

EBT workshop session



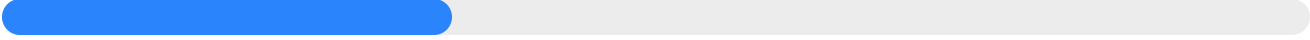
14 - 21 Nov 2023

Poll results

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- 1.1 Integration with safety department & programme's customisation
- 1.2 Evaluation of the pilots and key training data gathering
- 1.3 Instructor Concordance Assurance Programme (ICAP)
- 1.4 Link and communication with the authorities and its role in the EBT

Which should be the priority for the implementation of the proposed solutions?

1. Best-practices to standardise taxonomy between FDM methods and EBT competencies and training topics
 2.09
2. Best-practices for easing integration and governance of safety and training department cooperation
 1.84
3. Best-practices to integrate or fuse inner loop data for customisation and contextualisation of scenarios
 0.97

What elements should be included for easing integration and governance of safety and training department cooperation?

Safety data, events and occurrences to be shared



Governance framework definition



Methodologies for collaboration



Trainings for cross-departmental knowledge



Mechanisms to check the effectiveness of the introduced changes



What elements should be included to standardise taxonomy between FDM methods and EBT competencies and training topics?

Relevant safety events and parameters



Mapping between events and competencies



Thresholds to indicate potential training needs



Training topics selection for addressing risks





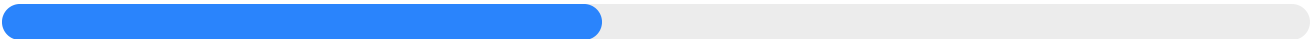
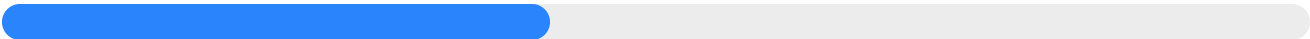
1.1 Integration with safety department & programme's customisation (4/4)

002

Is there any important aspect we are not considering?

- EBT per pilot or per ground of pilots:
we are not allowed to gather data for an individual pilot but only for a group of pilots.
- ...

Which should be the priority for the implementation of the proposed solutions?
(1/2)

1. GM for standard application of grading system and assessment method and techniques
 3.88
2. GM on how to satisfy the established Observable Behaviours
 3.41
3. GM explicitly highlighting the importance of the debriefing
 2.21
4. GM capturing desirable capabilities for EBT software supporting EBT evaluations, and its associated risks
 2.00

1.2 Evaluation of the pilots and key training data gathering (1/6)

0 3 4

Which should be the priority for the implementation of the proposed solutions?
(2/2)

5. Definition and introduction of a metric for programme difficulty



1.2 Evaluation of the pilots and key training data gathering (2/6)

033

What elements should be included to define a standard application of grading system and assessment method?

Assessment methodologies clarification



Prioritisation of instructors tasks



Process and order to be followed to conduct assessments



1.2 Evaluation of the pilots and key training data gathering (3/6)

0 3 3

What elements should be included to highlight the importance of the debriefing?

Definition of a fixed and dedicated slot for debriefing



Recommended debriefing techniques



1.2 Evaluation of the pilots and key training data gathering (4/6)

0 3 4

What elements should be included to define the capabilities for EBT software supporting evaluations and its associated risks?

Current risks regarding excessive automation



Highlight EBT philosophical pillars



Quality of the collected data



Data privacy considerations



What elements should be included to define a metric for programme difficulty?

Criteria for assigning the difficulty level (e.g., included training topics, scenarios or malfunctions)



Scoring method or system



Weighting factors



Potential use of this metric



1.2 Evaluation of the pilots and key training data gathering (6/6)

0 0 1




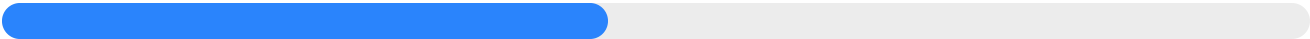
Is there any important aspect we are not considering?

