

# Session 10

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## Global Aviation Safety Roadmap



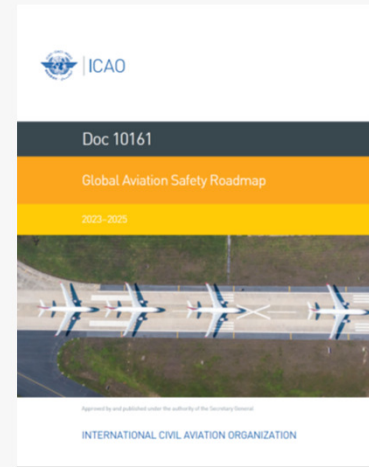
## Overview

- Purpose & structure of roadmap
- ORG & OPS roadmaps
- Safety enhancement initiatives (SEIs)
- Use of roadmap in developing action plan
- Facilitated Exercise III



## 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



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## Structure of Roadmap

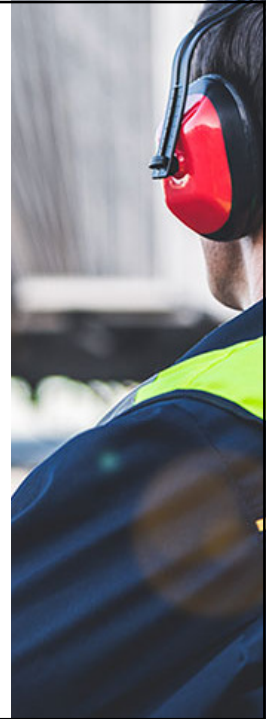
- Roadmap outlines specific SEIs
  - associated with GASP goals & targets
  - each SEI contains set of actions
- Includes SEIs for 3 stakeholders
  - States; Regions; Industry
- Roadmap is composed of 2 pieces
  - ORG challenges – ORG roadmap
  - Ops safety risks – OPS roadmap



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## Structure of Roadmap

- ORG roadmap provides SEIs to meet GASP goals related to
  - State safety oversight capabilities
  - SSP implementation
  - SMS implementation (industry)
- OPS roadmap provides SEIs to meet GASP goals related to
  - operational safety risks
  - based on G-HRCs identified in GASP



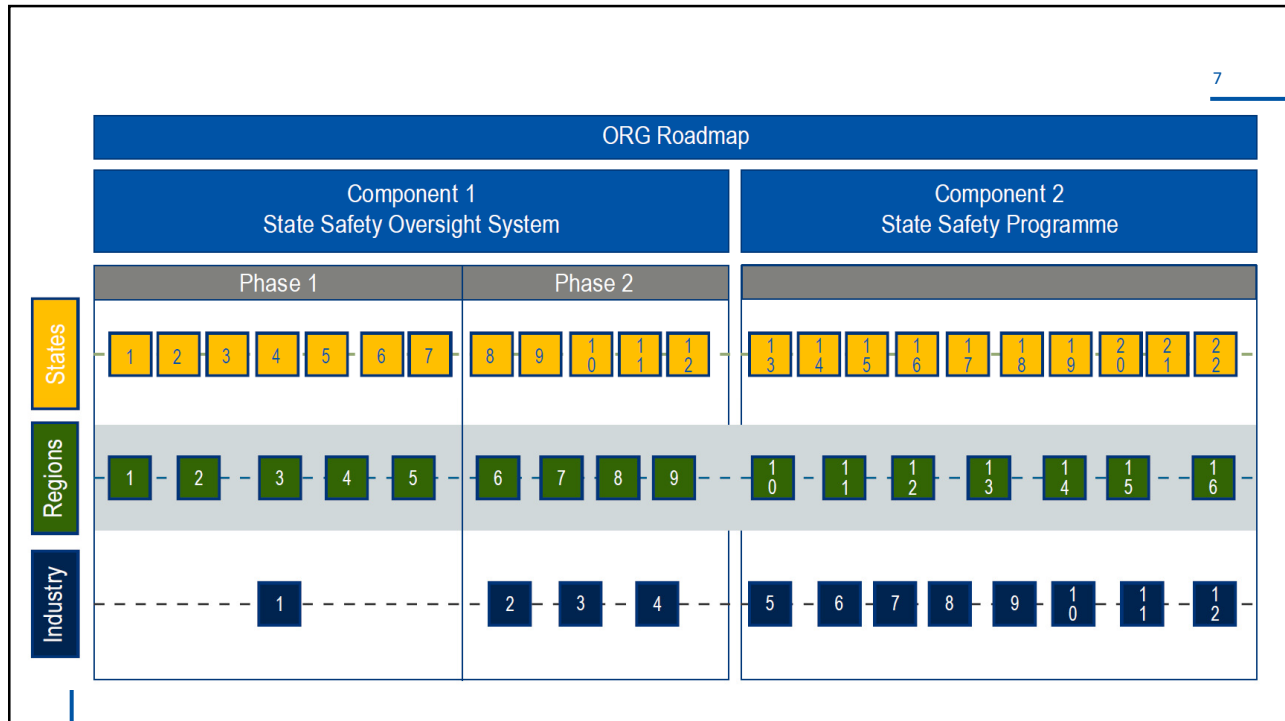
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## ORG Roadmap

