European Review of Digital Administration & Law - Erdal
2026, Volume 7, Issue 1, pp. 163-181
ISSN 2724-5969 – ISBN 979-12-218-2846-7 – DOI 10.53136/9791221828467 16

*Legal and Governance Issues in the Implementation of the High-Value Data Regulation (EU) 2023/138: An Analysis of the Spanish Model**

Jaime Olmedo Palomares
(Predoctoral Researcher, HELEADE Project, University of Alicante)

ABSTRACT Commission Implementing Regulation (EU) 2023/138, which implements Directive (EU) 2019/1024 on open data, marks a regulatory turning point for European public administrations. The Regulation not only requires the publication of certain categories of information but also imposes technical modalities (primarily access via Application Programming Interfaces (APIs)) that compel a conceptual shift: from a passive role as information publishers to an active role as providers of dynamic data services. Accordingly, the Regulation establishes a framework for publishing high-value datasets (HVDs) in order to maximise reuse and generate socioeconomic value. However, its implementation within decentralised administrative structures such as Spain's reveals significant legal and governance frictions. This article analyses the problems arising from the clash between Spain's traditional hierarchical model of public data management, derived from the INSPIRE Directive 2007/2/EC and transposed through Law 14/2010 of 5 July on spatial data infrastructures and services in Spain (LISIGE), and the new European Regulation's requirements for decentralised, immediate, API-based access. Taking Spain as a case study, this article examines (i) the uncertainty as to which body is legally required to expose and maintain the mandatory APIs, (ii) the interoperability and standardisation gaps between administrative levels, (iii) the capacity asymmetries that may undermine uniform compliance, and (iv) the interaction between open licences and the State's non-contractual liability for defective or outdated data. Drawing on doctrinal analysis and comparative lessons from other Member States, the article argues that effective compliance requires a federated governance architecture, a clearer allocation of responsibilities, enforceable coordination mechanisms and specific support for under-resourced entities.

KEYWORDS: High-value datasets - Open data - API - Federated governance - Interoperability - Liability - Subsidiarity - Spain

TABLE OF CONTENTS: 1. Introduction. – 1.1. Context and Purpose. – 1.2. Methodology and Scope. – 2. European Regulatory Framework for High-Value Data. – 2.1. From Open Data to High-Value Datasets. – 2.2. Links with the Data Governance Act and the Data Act. – 3. The Tiered Data Architecture in Spain. – 3.1. Domestic Legal Foundations. – 3.2. Operational Limitations of the Aggregation Chain. – 3.3. Doctrinal Framework: Inter-Administrative Cooperation and Digital Infrastructures. – 3.3.1. Subsidiarity as an Operational Allocation Criterion. – 4. Emerging Legal Issues in the Implementation of HVDs. – 4.1. Uncertainty as to Which Body Is Obliged to Publish the API. – 4.2. Fragmentation of Standards and Weak Interoperability. – 4.3. Capacity Gap and the Risk of a 'Two-Speed Europe'. – 4.4. State Liability and Open Licences. – 4.5. Lack of a Sanctioning Regime and New Cybersecurity Risks. – 4.6. The Clash of Models: Tiered vs. Federated (Comparative Experiences). – 4.7. Proposed Table of Roles and Responsibilities in a Federated Governance Model. – 5. Proposed Normative and Governance Improvements. – 5.1. Normative Reforms. – 5.1.1. Explicit Designation of the Competent Authority by HVD Category. – 5.1.2. Sanctioning Regime and Effective Compliance Mechanisms. – 5.2. Implementation Toolkit. – 5.2.1. Federated, 'Publish-at-Source' Model with Synchronised Catalogues. – 5.2.2. Funding Programmes and Technical Support for Local Entities. – 5.2.3. Security-by-Design Clauses and Periodic API Audits. – 5.2.4. Multilevel Coordination and Training of the Actors Involved. – 5.2.5. Unified Inventory and Improved Metadata Management. – 5.2.6. Planned Transition for Datasets Currently Subject to Fees or Restrictions. – 5.2.7. Assisted Implementation of APIs and Bulk Downloads. – 6. Conclusions.

