

Safety Risk Management

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Your safety is our mission.

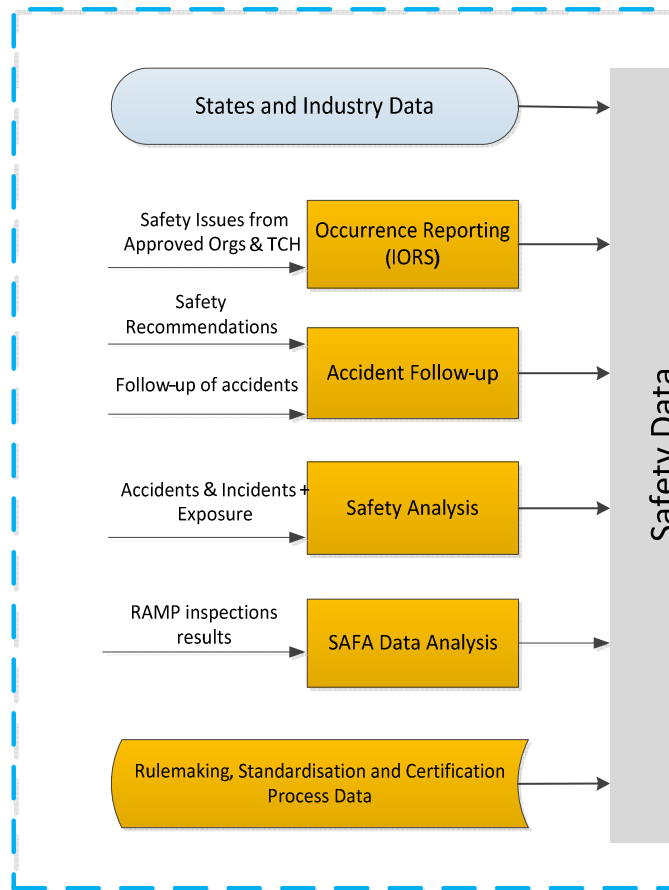
EASA is an agency of the European Union



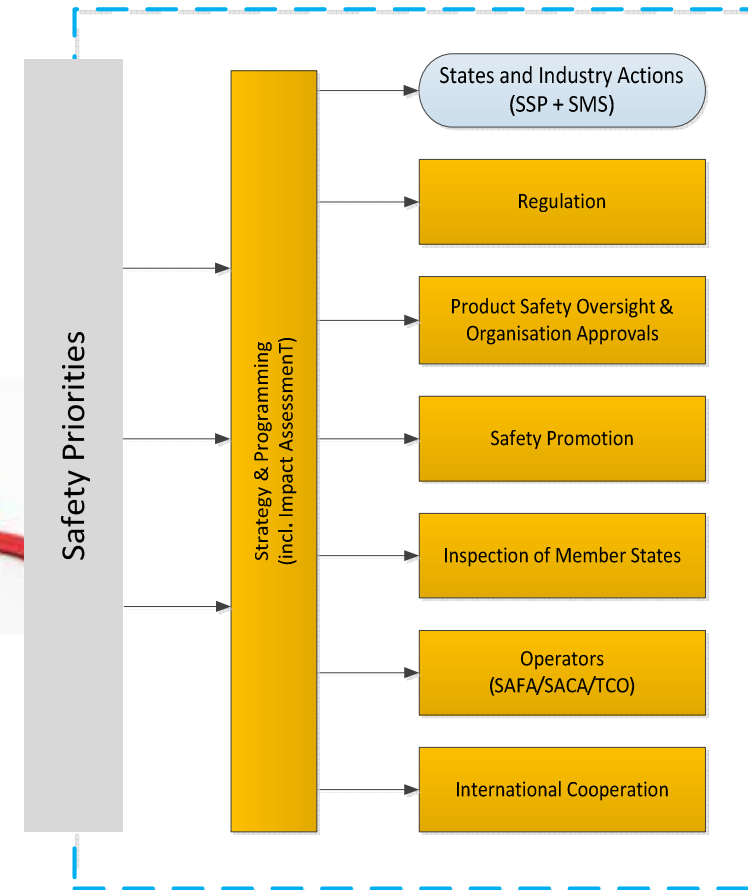


What we are trying to achieve

Annual Safety Review



European Aviation Safety plan





What we are trying to achieve

A **robust**
Safety Risk
Management
Process
that...