- Data gathering is usually a problem,

1.3 Instructor Concordance Assurance Programme (ICAP) (1/6)

0 2 6

Which should be the priority for the implementation of the proposed solutions?
(1/2)

1. Best-practices for standardised metrics and methods to assess agreement and alignment
 3.81
2. Creation and provision of “Golden Standards” as reference videos to be used by any operator
 3.08
3. Guidance Material for normalisation of instructors’ data
 2.85
4. Implementation of a tool that allows the operators to manage the ICAP related data
 2.23

1.3 Instructor Concordance Assurance Programme (ICAP) (1/6)

0 2 6

Which should be the priority for the implementation of the proposed solutions?
(2/2)

4. Definition of a framework of indicators to assess the appearance of forced concordance



1.3 Instructor Concordance Assurance Programme (ICAP) (2/6)

0 2 6

What elements should be included for the standardised metrics and methods to assess agreement and alignment?

Specific metrics for agreement and alignment



Granularity and level of grading metrics to be used



Methodologies to assess agreement and alignment



Conduction of a webinar focusing on ICAP



1.3 Instructor Concordance Assurance Programme (ICAP) (3/6)

0 2 6

What elements should be included to foster the implementation of a tool that allows the operators to manage the ICAP related data?

(1/2)

Data collection process



Metrics to be collected



Granularity and periodicity



Data validation to ensure data quality and accuracy



Statistical methods and algorithms to be used



1.3 Instructor Concordance Assurance Programme (ICAP) (3/6)

0 2 6

What elements should be included to foster the implementation of a tool that allows the operators to manage the ICAP related data?

(2/2)

Data governance policies

 4 %

Development of a generic tool for analysing the data

 27 %

1.3 Instructor Concordance Assurance Programme (ICAP) (4/6)

0 2 6

What elements should include the Guidance Material for the normalisation of instructors' data?

Granularity and level of grading metrics to be used



Normalisation methods



Outliers detection



Type of tools to be used



What elements should be defined for a framework of indicators to assess the appearance of forced concordance?

Metrics to assess forced concordance



Methodologies to detect and assess forced concordance



Instructors' trainings focusing on forced concordance



Sharing of concordance data with authorities







1.4 Link and communication with the authorities and its role in the EBT (1/5)

0 2 2

Which should be the priority for the implementation of the proposed solutions?

(1/2)

1. Industry best-practices for standardised metrics to monitor the consistency of EBT programmes
 3.41
2. GM defining a recommended framework of KPIs for oversight of EBT programmes
 3.27
3. Best-practices for sharing authority data with operators
 3.05
4. Incentivise the creation of collaborative data-driven mechanisms among Authorities and operators
 2.73

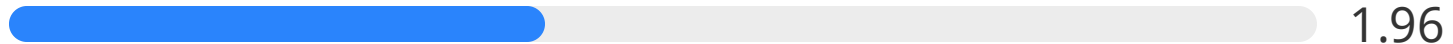
1.4 Link and communication with the authorities and its role in the EBT (1/5)

0 2 2

Which should be the priority for the implementation of the proposed solutions?

(2/2)

- 5. Support the definition of specific trainings for the enhancement of the authorities' IT capabilities



1.4 Link and communication with the authorities and its role in the EBT (2/5)

0 2 2

What elements should be included for sharing authority data with operators?

Data sources to be considered for data sharing



Data sharing methodologies or standards



Frequency for sharing data



1.4 Link and communication with the authorities and its role in the EBT (3/5)

0 2 2

What elements should be defined for a framework of KPIs for oversight of EBT programmes by Authorities?