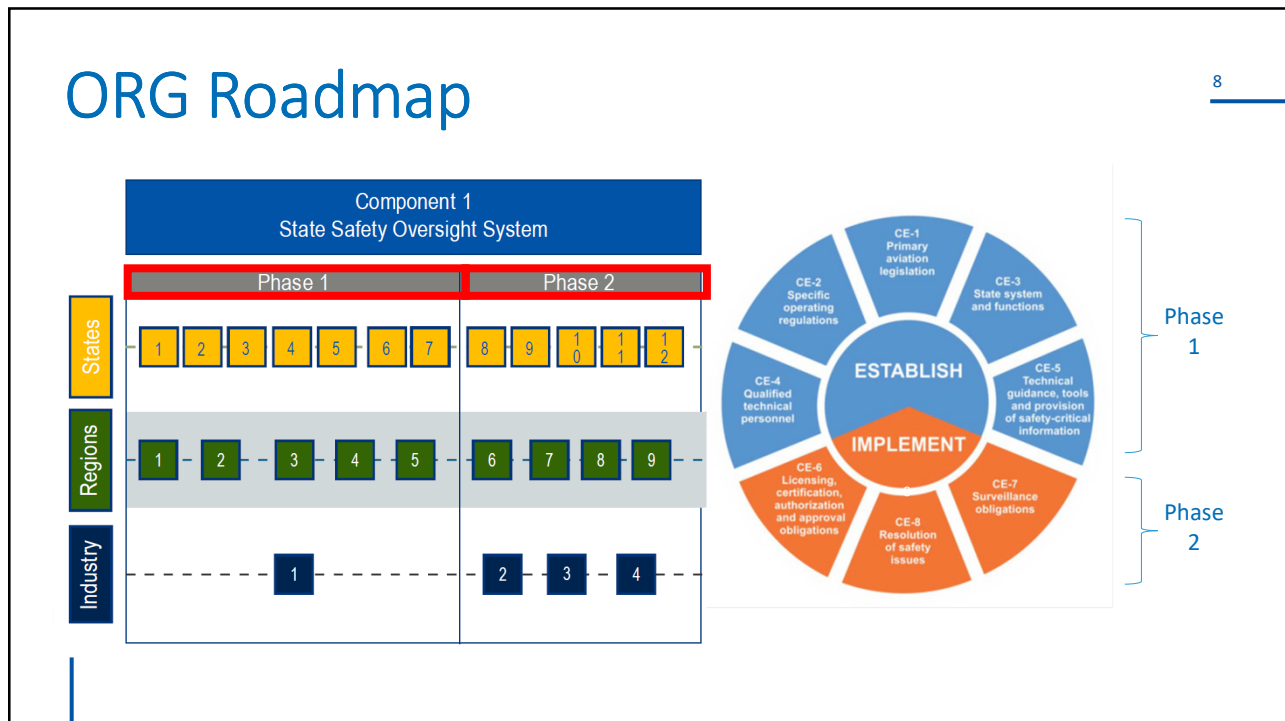
- Contains 2 distinct components
    - in line with GASP goals
    - to address SM responsibilities
1. State safety oversight (SSO) system
  2. SSP, including service providers' SMS



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## Layout of SEIs in ORG Roadmap

- All SEIs presented in standardized “roadmap template” format
- Covers following points
  - **SEI** - Description of specific safety enhancement initiative
  - **Stakeholder** - Entity to which SEI is addressed
  - **Actions** - Description of tasks required for implementation of SEI
  - **References** - Documents & tools to assist stakeholders
    - in implementing SEIs and associated actions



