



EASA
European Aviation Safety Agency

Identification of Safety Issues: Airworthiness Risk Portfolio Commercial Air Transportation - Fixed Wing

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Aim of this presentation

- To show how Safety Issues are identified using the data provided to EASA and NAAs in the frame of the Occurrence Reporting scheme



Development of an Airworthiness SRP

- **Purpose** of this project is to identify which are the systemic Safety Issues affecting Design, Production and Maintenance of Commercial Air Transportation - Fixed Wing (CAT-FW) products
- The Project is divided into 4 Work Packages
 - **WP1**: Review of occurrences database
 - WP2: EASA experts feedback
 - WP3: Review of Safety Recommendations
 - WP4: Merge of the results obtained through the previous 3 WPs
- Through these slides you'll be given an insight on the activities carried out in the frame of **WP1**



Data used

➤ WP1 Databases used

➤ Internal Occurrence Reporting System

➤ Review of Occurrences concerning:

- CAT-FW events
- Accidents and Serious Incidents
- Events from Jan 2011 to Dec 2015



➤ European Central Repository

➤ Analysis based on the ECCAIRS Taxonomy, events:

- CAT-FW events
- Accidents, Serious Incidents, Incidents
- Events from Jan 2011 to Dec 2015





➤ IORS

- 334 occurrence files reviewed with the aim of identifying the root cause of the event
- The following safety issues have so far been identified as relevant

Design	Maintenance
Inadequate Landing Gear design	Incorrect execution of Maintenance action on Landing Gear or braking system components
Inadequate AFM content & Management	Incorrect execution of Maintenance action on Control Surfaces
Inadequate Maintenance Instructions	Inadequate Closure check of Engine Fan cowls / baggage door
Ageing of electro/avionic components	Incorrect installation or Maintenance action on Air Conditioning and Pressurization system components.
Inadequate annunciation, alarm and indication systems for enhanced crew awareness	Part/component missing upon post maintenance release to service
	Inadequate maintenance on probes, sensors

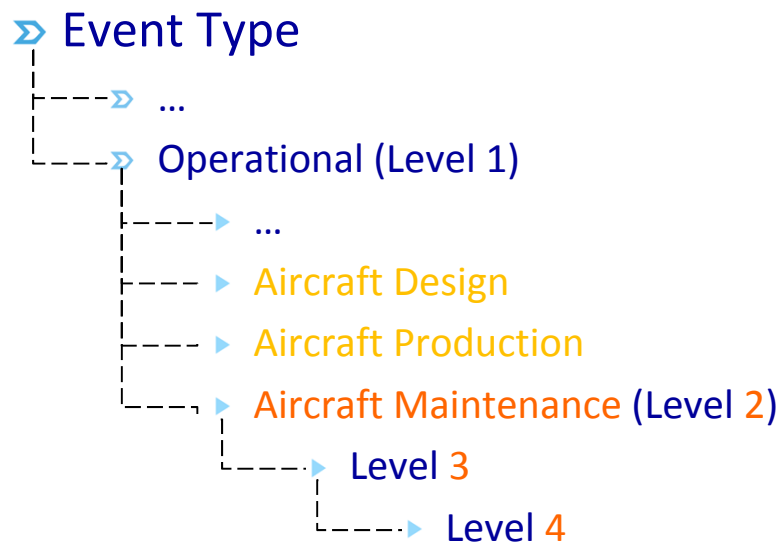
➤ WORK STILL IN PROGRESS



ECR database - Taxonomy



- ECR
- Analysis based on the Event Type attribute coding of the ECCAIRS Taxonomy:
 - Is constituted by several pre-defined attributes, with given values to chose from, to code an event.
 - Attributes are structured in “Levels”





ECR database



- ECR database
 - Filtered for:
 - Event Type (Level 2):
 - ▶ Aircraft Maintenance
 - Event Type (Level 3)
 - ▶ No blanks
 - Displayed (bars):
 - Event Type (Level 3)
- 3325 occurrences