(1/2)

Definition of the relevant KPIs



Data sources for each KPIs



Thresholds



KPIs reporting frequency



Process to report the KPIs



1.4 Link and communication with the authorities and its role in the EBT (3/5)

0 2 2

What elements should be defined for a framework of KPIs for oversight of EBT programmes by Authorities?
(2/2)

Establishment of review meetings

 5 %

Integration of the framework within the audits

 5 %

1.4 Link and communication with the authorities and its role in the EBT (4/5)

0 2 2

What elements should be defined for standardised metrics to monitor the consistency of EBT programmes?

(1/2)

Relevant metrics to assess monitor the consistency concordance



Type of analysis to be performed



Frequency for data sharing



Data granularity



Roles & responsibilities



1.4 Link and communication with the authorities and its role in the EBT (4/5)

0 2 2

What elements elements should be defined for standardised metrics to monitor the consistency of EBT programmes?

(2/2)

Monitoring over time

0 %

1.4 Link and communication with the authorities and its role in the EBT (5/5)

0 0 1

Is there any important aspect we are not considering?

- All the priorities are important, I fill out in a particular order such priorities but in reality all of them are equally important.

Fuel workshop session




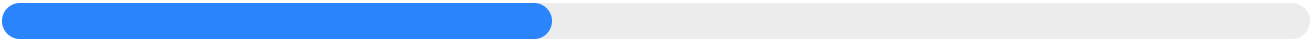
14 - 21 Nov 2023

Poll results

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- FUEL-RELATED DATA COLLECTION & VALIDATION
- FUEL CONSUMPTION MODELS
- FUEL CONSUMPTION MODELS
- COLLECTION & INTEGRATION OF OPERATING CONDITIONS DATA

Which should be the priority for the implementation of the proposed solutions?

1. GM/AMC for minimum requirements and selection criteria of fuel-related data sources
 3.39
2. Best-practices for the definition of a comprehensive fuel data framework
 2.50
3. GM/AMC for the alignment of FDM and fuel schemes regulatory requirements
 2.33
4. GM/AMC for data validation methodologies
 1.61

What elements should be included for the minimum requirements and selection criteria of fuel-related data sources?

Necessary granularity for different types of analyses



Recommend specific sources for different applications



Strategies to mitigate delays in data availability



Mechanisms for seamless collaboration between departments



What elements should be defined for a comprehensive fuel data framework?

Standardised list of fuel-related parameters to be recorded.



Define scheme-specific data requirements.



What elements should be included in the data validation methodologies?

(1/2)

Minimum accuracy requirements



Assessment of reliability of parameters (e.g. identification of outliers, etc.)



Thresholds beyond which data discrepancies should be further investigated



Methodologies to ensure data consistency across different aircraft models and sensors



What elements should be included in the data validation methodologies?

(2/2)

Specific procedures for manual data collection, data entry, and quality control



Incentivise automated fuel-data collection







Is there any important aspect we are not considering?

- I would add the timeliness of the file related data, I.e. collecting and analysing the data in real-time rather than in restrained only.

FUEL CONSUMPTION MODELS (1/5)

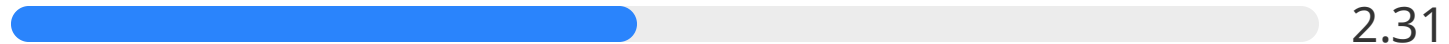
0 1 6

Which should be the priority for the implementation of the proposed solutions?
(1/2)

1. GM/AMC that establish a standardised framework for statistical fuel consumption models
 3.38
2. Best-practices for the validation and deployment of fuel-related models
 3.06
3. GM/AMC specifying what constitutes statistically relevant data
 2.75
4. Best-practices for data sharing and collaboration among operators
 2.50

Which should be the priority for the implementation of the proposed solutions?
(2/2)

5. GM/AMC capturing the need for transparency in algorithm details provided by vendors



What elements do you think that the solution “GM/AMC that establish a standardised framework for statistical fuel consumption models” should include?