1. *Introduction*

1.1. *Context and Purpose*

The European Data Strategy[1] seeks to create a single market for information and knowledge that drives innovation and competitiveness. In this context, Commission Implementing Regulation (EU) 2023/138 (implementing the Open Data Directive (EU) 2019/1024) is a cornerstone instrument, as it identifies a list of specific high-value datasets (HVDs) that must be made available free of charge (subject to certain exceptions),[2] in

*Article submitted to double-blind peer review.

[1] Adopted by the European Commission (2020). Document COM (2020) 66 final.

[2] Recital 6 of Regulation No. 138/2023 states: 'In accordance with Directive (EU) 2019/1024, the requirement to make high-value datasets available free of charge shall not apply to libraries, including university libraries, museums and archives. Member States may, at their request and in accordance with the criteria laid down in the Directive, exempt certain public sector bodies from the obligation to make high-value datasets available free of charge for a period not

machine-readable formats, via bulk download and, crucially, through Application Programming Interfaces (APIs).

In contrast to this logic of direct and decentralised access, the Spanish model relies on a tiered architecture (municipality → autonomous community → State → EU) shaped by Spain's territorial organisation and by the specific infrastructure created to comply with the INSPIRE Directive (2007/2/EC), through Law 14/2010 (LISIGE) and the provisions of the National Interoperability Scheme (Royal Decree 4/2010). This regulatory and organisational tension is the driving force behind the present study.

The main objective is to identify the legal issues arising from the transition to the new HVD regime, assessing its alignment with the principle of subsidiarity (Article 5(3) TEU and Protocol No 2) and with complementary EU frameworks, such as Regulation (EU) 2022/868 (Data Governance Act, DGA) and Regulation (EU) 2023/2854 (Data Act).

Against this background, the article addresses the following central research question: How can the Spanish data governance model transition from a hierarchical aggregation structure to a federated ecosystem that guarantees the immediate API access required by Regulation (EU) 2023/138?

Working Hypotheses: Two working propositions guide the analysis. First, in decentralised Member States, the HVD 'publish-at-source' logic is most compatible with subsidiarity when legal and operational responsibility for API exposure remains with the data-producing tier, while higher layers concentrate on interoperability governance (standards, catalogues and shared services). Second, where the implementing framework does not clearly designate the responsible API publisher and does not provide enforceable coordination instruments, implementation tends to drift either towards technical fragmentation (multiple incompatible APIs) or de facto recentralisation through aggregation chains. In any case, both outcomes undermining the Regulation's objective of seamless cross-border reuse.

exceeding two years from the date of entry into force of this Implementing Regulation'.

1.2. *Methodology and Scope*

Methodologically, the article uses a doctrinal and comparative analysis, supported by legal sources, academic literature, data governance studies and technical documents from the European Commission. In particular, Spain's situation is contrasted with best practices identified in other Member States (Finland, Estonia, Denmark, the Czech Republic, among others), with a view to proposing improvement recommendations grounded in real implementation experiences.

Comparative references to other Member States are used as 'information-rich' cases to identify institutional design options that facilitate compliance (centralised vs. federated publication, portal governance, standard-setting and support/monitoring tools). The comparison is deliberately limited to the institutional dimension (who is legally and operationally responsible for each function in the publication chain), setting aside sector-policy outcomes, so that the lessons drawn are transferable to the Spanish context regardless of differences in budgetary or administrative context between countries.

2. *European Regulatory Framework for High-Value Data*

2.1. *From Open Data to High-Value Datasets*

Directive (EU) 2019/1024 (which replaced Directive 2003/98/EC) introduced, for the first time, the concept of high-value datasets. In Annex I (in connection with Article 13(1) of that Directive), it established six thematic categories (geospatial, Earth observation and environment, meteorology, statistics, companies and company ownership, mobility) considered to be of particular socio-economic importance.

Although the Directive required that HVDs be available free of charge, in a machine-readable format, via APIs and, where relevant, through bulk download (Article 14(1)), it tasked the Commission, under Article 14, with adopting implementing acts to list the specific datasets and to lay down the specific conditions for their publication and reuse.

That mandate materialised in Commission Implementing Regulation (EU) 2023/138 of 21 December 2022, establishing a list of specific high-value datasets and their arrangements for publication and reuse, thereby completing the legal framework foreshadowed by the Directive.