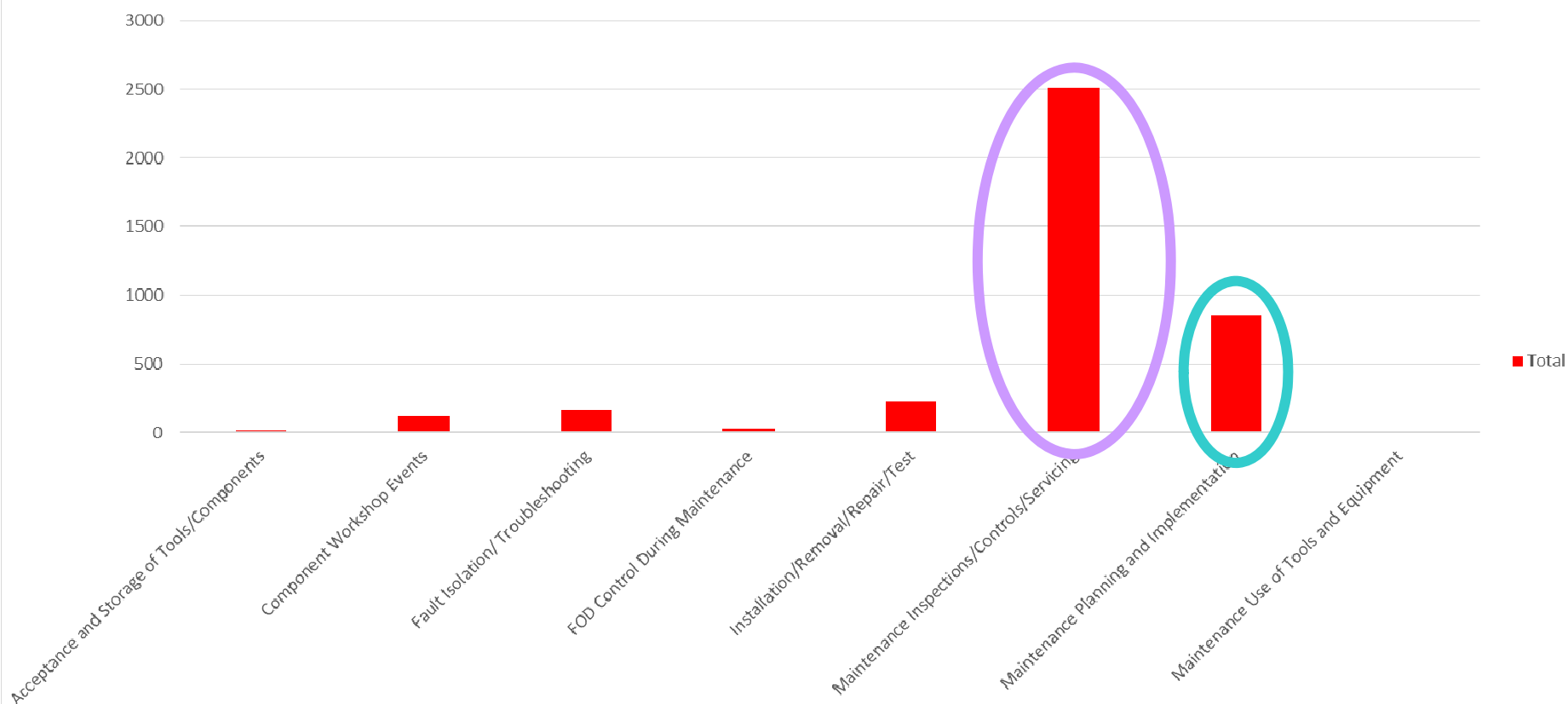
ECR database



Event type {Occurrence/Events} [Level 2, Description] (390)

Count of File number {Occurrence} [Description] (452)

Total



Event type {Occurrence/Events} [Level 3, Description] (390)



- Filtered for:
 - Event Type (Level 2):
 - ▶ Aircraft Maintenance
 - Event Type (Level 3)
 - ▶ Maintenance Inspection/Controls/Servicing
- Displayed (bars):
 - Event Type (Level 4)

