الهيئة العامة للطيران المدني
CIVIL AVIATION AUTHORITY
QATAR قطر

ICAO

# MIDANPIRG/22 & RASG-MID/12

**Doha, Qatar | May 4-8, 2025**

# Overview on MID Regional Aviation Safety Plan (MID-RASP) 2026-2028 Edition

**Third Edition**

**2026-2028**

# MID Regional Aviation Safety Plan (MID-RASP) 2026-2028 Edition

Introduction: Overview & structure of the RASP; Process for MID RASP development; Regional Safety issues, goals and targets; Operational context

Purpose of MID-RASP

MID Region's Strategic Safety Priorities

MID region's strategic direction for the management of aviation safety

Safety Actions

# Section 1.
# Introduction

# Overview of MID RASP

- **Commitment to regional safety enhancement:** The MID Region is committed to improving aviation safety and fostering regional collaboration.

- **Implementation of MID- RASP:** The MID-RASP provides a strategic framework for managing aviation safety at the regional level.

  - Lists regional safety issues.
  - Sets regional safety goals and targets.
  - Presents Safety Enhancement Initiatives (SEIs) to achieve goals.

- **Alignment with GASP:** Aligns with ICAO's Global Aviation Safety Plan.

# Main objectives of MID-RASP


- Continuous reduction of operational risks
- Enhance safety oversight capabilities
- Establish effective State Safety Programmes (SSP)
- Development of  NASPs
- Raise awareness of safety risks among States, industry, and stakeholders
- Encourage collaboration among all stakeholders to address regional aviation safety issues and support the implementation of GASP.
- Encourage allocation of resources to improve safety management.
- Facilitate information sharing.

# Structure of MID RASP

- **Two Main Parts:**
  - **Part I: Planning**
    - Introduction, structure, and strategic safety priorities.
    - Sections 1–3.
  - **Part II: Implementation**
    - Safety performance monitoring and SEI actions.
    - Sections 4–5.
- **Supporting Appendices:** Provide additional details and guidance..

# Strategic Goals of MID-RASP

Aligned with GASP (2026–2028 Edition)

- **Goal 1:** Achieve a continuous reduction of operational safety risks
- **Goal 2**: Strengthen States' safety oversight capabilities
- **Goal 3**: Establish & manage effective State safety Programmes (SSP)
- **Goal 4:** Strengthen collaboration at the regional & national levels to address safety issues
- **Goal 5:** Strengthen aviation safety planning (RASP & NASP)
- **Goal 6:** Expand the use of industry safety assessment and safety data sharing Programmes.

# How MID-RASP is developed and monitored

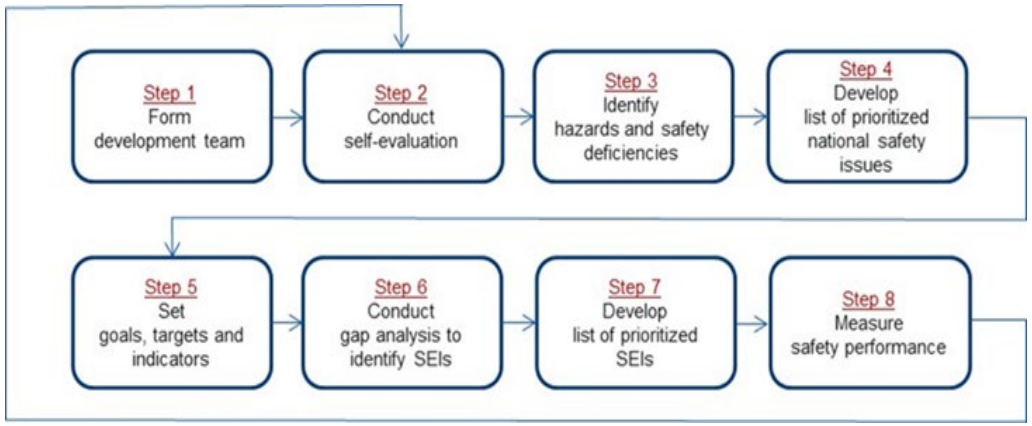
## Governing Body and Collaboration

- **RASG-MID:** Governing body responsible for MID-RASP development, implementation, and monitoring in collaboration with MID Office, organization, and industry.
- **SEIG** supports RASG-MID in developing MID-RASP. It also reviews MID-RASP annually to:
  - Include new SEIs.
  - Update existing SEIs and safety actions
  - Monitors and ensures timely implementation of SEIs in coordination with all stakeholders
  - Monitors and update SPMM
- Collaboration with ICAO MID Office, States, international organizations, and aviation industry.
- Support from MIDANPIRG, RASFG-MID, States, and industry ensures timely implementation of SEIs.
- MID-RASP is reviewed and endorsed by RASG-MID every three years or as necessary.

# How MID-RASP is developed and monitored

## Eight-Steps Process for MID-RASP Development

- Identification of regional safety issues
- Establishment of goals and targets aligned with GASP objectives
- Prioritization of SEIs based on regional relevance and actionable outcomes
- Safety Performance Monitoring & Measurement Mechanism (SPMM)



# Regional safety issues, goals and targets

## Key Features of MID-RASP Implementation:

Structural Alignment with GASP to ensure harmonization.

Comprehensive gap analysis conducted to identify gaps between RASG-MID initiatives and GASP.

MID Region Safety Performance Monitoring and Mechanism (SPMM) aligned with the GASP 2026-2028.

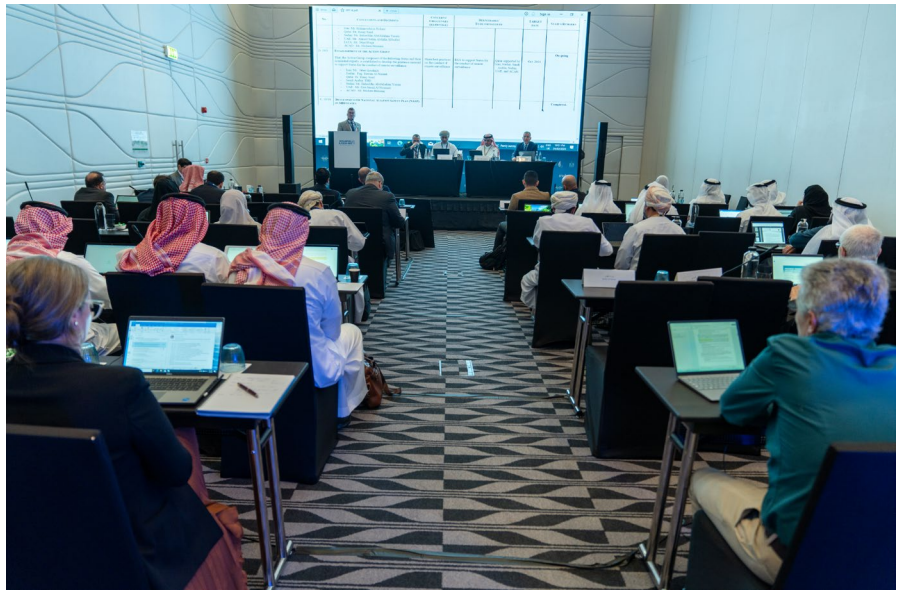
SEIs have been prioritized based on regional relevance, GASP 2026-2028 guidance, and actionable outcomes from key forums/Groups

# RASG-MID commitment to the strategic priorities

- Continuous reduction of operational risks
- Strengthening safety oversight capabilities notably (AIG, AGA, ANS)
- Supporting SSP & SMS development and implementation including NASP
- Promoting aerodrome safety certifications & runway safety programs.
- Addressing cross-sector risks
- Support in integrating UAS and AAM
- Supporting MENA ARCM Activities
- Support Advancing the operation of MENA RSOO
- Capacity Building and Implementation Support
- Promoting Regional Collaboration
- Promoting Safety Data Management

# States and Industry commitment

- Strengthen state oversight system to address deficiencies notably for AIG, AGA, &ANS
- Resolution of Significant Safety Concerns (SSCs)
- Developing and implementing  Safety Management
- Data-Driven Risk Mitigations
- Leveraging Industry Safety Programmes
- Support the Implementation of SEIs



# Operational Context

## The Middle East's role in global aviation

**01**

The Middle East is a global leader in aviation growth, connecting Europe and Asia-Pacific.

**02**

Geographical shift: West-to-east movement of air transport's center of gravity.

**03**

Hubs like Dubai and Doha dominate long-haul markets, reshaping global travel dynamics.

# Operational Context

## Passenger Market Forecast

**Feb. 2025**

Strong Growth Trajectory Ahead
February 2025:
Passenger demand ↑ 3.3% YoY
Flight capacity ↑ 1.3%

**2025**

Market Size:
$28.38B in 2025 → $35.19B by 2030

**2040**

Long-term Forecast:
Air passenger traffic to surge 300%
Reaching 1.1 billion passengers by 2040

# Positioning for Global Leadership

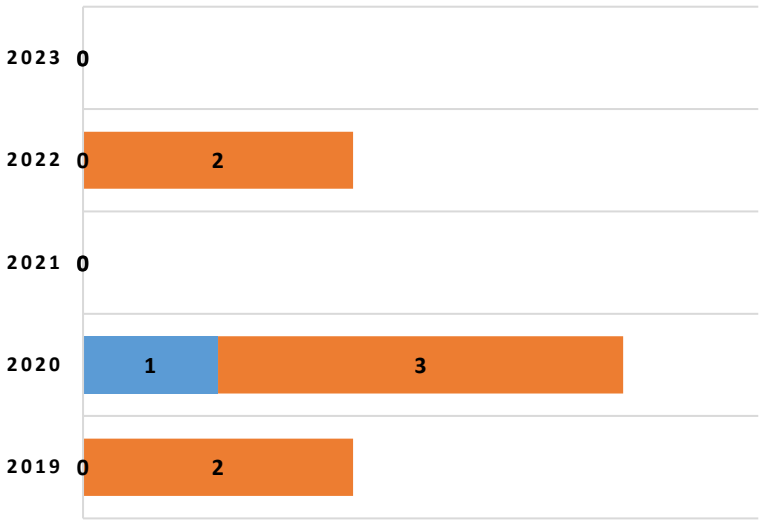
Strategic location + massive investment = sustained growth

The Middle East is shaping the future of aviation innovation, connectivity, and sustainability

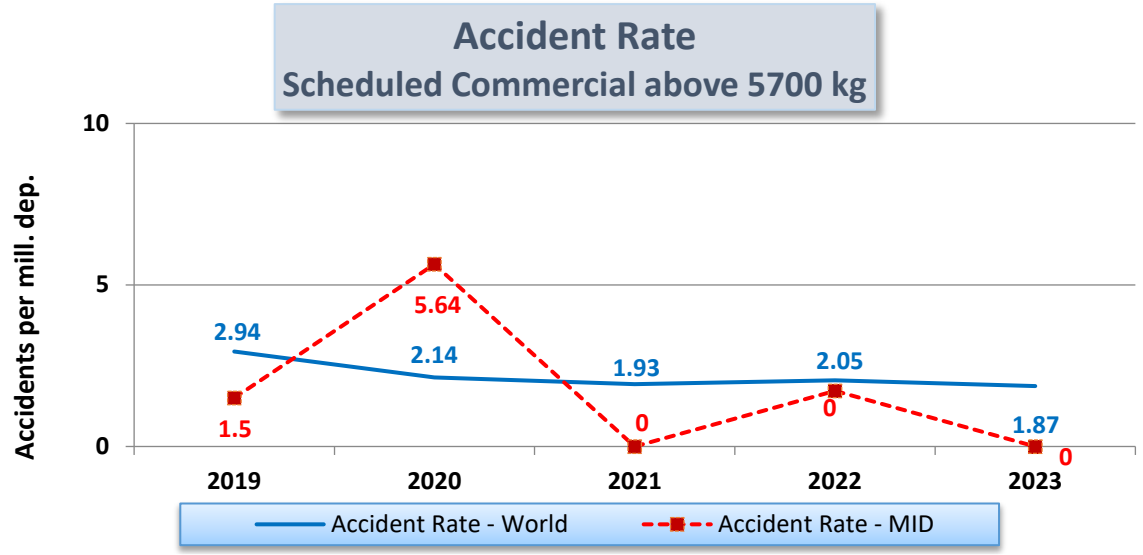
Poised to become a leading global aviation hub