## Layout of SEIs in ORG Roadmap

<i>Safety enhancement initiative</i>	SEI-7 — Provision of the primary source of safety information to ICAO by completing, submitting and updating all relevant documents and records
<i>Stakeholder</i>	States
<i>Actions</i>	<input type="checkbox"/> 7A — Update USOAP corrective action plan items <input type="checkbox"/> 7B — Complete and submit the self-assessment checklist based on USOAP CMA priority PQs <input type="checkbox"/> 7C — Complete and submit the State aviation activity questionnaire (SAAQ) <input type="checkbox"/> 7D — Complete and submit the compliance checklists (CCs) on electronic filing of differences (EFOD) system <input type="checkbox"/> 7E — Update documents and records, as required, in a timely manner
<i>References</i>	<ul style="list-style-type: none"> <li>— Doc 9735, <i>Universal Safety Oversight Audit Programme Continuous Monitoring Manual</i>, sections 2.8, 2.14 and 2.15</li> <li>— <a href="#">iSTARS</a></li> <li>— <a href="#">USOAP CMA Computer-based Training</a></li> <li>— <a href="#">USOAP CMA Online Framework</a> (log-in required)</li> <li>— <a href="#">USOAP CMA Workshops</a></li> </ul>



# Mapping SEIs to Targets

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States Component 1 – State safety oversight system	
Phase 1 – Establishment of a safety oversight framework (CE-1 to CE-5)	
<i>Safety enhancement initiative</i>	<i>Supported targets</i>
SEI-1 – Consistent implementation of ICAO SARPs at the national level	2.1
SEI-2 – Development of a comprehensive regulatory oversight framework	2.1
SEI-3 – Establishment of an independent accident and incident investigation authority, consistent with Annex 13 – Aircraft Accident and Incident Investigation	1.1
	2.1



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## OPS Roadmap

- OPS roadmap addresses ops safety risks
- Contains specific SEIs to address 5 G-HRCs
- To develop action plan to mitigate risks
  - associated with N-HRCs
- Unlike ORG, OPS roadmap not divided into components or phases
  - SEIs can be accomplished in parallel



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## Layout of SEIs in OPS Roadmap

Safety Enhancement Initiative	Mitigate contributing factors to CFIT accidents and incidents
Stakeholder	Regions
Actions	<ol style="list-style-type: none"> <li>1. Implement the following CFIT safety actions:               <ol style="list-style-type: none"> <li>a. Support the adoption of TAWS in accordance with Annex 6</li> <li>b. Promote the wider use of TAWS beyond the requirements of Annex 6</li> <li>c. Promote the adherence to TAWS warning procedures</li> <li>d. Promote greater awareness of approach risks</li> <li>e. Promote the implementation of CDFA</li> <li>f. Promote the implementation of MSAW systems</li> <li>g. Promote the timeliness of updates and accuracy of eTOD</li> <li>h. Promote the use of global positioning system (GPS)-derived position data to feed TAWS</li> </ol> </li> <li>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)</li> <li>3. Identify additional contributing factors, for example:               <ol style="list-style-type: none"> <li>a. Flight in adverse environmental conditions</li> <li>b. Approach design and documentation</li> <li>c. Phraseology used (standard vs non-standard)</li> <li>d. Pilot fatigue and disorientation</li> </ol> </li> <li>4. Develop and implement further SEIs to mitigate the risk of the identified contributing factors, if any, for CFIT</li> <li>5. Conduct continuous evaluation of the performance of the SEIs</li> </ol>
References	<ul style="list-style-type: none"> <li>— Annex 6, <i>Operation of Aircraft</i></li> <li>— <a href="#">ICAO Safety Report</a></li> <li>— <a href="#">RASGs</a></li> <li>— <a href="#">Commercial Aviation Safety Team</a> Safety enhancements for CFIT</li> <li>— <a href="#">IATA CFIT</a></li> <li>— <a href="#">IATA Safety Report</a></li> <li>— <a href="#">Flight Safety Foundation ALAR Toolkit</a></li> <li>— <a href="#">Skybrary</a></li> <li>— <a href="#">EUROCONTROL</a></li> </ul>