- Connects safety intelligence with actions;
- Feeds the programming of our activities; and
- Capitalises on the expertise of Industry and States



Global Safety Issues

Better addressed by the Agency than by individual Member States;

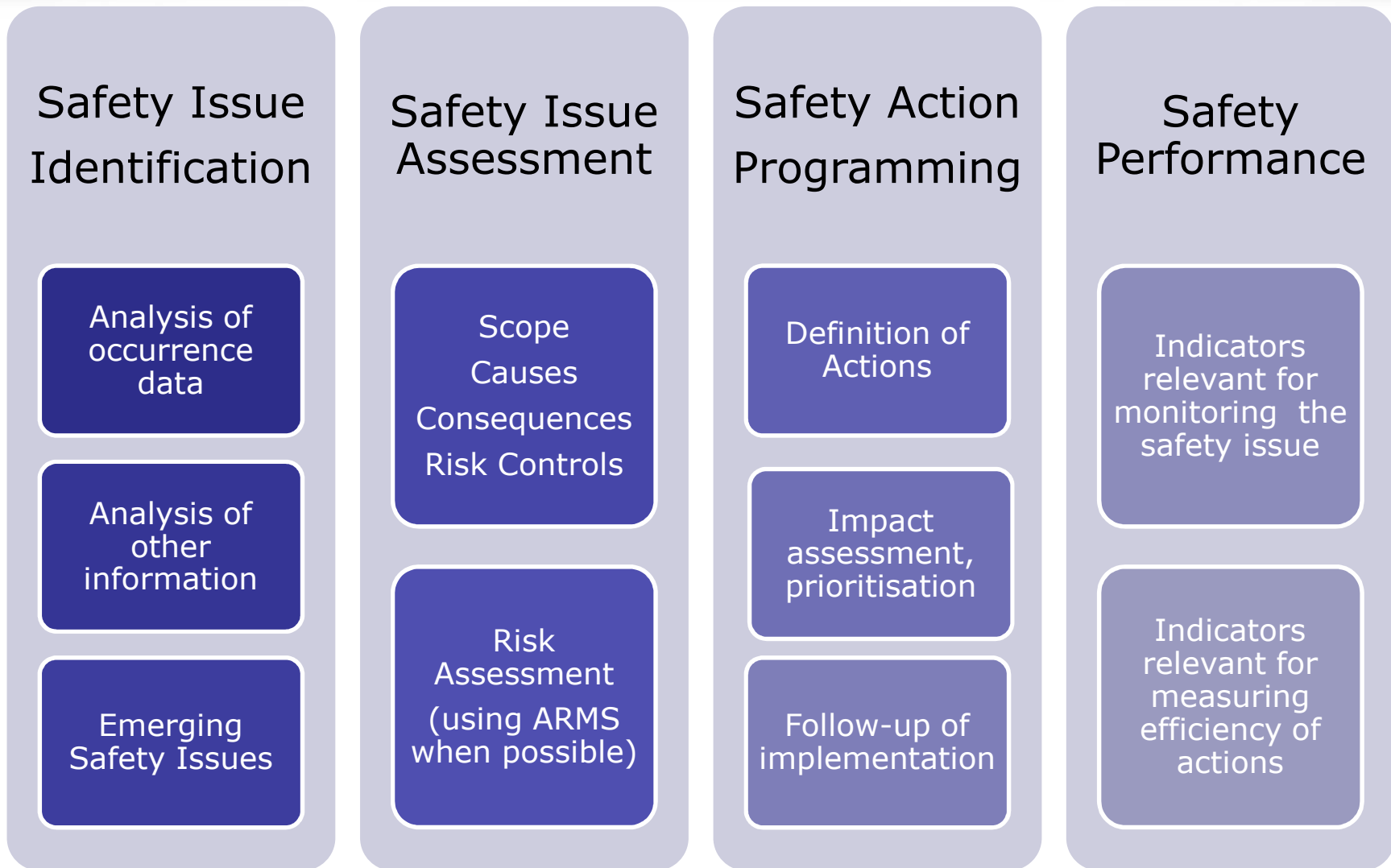
Require coordination of more than one entity, for example issues affecting:

- more than one aircraft type,
- more than one operator, and/or
- more than one State.

