

**ACTION PLAN FOR THE ESTABLISHMENT AND IMPLEMENTATION OF SAFETY DATA COLLECTION AND PROCESSING SYSTEMS (SDCPS)**

Activity	Details and criteria	Start	End	Responsible party
<b>INITIAL DIAGNOSTIC PHASE</b>				
1) Definition and establishment of the technical specifications of the safety data collection and processing system (SDCPS)	Based on the size and complexity of the civil aviation system of your State, define and establish the technical specifications of the safety data collection and processing system (SDCPS). At least, define and establish the following: <ul style="list-style-type: none"> <li>✓ Inputs (collection);</li> <li>✓ Processes (analysis); and</li> <li>✓ Outputs (exchange)</li> </ul> Note 1. Figure 2-8 of Doc 9859, third edition, provides a schematic view of a State's safety data system, indicating the inputs, processes and outputs related to safety data collection, analysis and exchange. Note 2. Figure 13 of Doc 9859, fourth edition, offers examples of safety data and information that, in many cases, are already available in the State.			
2) Definition and establishment of the State's SDCPS structure	Define and graphically illustrate the structure of the State's SDCPS, taking into account the design of a core safety database that will compile safety data and information of satellite databases, <i>e.g.</i> , of the ADREP/ECCAIRS platform available to aircraft accident and incident investigation authorities, State safety databases, service provider databases, etc.			
3) Inventory of safety databases for the SSP	List the databases available to the State, which could deliver safety data and information to the core safety database of the State's SDCPS.			
4) Assessment of the database containing data on serious accidents and incidents				

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5) Assessment of the incident safety database (includes ATS incidents)	Assess whether the entities responsible for the databases have applied quality procedures to the data used for safety risk management, based on the following criteria:			
6) Assessment of the mandatory reporting system database	a) <b>Validity.</b> Data collected is acceptable according to the criteria established for its intended use.			
a) Reporting of malfunction, failures or defects of aeronautical products	b) <b>Completeness.</b> No relevant data is missing.			
b) Wildlife management reports	c) <b>Consistency.</b> The degree of consistency and error avoidance in the measurement of a given parameter can be reproduced.			
c) Dangerous good reports	d) <b>Accessibility.</b> Data is readily available for analysis.			
d) Reports on air navigation and aerodrome infrastructure and support deficiencies	e) <b>Timeliness.</b> Data is relevant for the period of interest and is available on a timely manner.			
e) Reports on in-flight crew incapacitation events	f) <b>Security.</b> Data is protected from inadvertent or deliberate modification.			
7) Assessment of voluntary reporting system databases (hazards)	g) <b>Accuracy.</b> Data contains no errors. Standard taxonomies will be established and used for occurrences and hazards. Standard taxonomies will be established and used for types and categories of findings.			
8) Assessment of safety oversight inspection and audit report/finding databases	The ICAO ADREP taxonomy will be used as the standard within the framework of the pilot project and in South America.			
	To ensure proper understanding and use of a database, information related thereto (metadata) must be properly documented and be available to users. Metadata types include field definitions, changes made to the database over time, utilisation rules, data collection forms, and references to valid values.			
	Each investigation report can be categorised and updated based on the following taxonomy:			
	a) Initial report: for assessment/follow-up/information as noted.			

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	b) Under investigation: investigation in progress as noted. c) Investigation completed: investigation results/data received and updated. d) Closed: no further measures are required.			
9) Assessment of existing <b>mandatory reporting</b> mechanisms.	Identify the means: correspondence, e-mail or on-line access.			
10) Assessment of existing <b>voluntary reporting</b> mechanisms.	Identify the means: correspondence, e-mail or on-line access.			
<b>PROCESS DESIGN/REVIEW</b>				
Documentary development of the generic safety data collection and processing process	a) Document process inputs (reactive, proactive and predictive sources), list safety data, for each piece of data, describe the legend, properties, type, pre-established list (if an already established taxonomy is available). b) For the collection process, indicate the means (preferably in electronic media, on-line). c) An option menu is proposed for the collection process, based on the type of report to be submitted. This includes report forms (preferably in electronic media, on-line): <b>Mandatory:</b> 1) Accidents 2) Serious incidents 3) Incidents (includes ATS incidents) 4) Mandatory reporting systems: - Reporting of aeronautical product malfunction, failure, or defects.			