# State of occurrence-accidents schedule commercial above 5700 kg

## Fatal Accidents Vs Accidents- MID

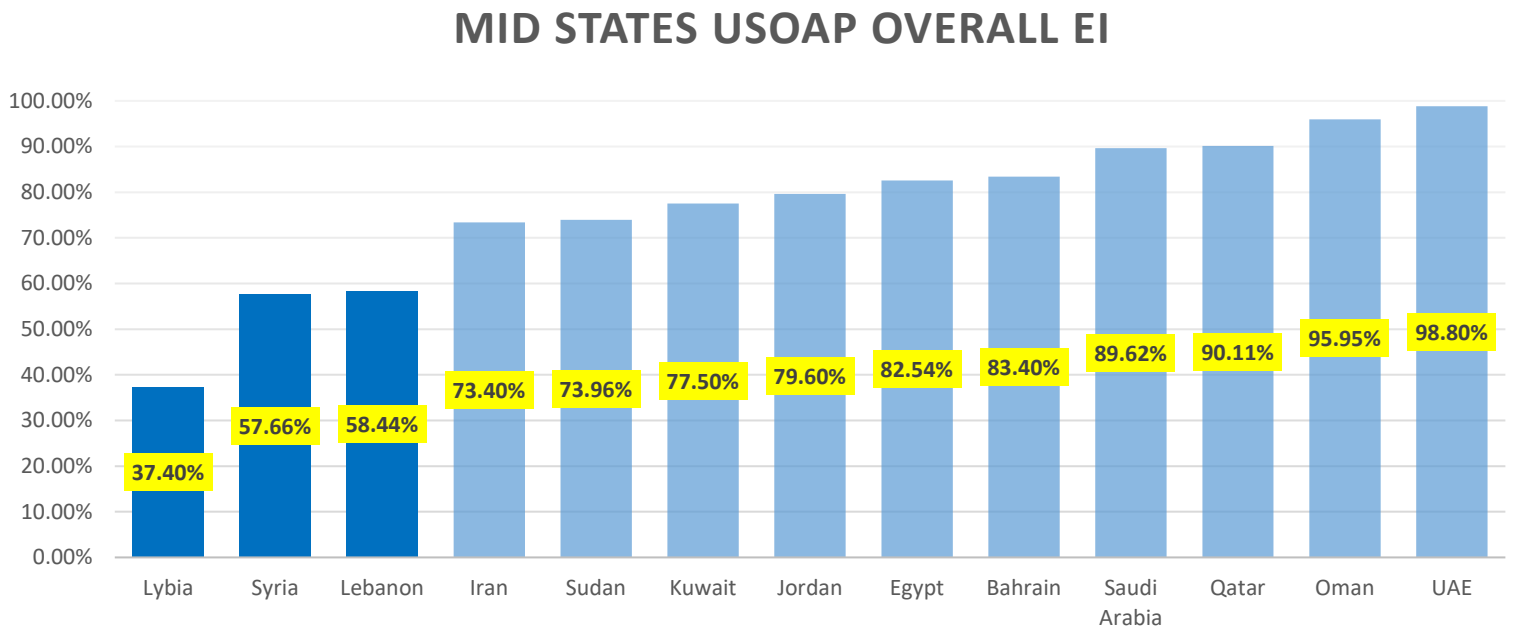



## Accidents Rate




| Average 2019-2023 | |
|---|---|
| Average MID | 1.17 |
| Average Global | 2.18 |

# MID USOAP





13 out of 15 States have been audited

**Overall MID EI = 76, 8%** which is above Global average (69.68%)

3 states are below 60% (Libya, Syria, Lebanon)

**NO SSC in MID Region**

# Regional Challenges to Aviation Development

Complex geopolitical landscape impacts safety and operations

Political/security instability in some States hinders technical assistance and project implementation

Cross-national variations in aviation development impede progress toward regional safety and navigation targets

Insufficient financial and human resources in certain States exacerbate these challenges.

# Section 2.

# Purpose of MID-RASP

# Purpose of MID RASP

- Continually reduce fatalities and accident risks through regional Safety Enhancement Initiatives (SEIs)
- Achieve zero fatalities in commercial operations by 2030 through full alignment with ICAO's GASP objectives
- Creates a common focus on regional aviation safety issues
- Complements existing systems for regulations, compliance, and accident investigation
- Supports a safe, resilient, and sustainable aviation system that contributes to economic development in the MID Region

# Relationship between MID-RASP and GASP

MID-RASP is developed using goals, targets, high-risk categories, and organizational challenges from the ICAO GASP.

Supports GASP objectives and priorities for reducing fatalities and accident risks.

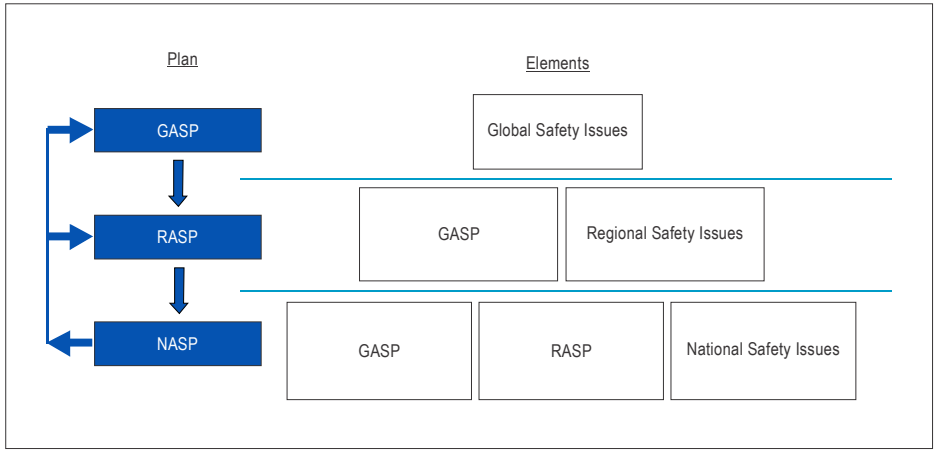
Aligns with GASP by guiding harmonized aviation safety strategies and national aviation safety plan development.

# NASP Alignment with GASP and MID-RASP

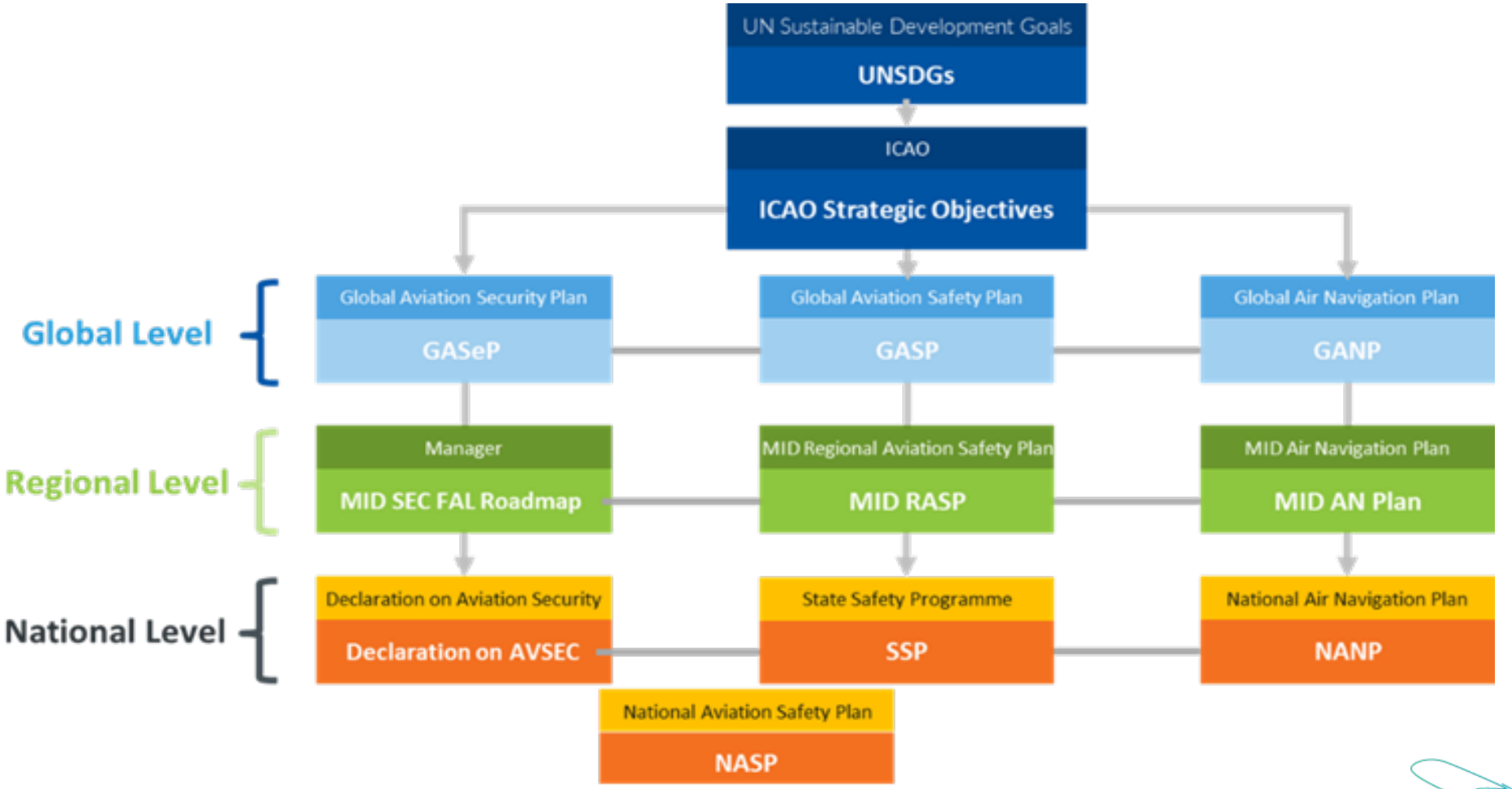
Assembly Resolution A40-1 calls for each State to develop a National Aviation Safety Plan (NASP) in line with GASP

States identify top risks and key safety issues from GASP and MID-RASP applicable to their national context and identify suitable mitigation actions within their NASP

States may add/consider other safety issues which are unique to their operational context.



# Relationship between MID-RASP, GASP and other Plans



# Section 3.

## MID Region's Strategic Safety Priorities

# MID Region's Strategic Safety Priorities


- Developed based on ICAO GASP framework
  - Organizational challenges
  - Operational safety risks
  - Emerging issues
- Informed by safety risk assessments, Annual Safety Reports, and RASG-MID activities
- Focuses on addressing regional safety issues in a timely manner

# Three Focus areas

| | |
|---|---|
| Regional Operational Safety Risks | **LOC-I, RE/ARC, MAC, CFIT, and RI** |
| Regional Organizational Issues | • **States' Safety Oversight capabilities**<br>• **Safety Management**<br>• **Human Factors & Human Performance**<br>• **Risk interdependencies**<br>  • Cybersecurity risks<br>  • GNSS Interference & Spoofing Risks<br>  • aviation health safety (AHS) risks<br>  • Risks arising from conflict zones, and<br>  • Security risks with an impact on aviation safety. |
| Emerging Issues | - **AAM and New Entrants: UAS, eVTOL** |

# Three Focus areas

| | |
|---|---|
| Regional Operational Safety Risks | **LOC-I, RE/ARC, MAC, CFIT, and RI** |
| Regional Organizational Issues | • **States' Safety Oversight capabilities**<br>• **Safety Management**<br>• **Human Factors & Human Performance**<br>• **Risk interdependencies**<br>  • Cybersecurity risks<br>  • GNSS Interference & Spoofing Risks<br>  • aviation health safety (AHS) risks<br>  • Risks arising from conflict zones, and<br>  • Security risks with an impact on aviation safety. |
| Emerging Issues | - **AAM and New Entrants: UAS, eVTOL** |

# First Focus Area – Mitigation of Regional Operational Safety Risks

## Structured approach to address Regional operational risks

**Effective Mitigation Strategies:** Develop and promote strategies to address LOC-I, CFIT, MAC, RI, and RE at the regional level.

**Safety Data Collection & Analysis:** Use data-driven insights to identify safety issues and implement evidence-based solutions.