The Regulation provides that, by 9 June 2024, all Member States must make the identified HVDs available free of charge, in machine-readable formats, with bulk download and API access. It also envisages the use of standard open licences (such as Creative Commons BY 4.0) and the designation of contact points by the public-sector bodies holding those data (Article 3(4) of Regulation 2023/138).

2.2. *Links with the Data Governance Act and the Data Act*

Regulation 2023/138 does not operate in a vacuum, it forms part of a broader European data regulatory ecosystem. Regulation (EU) 2022/868 (the Data Governance Act, DGA) introduces the concepts of data holders and data intermediaries, promoting a trust-based sharing environment and establishing accountability principles in data governance.

In this regard, as Dopazo Fraguío[3] notes, the adoption of the Data Governance Act is due, on the one hand, to recognition of the potential value of data as an economic asset and a new source of resources, encouraging circulation and reuse to create a genuine 'European data market', and, on the other hand, to the current context of rapid technological development, which makes it necessary to advance public-sector digital transformation processes and to have appropriate common legislation.

Accordingly, the new HVD framework should align with the DGA's logic of clear roles and traceability. However (as will be detailed later), Regulation 2023/138 does not precisely identify the entity obliged to expose the API when multiple administrative levels are involved (Article 3(1) merely refers to 'public sector bodies holding the datasets'), which complicates the allocation of responsibilities and could hinder compliance with the DGA's provisions.

Moreover, the adoption of Regulation 2023/2854 (the Data Act) strengthens 'security by design and by default' practices and introduces obligations for fair access to privately held data, aspects that complement the public-data openness paradigm.

Spain's implementation of HVDs will need to take these developments into account to ensure regulatory coherence and leverage synergies (e.g., in cybersecurity, where EU security rules, such as the new NIS2 Directive and the Data Act, among others, and national rules such as the National Security Scheme provide guidance to protect open APIs).

3. *The Tiered Data Architecture in Spain*

3.1. *Domestic Legal Foundations*

Spain's public-data framework has traditionally been structured around a tiered architecture, grounded in Law 14/2010 (LISIGE), which transposes the INSPIRE Directive, and in Royal Decree 4/2010, which regulates the National Interoperability Scheme (ENI). This model operates hierarchically as follows:

Municipal level: generation and collection of primary data (e.g., data from a local air-quality monitoring station).

Autonomous community level: harvesting, validation, and aggregation of municipal data into regional repositories or networks.

State level: consolidation of regional data and reporting to the European Union.

European level: receipt and publication via pan-European portals (e.g., EIONET Air Quality for air quality, the INSPIRE Geoportal, etc.).

This tiered system, originally designed to meet periodic reporting obligations (e.g., in environmental matters), has been legally valid and functional for years. LISIGE (Article 18(1)) legitimises the production of cartography by any public administration (within its competences) integrated into the National Cartographic System, while the ENI establishes, in Article 6, the multidimensional character of interoperability (organisational, semantic and technical) and provides, in Article 8, for interoperability nodes and inter-administrative agreements enabling vertical data flows between administrative levels. Article 9, for its part, requires each Administration to maintain an updated inventory of administrative procedures and services, with univocal coding of organs and offices, interlinked with the General State Administration's centralised inventory (a baseline organisational condition for data publication chains).[4]

[3] M.P. Dopazo Fraguío, *The new European Regulation for data governance: Safe liberalization of information and neutrality of its processing?* in *Revista Española de Derecho Europeo*, vol. 82, 2022, 115–166.

[4] The legal framework described is currently undergoing simplification. Proposal for a Directive COM(2025) 985 final, of 10 December 2025 (INSPIRE simplification),

3.2. *Operational Limitations of the Aggregation Chain*

Although this system is legally valid and functional for traditional reporting flows, it is inefficient and outdated for the objectives of the HVD Regulation. Its main drawbacks are publication latency, duplication of efforts and operational costs, and weak traceability for identifying errors.

The issue of losing territorial granularity deserves special mention. While Annexes to Regulation (EU) 2023/138 lay down specific granularity obligations for certain data categories (such as geospatial information or meteorology), the problem persists in the very nature of the tiered model. The aggregation process across successive levels tends to standardise and simplify information, causing the loss of local metadata and valuable details. As a result, even if the final dataset reported to Europe meets the minimum required granularity, it is possible that richness and original detail, crucial for territorial innovation and for reuse by citizens, academia, or the private sector, has been lost along the way.