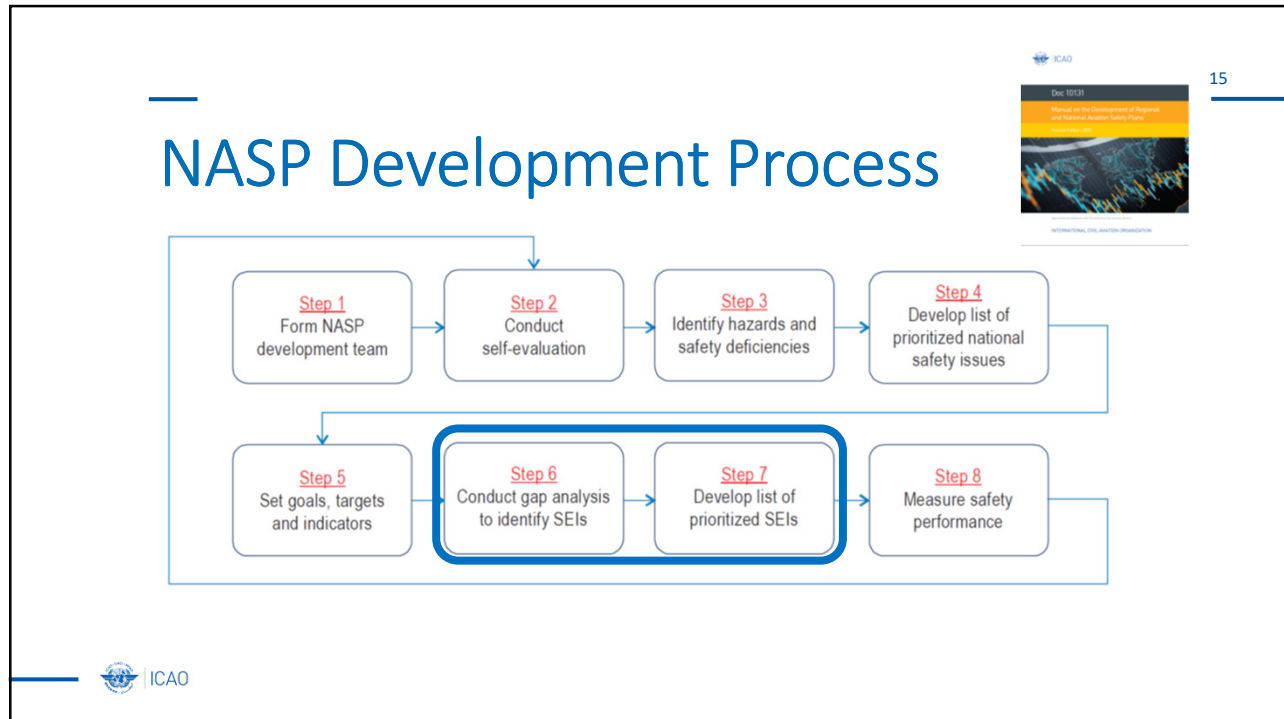
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## SEIs in OPS Roadmap

- ORG roadmap is not substitute for SRM activities
  - that need to be conducted as part of SSP & SMS
- OPS roadmap gives specific examples of potential contributing factors
  - not exhaustive
  - may not be applicable to all stakeholders or environments



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## Conduct Gap Analysis for SEIs (Step 6)

- To develop list of SEIs for NASP
  - conduct gap analysis
  - using Doc 10161
- Purpose of gap analysis
  - to identify specific steps to take
  - to address national safety issues
  - and achieve each goal & associated targets
- Compilation of SEIs forms action plan
  - that supports safety strategy
  - presented in NASP

The graphic shows a large globe composed of many orange puzzle pieces. A single blue puzzle piece is being held by a hand and is about to be placed into a missing spot on the globe, symbolizing the completion of a task or the integration of a new element.