**Improved Safety Management**: Strengthen SSP & SMS to incorporate data-driven risk

**Fostering Regional Collaboration:** Facilitate information exchange and best practice sharing among States and stakeholders.

**Collaborative SEIs:** Align SEIs with regional priorities and global best practices for maximum impact and encourage joint effort among stakeholders

**Continuous Safety Promotion & Training:** Promote training programs & safety promotion targeting high-risk areas LOC-I, CFIT, MAC, RI, and RE.

# Three Focus areas

| | |
|---|---|
| Regional Operational Safety Risks | **LOC-I, RE/ARC, MAC, CFIT, and RI** |
| Regional Organizational Issues | • **States' Safety Oversight capabilities**<br>• **Safety Management**<br>• **Human Factors & Human Performance**<br>• **Risk interdependencies**<br>  • Cybersecurity risks<br>  • GNSS Interference & Spoofing Risks<br>  • aviation health safety (AHS) risks<br>  • Risks arising from conflict zones, and<br>  • Security risks with an impact on aviation safety. |
| Emerging Issues | - **AAM and New Entrants: UAS, eVTOL** |

# Second Focus Area – Strengthening Regional Safety Oversight and Management

## Structured approach to address systemic issues

**Strengthening Safety Oversight and Capacity Building**. Conduct regional technical assistance missions and training programs & safety promotion activities

**Human Factors and Performance Management:** Enhance human factors training to improve decision-making and performance in aviation operations

**Improved Safety Management implementation**: Support SSP & SMS development & implementation

**Manage risk interdependencies: Addressing** interconnected risks such as cybersecurity risks, GNSS interference & spoofing risks, aviation health safety (AHS) risks, risks arising from conflict zones, and security risks with an impact on aviation safety

**Enhancing Regional Coordination & Cooperation:** Strengthen partnerships to support the implementation of MID-RASP SEIs & information sharing

**Resource Mobilization:** Engage with donors, States, and international organizations to secure financial and technical support for safety initiatives

**Supporting Regional Safety Initiatives:** Provide continuous support for MENA ARCM &operationalization of MENA RSOO .

# Three Focus areas

| | |
|---|---|
| Regional Operational Safety Risks | **LOC-I, RE/ARC, MAC, CFIT, and RI** |
| Regional Organizational Issues | • **States' Safety Oversight capabilities**<br>• **Safety Management**<br>• **Human Factors & Human Performance**<br>• **Risk interdependencies**<br>  • Cybersecurity risks<br>  • GNSS Interference & Spoofing Risks<br>  • aviation health safety (AHS) risks<br>  • Risks arising from conflict zones, and<br>  • Security risks with an impact on aviation safety. |
| Emerging Issues | - **AAM and New Entrants: UAS, eVTOL** |

## Third Focus Area – Integration on emerging technologies

Structured approach to address AAM & New Entrants issues

- **Capacity Building Initiatives:** Promote structured, safe, and harmonized approaches to integrating new technologies.
- **Regional Cooperation:** Foster collaboration among States, organizations, and industry stakeholders to share best practices and expertise.
- **Development of a Regional Roadmap:** Support the creation of a roadmap for the integration of AAM and new entrants into the aviation system.

## Section 4.

# MID region's strategic direction for the management of aviation safety

## Monitoring implementation

MID – RASP Presents strategic safety priorities and performance indicators for the MID Region.

MID region safety indicators and targets aligned with GASP 2026-2028 Edition goals. and targets as relevant in the MID Regio

RASG-MID uses the MID Region SPMM to measure safety performance and monitor regional safety targets.

For each goal in the MID Region SPMM, identified SEIs are mapped with their respective actions.

## Monitoring implementation

- RASG-MID continuously monitors the implementation of SEIs in the MID-RASP.
- Measures the safety performance of the regional civil aviation system to ensure target achievement.
- Publishes an annual safety report with up-to-date information on progress toward regional safety goals and the implementation status of SEIs.

## monitoring implementation

- **Goal 1**: Achieve a Continuous Reduction of Operational Safety Risks
- **Goal 2**: Strengthen States' Safety Oversight Capabilities
- **Goal 3**: Establish & manage effective State safety Programmes (SSP)
- **Goal 4**: Strengthen collaboration at the regional & national levels to address safety issues
- **Goal 5**: Strengthen aviation safety planning (RASP & NASP)
- **Goal 6**: Expand the use of industry safety assessment and safety data sharing Programmes

# Safety monitoring and implementation

## MID Region-Safety Performance Measurement & Monitoring (SPMM)

**Goal 1: Achieve a Continuous Reduction of Operational Safety Risks**

| Safety Indicator | Safety Target | Timeline | Mapped with GASP |
|---|---|---|---|
| Number of accidents per million departures | Regional average rate of accidents to be in line with the global average rate | 2028 | Target 1.1<br>Target 1.2<br>Target 1.3 |
| Number of fatal accidents per million departures | Regional average rate of fatal accidents to be in line with the global average rate | 2028 | |
| Number of fatalities per million departures | Number of fatalities per billion passengers carried (fatality rate) to be in line with the global average rate | 2028 | |
| Number of Runway Excursion accidents per million departures | Regional average rate of Runway Excursion accidents to be below the global average rate | 2028 | |
| Number of Runway Incursion accidents per million departures | Regional average rate of Runway Incursion accidents to be below the global average rate | 2028 | |
| Number of LOC-I related accidents per million departures | Regional average rate of LOC-I related accidents to be below the global rate | 2028 | |

**Goal 2: Strengthen States' Safety Oversight Capabilities**

| Safety Indicator | Safety Target | Timeline | Mapped with GASP |
|---|---|---|---|
| a. Regional average EI | a. Regional average EI to be above 75% | a. 2026-2028 | Target 2.1<br>Target 2.2<br>Target 2.3 |
| b. States committed to national allocate to each safety oversight authority sufficient financial resources | b. At least 10 States with a "satisfactory" rating for USOAP PQ: 2.051 | b. 2026-2028 | |
| c. Number of audited States with an overall EI over 60% | c. All MID audited States to be above 60% EI | c. 2026-2028 | |
| d. States to improve EI for CE-4 & CE-8 | d. Number of MID States average EI for CE-4 & CE-8. (AIG, AGA, ANS) to be above 60% | d. 2026-2028 | |
| e. Regional average EI of PPQs | e. Regional average EI PPQs above 75% | e. 2026-2028 | |

## Communication of Progress to RASG-MID and Regional Stakeholders

### Importance of Effective Communication

- Essential for transparency, accountability, and continuous improvement in aviation safety.
- Ensures that RASG-MID, States, organizations, and industry partners are regularly updated.
- Updates include safety performance trends, challenges encountered, and milestones achieved.

## Communication of Progress to RASG-MID and Regional Stakeholders

### Reporting Mechanisms

**MID Region Annual Safety Report:**

Published annually to provide up-to-date insights on regional safety performance.

Includes progress toward achieving safety goals and targets.

Details the implementation status of SEIs and their respective safety actions.

**Regular Progress Reports:**

Presented at Safety Enhancement Initiatives Group (SEIG) meetings.

Presented at RASG-MID meetings.

Presented at regional safety seminars and workshops.

# Section 5.
# Safety Actions

# Safety Actions

- This section focuses on system-wide issues impacting aviation safety in the MID Region.

- Includes Safety Enhancement Initiatives (SEIs) and their respective actions related to:
  - Regional organizational issues
  - Regional operational safety risks
  - Emerging Issues

- Facilitates stakeholders support and participation in the implementation of these SEIs and their respective actions at both the regional and national levels

## Safety Actions

**Total: SEIs= 18 and Actions: 58**

| Regional operational risks: | Regional Organizational issues: | Emerging issues: |
|---|---|---|
| **5 SEIs & 23 actions** | **12 SEIs & 33 actions** | **1 SEI and 2 actions** |

# Safety Actions

- **SEI Name:** Description of the SEI.
- **Target(s)/Metrics.** Targets which serve to fulfil their respective Regional Goal,
- **Rationale** behind the safety issue (why it has been identified as an issue);
- **What it is to be achieved** (objective);
- **How we intend to monitor improvement** in the future;
- **How we intend to achieve** the objective; here, the various actions contributing to mitigate the identified risk in that area are described.
    - **Actions**: The tasks required for the implementation. The Actions support the Targets of the Regional Goal
- **References:**
    - Indicates key existing global documents from which the Action is adopted, if applicable
    - Where the Actions stem from the SEIs in the GASP Roadmap, specific references are made for easier reference

| | |
|---|---|
| **Affected Stakeholders:** ICAO, RASG-MID, States, Regional organizations, industry | |
| **Example Action 1:** Description of the Action to be taken | |
| **Subtask(s) if needed to be added:**<br><br>**Responsible entity/Owner**: Appointed Group/State(s)/Organization(s) to further develop details for implementation of the respective Action<br><br>**Priority:** Low, Medium, High<br><br>**Completion Date**: The date in which the respective Action is expected to be implemented<br><br>**Status**: new, ongoing, on hold, completed | |
| **Example Action 2**: Description of the Action to be taken | |
| **Subtask(s) if needed to be added**<br><br>**Owner(s):** Appointed Group/State(s)/Organization(s) to further develop details for implementation of the respective Action<br><br>**Priority**: Low, Medium, High<br><br>**Completion Date**: The year(s) in which the respective Action is expected to be implemented<br><br>**Status** : new, ongoing, on hold, completed | |
| **EXPECTED OUTPUT** | |
| **Deliverable(s)** | **TIMELINE** |
| Description of the Result to be achieved | The year(s) in which the respective Target is expected to be achieved |

# SEI and safety actions - Example

**5.2.4.2 G5-SEI-02: MID States to develop and publish NASP**

**Target:** The safety targets of this goal are indicated in the MID Region SPMM at **Appendix B.**

**Rationale:** States should ensure that NASP is maintained and regularly reviewed. MID-RASP provides the identified safety priorities in the region and States should identify which top risks and safety issues mentioned in the GASP and MID-RASP; which apply to their national context and identify suitable mitigation actions within their NASP. States should also add/consider others which are unique to their operational context.

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**What we want to achieve:** MID Region States to develop NASP. Successful implementation of the NASP actions would require the commitment of resources from stakeholders within State, availability of data to effectively monitor the achievement of NASP Targets, and proper project governance. In addition to the actions, NASP shall also consider how to measure their effectiveness.

**How we monitor improvement:** ICAO GASP requiring States to develop NASP and region to develop RASP. Feedback from RASG-MID and states on NASP implementation.

**How we want to achieve it**: This SEI should be considered by States for inclusion in their NASPs.

States to establish and maintain a National Aviation Safety Plan (NASP)
States should ensure that a NASP is maintained and regularly reviewed. NASP should:

- Describe how the plan is developed and endorsed, including collaboration with different entities within the State, with industry and other stakeholders
- Include safety objectives, goals, indicators and targets in line with GASP as well as regional safety plan
- Identify the main safety risks at national level in addition to the ones identified in MID-RASP as applicable to the State
- Include series of SEIs to address safety issues
- Reflect the GASP and MID-RASP SEIs as applicable to the State.

| **Action: A1-A2** |
|---|
| **A1**- Conduct NASPs capacity building activities & technical assistance missions. |
| **A2**- Identify and mobilize resources to support states in need of developing NASP. |

**References:**

- ICAO Annex 19 and GASP 2026-2028 Goal 5: "Strengthen aviation safety planning"
- GASP SEIs: SEI-21, SEI-22, SEI-23, and SEI-24 (Regions).

