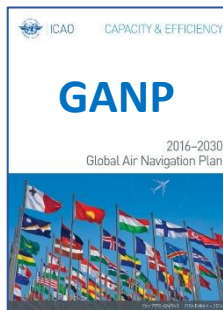
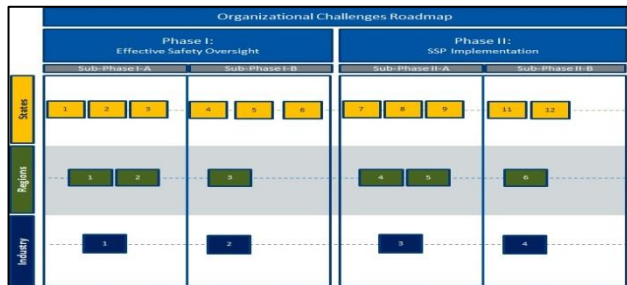
INFRA-  
STRUCTURE  
BBBs

## Operational Risks



Performance  
Monitoring  
DATA

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Organizational - EI

INFRA

Operational Risks

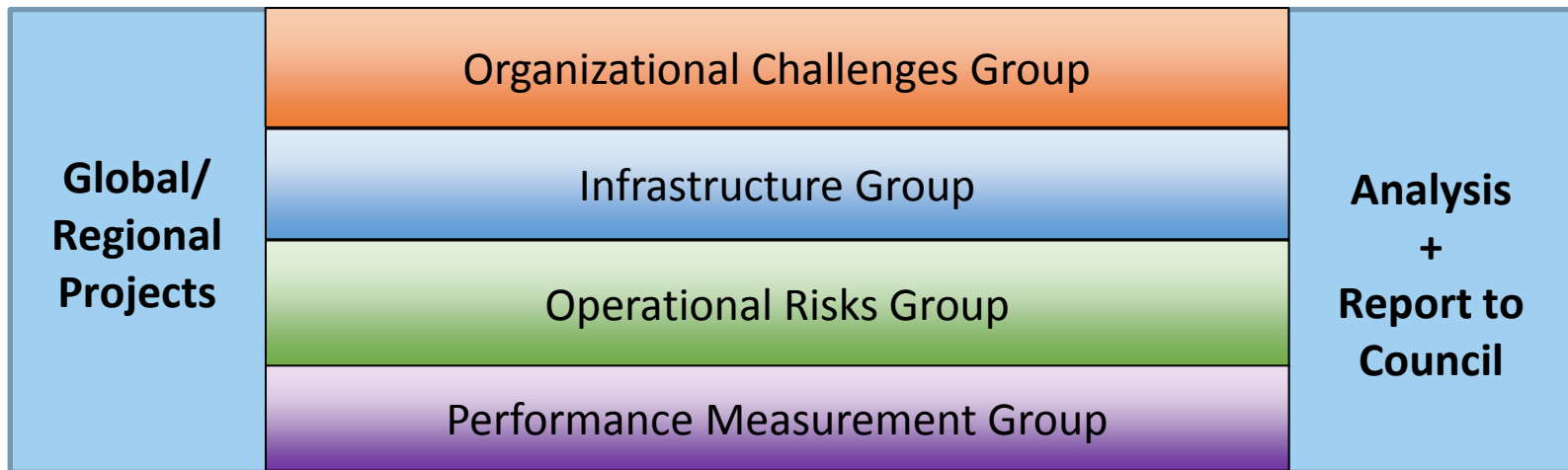
Performance  
Monitoring



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## Project Implementation/Reporting



# Focus Group Plan

	By June 13	By August 7	By the end of August	By the end of September	By the end of October	By the end of January 2019	By the end of March 2019
Council	-	Slot reservation	-	-	-	-	Review and approval 216th Session
ANC	-	Slot reservation	-	-	-	Review and approval 210th Session	-
HQ-PCI	Kick-off	Planning, Goals & tasks for FG	➔	TOR finalization	WP preparation	➔	➔
Regional Offices	Kick off	Group nomination	➔	➔	➔	➔	➔
Focus Group	-	Kickoff	Define Doc list for preparation e.g. TOR, report, etc.	TOR	templates, guidance materials, handbooks	➔	➔

# 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 nav aids

# Achievement

- SASP
  - Job card revised to two projects
- SMP
  - Job Cards are part of the TOR
- GADSS
  - 7 Job cards become one project
- FLIREC
  - 3 Job cards -Impact to industry, revision of the applicability , explore new methods
- Conflict zone cross Bureau
  - From update of Doc 10083 to full project and now in implementation phase
- Dangerous Goods
  - 3 job cards; one project, one overtaken by events, one be consulted airworthiness
- AIM implementation
  - AIM implementation projects

# 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:
    - Regional Offices, DCA, PIRGs/RASGs and their Sub Groups, FPPs, RAIO, RSOO, COSCAPs, IFAIMA, etc.
- Through project management
  - **Multi-disciplinary**
  - **Implementation driven**
- Many project in pipe line (e.g. AIM, Conflict zone (Doc 10084 ), etc.)