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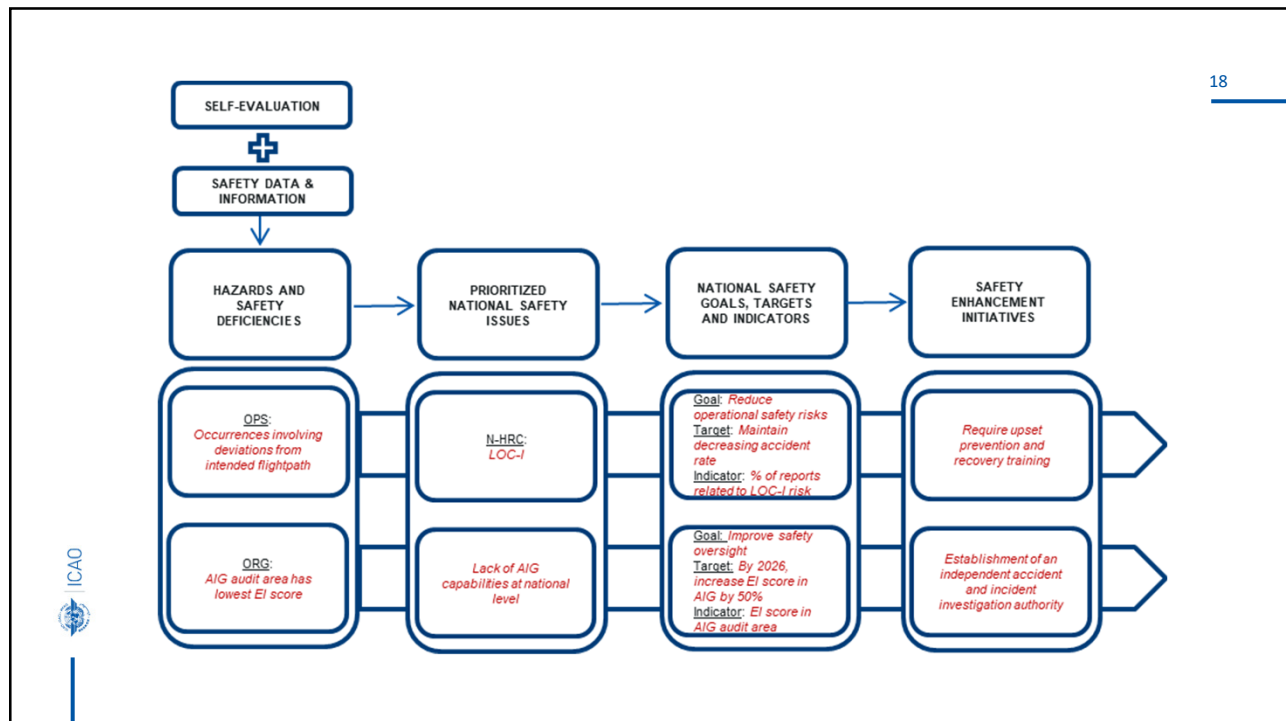


# Use of Roadmap

- Select SEIs
  - and specific actions to be implemented
  
- Based on
  - identified national safety issues
  - goals & targets
  
- Determine order of completion
  - sequence



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# Use of ORG Roadmap

- To identify SEIs that address ORG challenges
  - refer to ORG roadmap
  
- Identify starting point within roadmap
  - using data from of existing sources
  - or from SMEs