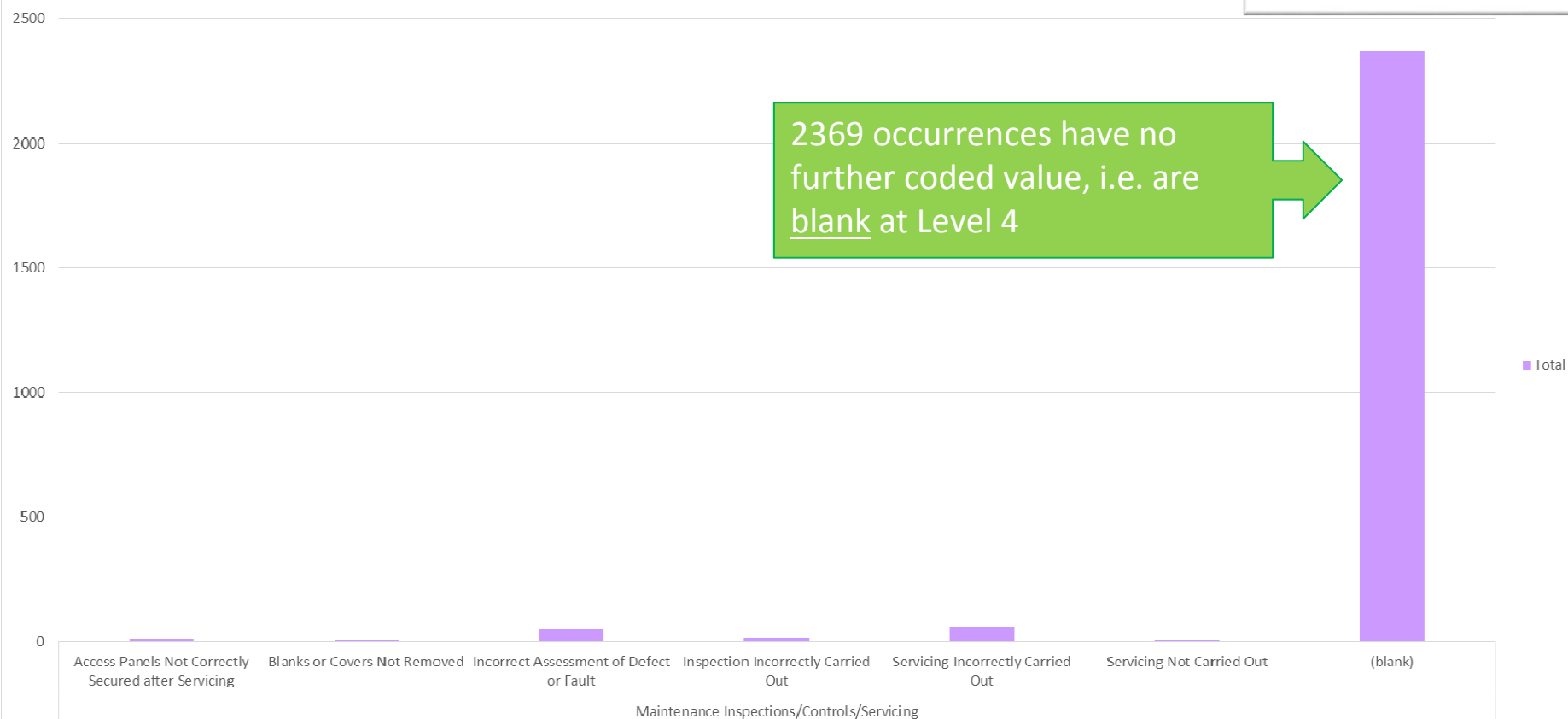


ECR database

Event type {Occurrence/Events} [Level 2, Description] (390)