Standardised statistical methods that ensure consistency and reliability in fuel modelling



Methodologies for generalising statistical models and guidelines on how to apply them to different aircraft or operational scenarios



Limits of model generalisation for each operational context



What elements do you think that the solution “GM/AMC specifying what constitutes statistically relevant data” should include?

Criteria for assessing the adequacy of data for statistical analysis while considering operational variations



Provide recommendations on effective data sampling techniques



Guidance on how to revalidate datasets over time



What elements do you think that the solution “GM/AMC capturing the need for transparency in algorithm details provided by vendors” should include?

Algorithms documentation



Traceability of the calculated indicators



Support decision-making



FUEL CONSUMPTION MODELS (5/5)

0 0 1



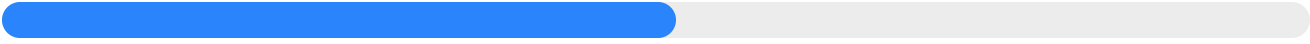
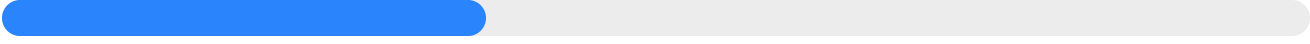
Is there any important aspect we are not considering?

- Variations due to different types of operations: cargo, business jets, helicopters, etc.

FUEL CONSUMPTION MODELS (1/5)

0 1 5

Which should be the priority for the implementation of the proposed solutions?

1. GM/AMC for the definition of standardised SPIs frameworks specific to fuel reductions
 3.13
2. GM/AMC for the continuous monitoring and reporting of fuel-related safety performance
 2.27
3. Collaborative data programmes for the definition and monitoring of safety frameworks
 2.00
4. GM/AMC for the alignment of fuel initiatives with Safety Management System
 1.40

What elements should be included for the definition of standardised SPIs frameworks specific to fuel reductions?

Standardised list of SPIs



Distinction between Metrics vs. Events



Critical safety parameters -



Thresholds and targets



What elements should be included for the continuous monitoring and reporting of fuel-related safety performance?

Precursor events



Safety margins



Monitoring of operating conditions



Annual Safety Reports to identify consequential events



Monitoring frequency & format



What elements should be included for the alignment of fuel initiatives with Safety Management System?

Communication channels and protocols for monitoring SPIs related to fuel initiatives






Seamless data sharing and collaboration between departments



Mechanisms for monitoring and auditing compliance with de-identification guidelines



Which should be the priority for the implementation of the proposed solutions?

1. Best-practices for the use and monitoring of operating conditions data
 2.39
2. GM/AMC for minimum requirements for operating conditions data & its integration
 2.08
3. Development of centralised platforms
 1.00

What elements should be included for the minimum requirements for operating conditions data & its integration?

Quality assessment methods



Reliability, accuracy & completeness



Standardised data formats



What elements should be included for the use and monitoring of operating conditions data?

Automated monitoring tools



Data update in real time



Communication protocols & channels between dispatch and fuel department



Communication protocols & channels between dispatch and flight crew



FDM session

15 - 18 Nov 2023

Poll results




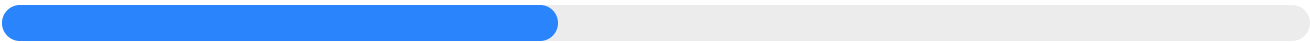
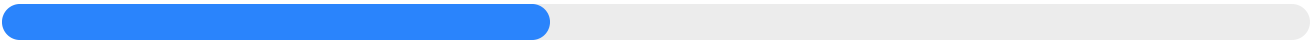
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- Production of the Data Frame Layout decoding file
- 1.2 Standardising FDM programmes
- 1.3 Knowledge management for FDM programmes