Global safety issues include those addressed by EASp actions.

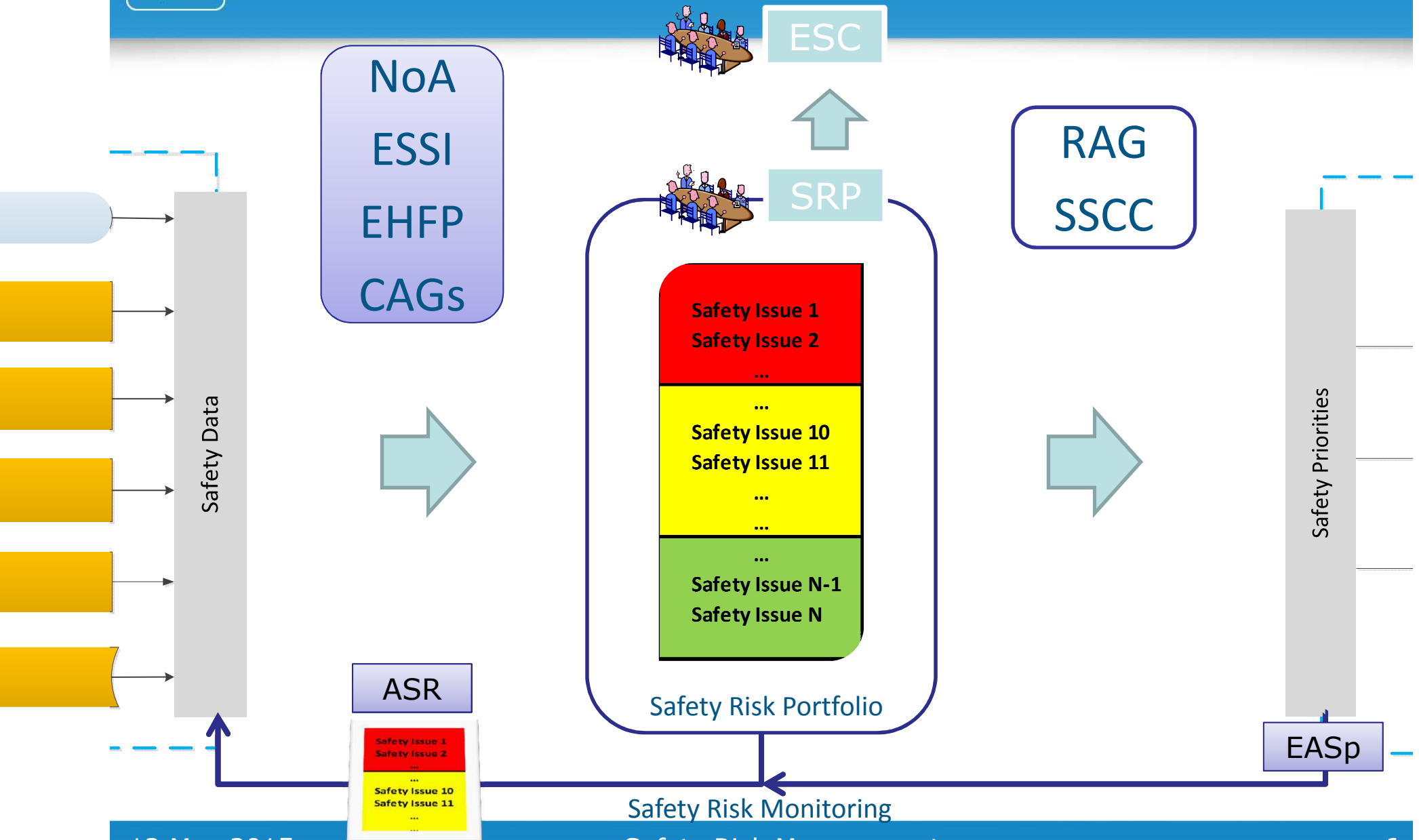


What is to be done



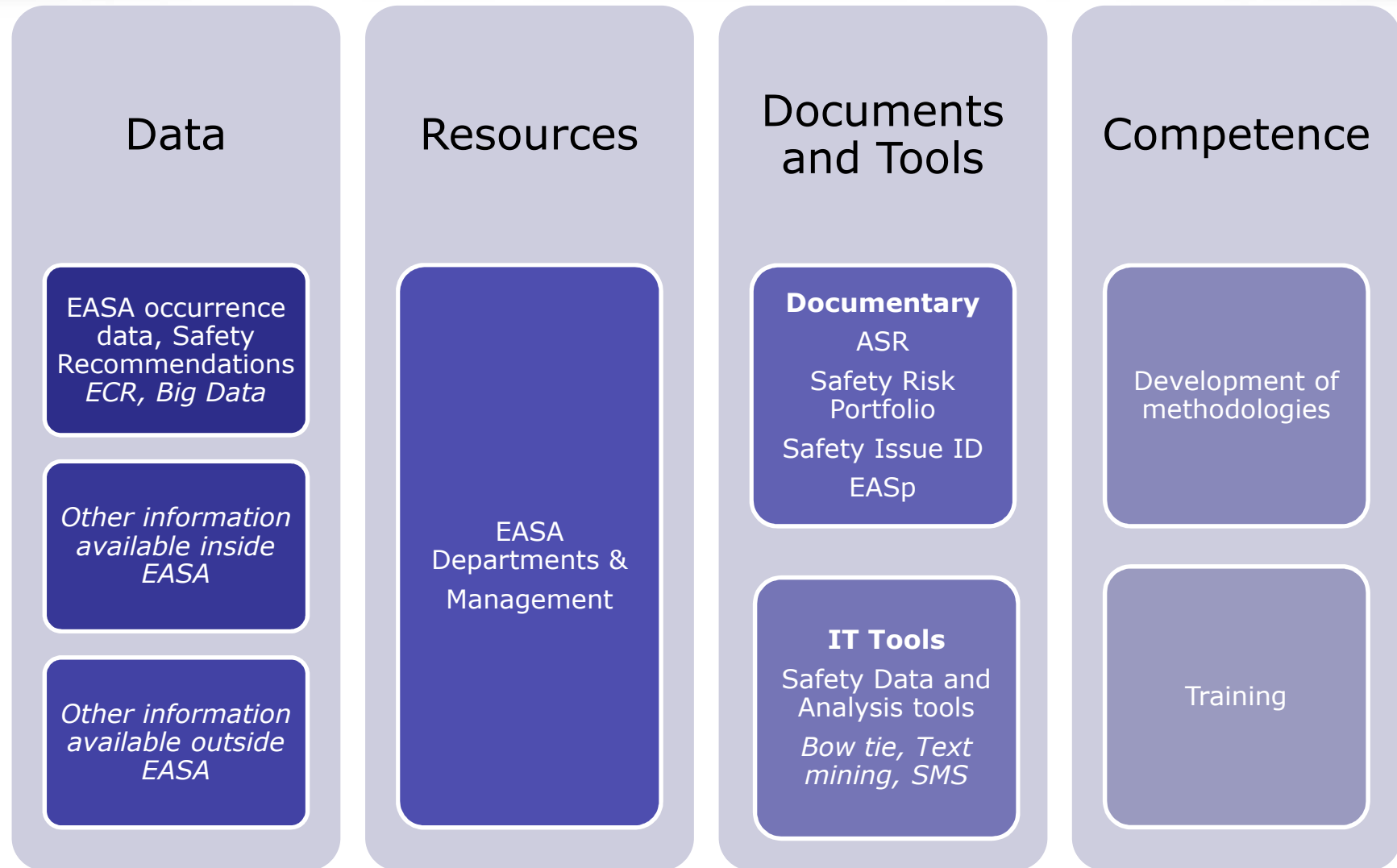


Who is doing what





What is needed





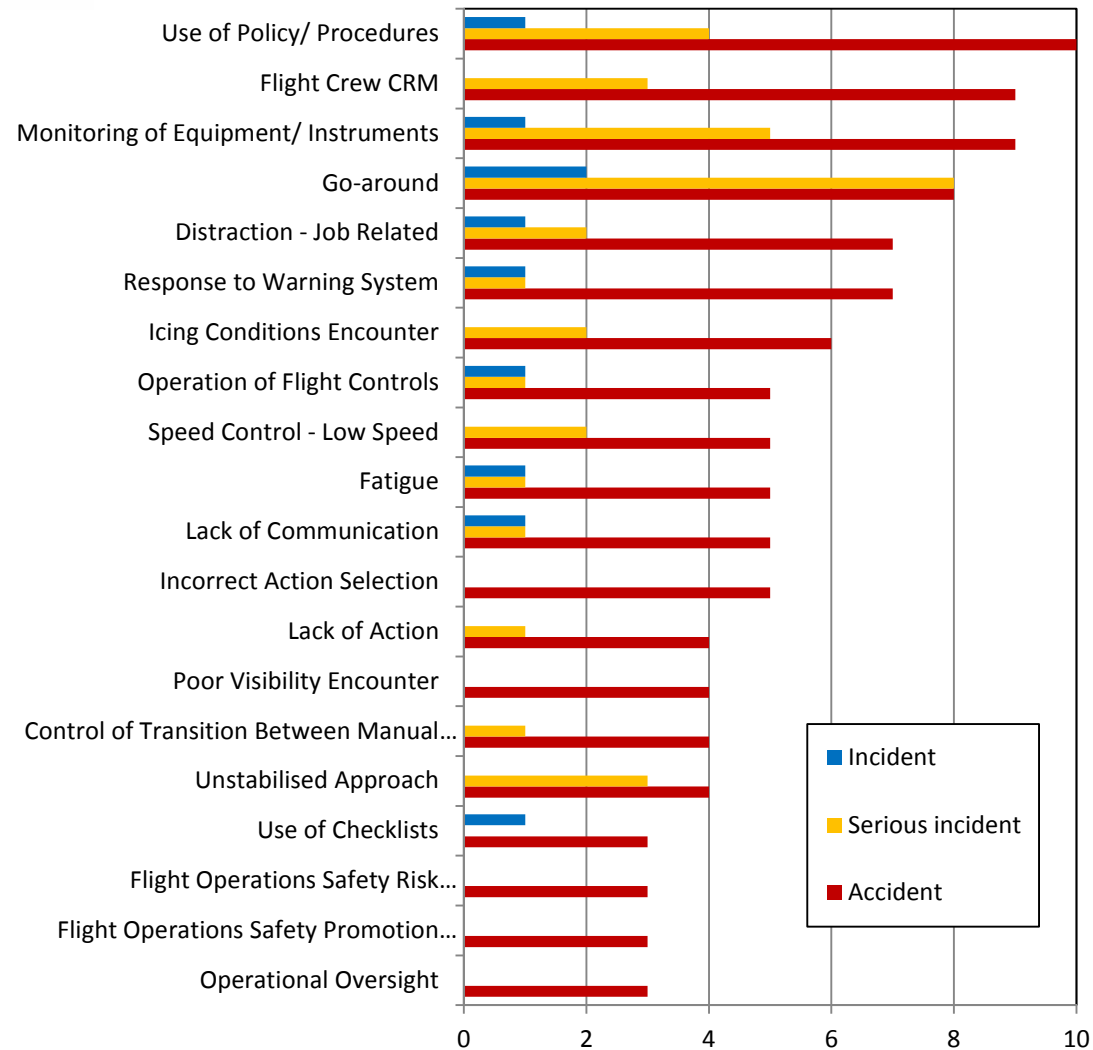
On-going activities

- Safety Analysis at the level of the aviation activity area
 - Ongoing: Balloons Accidents
 - Ongoing: Offshore Helicopters accidents
- Safety Analysis at the level of the accident category
 - Ongoing: LOC-I Study
- Safety Analysis at the level of the safety issue
 - Ongoing: Erroneous Take-Off parameters
- Risk Assessment Methodology
 - Use of ARMS when possible.
 - Example: Report on Occurrences over High Seas involving Military Aircraft

<http://ec.europa.eu/transport/modes/air/news/doc/2015-04-14-civil-military-coordination/report-on-occurrences-over-the-high-seas-involving-military-aircraft-in-2014.pdf>