This rigid model is therefore inadequate for new European data spaces and initiatives such as HELEADE,[5] which require immediate and direct access to local data, fully applying the FAIR[6] principles. The hierarchical logic of 'uploading data to Madrid' loses its meaning in the face of the distributed and federated access that the new Regulation promotes.

3.3. *Doctrinal Framework: Inter-Administrative Cooperation and Digital Infrastructures*

From the perspective of Spanish administrative law, the implementation of the HVD regime must be read through the classical framework of inter-administrative relations in a decentralised State. As Almeida Cerreda[7] notes, inter-administrative relations are those 'legal relations established between two or more territorial or general public administrations [...] in the exercise of the powers that, in accordance with the legal system, belong to each of them, in order to guarantee the effective and correct exercise of those powers.' Beyond the formal allocation of powers, what matters is how the modalities of collaboration, cooperation and coordination are legally structured, along with their techniques and instruments (e.g., conventions, plans, joint bodies) and, above all, the boundary between coordination and substitution.

As systematised by García de Enterría (a construction developed by Muñoz Machado[8] and Ruíz López[9] in the context of the contemporary autonomous State), the organisational plurality of the State does not undermine its overall unity, which is preserved through the coordination principle of Article 103(1) of the Constitution and Articles 140 et seq. of Law 40/2015. That principle coexists, without being conflated, with those of inter-administrative collaboration and cooperation.[10]

Spanish doctrine has specifically addressed

proposes to repeal Regulations (EC) 976/2009 and (EU) 1089/2010 with an application date of 1 March 2027 (Article 3(2) of the proposal). This reform reinforces the urgency of the measures proposed in section 5: if the technical architecture inherited from INSPIRE is dismantled before a federated publish-at-source model is operational, the result could be an operational gap in the effective availability of high-value geospatial data.

[5] HELEADE (Humedales como generadores de valor medioambiental y económico mediante un espacio de datos territorializado) is an applied research project funded under the Recovery, Transformation and Resilience Plan (NextGenerationEU), developed by the University Institute for Research in Computer Science at the University of Alicante. Its aim is to implement a socio-environmental data space for the Natural Parks of Southern Alicante, in which public institutions, businesses and the scientific community can share and exchange data efficiently in accordance with the FAIR principles and the standards of the European Data Strategy. Specifically, the project involves designing a governance model for the data space at the legal, organisational, semantic and technical levels, as well as integration with European initiatives such as the Green Deal Data Space. See https://heleade.iuii.ua.es.

[6] datos.gob.es, *'FAIR Principles: Good practices for the management and administration of scientific data'*, News, 5 June 2019.

[7] M. Almeida Cerreda, *Las relaciones entre Administraciones públicas*, in F. Velasco Caballero and M. Darnaculleta Gardella (dirs.), *Manual de Derecho administrativo*, 3rd ed., Madrid, Marcial Pons, 2025, 337.

[8] S. Muñoz Machado, *Tratado de Derecho Administrativo y Derecho Público General*, vol. X (*La Administración del Estado*), Agencia Estatal Boletín Oficial del Estado, Madrid, 2017, 32.

[9] M.A. Ruiz López, *Transformaciones actuales del Derecho Administrativo*, Madrid, Colex, 2022, 33.

[10] M. Sánchez Morón, *La coordinación administrativa como concepto jurídico*, in *Documentación Administrativa*, nos. 230-231, 1992, 25–29; L. Morell Ocaña, *Una teoría de la cooperación*, in *Documentación Administrativa*, no. 240, 1994, 58–60; Á. Menéndez Rexach, *La cooperación, un concepto jurídico*, in *Documentación Administrativa*, no. 240, 1994, 17.

cooperation in the field of e-Government as a legal instrument capable of articulating the joint action of entities at different competence levels without implying the absorption of others' powers. Authors such as Cerrillo i Martínez[11] have analysed how collaboration agreements, consortia and joint bodies allow specification of which administrative level assumes responsibility for providing and maintaining common digital services, a construction fully transferable to the HVD regime.

Other authors, notably Gamero Casado,[12] have emphasised that interoperability cannot be viewed merely as a technical objective, but rather constitutes a legal requirement for administrative efficiency, the failure to meet which leads to constitutional malfunctions, distinguishing between the organisational, semantic and technical aspects of interoperability, a distinction that is particularly useful for identifying where the breakdown occurs in the chain of publication of high-value data.