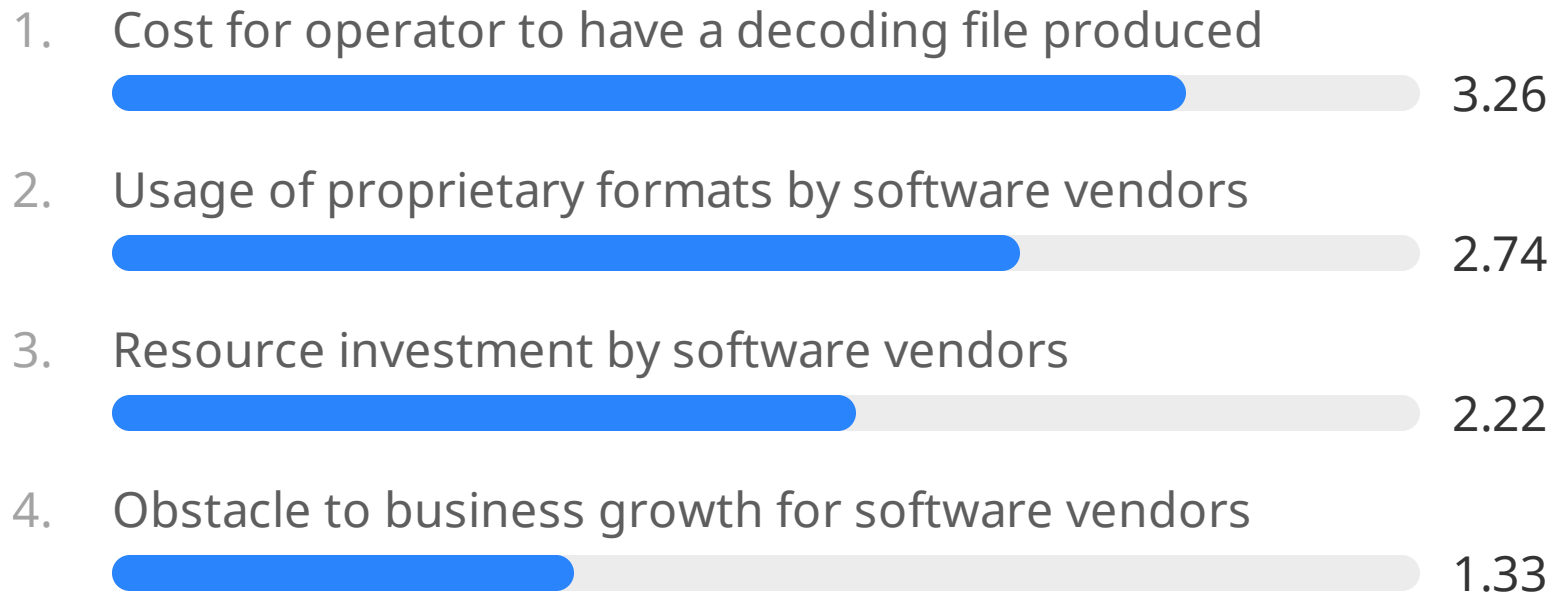
Production of the Data Frame Layout decoding file (1/3)

028

Which factors are most relevant to explain the high cost of producing the decoding file, in your opinion?

1. Diversity in the number of existing Data Frame Layouts
 3.82
2. Data entry process is slow and/or manual
 2.93
3. Validation of decoding files is slow and/or manual
 2.79
4. Growth in size and complexity of Data Frame Layouts
 2.04
5. Manufacturers updating the Data Frame Layout
 2.00