Example: LOC-I study, first results





Risk Portfolio – CAT Fixed Wing

CAT – Fixed Wing		SYS	Outcomes								EME
Safety Issue			RE/ARC	MAC	LOC-I	CFIT	RI	Fire	SCF	GCOL	
Operational	Survivability and Evacuation		•		•		•	•		•	
	Inadequate recognition and recovery from aircraft warning system (e.g. aircraft upset)		•	•	•	•					
	Inadequate handling of go-arounds		•		•						
	Management of extreme weather conditions		•		•	•	•			•	
	Erroneous data parameters		•		•						
	Improper fuel management		•			•			•		
	Birdstrikes		•								
	Improper management of separation between aircraft				•						
	Inadequate ground handling activities (e.g. de-icing)				•		•			•	
	Improper loading and dangerous goods handling				•			•	•		
Technical	Incorrect installation during maintenance and documentation errors		•	•	•	•	•	•	•	•	
	ILS false/disrupted signal capture		•		•				•		
	Contamination of Controls or Control Surfaces		•		•				•		
	Unsuitability of recording devices	•			•						
Human	Technical failure in flight		•	•	•	•	•	•	•		
	Crew impairment	•	•	•	•	•	•	•		•	
	Inadequate CRM or Communication	•	•	•	•	•	•	•		•	
	Inadequate monitoring of flight parameters/ automation modes		•	•	•	•					
	Inadequate knowledge of aircraft systems and associated procedures	•	•	•	•	•					
Organisational	Inadequate crew awareness in unexpected or unfamiliar scenarios		•	•	•						
	Inadequate operational procedures and oversight	•			•						
	Improper management of single pilot operations in CAT	•									

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Risk Portfolio – Offshore Helicopter

	Offshore Helicopters	SYS	Outcomes						EME
	Safety Issue		ARC	LOC-I	CFIT/ CTOL	RI	Fire	SCF	
Operational	Ditching Survivability and Evacuation	•							
	Inadequate recognition and recovery from aircraft warning system		•	•	•				
	Inadequate management of autopilot and automated flight path		•	•	•				
	Incorrect control of the aircraft flight path		•	•	•				
	Inadequate clearance between helicopter and known obstacles		•	•	•				
	Management of extreme weather conditions (loss of visual references)		•	•	•	•			
	Improper fuel management		•	•	•				
	Inadequate flight planning and preparation				•	•			
	Incorrect maintenance data and documentation		•	•	•	•	•	•	
Technical	Failure of ELT Beacon	•							
	Autopilot system failures		•	•	•				
	Brake system failures							•	
	Gearbox and Transmission system failures		•	•	•		•	•	
Human	Incorrect perception of situations by flight crew (e.g. Disorientation Illusions)		•	•	•	•			
	Incorrect or inadequate flight crew actions		•	•	•	•			
	Inadequate crew awareness in unexpected or unfamiliar terrain		•	•	•				
	Inadequate knowledge of aircraft systems and associated procedures	•	•	•	•				
	Incorrect application of rules and procedures		•	•	•	•	•	•	
Organisational	Inadequate operational procedures and oversight	•							
	Inadequate operational leadership and supervision	•							

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Risk Portfolio - Balloons

GA - Balloons		SYS	Outcomes					EME
	Safety Issue		CTOL	LOC-I	MAC	ARC	Fire	
Operational	Insufficient or Poor Weather Planning		●	●		●		
	Incorrect Control of Manual Flight Path through Control of Balloon Inertia		●	●	●	●		
	Loss of Separation – Particularly during Mass Balloon Launches			●	●			
Technical	Propane System Fire						●	
	1110 Exterior Colour Schemes and Markings – Insufficient Visibility of Balloon Registration				●			
Human	Insufficient Pilot Knowledge of Balloon Physics			●	●	●		
	Commercial and Competitive Pressure to Initiate Flights		●			●		
	Incorrect Decision Making and Planning		●		●	●		
	Insufficient or Poor Communication – Insufficient Situation Awareness during Mass Balloon Launches			●	●			
Organisational	Insufficient Passenger Safety Knowledge	●						
	Insufficient Availability of Operational Documentation – e.g. Map Marking with Power Wires		●			●		

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Example of Safety Issue ID Balloons – Weather Planning

1. Identification of Safety Issue	
Description & Stakeholders Provide a problem statement for the safety issue. If there are several scenarios that are relevant, please describe each of them separately here. Describe who is affected by the described issue, in which flight phases and circumstances. Insufficient or poor weather planning leading to unexpected encounters with weather phenomena for which the pilot is subsequently unprepared. All aspects of balloon operations in CAT and GA (pleasure flying)	Source & Rationale What triggered the identification of the issue? Are there safety studies available? Analysis of Hot Air Balloon occurrences in the Balloon Accident Data Coding and Analysis Group in March 2015.