**Stakeholders:** RASG-MID, States, industry, international organizations

| | |
|---|---|
| **Action 1**- Conduct NASPs capacity building activities & technical assistance missions | |
| **Responsible entity:** | ICAO and states |
| **Priority:** | High |
| **Completion Date:** | 2026 |

47

| | |
|---|---|
| **Status:** | Ongoing |
| **Action 2**- Identify and mobilize resources to support states in need of developing an NASP | |
| **Responsible entity:** | States, organizations, and industry |
| **Priority:** | High |
| **Completion Date:** | 2026 |
| **Status:** | ongoing |

| **EXPECTED OUTPUT** | |
|---|---|
| **Deliverable(s)** | **Timeline** |
| MID States to develop and publish NASP | 2026 |

# Regional operational safety risks

**Goal 1:**

**Achieve a continuous reduction of operational risks**

- **G1-SEI 1: LOC-I**

- **G1-SEI 2: RE**

- **SG1-EI 3: RI**

- **G1-SEI 4: MAC**

- **G1.SEI 5: CFIT**

# Regional Organizational issues

**Goal 2:**

**Strengthening states safety oversight capabilities**

**G2-SEI-01:**
Strengthening state safety oversight


**G2-SEI-02:**

Manage Human Factors and Human Performance


**G2-SEI-03:**

Manage Risk interdependencies

**G2-SEI-04:**

AAM and New Entrants

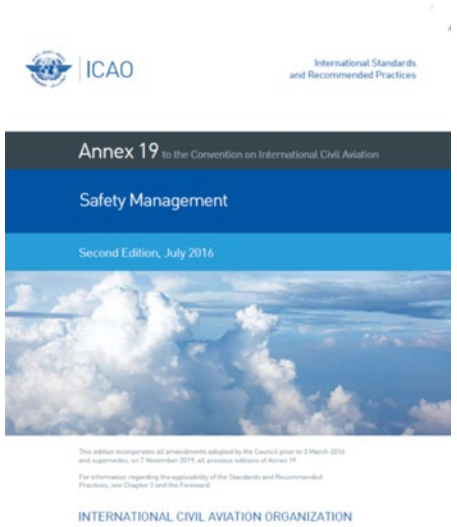
# Regional Organizational issues

**Goal 3:**

**Establish & manage effective State safety Programmes (SSP)**

**G3-SEI-01:**

Improve development & implementation of Safety Management



# Regional Organizational issues

**Goal 4:**

**Strengthen collaboration at the regional and national levels to address safety issues**

**G4-SEI-01:**

Collaboration and coordination with stakeholders to address safety issues

# Regional Organizational issues

**Goal 5:**

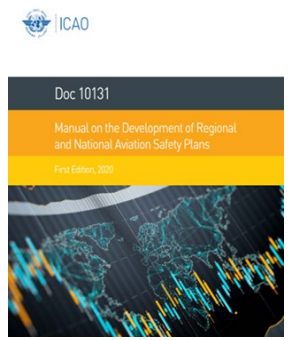
**Strengthen aviation safety planning (RASP & NASP)**

**G5-SEI-01:**

Development and Implementation of MID-RASP

**G5-SEI-02:**

MID States to develop and publish NASP

# Regional Organizational issues

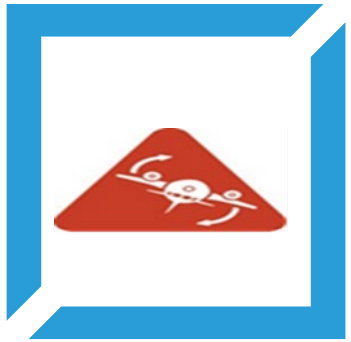
**Goal 6:**

**Expand the Use of Industry Programmes and safety information sharing networks**

**G6-SEI-01:**

Promote the Use of industry Programmes

# SEIs identified in MID-RASP and recommended as appropriate; to States for inclusion in their NASPs



**G1-SEI-01:**
LOC-I

**G1-SEI-02:**
RE

**G1-SEI-03:**
RI

**G1-SEI-04:**
MAC

**G1-SEI-05:**
*CFIT*

# SEIs identified in MID-RASP and recommended as appropriate; to States for inclusion in their NASPs


**G2-SEI-01:**

Strengthening of States' Safety Oversight


**G2-SEI-02:**

Manage Human Factors and Human Performance

**G2-SEI-03:**

Manage Risk interdependencies

**G2-SEI-04:**

AAM and New Entrants

**G3-SEI-01:**

Implement an effective Safety Management


**G5-SEI-02:**

MID States to develop and publish NASP

## Appendix C: Safety Actions- Consolidated List of SEIs with their respective Actions for follow up- Draft

| EI Code | SEI Name | Actions | Owner(s) | Status/Progress | Completion Date | Name & # Activities |
|---|---|---|---|---|---|---|
| **Regional Operational Safety Risks** | | | | | | |
| **Goal 1: Achieve a Continuous Reduction in Operational Risks** | | | | | | |
| **G1-SEI-01:** | Aircraft Upset in Flight (LOC-I) | **A1**- Guidance material on flight crew proficiency | States, Organizations, industry | | 2026- 2028 | |
| | | **A2**- Advisory Circular: Mode Awareness and Energy State Management Aspects of Flight Deck Automation | States, Organizations, industry | | 2026- 2028 | |
| | | **A3**- Promote and conduct Upset Recovery Capacity building activities | States, Organizations, industry | | 2026- 2028 | |
| | | **A4**- Conduct Wildlife Hazard Management Control capacity building Activities | States, Organizations, industry | | 2026- 2028 | |
| | | **A5**- Promote DG capacity building activities including Lithium | States, Organizations, | | 2026- 2028 | |

# Thank You

# NASP Workshop

RASG-MID/12
Doha, Qatar, 7 May 2025

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# Overview



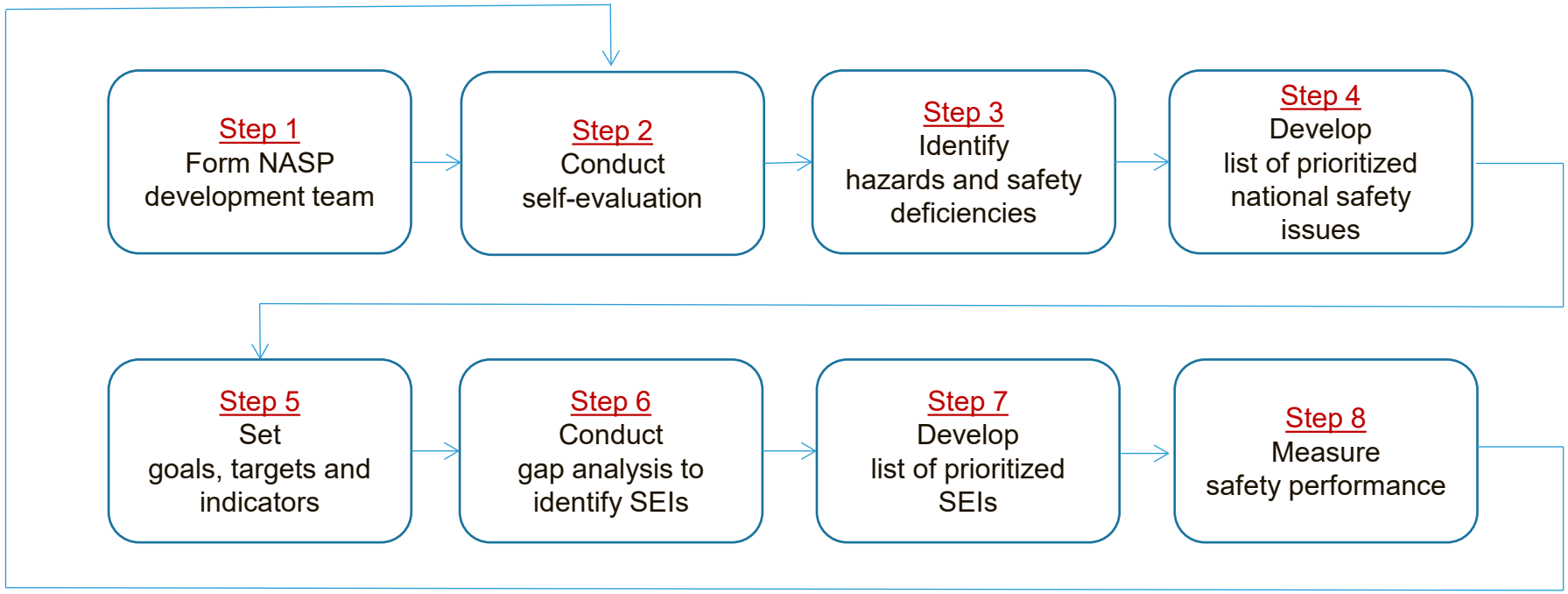
- NASP Content & Development Process
- National Safety Issues
- Goals, Targets & Indicators
- Action Plan
- From Planning to Implementation
- From Theory to Practice: States’ Experience

# Content of NASP



1. Introduction
2. Purpose of NASP
   - including links to GASP & RASP
3. Description of national ops safety risks
   - N-HRCs + N-ORCs
4. Description of ORG challenges
5. State's strategic direction for management of aviation safety
   - Incl. national safety goals, targets and indicators
   - + SEIs to address them
6. Description of how State will measure safety performance
   - to monitor NASP implementation + effectiveness

# NASP Development Process




**Same steps & rationale should be used when developing RASP*

# Process Assists Develop NASP that:

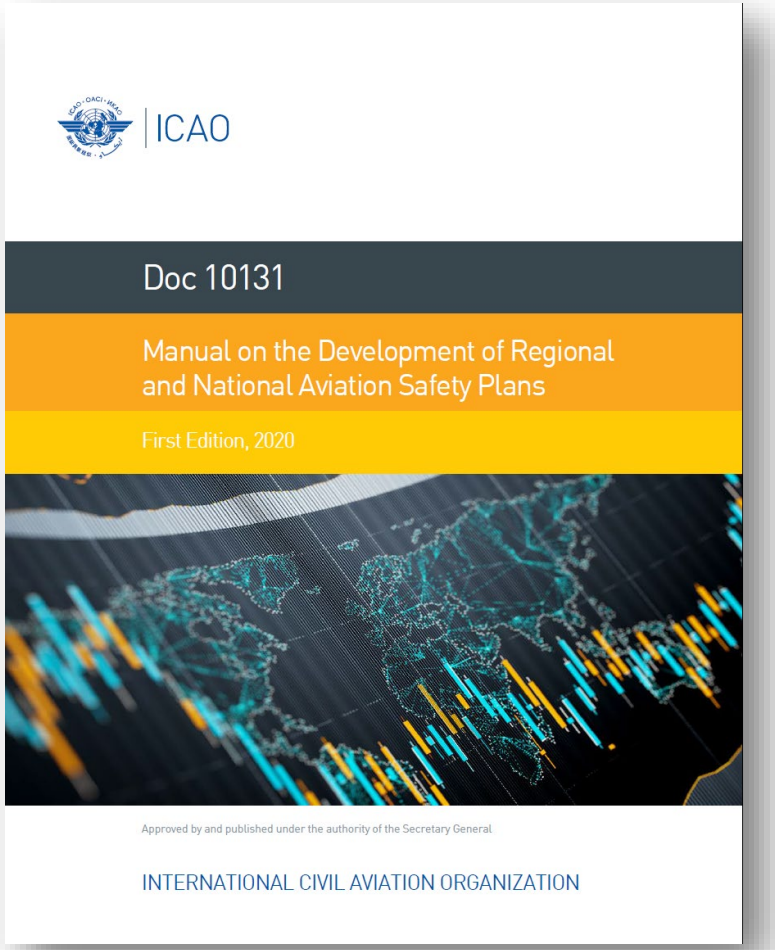


- Identifies hazards & safety deficiencies
- Contains list of prioritized safety issues
  - in form of ops safety risks & ORG challenges
- Sets safety goals and targets
  - i.e. strategic direction for management of safety
- Presents specific SEIs >> action plan
- Defines how safety performance will me measured
  - to monitor NASP implementation + effectiveness

# NASP Guidance & Template



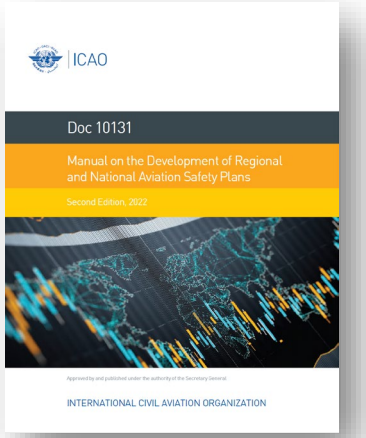
- ICAO developed guidance
  - Doc 10131, *ICAO Manual on the Development of Regional and National Aviation Safety Plans*
- Provides guidelines for NASP development
- Explains in detail content to be included in plan
- Provides Template + Checklist
- 3rd Ed to include Frameworks to guide development