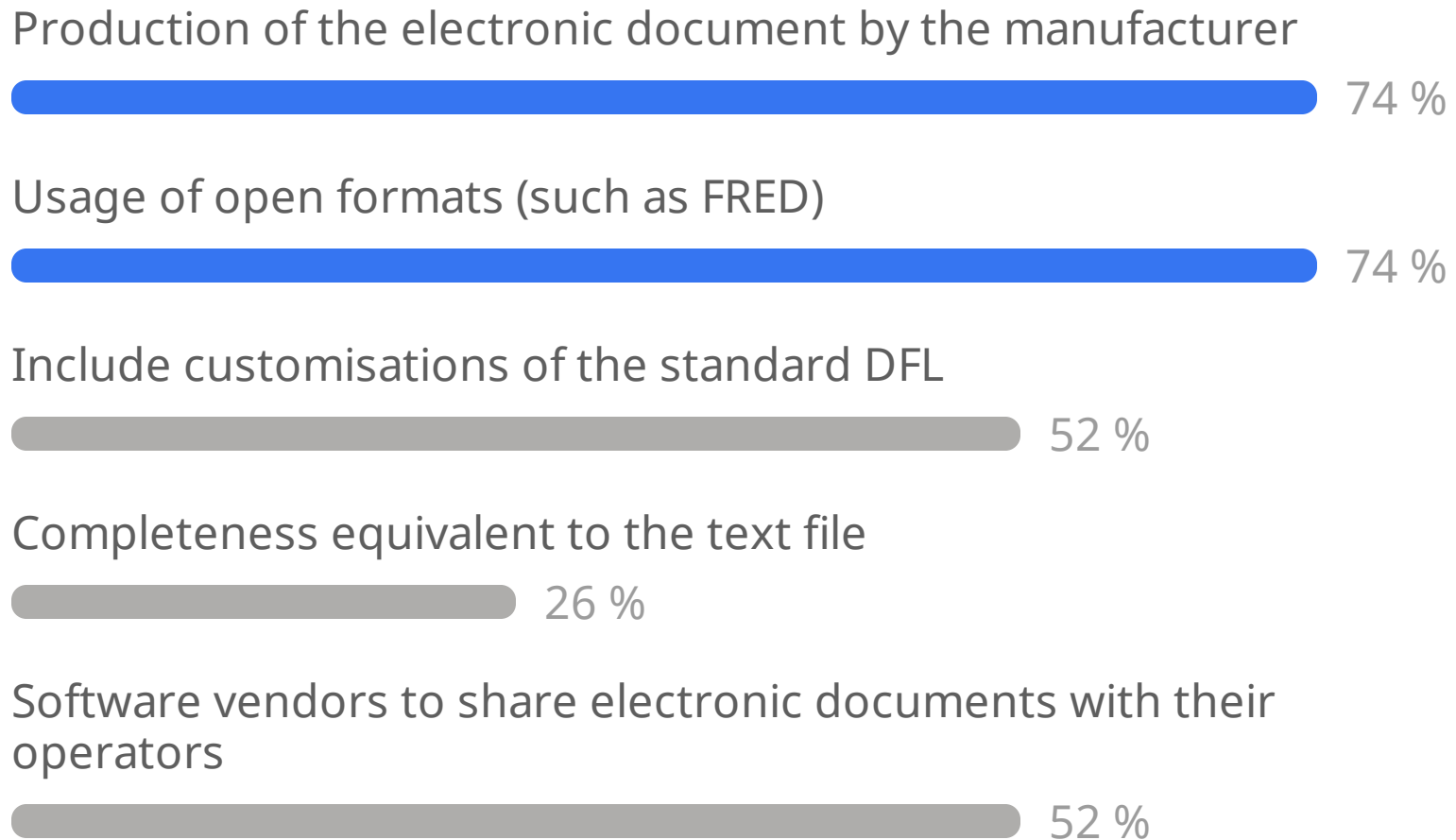
Which impacts of the production costs should be addressed first?



Production of the Data Frame Layout decoding file (3/3)

0 2 7




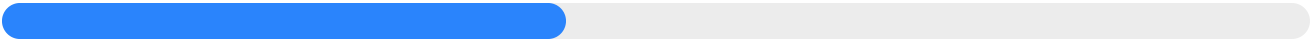
What elements should be included for the generalisation of DFL electronic documentation through regulatory requirement?