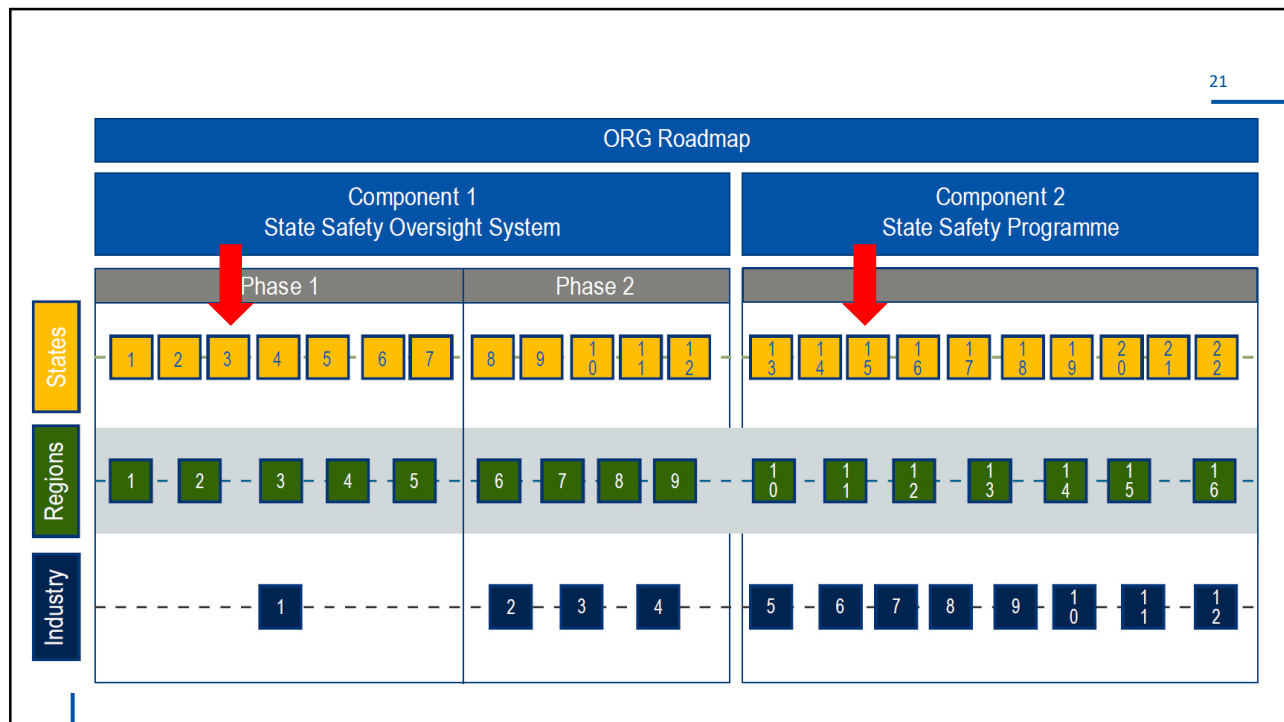
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<i>Safety enhancement initiative</i>	✘	SEI-3 — Establishment of an independent accident and incident investigation authority, consistent with Annex 13 — <i>Aircraft Accident and Incident Investigation</i>
<i>Stakeholder</i>		States
<i>Actions</i>		<ul style="list-style-type: none"> <li>✘ 3A — Establish an independent accident and incident investigation authority, as per Annex 13 requirements (CE-1 and CE-3)</li> <li>✘ 3B — Develop an effective system to promulgate technical guidance and tools, and provide safety-critical information needed for technical personnel to effectively conduct accident and incident investigations (CE-5)</li> <li>✘ 3C — Establish an effective system to attract, recruit, train and retain qualified and sufficient technical personnel to support accident and incident investigations (see SEI-5) (CE-3 and CE-4)</li> </ul>
<i>References</i>		3A — <i>Annex 13, Aircraft Accident and Incident Investigation</i> — <i>Doc 9734, Safety Oversight Manual, Part A — The Establishment and Management of a State Safety Oversight System</i>



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## Use of OPS Roadmap

- **Conduct similar review**
  - of SEIs presented in OPS Roadmap
  - identify those not implemented
  - to serve as safety risk mitigations for N-HRCs
- **Series of SEIs should be implemented to address contributing factors to N-HRCs**
  - some SEIs may be derived from OPS Roadmap
  - others may be identified through sources (investigations, safety risk assessments)

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## Develop List of Prioritized SEIs (Step 7)

- Review list of potential SEIs
  - reviewing gaps & SEIs
- Select SEIs relevant (prioritize)
  - safety impact
  - ability of State
  - or ease of implementation
- Generate prioritized list of SEIs
- List forms action plan of NASP



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## 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



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N-HRC 2: LOC-I							
Goal 1: Achieve continuous reduction of operational safety risks 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	<ul style="list-style-type: none"> <li>Operators</li> <li>ATO</li> <li>Flight simulator product and service providers</li> <li>Pilots' associations</li> <li>CAA inspectors</li> </ul>	<ul style="list-style-type: none"> <li>Training programmes updated with UPRT</li> <li>Number of pilots completing UPRT</li> <li>Upset occurrence rates in voluntary reporting</li> <li>Stick-shaker activation events in FDA data</li> <li>LOC-I occurrence rates</li> </ul>	High	Surveillance of operator & ATO training activities

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Points to Remember	
<ul style="list-style-type: none"> <li>Roadmap is action plan to assist in achieving GASP goals</li> <li>Provides structured, common frame of reference</li> <li>ORG portion for SSO &amp; SSP</li> <li>OPS for HRCs, supporting SM approach</li> <li>Use roadmap as basis to develop NASP SEIs (action plan)</li> </ul>	26

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# Facilitated Exercise III

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## Develop List of Prioritized SEIs

## Your Tasks

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- Based on list of prioritized national safety issues (Ex I) & national goals, targets and indicators (Ex II)
  - review excerpts from Roadmap (Appendix A)
- Select series of SEIs + actions
  - to achieve national targets
- Review list of selected SEIs & assign order of priority
  - select those for action plan as prioritized list of SEIs
- Complete Appendix B
  - Time allocated: 3h00



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SEI Number and Name	Actions	Priority (and why?)
Example, SEI-1 – Consistent implementation of ICAO SARPs at the national level	Example, 1A, 1B, 1C	