This recognition finds support in constitutional case-law, which has defined the limits of hetero-coordination mechanisms. Their design must respect the principle of proportionality (SSTC 154/2015, 111/2016 and 82/2020), being as little restrictive as possible of the autonomy of the coordinated entities and not placing them in a position of hierarchical or quasi-hierarchical dependence (STC 27/1987).[13]

This doctrinal framework has specific implications for public data infrastructures. If interoperability, as Gamero Casado points out, is not merely a technical objective but a legal requirement for administrative efficiency, its failure within the chain of publication of high-value data is not just an organisational problem but a breach of the constitutional mandate set out in Article 103 of the Spanish Constitution. The consequence is that the mechanisms for inter-administrative cooperation provided for in Articles 140 et seq. of Law 40/2015 (agreements, sectoral conferences, consortia) are not merely optional instruments of voluntary coordination, but legally binding channels when the effectiveness of public action depends on the joint action of several administrations. Applied to the HVD regime, this means that the structuring of the API-based publication architecture cannot be left to the discretion of each administrative level: its design must be the subject of legally traceable decisions, adopted through the cooperation instruments provided for by law, with an express allocation of responsibilities and the possibility of oversight and correction. The proposed federated model set out in section 5 is based precisely on this premise.

3.3.1. *Subsidiarity as an Operational Allocation Criterion*

The principle of subsidiarity, formulated in European Union law (Art. 5(3) TEU) and developed by Protocol No 2 on subsidiarity and proportionality, provides a normative criterion for deciding at which level it is most effective to intervene when shared powers exist: action at the higher level is justified only 'in so far as' the objectives cannot be sufficiently achieved at lower levels and can be better achieved by reason of the scale or effects of the action, also taking into account the regional and local dimension.[14]

In the Spanish legal order, rather than affirming that subsidiarity is 'incorporated' as an autonomous constitutional principle, it is more accurate to connect it, on the one hand, with the recognition of territorial autonomy (Art. 137 CE) and, on the other hand, with the domestic reception of the proximity rule enshrined in Art. 4(3) of the European Charter of Local Self-Government. This criterion finds a parallel reflection in Article 2 of Law 7/1985, which establishes that the attribution of powers to municipalities is governed by the principles of decentralisation, proximity, efficiency and citizen participation. This provision formulates a criterion very close to

[11] A. Cerrillo i Martínez, *Cooperación entre Administraciones Públicas para el impulso de la Administración Electrónica*, in E. Gamero Casado and J. Valero Torrijos (coords.), *La Ley de Administración Electrónica*, 3rd ed., Cizur Menor, Thomson Reuters-Aranzadi, 2010, 762 ff.

[12] E. Gamero Casado, *Interoperabilidad y Administración electrónica: conéctense, por favor*, in *Revista de Administración Pública*, no. 179, 2009, 295 ff.

[13] M. Almeida Cerreda, *Las relaciones entre Administraciones públicas*, in F. Velasco Caballero and M. Darnaculleta Gardella (dirs.), *Manual de Derecho administrativo*, 3rd ed., Marcial Pons, Madrid, 2025, 337.

[14] European Union, *Consolidated version of the Treaty on European Union*, in *Official Journal of the European Union*, C 326, 26 October 2012, 13 (Art. 5.3); and *Protocol (No 2) on the application of the principles of subsidiarity and proportionality*, in *Official Journal of the European Union*, C 326, 26 October 2012, 206.

the subsidiarity logic: public responsibilities should preferably be exercised by the authorities closest to the citizen.

Administrative law scholars have emphasised,[15][16] precisely, that this canon of 'modulated preference' operates as a standard for ordering relations between territorial levels without emptying local autonomy, imposing motivation requirements and limits against discretionary displacement of functions.

Applied to HVDs, subsidiarity produces a presumption of retention at source, that is, operational responsibility (data production, updating, API exposure and primary quality control) must remain at the level closest to data generation, unless there is a justified reason for 'escalation': (a) demonstrable technical insufficiency of the lower level, (b) interoperability externalities requiring higher coordination (such as cross-border reuse or pan-European standards), or (c) economies of scale advising shared services. When one of those causes arises, the intervention of the higher level must be strictly limited to the function that cannot be exercised locally, without absorbing operational control of the data at source.