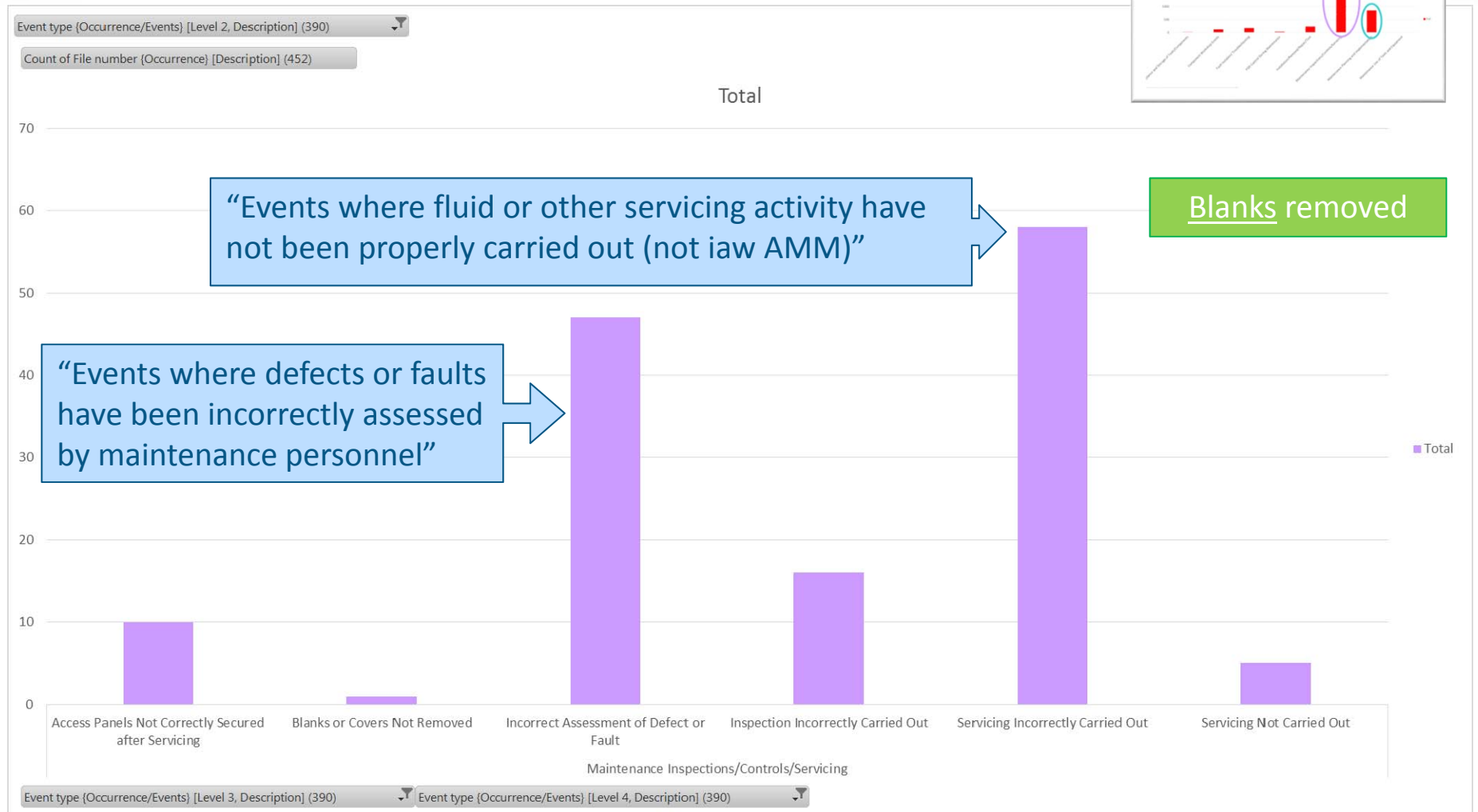
Count of File number {Occurrence} [Description] (452)