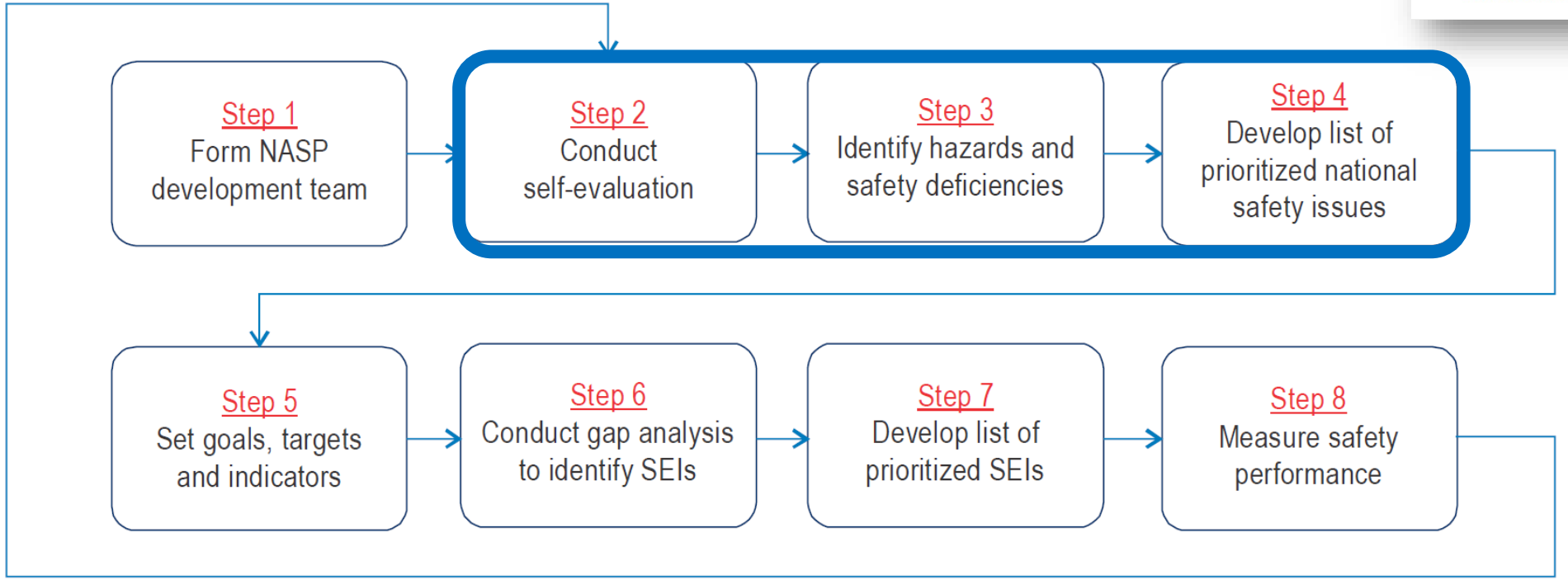


# NATIONAL AVIATION SAFETY PLAN CHECKLIST

| *Doc 10131, Chapter 4, 4.3, Detailed Sections of the NASP (reference)* | *National aviation safety plan (NASP) content (aspect to be analysed or question to be answered)* | *Answer (Yes/No or N/A[1])* | *Reference in State's NASP (if different from template)* |
|---|---|---|---|
| **4.3.1 Introduction of the NASP** | | | |
| 4.3.1 a) | Does it provide an overview of the NASP, including its structure (chapters, sections and their content)? | ☐ Yes<br>☐ No | |
| 4.3.1 b) | Does it note the State's commitment to aviation safety and to the resourcing of activities at the national level to enhance aviation safety, by issuing a statement signed by a senior aviation ministerial or government agency representative? | ☐ Yes<br>☐ No | |
| 4.3.1 c) | Does it describe how the NASP is linked to the SSP or how the NASP is linked to achieving effective safety oversight in the absence of a fully implemented SSP? | ☐ Yes<br>☐ No | |

# NASP Development Process



# National Safety Issues Pt 1

## Operational Safety Risks

# HRCs: Top Ops Safety Risks

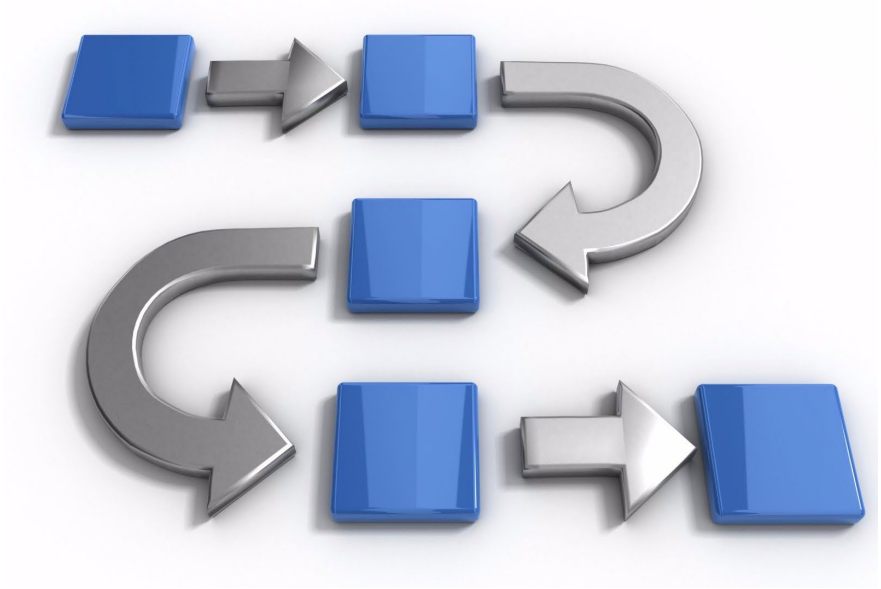
- HRCs represent unsafe outcomes
  - CICTT

- They are “end states”
  - need to be avoided
  - to prevent fatalities
  - need to address pre-cursors & contributing factors

- HRCs can be global, regional or national
  - G-HRCs, R-HRCs, N-HRCs

# How to Identify N-HRCs?

- Standardized Framework for Identification of HRCs
  - criteria may be used for inclusion & removal of occurrences from HRC list
- Framework defines
  - Criteria – Aspects / areas to analyse
  - Specifics – Detailed elements to analyse
  - Methodology – Set of methods for analysis
- Guide analysis of existing data sources
  - in transparent & repeatable manner
- Tool for organizing information
  - direct data collection & analysis



| Criteria | Specifics | Methodology |
|---|---|---|
| **Number of fatalities** | Fatalities by accident occurrence categories<br>(as per the Commercial Aviation Safety Team/ICAO Common Taxonomy Team (CICTT)) | 1) Analyse the classification of occurrences:<br>• as per the ICAO Occurrence Validation Study Group (OVSG)<br>2) Identify categories that resulted in the highest number of fatalities |
| **Fatality risk** | Fatality risk by accident or serious incident occurrence categories (as per CICTT) | 1) Analyse the classification of occurrences:<br>• as per the OVSG<br>2) Identify categories that are linked to occurrence categories with the highest number of fatalities (as severity outcome) |
| **Number of accidents and serious incidents** | Number of accidents or serious incidents by occurrence categories (as per CICTT) | 1) Analyse the classification of occurrences:<br>• as per the OVSG<br>2) Identify categories that resulted in the highest number of accidents and serious incidents |
| **Breakdown by ICAO Region**<br>**(based on min of 5-year data set)** | Frequency of occurrences | • 5-year rolling average<br>• Consider including use of rate-based data (e.g., sectors flown) |
| | Commonality of occurrence across Regions | If an occurrence category appears in more than two regions, consider it potentially global |
| | Use of data/safety intelligence from accidents | • Focus on pre-cursors and contributing factors<br>• Sources: ICAO and Industry<br>• Develop and monitor associated safety performance indicators |

# Criteria to Identify HRCs

- Number of fatalities
- Fatality risk by accident or serious incident occurrence categories
- Number of accidents or serious incidents by occurrence categories
  - as per CICTT
- Breakdown by ICAO Region
  - based on a minimum of five-year data set
- Consideration of G- & R- HRCs
  - in setting N-HRCs

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# AIRPROX/TCAS ALERT/LOSS OF SEPARATION/NEAR MIDAIR COLLISIONS/MIDAIR COLLISIONS (*MAC*)

**Air proximity issues, Traffic Collision Avoidance System (TCAS)/Airborne Collision Avoidance System (ACAS) alerts, loss of separation as well as near collisions or collisions between aircraft in flight.**

*Usage Notes:*

**Includes:**

- All collisions between aircraft while both aircraft are airborne.
- Separation-related occurrences caused by either air traffic control or cockpit crew.
- AIRPROX reports
- Genuine TCAS/ACAS alerts.

**Does NOT include:**

- False TCAS/ACAS alerts caused by equipment malfunctions, which are coded as SCF-NP.
- Loss of separation with at least one aircraft on the ground, which may be coded as ATM, GCOL, NAV, and/or RI if the occurrence meets the criteria and usage notes for those categories.

**Crossover to/from other occurrence categories:**

- Code both MAC and NAV if the event was caused by a navigation error and the event meets the usage notes of both categories.
- Code both MAC and ATM if the event was caused by an ATC/ATM error and the event meets the usage notes of both categories.

# Example: Fatality Risk

| Occurrence per CICTT | Categories linked to Occurrence |
|---|---|
| • Mid-air Collision (MAC) | • Air proximity issues<br>• TCAS/ACAS alerts<br>• Loss of separation<br>• Near collisions<br>• Collisions between aircraft in flight |

# Facilitated Exercise I

## Develop a List of Prioritized National Safety Issues (Pt. 1)

# Exercise – What are the N-HRCs?



- State info for past 5 years:
  - No fatal accidents involving aircraft of MTOW > 5 700 kg
  - Several serious incidents due to AIRPROX issues (TCAS/ACAS)
  - 3 RIs (classified as serious incidents) – all at same airport
  - Increase in Unstable APRs
  - Increase in TURB encounters (incl. one resulting in serious injuries)
  - Increase in reports of SCF–NP

- Based HRC Framework Criteria…
  - Number of fatalities
  - Fatality risk by CICTT
  - Number of accidents or serious by CICTT

- Which can be N-HRCs?

# Exercise – What are the N-HRCs?



| Occurrence | N-HRC | Justification |
|---|---|---|
| AIRPROX (MAC) | X | Risk of fatalities |
| Runway Incursion | X | Risk of fatalities + Number of events |
| Unstable APR (RE) | X | Risk of fatalities |
| Turbulence | | |
| SCF–NP | | |

# National Safety Issues Pt 1

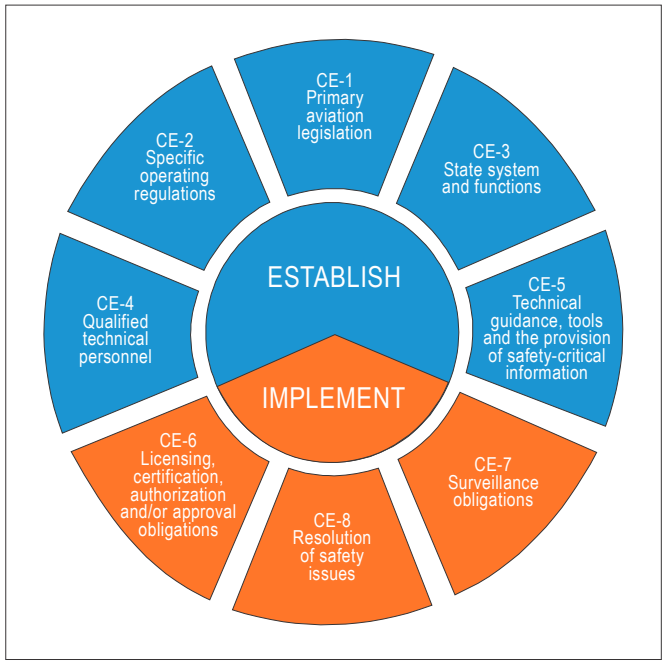
## Organizational Challenges

# What is an ORG Challenge?

- Organizational challenges are systemic issues
- Take into consideration impact of ORG aspects
  - on State's SO & SM capabilities
- Examples of ORG aspects
  - ORG culture; policies & procedures; training; etc.
- "Organization" refers to State's aviation-related entities
  - such as CAA & AIA
  - in national context, also include service providers