1.2 Standardising FDM programmes (1/5)

0 3 1

Which should be the priority for the implementation of the proposed solutions?
(1/2)

1. Development of Flight Parameter Reference document with flight parameters and recommended performance
 3.81
2. Promotion of the “Developing Standardised FDM-based Indicators” document
 3.29
3. Promote manufacturer definition of Data Frame Layouts with extensive selection of flight parameters
 3.19
4. AMC on minimum list of risk areas to be monitored by operators
 2.07

1.2 Standardising FDM programmes (1/5)

0 3 1

Which should be the priority for the implementation of the proposed solutions?
(2/2)

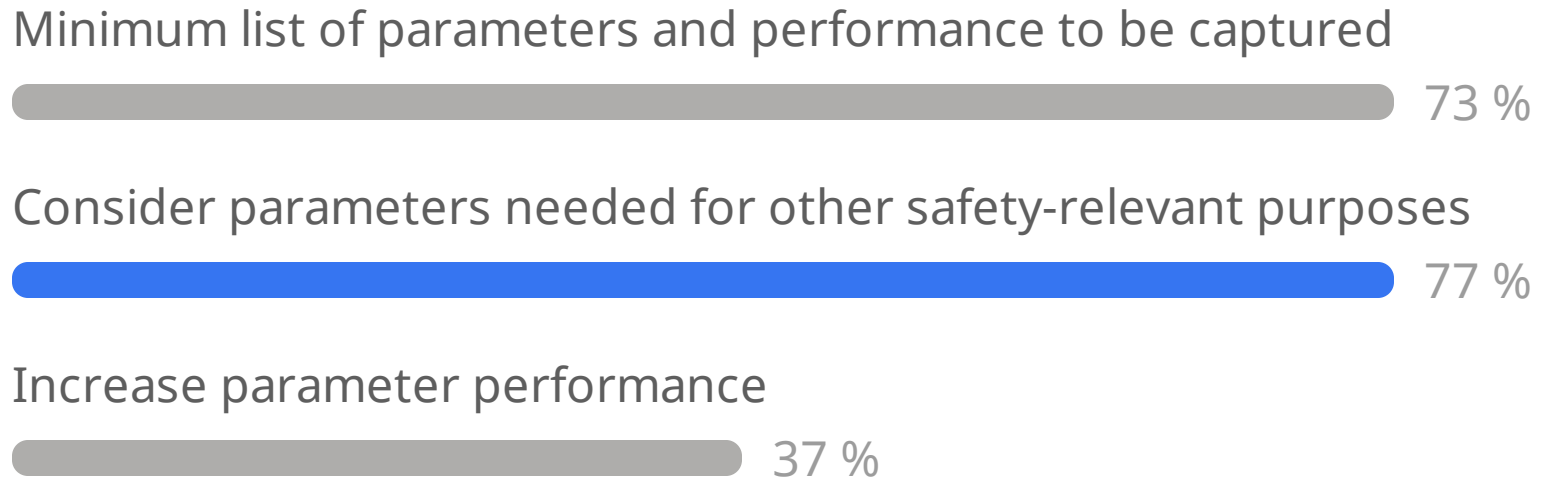
5. Large data exchange programme



1.2 Standardising FDM programmes (2/5)

030

What elements should be included to promote the manufacturer definition of Data Frame Layouts with extensive selection of flight parameters?



1.2 Standardising FDM programmes (3/5)

030

What elements should be included in the development of Flight Parameter Reference document, containing comprehensive list of flight parameters and recommended performance?

(1/2)

List of necessary or recommended parameters for FDM



90 %

Standardised nomenclature



83 %

Minimum and recommended performance



67 %

System sources of each parameter within the aircraft



50 %

1.2 Standardising FDM programmes (3/5)

030

What elements should be included in the development of Flight Parameter Reference document, containing comprehensive list of flight parameters and recommended performance?

