

New Data Ingestion and Management System – D3 - Challenges

Rebuild Data Framework – New Data Ingestion and Management System Member States Recommendations and Enhancing for new functionalities

D3 - Challenges

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Abstract

This document identifies and elaborates on the key operational and strategic challenges faced by Member States in relation to EFSA's data ingestion and management processes. These insights, derived from joint workshops, interviews, and surveys, as part of the European Food Safety Authority's (EFSA) Data Collection Framework (DCF) Rebuild initiative, are intended to inform the redesign of the Data Collection Framework by highlighting barriers to efficiency, compliance, and data integrity.

The primary objective of Work Package 2 (WP02) of the Rebuild Data Framework project, titled "*New Data Ingestion and Management System.*", is to ensure that the redesign of EFSA's data systems is closely aligned with the operational realities, expectations, and improvement priorities expressed by Member States. To this end, MS have been actively engaged in the identification of new functionalities, capabilities, and processes that can enhance the effectiveness, usability, and sustainability of the future DCF.

The process emphasizes two key goals: (1) aligning system development with Member States' practical needs by involving them directly in the formulation of business recommendations, and (2) maximizing adoption and usability of the new solution through early and inclusive collaboration.

Revision History

Version	Date issued	Author(s)	Description
1.0	2025-07-14	EFSA Project PM	Initial Consolidation
1.1	2025-07-26	EFSA Project PM	MS Feedback

1 Key Assumptions

- Current systems present diverse capabilities and constraints across MS.
- Manual processes persist despite opportunities for automation.
- Regulatory complexity is an ongoing burden for MS.

2 Key Challenges

2.1 High level challenges

This section outlines the core barriers impeding efficient data submission and management from the Member States' perspective.

2.2 List of challenges

The matrix in Table 4 consolidates all challenges related to the recommendations reported by the Member States in D2 and discussed during the workshops organized by Grant's participants.

It includes the ID of each challenge, the ID of the referred recommendation and challenge description. Cluster indicates the typology of the challenge: Usability; User Experience; Functionality; Performance; Integration/Compatibility; Security; Others. Whenever a challenge has been approved by the participants, it can be considered as approved, otherwise it remains in the proposed state. Finally, the last column reports an example that allows the reader to better understand the suggested challenge and the mitigation action to be implemented.

It includes the following information:

- ID of each challenge
- Challenge Cluster → indicates the typology of the challenge, e.g: Trainings; Communication; Others
- Challenge Description
- Challenge Example → an example that allows the reader to better understand the suggested challenge
- Challenge Solution → to be filled with the mitigation action related challenge
- Status → to be considered "Approved" whenever a challenge has been approved by the participants, otherwise it remains in the "Proposed" state
- Reported priority → to be set with values high-medium-low
- Area → to be filled with the reference to the chapter in D2 to which the challenge is related
- ID Recommendations impacted/related → to be filled with the list of recommendation IDs defined in D2 to which the challenge is related

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Table 3: Challenges Matrix on Key Challenges

ID Challenge	Challenge Cluster	Challenge Description	Challenge Example	Challenge Solution (mitigation action)	Status	Priority	Area	ID Recommendations impacted/related
C.1	Integration/ Compatibility	Technical differences hinder data harmonization among MS and EFSA systems	Systems use different file formats or standards	Standardize API and formats, enable flexible tool integration	Approved	High	2.2.1, 2.2.2, 3.2.1, 3.2.2	R.1, R.2, R.5, R.6
C.2	Compliance	Frequent regulatory changes cause delays and rework	Catalogue rules updated after data collection	Publish changes early, with clear changelogs	Approved	Medium	2.2.1	R.1
C.3	Usability	Manual processing burden	Copy-pasting values from spreadsheets	Automate data ingestion and mapping tasks	Approved	High	2.2.2, 3.2.1, 3.2.2	R.2, R.5, R.6
C.4	Communication	Coordination among stakeholders	Unclear roles in data approval chain	Define roles and enable shared validation platform	Approved	Medium	2.2.3, 2.2.4	R3, R.4
C.5	Data Quality	Data completeness and accuracy	Delayed submissions with incomplete sets	Real-time validation and dashboards	Approved	High	2.2.2, 3.2.2, 3.2.3	R.2, R.6, R.7

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2.2.1 Interoperability Among MS and EFSA Systems

Many MS use different national platforms, formats (e.g., XML, XLSX, CSV), and internal validation mechanisms, which are often not compatible with EFSA's systems. This lack of standardization makes integration complex, introduces data translation issues, and results in inconsistent submissions.

Proposed solutions:

- Define and enforce common data standards and schemas with clear documentation.
- Expand API endpoints with backwards compatibility and support for different formats.
- Provide a data mapping tool to help MS to convert national data sets to EFSA SSD2 standard.
- Provide standardized toolkits or conversion scripts to MS for harmonizing input/output data.

2.2.2 Frequent Regulatory Changes

Business rules, catalogues, and regulatory criteria often evolve close to or during the data collection period. These late changes disrupt data workflows, require rework, and may lead to non-compliance due to insufficient lead time.

Proposed solutions:

- Commit to a predictable update schedule (e.g., publishing all changes by October for the following year).
- Introduce a "change log" view with side-by-side rule comparisons.
- Use a version-controlled repository (e.g., GitHub or EFSA portal) for catalogues and rules.

2.2.3 Manual Processing Burden

Several MS still rely heavily on spreadsheets and manual input for data mapping, validation, and formatting. This not only introduces human error but also limits scalability and places a strain on already limited human resources.

Proposed solutions:

- Provide automated mapping tools and pre-validation engines that run locally.
- Enable auto-fill and auto-correction functions for repetitive entries.
- Promote machine-readable catalogue formats (e.g., JSON/XML) to enable script-based processing.

2.2.4 Coordination Among Stakeholders

In some countries, multiple agencies are involved in data collection, validation, and submission. Poorly defined roles, inconsistent communication, and lack of shared tools contribute to inefficiencies and missed deadlines.

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Proposed solutions:

- Create clear process maps for stakeholder roles and responsibilities within each MS.
- Provide a shared validation workspace or portal, where multiple actors can collaboratively review and refine data.
- Encourage use of a “submission checklist” and confirmation workflows with audit trails.
- Encourage exchange between stakeholders/data providers on the practical side to find already available solutions to ongoing problems other users have already overtaken in the past.

2.2.5 Data Completeness and Accuracy

Several MS experience challenges with missing or incomplete data, often due to late inputs, complex reporting chains, or lack of automated checks. The absence of early feedback mechanisms exacerbates the issue.

Proposed solutions:

- Introduce real-time validation dashboards with error summaries, criticality flags, and repair suggestions.
- Offer sandbox environments where MS can test data before official submission.
- Promote incremental data upload features with partial validation to reduce pressure at final submission

References

Table 4: References

Reference ID	Title	URL
	EFSA Survey Open Ended Q 2023	
	MS Workshop Summary, April 2025	
	EFSA RebuildDF Survey 2025	

Glossary

Table 5: Glossary

Terms	Definition
Data Harmonisation	The process of aligning data formats and definitions across systems

Abbreviations

Table 6: Abbreviations

Abbreviation	Meaning
MS	Member States
EFSA	Europeans Food Safety Authority