This distinction (technical interoperability coordination at the State level and operational responsibility for the data at the producing level) is consistent with Spanish doctrine on the limits of State coordination powers and with literature on federated data governance, which understands data governance as a set of decision rights and accountability mechanisms ('who decides what' and 'who is responsible' for standards, policies, controls and compliance), separable from mere day-to-day technical operation.[17]

A critical risk is that interoperability requirements produce *de facto* recentralisation by transferring operational control from producing authorities to higher-level aggregators, which the specialised literature terms 'default technological determinism'.[18]

The Spanish tiered model analysed in section 3.2 exemplifies this risk. A possible solution is to treat technical design as the object of governance: architectural options must be adopted through legally traceable decisions, documenting the reasons for each choice and preserving the possibility of audit and correction by entities with clearly assigned institutional responsibility.

The publish-at-source model of Regulation 2023/138 restores the internal dimension of subsidiarity: municipalities and regions retain operational responsibility while the role of the State is limited to coordination functions that genuinely cannot be performed locally.

4. *Emerging Legal Issues in the Implementation of HVDs*

This section addresses the main legal and governance frictions identified when attempting to fit Regulation (EU) 2023/138 into the Spanish model described above. They all stem, to a greater or lesser extent, from the tension between the State's decentralised allocation of powers and the technical coordination required for pan-European interoperability.

4.1. *Uncertainty as to Which Body Is Obliged to Publish the API*

Directive (EU) 2019/1024 states in recital 32 that 'an API is a set of functions, procedures, definitions and protocols for machine-to-machine communication and the seamless exchange of data. APIs should be supported by clear, complete and publicly available online technical documentation. Where possible, open APIs should be used.'[19]

The main source of legal conflict is the absence, in Regulation (EU) 2023/138, of an express designation clause identifying who must provide the API for each dataset. Article 3(4) merely provides that the public-sector bodies holding HVDs 'shall designate a point of contact for questions and issues related to

[15] L.I. Ortega Álvarez, *La Carta Europea de la Autonomía Local y el ordenamiento local español*, in *Revista de Estudios de la Administración Local y Autonómica*, 259, 1993, 494–495.

[16] J.L. Martínez López-Muñiz, *Cooperación y subsidiariedad intermunicipal*, in *Revista de Estudios de la Administración Local y Autonómica*, 302, 2006, 63–65.

[17] R. Abraham, J. Schneider and J. vom Brocke, *Data governance: A conceptual framework, structured review, and research agenda*, in *International Journal of Information Management*, vol. 49, 2019, 425.

[18] S. Verhulst and B.G. Otero, *What is Data Governance: 30 Questions and Answers*, Open Data Policy Lab (Incubator), February 2026, 12. Available at: https://incubator.opendatapolicylab.org/files/what-is-data-governance-report.pdf.

[19] M. Fernández Salmerón, *Accesso a la información pública y datos abiertos*, in J. Valero Torrijos and R. Martínez Gutiérrez (eds.), *Datos abiertos y reutilización de la información del sector público*, Granada, Editorial Comares, 2022, 1–15.

the APIs... and the maintenance of the APIs', but it does not clarify which administration must technically ensure continuous API availability when the same dataset involves the municipality, the autonomous community, and the central State administration.[20]

This ambiguity leads to a dilution of responsibility: no administrative level assumes the duty as its own, because each can consider that the obligation lies with another. The result is a high risk of technical fragmentation, with each administration interpreting API requirements differently and creating heterogeneous interfaces, contrary to the Regulation's harmonisation objective.

Moreover, the lack of a clearly responsible entity makes enforcement by the European Commission more difficult, since there is no defined addressee to be formally required to comply or sanctioned in the event of non-compliance.

In this regard, it could be argued, on the basis of Article 3(1) of Regulation (EU) 2023/138, that all public administrations holding the data are jointly responsible. However, this issue would require a deeper treatment that falls outside the scope of this article.