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	<ul style="list-style-type: none"> <li>- Wildlife management reports.</li> <li>- Reporting of dangerous goods.</li> <li>- Reports on infrastructure and air navigation aid deficiencies.</li> <li>- Reports on in-flight crew incapacitation occurrences.</li> </ul> <p><b>Voluntary:</b></p> <p>5) Reporting of hazards.</p> <p>d) Data sets collected in the various reports are fed into the databases.</p> <p>e) Data relationships will be established for each database in order to build safety information.</p> <p>f) Safety information will be used for the creation of various graphical reports, with indicators, to measure safety performance at three levels:</p> <ul style="list-style-type: none"> <li>- Low probability/high severity indicators</li> <li>- Precursor indicators</li> <li>- Leading indicators</li> </ul>			
Review formal mandatory reporting procedures	The different types of guidance materials are described, explaining the scope of each type of report, data to be entered, means to attain it, and voluntary and confidential reporting options.			
Review formal voluntary reporting procedures				
Develop procedures for analysing safety data and information obtained from the safety data collection and processing system (SDCPS)	<p>a) Once data is collected and processed, a description is provided of the procedure for hazard identification and classification, and for determining the consequences, using different sources, such as:</p> <ul style="list-style-type: none"> <li>- Reactive sources: (causes and contributing factors) safety investigation databases.</li> </ul>			

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	<ul style="list-style-type: none"> <li>- Reactive sources: hazards identified from precursor events.</li> <li>- Proactive sources: (hazard reports from the community and organisations' SMSs)</li> <li>- Proactive source: (hazards identified through inspections and audits).</li> <li>- Proactive source: (hazards identified through safety assessments).</li> <li>- Predictive source: (reports on emerging hazards resulting from operational changes, observed behaviours and their trends)</li> </ul> <p>b) Describe the procedure for assessing the risk of consequences from identified hazards.</p> <p>c) Describe the risk control procedure, which involves the recording of measures taken, action plans, their acceptance and follow-up</p>			
<b>SAFETY AND SUPPORT SOFTWARE DEVELOPMENT/REVIEW</b>				
<b>Accident investigation authority</b>				
Verify the proper installation and use of the ECCAIRS application by the investigation authority	Take into account the criteria set forth in Annex 13 and 19			
Verify ECCAIRS support platforms				
Verify users and coordination for import or export of safety databases				

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<b>Aeronautical authority</b>				
Define the scope of CAA management/directorate requests based on the design of the data collection and processing process.				
Request and assess proposals from service providers for the development of IT platforms.				
Approve the selection of the service provider				
Develop the IT platform based on the design stage (includes platform commissioning and test period)	<p>In this case, the SSP IT platform would include several modules:</p> <ul style="list-style-type: none"> <li>a) Module on the aeronautical event reporting system <ul style="list-style-type: none"> <li>Mandatory reporting module (events in different areas, according to the design stage)</li> <li>Voluntary reporting module (hazards)</li> <li>Service provider and industry SMS hazard registration and analysis module</li> </ul> </li> <li>b) CAA oversight programme module <ul style="list-style-type: none"> <li>Module on registration of planning, execution, follow-up and results of oversight activities.</li> </ul> </li> <li>c) <b>HAZARDS</b> <ul style="list-style-type: none"> <li>Module on the analysis of hazards (allows for grouping of collective hazards and specific cases in different sectors: OPS, AIR, PEL, AGA, ANS, CIA, MED) derived from the aeronautical event reporting module</li> </ul> </li> <li>d) <b>RISK MANAGEMENT</b></li> </ul>			

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	<p>Risk analysis module, with data derived from all reporting modules.</p> <p>Risk control module for recording the adoption and follow-up of measures.</p> <p>Module design includes the import of existing databases, following their validation.</p> <p>Module design includes data protection mechanisms (use of administrators, users and permits)</p> <p>Module design includes mechanisms for protecting and retrieving data following unexpected technical failures.</p> <p>Module design allows for the construction of information based on queries and cross-referenced data.</p> <p>Module design allows for the construction of graphical reports on queries.</p> <p>Modules allow for database export in user-friendly formats, such as spreadsheets.</p>			