# How To Identify ORG Challenges?

- Standardized Framework for Identification of ORG Challenges
- Same structure & components as one for HRCs
- Criteria focuses on
  - Operational context description
  - Safety oversight system & capabilities
  - SSP establishment & management
  - Consideration of Global & Regional ORG Challenges in setting National



# Operational Context Description

- Main points to cover
  - Traffic volume data
  - Number/types of aerodromes & heliports
  - Airspace classifications
  - Types of operations
  - Complexity of ops
  - PBN implementation
  - Impact of socio-political issues

# Safety Oversight System & Capabilities


- State aviation activity questionnaire (SAAQ)
- USOAP CMA self-assessment (Compliance)
- Significant Safety Concerns (SSCs)
- 5 lowest scoring PPQ EI by AA & CE combination
  - based on State's "Heat Map"
- PQs used to assess Civil Aviation Organization & State System and Functions (ORG/CE-3)

- Refer to ICAO OLF: https://soa.icao.int

# 5 Lowest Scoring PPQs (AA & CE Combo)

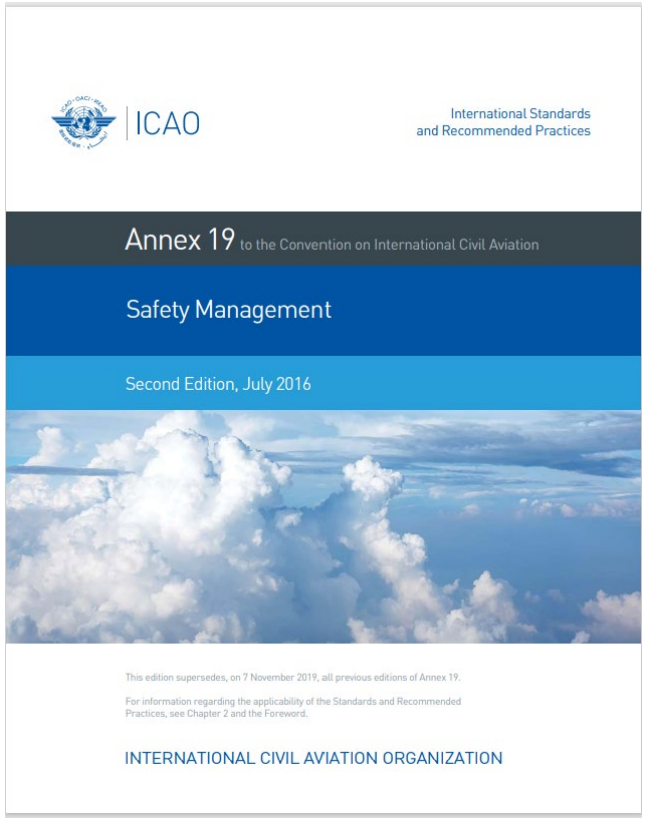
# PQs to assess ORG/CE-3



| PQ | Description |
|---|---|
| 2.051 (PPQ) | Establishment & implementation of mechanism to ensure each SOA has sufficient financial resources to meet national/int'l obligations |
| 2.053 | Establishment of mechanism to ensure that each SOA has sufficient personnel to meet national/int'l obligations |
| 2.103 | Each SOA/AIA's ability to attract, recruit, and retain qualified technical personnel |

# SSP Establishment & Management

- SSP Gap Analysis app on iSTARS
  - https://istars.icao.int
- USOAP CMA self-assessment (SSP)
  - https://soa.icao.int



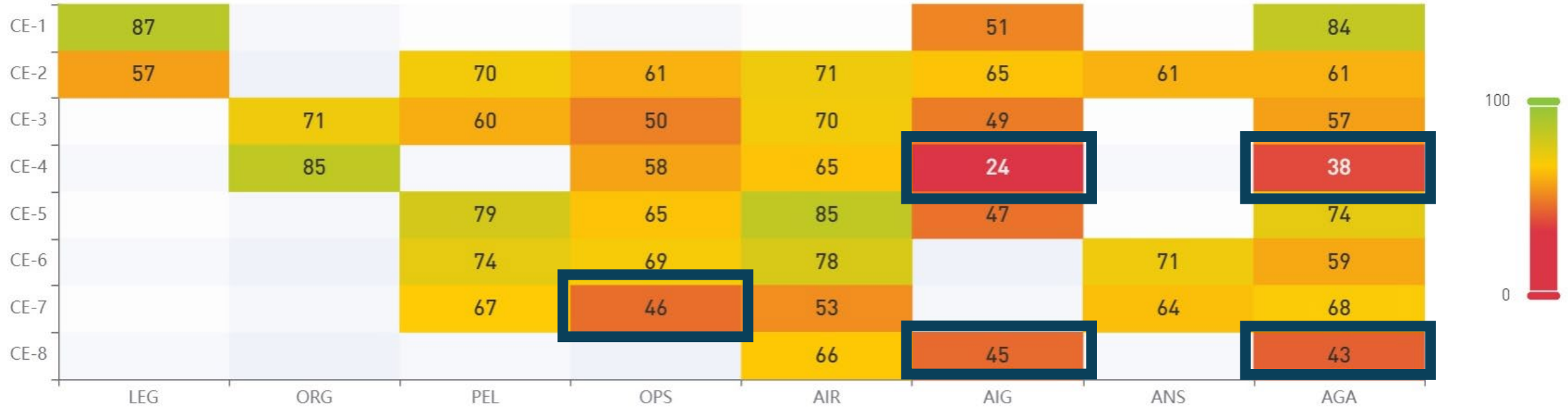
# Common ORG Challenges - GASP & RASP

- If GASP calls for States to address specific ORG Challenge...
- If RASP calls for States in Region to address specific ORG Challenge...
  - Consider it potential National ORG Challenge in NASP
- Refer to
  - GASP public website: www.icao.int/gasp
  - RASP Library: www.icao.int/rasp

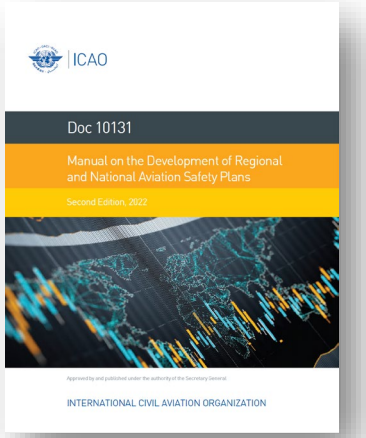
# Facilitated Exercise II

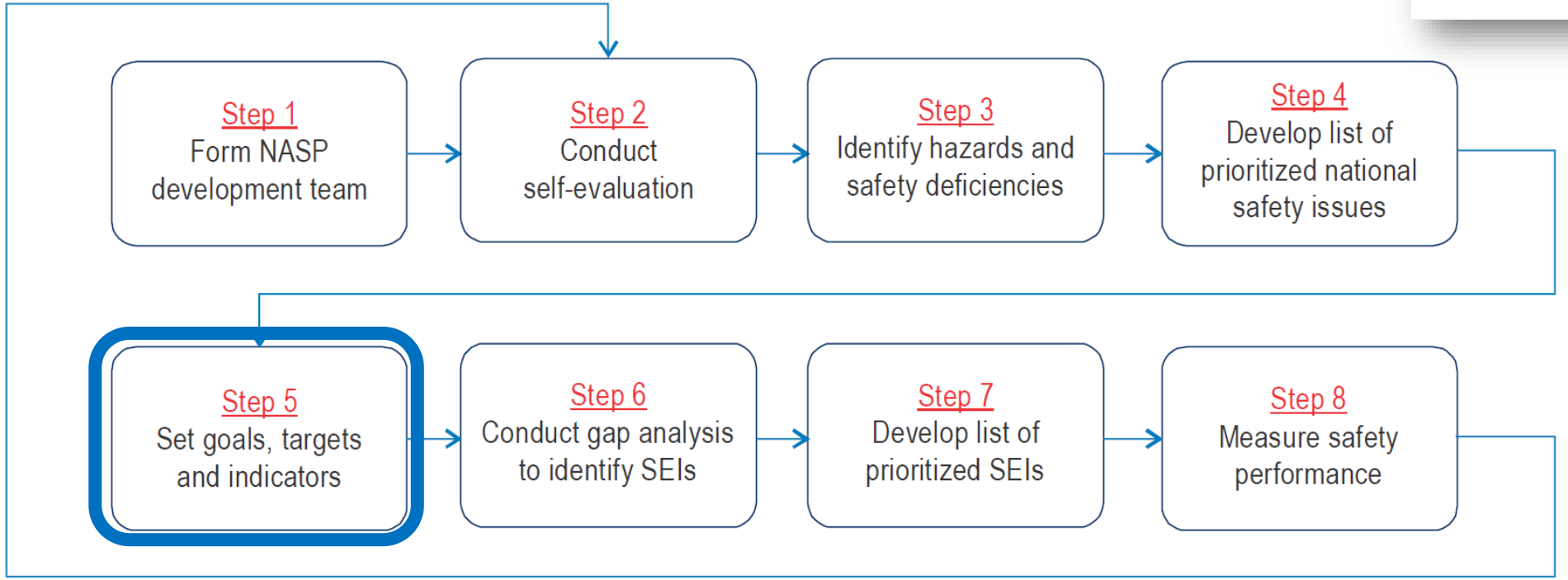
## Develop a List of Prioritized National Safety Issues (Pt. 2)

# Exercise – What are the ORG Challenges?



# NASP Development Process



# Strategic Direction

## Drafting Goals, Targets and Indicators

# Drafting Challenges & Use of Framework



- States face challenges when drafting NASP goals, targets & indicators
  - How do you write goal vs target or indicator?
  - How many items can you measure?
  - Do you have data to measure?

- Standardized Framework for Development of Goals, Targets & Indicators

- Addresses
  - Drafting criteria
  - Specific points for consideration
  - Examples & rationale

# Writing Goals



- Describes high-level outcome State aims to achieve
  - desired results that strategy aims to produce
- Qualitative manner
  - e.g., using terms such as “strengthen” or “enhance”
  - does not include quantification
- General manner, without citing specifics
  - e.g., “strengthen safety oversight”, not “recruit inspectors”
  - does not identify who actions are directed to
  - enables goal to remain high-level & linked to more than 1 target
- Can be understood as standalone statement
  - avoid including reference to documents
  - or anything that would require reader to crosscheck other source

# Specific Points for Consideration



- Use list of national safety issues to set national safety goals
  - list points to topics State wishes to address through strategy
- Consider results toward which efforts in safety are directed
  - what is reason for wanting to hire more inspectors
  - or modify existing regulation?
- Identify what State wants to achieve, in terms of management of safety
  - e.g., better collaboration with stakeholders; improved oversight capabilities
- Express goal through qualitative action statements
  - on selected high-level/high-consequence outcomes
  - e.g., reduce ops safety risks

# Example

Increase effective safety oversight capabilities

- ✓ High-level outcome
- ✓ Does not identify who actions are directed to
- ✓ Qualitative & general
- ✓ Easily understood

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# Writing Targets



- Describes specific desired outcome
  - from specific actions taken to achieve goal, at certain point in time
- Identifies who specific outcome is directed to
- Quantitative or reference completed actions
  - e.g., using numerical values or percentage – “achieve 75% score”
  - e.g., “complete recruitment process of all new inspectors”
- Date by which outcome needs to be completed
- Can be understood as standalone statement