Total





ECR database





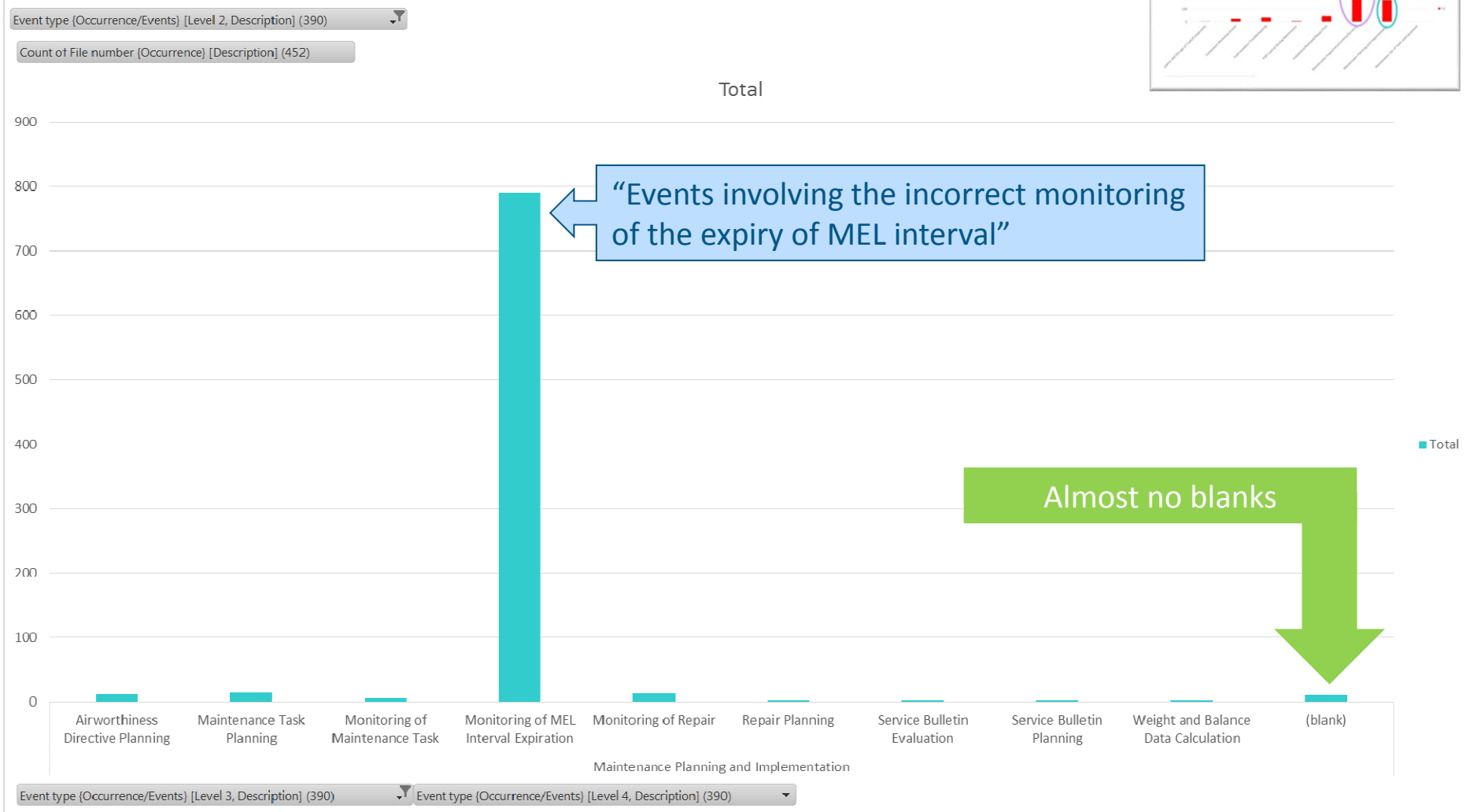
ECR database



- Filtered for:
 - Event Type (Level 2):
 - ▶ Aircraft Maintenance
 - Event Type (Level 3)
 - ▶ Maintenance Planning and Implementation
- Displayed (bars):
 - Event Type (Level 4)



ECR database





Summary – Airworthiness SRP

- The review of the **IORS** database has allowed to identify several Safety Issues

Design	Maintenance
Inadequate Landing Gear design	Incorrect execution of Maintenance action on Landing Gear or braking system components
Inadequate AFM content & Management	Incorrect execution of Maintenance action on Control Surfaces
Inadequate Maintenance Instructions	Inadequate Closure check of Engine Fan cowls / baggage door
Ageing of electro/avionic components	Incorrect installation or Maintenance action on Air Conditioning and Pressurization system components.
Inadequate annunciation, alarm and indication systems for enhanced crew awareness	Part/component missing upon post maintenance release to service
	Inadequate maintenance on probes, sensors

Work still in progress

- The analysis based on the **ECR** database for Maintenance related Event Types allows to highlight the following Safety Issues
 - Monitoring of MEL Interval Expiration (about 800 occurrences)
 - Incorrect Assessment of Defect or Fault
 - Servicing Incorrectly Carried Out



Summary - General

- There is an high number of “blank” values of taxonomy coding at “lower” levels
- This means that for many occurrences we cannot capture which was the detailed Maintenance “Event” key for the development of the occurrence
- **Improved coding quality** will allow a more detailed understanding of the reported occurrences
 - Mandatory fields and “follow ups”, as per R376/2014
 - Ongoing activity to expand the Taxonomy for Design and Production event types



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End

Questions?

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