2.Assessment of Safety Issue					
Scenario 1 Poor planning resulting in an unexpected weather encounter during the enroute phase			Scenario 2 Blinding of pilot in command during landing		
Accident Outcome	Risk (ARMS)	CICTT Cat.	Accident Outcome	Risk (ARMS)	CICTT Cat.
Loss of control	Monitor	LOC-I	Collision with Object During Landing	Improve	CTOL
			Hard Landing		ARC
Negative factors/causes	Positive factors		Negative factors/causes	Positive factors	
What actions or conditions increase or cause the accident risk? 1. Incorrect or unavailable meteorological information. 2. Meteorological information available but not used in the pre-flight planning process. 3. Pilot fails to interpret the relevance of meteorological information with reference to their planned flight. 4. External factors (commercial or competition pressure) or personal risk perception leads to an incorrect flight planning or flight initiation decision.	What events or conditions have a significant influence on reducing the risk? 1. Meteorological information readily available through public sources (Internet) 2. All major balloon events provide clear meteorological information for all pilots. 3. Training in interpretation of meteorological information in balloon pilot training and licensing process.		What actions or conditions increase or cause the accident risk? 1. Incorrect or unavailable meteorological information. 2. Meteorological information available but not used in the pre-flight planning process. 3. Pilot fails to interpret the relevance of meteorological information with reference to their planned flight. 4. External factors (commercial or competition pressure) or personal risk perception leads to an incorrect flight planning or flight initiation decision. 5. Need for good pilot understanding of balloon physics and inertia.	What events or conditions have a significant influence on reducing the risk? 1. Meteorological information readily available through public sources (Internet) 2. All major balloon events provide clear meteorological information for all pilots. 3. Training in interpretation of meteorological information in balloon pilot training and licensing process. 4. Training in balloon physics and inertia in balloon pilot training and licensing process.	
Overall Risk Level (ARMS)			Improve		



Example of Safety Issue ID Balloons – Weather Planning

3. Safety Actions and Impact

Scenario 1 and 2 Blinding of pilot in command during take-off and landing

Actions/Risk controls in place

What is in place to reduce the likelihood or severity of the scenario? Is it effective?

1. Meteorological information readily available through public sources (Internet).
2. All major balloon events provide clear meteorological information for all pilots.
3. Training in interpretation of meteorological information in balloon pilot training and licensing process.
4. Training in balloon physics and inertia in balloon pilot training and licensing process.

New Actions/Risk Control

Action Id & Date	Short description	Action Type	Action Owner	IA Score	New Risks?	Status
BA001 08/04/2015	Develop promotion package to assist balloon pilots in the availability and interpretation of meteorological information as relevant to balloon operations.	Safety Promotion	Safety Promotion Programme Manager	TBD	N	Open
BA002 08/04/2015	Develop promotion package to inform balloon pilots on the dangers of poor planning and good practices in the flight planning and decision making process.	Safety Promotion	Safety Promotion Programme Manager	TBD	N	Open

4. Safety Performance

Date	Safety Performance Measurement (Purpose and Parameters)	Owner	Frequency?
30/09/2019	Scenario 1. - LOC-I for Balloons in Enroute Phase – Weather Relevant = Yes - Event Type Level 3 – Environmental Weather Encounters in Enroute Phase - Event Type Level 3 – Ground Conflict (Collisions or Near-Collisions) in Enroute Phase with associated Events	BADCAG	Annually
	Scenario 2. - ARC and CTOL for Balloons in Approach or Landing Phase – Weather Relevant = Yes - Event Type Level 3 – Environmental Weather Encounters in Approach or Landing Phase - Event Type Level 3 – Ground Conflict (Collisions or Near-Collisions) in Approach or Landing Phase with associated Events - Event Type Level 3 - Balloon Specific Events in Approach or Landing Phase with associated Events	BADCAG	Annually

Thank you

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