# Specific Points for Consideration

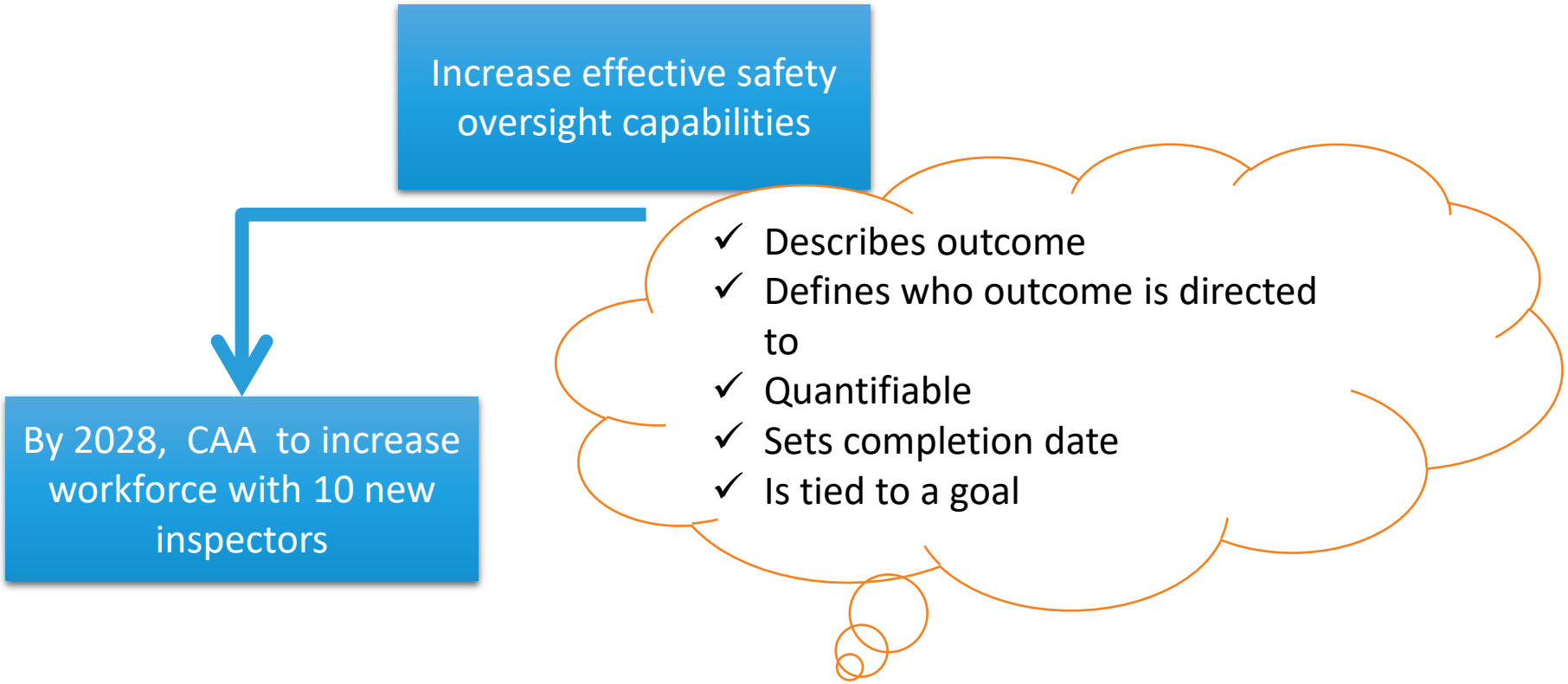


- Use list of national safety issues to set national safety targets
  - at this level, list can be used to address specific items
  - vs general ones at level of goal

- Target should provide measurable way
  - of ensuring and demonstrating effectiveness of actions (i.e., SEIs)
- Realistic & achievable, yet ambitious + acceptable to stakeholders
- Target is quantifiable benchmark State wants to reach, to meet goal
  - expressed in numerical terms
- Each target should be linked to goal (from which it is derived)

# Example




Increase effective safety oversight capabilities
By 2028, CAA to increase workforce with 10 new inspectors
✓ Describes outcome
✓ Defines who outcome is directed to
✓ Quantifiable
✓ Sets completion date
✓ Is tied to a goal

# Writing Indicators



- Quantitative manner
  - without including values i.e., actual numbers or data
- Use quantifiers such as “percentage of” or “number of”
  - e.g., should not state “50%” or “5 occurrences/month”
- Indicator defines what will be measured
  - data to fill in the blanks will come during actual SPM
- Provides evidence about whether outcomes occurred
  - “negative” outcomes/occurrences that State wishes to avoid
  - “positive” achievements & indicative of desired outcome
- Can be understood as standalone statement

# Specific Points for Consideration

- Indicator is measurement index
  - used to evaluate if NASP yields expected results (evidence)
  - each indicator should be tied to target
- Measurable value to track progress in activities related to target
- Avoid writing indicator at high-level, or capturing several tasks
  - favour indicators that are specific & capture single tasks
  - indicators may measure tasks that contribute to desired outcome
    - or they may measure outcome itself
- Avoid use of qualitative references
  - favour quantitative ones
  - measure concrete action/task & be tangible

# Example



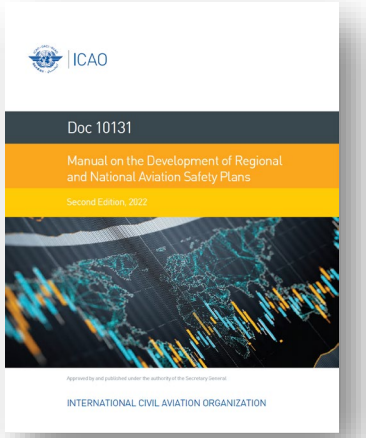
Increase effective safety oversight capabilities

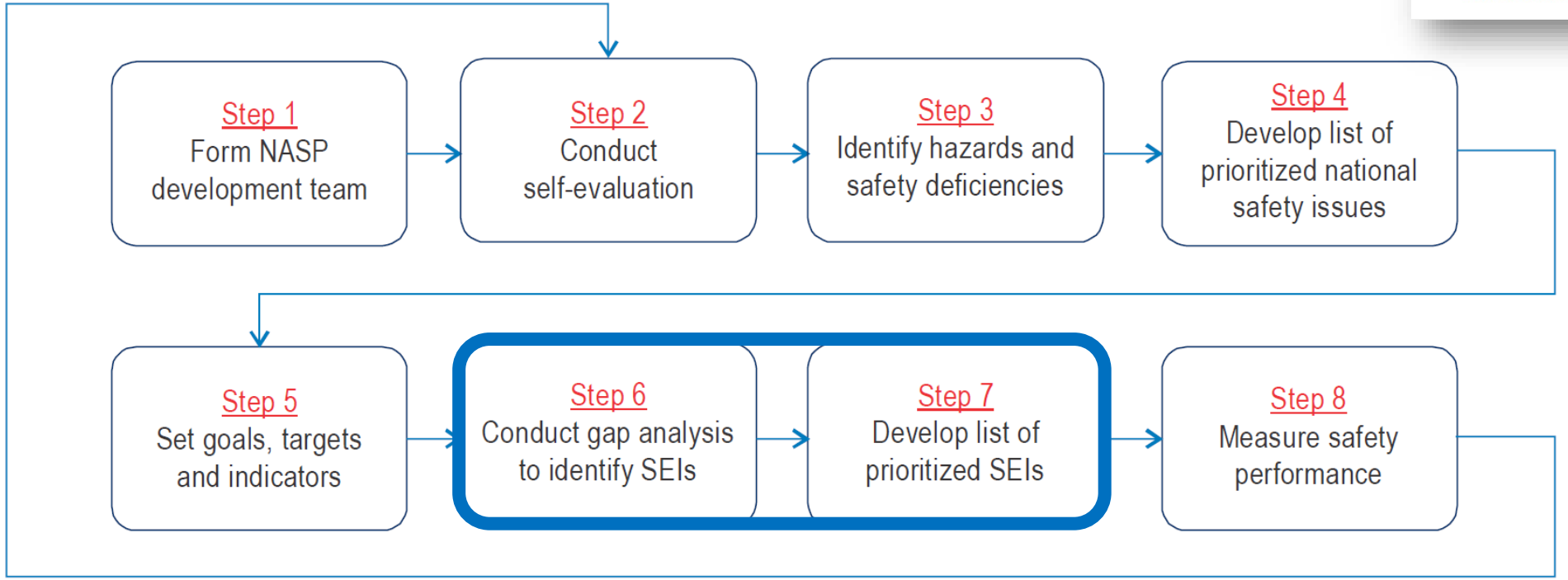
- ✓ Quantifiable
- ✓ Does not contain actual numbers/data
- ✓ Defines what will be measured
- ✓ Evidence (if desired outcomes occurs)
- ✓ Is tied to a target

By 2028, CAA to increase workforce with 10 new inspectors

- Number of applications received for new inspectors, per quarter
- Number interviews conducted for new inspectors, per month
- % of candidates successfully completing inspector training course
- % of candidates successfully completing inspector OJT

# NASP Development Process



# Action Plan

## Global Aviation Safety Roadmap

# Purpose of Roadmap

- Roadmap serves as action plan
  - to develop RASPs and NASPs
  - in line with the GASP goals & targets
  - through structured, common frame of reference
  - for all stakeholders

- Defines how goals & targets may be achieved

# Structure of Roadmap

- Roadmap outlines specific SEIs
  - associated with GASP goals & targets
  - each SEI contains set of actions
- Includes SEIs for 3 stakeholders
  - States; Regions; Industry
- Roadmap is composed of 2 pieces
  - ORG challenges – ORG roadmap
  - Ops safety risks – OPS roadmap

# Layout of SEIs in ORG Roadmap

| | |
|---|---|
| *Safety enhancement initiative* | SEI-7 — Provision of the primary source of safety information to ICAO by completing, submitting and updating all relevant documents and records |
| *Stakeholder* | States |
| *Actions* | ☐ 7A — Update USOAP corrective action plan items<br>☐ 7B — Complete and submit the self-assessment checklist based on USOAP CMA priority PQs<br>☐ 7C — Complete and submit the State aviation activity questionnaire (SAAQ)<br>☐ 7D — Complete and submit the compliance checklists (CCs) on electronic filing of differences (EFOD) system<br>☐ 7E — Update documents and records, as required, in a timely manner |
| *References* | — Doc 9735, *Universal Safety Oversight Audit Programme Continuous Monitoring Manual,* sections 2.8, 2.14 and 2.15<br>— iSTARS<br>— USOAP CMA Computer-based Training<br>— USOAP CMA Online Framework (log-in required)<br>— USOAP CMA Workshops |

# Layout of SEIs in OPS Roadmap

| | |
|---|---|
| *Safety Enhancement Initiative* | Mitigate contributing factors to CFIT accidents and incidents |
| *Stakeholder* | Regions |
| *Actions* | 1. Implement the following CFIT safety actions:<br>a. Support the adoption of TAWS in accordance with Annex 6<br>b. Promote the wider use of TAWS beyond the requirements of Annex 6<br>c. Promote the adherence to TAWS warning procedures<br>d. Promote greater awareness of approach risks<br>e. Promote the implementation of CDFA<br>f. Promote the implementation of MSAW systems<br>g. Promote the timeliness of updates and accuracy of eTOD<br>h. Promote the use of global positioning system (GPS)-derived position data to feed TAWS<br>2. Validate the effectiveness of the SEIs presented in this roadmap in the region using data provided by States and industry (apply safety management methodologies)<br>3. Identify additional contributing factors, for example:<br>a. Flight in adverse environmental conditions<br>b. Approach design and documentation<br>c. Phraseology used (standard vs non-standard)<br>d. Pilot fatigue and disorientation<br>4. Develop and implement further SEIs to mitigate the risk of the identified contributing factors, if any, for CFIT<br>5. Conduct continuous evaluation of the performance of the SEIs |
| *References* | — Annex 6, *Operation of Aircraft*<br>— ICAO Safety Report<br>— RASGs<br>— Commercial Aviation Safety Team Safety enhancements for CFIT<br>— IATA CFIT<br>— IATA Safety Report<br>— Flight Safety Foundation ALAR Toolkit<br>— Skybrary<br>— EUROCONTROL |