(2/2)

Linkage between manufacturer documentation and the Flight Parameter Reference document



1.2 Standardising FDM programmes (4/5)

0 3 1

What elements should be included for sharing algorithms, definitions and logics developed within a large data exchange programme?

(1/2)

Code scripts with the implemented algorithm



Definition of the FDM event and associated algorithm



Other algorithms developed (flight splitting, flight phase identification)



Recommended thresholds



1.2 Standardising FDM programmes (4/5)

0 3 1

What elements should be included for sharing algorithms, definitions and logics developed within a large data exchange programme?

(2/2)

Rationale behind shared algorithm



1.2 Standardising FDM programmes (5/5)

0 2 8

What elements should be included in the AMC on minimum list of risk areas to be monitored by operators through their FDM programmes?

FDM event definitions or algorithms that can be used to monitor the risk area







Optional risk areas to monitor



1.3 Knowledge management for FDM programmes (1/6)

0 2 6

Which should be the priority for the implementation of the proposed solutions?

1. Guidance Material on analysis of causal factors for FDM events and definition of corrective measures within the SRM process
 2.54
2. AMC for minimum set of documentation and information to be maintained by the operator
 2.42
3. Invite and integrate manufacturers and software vendors to the European Operators FDM forum (EOFDM forum)
 2.35
4. Develop a mandatory course for FDM analysts (and associated certification) on the flight data and analysis methodologies
 2.19

1.3 Knowledge management for FDM programmes (2/6)

0 2 6

What elements should be included in the AMC for minimum set of documentation and information to be maintained by the operator?

Flight parameters collected or used in FDM programme



The DFL documentation in text file



The DFL documentation in electronic file



The data quality process of decoded flight data



1.3 Knowledge management for FDM programmes (3/6)

0 2 5

What elements should include the mandatory course for FDM analysts (and associated certification) on the flight data and analysis methodologies?

(1/2)

Basic knowledge on the data collection, decoding and quality assurance processes



Flight data characteristics and limitations



Flight phase, event & measurement definition, implementation, and computation



1.3 Knowledge management for FDM programmes (3/6)

0 2 5

What elements should include the mandatory course for FDM analysts (and associated certification) on the flight data and analysis methodologies?

(2/2)

Analysis of individual events and trends, including identification of causal factors



Definition of corrective and mitigation measures and monitoring of results



1.3 Knowledge management for FDM programmes (4/6)

0 2 6

What elements should include the Guidance Material on the analysis of causal factors for FDM events and definition of corrective measures within the SRM process?

List of potential causal factors



Mapping between FDM events or trends and causal factors



Criteria for causal relationship validation



1.3 Knowledge management for FDM programmes (5/6)

0 2 4

What elements should be considered to Invite and integrate manufacturers and software vendors to the European Operators FDM forum (EOFDM forum)?

Specific manufacturer or software vendor forum



Industry organisational topics of discussion (non-safety related)



Official channels for knowledge transmission



Distribution list of EOFDM outcomes



1.3 Knowledge management for FDM programmes (6/6)

003

Is there any important aspect we are not considering?

(1/2)

- FDM analysts come from various backgrounds (analysts from another topic are to FDM, pilots moving from operational duties, safety professionals moving from other expertise areas etc). The induction programme for each of these groups is very different so no one specific course will work for all of them. The training should always be tailored for the individual background and a mandatory certification would likely limit the potential for operators to attract talent with more unusual but equally useful backgrounds (and we'd end up with ex-pilots only without a lot of formal training in data science and analytics etc.)
- Aeronautical knowledge and understanding flight physics/dynamics is important for

1.3 Knowledge management for FDM programmes (6/6)

003

Is there any important aspect we are not considering?
(2/2)

analysts and is not identified in the list. More than technical info, operators should keep a list of how their FDM programme relates to their risk management. Each event/SPI, should have a reason to exist - even if not related to safety. Non-safety events are very relevant for the cost-effectiveness of an FDM programme (fuel savings, for example)

after landing

- Data delay transmission