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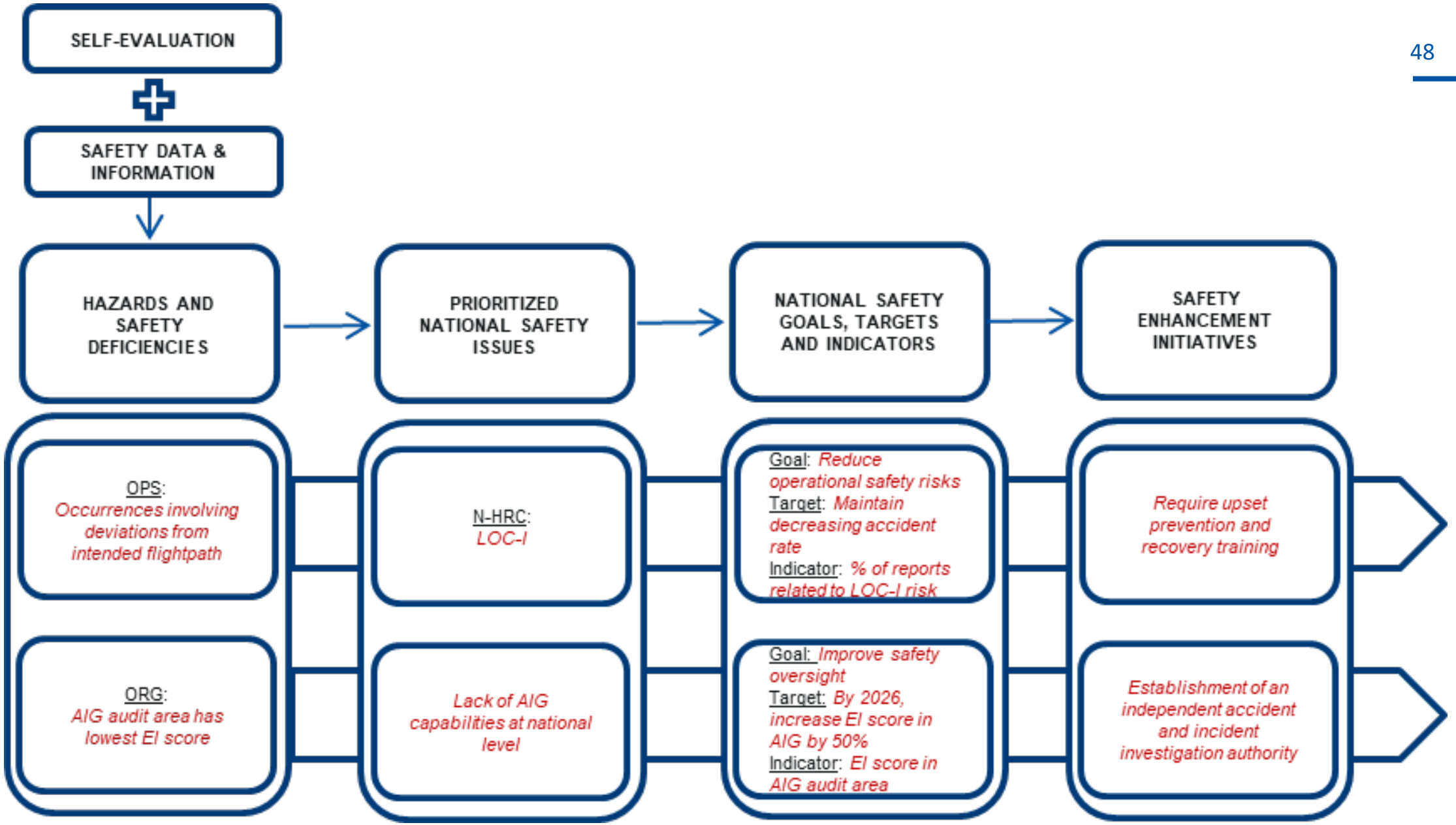



*Source: Doc 10131*

# Producing Detailed SEI Forms

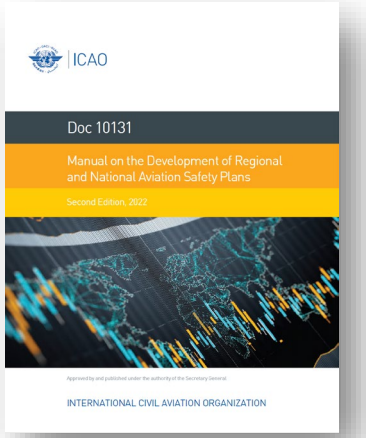


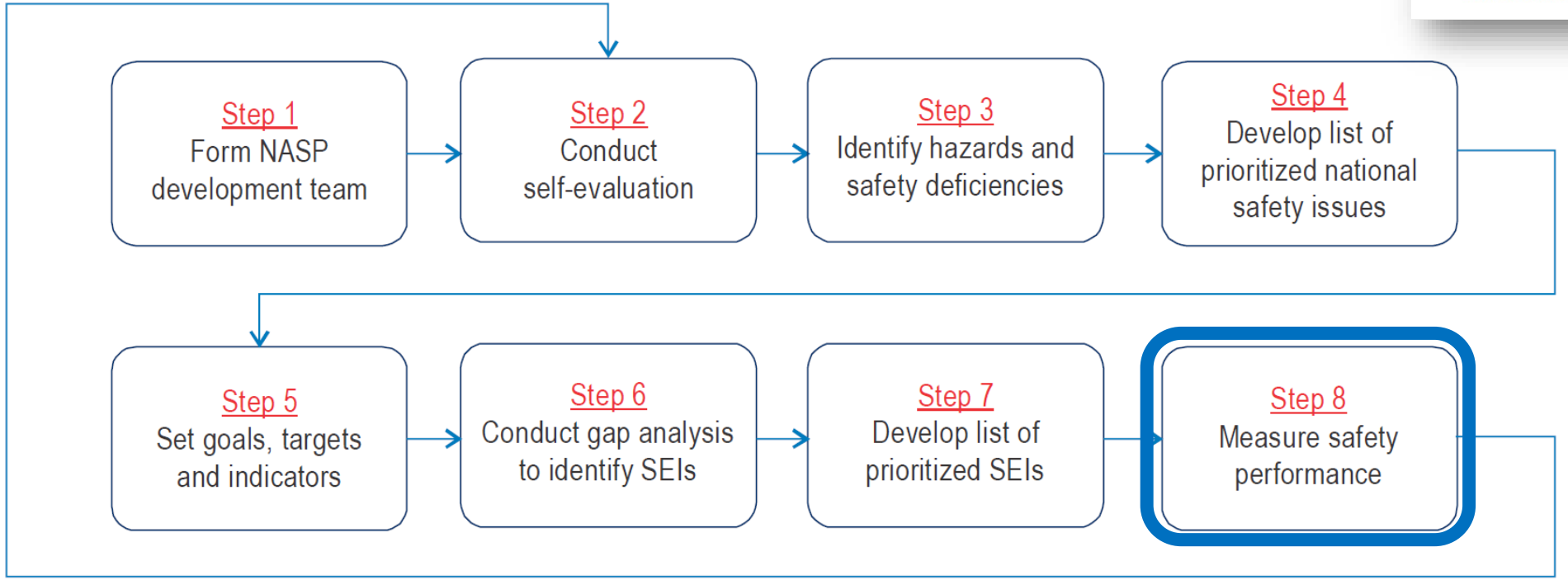
- Each SEI should be linked to a goal & target in NASP
- Roadmap only provides
  - overall SEI
  - associated actions
- Action plan in NASP to include (for each SEI/action)
  - Timeline
  - Responsible entity
  - Stakeholders
  - Metrics (different from indicators)
  - Priority
  - Monitoring activity

| N-HRC 2: LOC-I | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Goal 1: Achieve continuous reduction of operational safety risks<br>Target 1.1: Maintain a decreasing trend of national accident rate** | | | | | | | |
| ***SEI*** | *Action* | *Timeline* | *Responsible entity* | *Stakeholders* | *Metrics* | *Priority* | *Monitoring activity* |
| **Mitigate contributing factors to LOC-I accidents & incidents** | Require upset prevention and recovery training in all full flight simulator type conversion and recurrent training programmes | Q1 2023 to Q4 2025 | CAA | • Operators<br>• ATO<br>• Flight simulator product and service providers<br>• Pilots' associations<br>• CAA inspectors | • Training programmes updated with UPRT<br>• Number of pilots completing UPRT<br>• Upset occurrence rates in voluntary reporting<br>• Stick-shaker activation events in FDA data<br>• LOC-I occurrence rates | High | Surveillance of operator & ATO training activities |

*Source: Doc 10131*

# NASP Development Process



# From Planning to Implementation

## Measuring Safety Performance

# National Safety Performance

- Through NASP, State sets national goals & targets
  - and determines series of SEIs to achieve them
- State also uses NASP indicators related to targets
  - to measure if SEIs attain their desired outcomes
- Defining process to monitor (planning)
  - NASP implementation
  - NASP effectiveness
- Actually measuring safety performance (doing)
  - has safety improved nationally?

# Use of GASP Indicators for NASP



- Doc 10162 provide guidance on data sources
  - for indicators to measure achievement of NASP goals
- Guidance addresses
  - how to measure indicators
  - how to gather data
- GASP Indicator Form was developed for each indicator
  - to provide clear guidance & definitions
  - allows State to collects consistent, reliable data

| | |
|---|---|
| *Rationale* | How indicator connects to a target<br>What measurement and monitoring it supports |
| *Limitations* | Scope of what indicator measures |
| *Definition of terms* | Definition of terminology used in naming or defining indicator |
| *Calculation method* | Specific or technical formula available for calculation of indicator value |
| *Data set(s)* | Data needed for measuring indicator |
| *Availability* | Listed datasets may have different levels of availability<br>Varying from 1 (unavailable) data to 3 (fully available) |
| *Provider* | Provider where data comes from |

# Example of GASP-I Form

| *GASP-I.1.1.02* | *Number of accidents per million departures (accident rate)* |
|---|---|
| Rationale | Related to Global Aviation Safety Plan (GASP) Target 1.1: Maintain a decreasing trend of global accident rate.<br><br>This safety indicator has been widely used by ICAO since 2008. It can be found in the global Annual Safety Reports and on the ICAO public website. It is the most common reactive indicator measuring safety levels and is connected to risk exposure (number of million departures). |

# Example of GASP-I Form (2)

| | |
|---|---|
| Limitations | – The State of Occurrence shall forward a notification of an accident to ICAO when the aircraft involved is of a maximum mass of over 2 250 kg or is a turbojet-powered aeroplane, as required by Annex 13 – *Aircraft Accident and Incident Investigation*, paragraph. 4.1.<br>– The State conducting the investigation shall send Accident/Incident Data Reporting (ADREP) to ICAO for accidents to aircraft over 2 250 kg, as required by Annex 13, Chapter 7.<br>– ICAO maintains an ADREP database with the notifications and ADREPs it receives.<br>– A validation of the ADREP database is performed annually by a group of experts (the Occurrence Validation Study Group (OVSG)) only for accidents and some serious incidents involving civil-operated fixed-wing aircraft of a maximum mass of over 5 700 kg. This validation does not include, as of April 2020, helicopter accidents or aircraft between 2 250 kg and 5 700 kg.<br>– Validated ADREP data for year *n* is available in March of year *n+1*.<br>– The Official Airline Guide (OAG) makes available to ICAO traffic data for scheduled operations with aircraft > 5 700 kg.<br>– Validated OAG traffic data for year *n* is available in March of year *n+1*. |

# Example of GASP-I Form (3)



| | |
|---|---|
| Definition of terms | The term ”accident” is defined in Annex 13, Chapter 1. Definitions<br><br>ADREP: Accident/Incident Data Reporting |
| Calculation method | Indicator = N/D, where:<br><br>a) *N* is the number of accidents involving scheduled commercial operations with aircraft of maximum mass of over 5 700 kg for the year in question; and<br><br>b) *D* is the number of scheduled commercial departures (from iSTARS ‘State Traffic’ application), divided by 1 000 000. |
| Data sets | Notifications and ADREP reports sent by States to ICAO under Annex 13 obligations.<br><br>OAG dataset for ICAO. |

# Example of GASP-I Form (4)

| | |
|---|---|
| Availability (1-3) | 3: Accident notification and ADREP reports are already available in the ICAO ADREP database. No further reporting by States is required. |
| Provider | – ICAO ADREP database<br>– iSTARS Application "ADREP et al."<br>– iSTARS Application "State Traffic" |

# Indicator Selection: Validation Process



- Vet each indicator before publication
  - by populating fields from Doc 10162
  - to ensure indicators are realistic

- Specify for each NASP indicator
  1. rationale
  2. limitations
  3. definition of terms
  4. calculation method
  5. data set(s)
  6. availability
  7. provider

# Points to Remember



- Carry out 8 steps listed in Doc 10131
  - comprehensive process
- Use Standardized Frameworks
  - tools to guide analysis & prioritize issues
- Roadmap is action plan to assist in achieving GASP goals
  - provides structured, common frame of reference
  - use roadmap as basis to develop NASP SEIs (action plan)
- Use Doc 10162 to develop & track NASP indicators
  - to enable safety performance measurement

# NASP Development & Implementation

## From Theory to Practice: States' Experience