This ambiguity is not exclusive to the Spanish framework. Proposal for a Directive COM(2025) 985 final, of 10 December 2025, aims to simplify Directive 2007/2/EC (INSPIRE) by replacing network services with a reference to API obligations established in the HVD Regulation. However, the accompanying interoperability assessment document expressly acknowledges as residual obstacles the 'lack of enforcement mechanisms for cross-border data integration coherence' and the 'differences in the maturity of national coordination structures'.[21] The proposal deregulates the tiered technical architecture without designating the responsible API publisher in multilevel systems such as Spain's, confirming the diagnosis of section 4.1 and reinforcing the need for the measures proposed in section 5.1.1.

In any event, the principle of subsidiarity (Art. 5(3) TEU) provides the operational criterion for resolving the ambiguity: the Regulation's mandate for harmonised technical provisions is justified by cross-border interoperability externalities, nonetheless, the choice of which national authority publishes each API remains a matter of internal institutional design, which subsidiarity resolves in favour of the level closest to the data production process. Applied to HVD obligations, this reading produces the following function-differentiated allocation:

Function	Optimal level (subsidiarity presumption)	Justification
Primary data production and quality control	Municipal/Regional (data origin)	Proximity to source; capacity to detect and correct errors quickly
API exposure and real-time updating	Municipal/Regional (or via shared platforms)	Direct accountability; avoiding latency of aggregation chains
Technical interoperability governance	State/National	Cross-border externalities; need for uniform standards (DCAT-AP, API specifications)
Cybersecurity baselines and monitoring	State/National (with local implementation)	Economies of scale; specialist expertise; national CERT coordination

4.2. *Fragmentation of Standards and Weak Interoperability*

The technical fragmentation threatening the implementation of HVDs is not a new problem in the Spanish administrative legal order. As early as 2009, Gamero Casado warned that interoperability between Public Administrations cannot be managed as a merely technical objective and that its effectiveness requires mandatory legal frameworks at the highest possible territorial level, noting that fragmentation resulting from uncoordinated efforts constitutes the main obstacle to a comprehensive e-government. From this perspective, the absence of common standards for the exposure of HVD APIs is not simply an organisational weakness, but a breach of the mandate of administrative effectiveness that Article 103 of the Constitution imposes on all public activity.

[20] E. Huyer and M. Blank, *High-value datasets: understanding the perspective of data providers*, Analytical Report 15, European Data Portal, Luxembourg, 2020, doi: 10.2830/363773, 18–19.

[21] European Commission COM(2025) 985 final 2025/0393 (COD), 2025, 55.

The author[22] distinguishes the organisational, semantic, technical and legal planes of interoperability. This distinction is particularly useful for diagnosing where the break in the high-value data publication chain occurs: in many cases, the problem does not lie in the absence of technical infrastructure but in the non-existence of prior organisational agreements determining what format, metadata and update frequency each administrative level must respect.

The absence of a designated API publisher generates a secondary risk: technical fragmentation. Without binding coordination, each administrative level may adopt divergent API formats, metadata schemas and access protocols for the same data domain.[23]

Domestically, this disparity could arise between autonomous communities if no common guidance is provided. The result would be limited interoperability and reduced ability to find Spanish datasets in the European environment.

It should be noted that Regulation (EU) 2023/138 itself introduces a minimum level of technical harmonisation. However, those technical obligations must be interpreted and made operational through national developments or guidance. In the absence of such instruments, Spain risks offering a patchwork of divergent technical solutions that hinders cross-border reuse and undermines the FAIR principles (Findable, Accessible, Interoperable, Reusable).

4.3. *Capacity Gap and the Risk of a 'Two-Speed Europe'*

Implementing APIs, producing high-quality metadata, and ensuring frequent updates impose disproportionate burdens on smaller administrations. There is a profound asymmetry of resources between, for example, a State ministry and a small rural municipality. This technical and financial capacity gap may mean that certain HVDs under local or regional competence are not properly published, creating a 'two-speed Europe of data'.

This would run counter to the EU principle of economic, social and territorial cohesion enshrined in the Treaties (Articles 174 to 178 TFEU), and it would compromise the quality and continuity of open data offered to the public.

In Spain, this territorial imbalance is especially worrying: while some autonomous communities and large municipalities have established data units and mature open-data portals, many municipalities lack even dedicated IT staff.[24] Without a strategy of support and coordination, the HVD publication obligation may remain largely theoretical across wide areas of the country, generating inequities in the right to reuse public-sector information depending on the region concerned.

4.4. *State Liability and Open Licences*

Any analysis of the State's financial liability in the context of high-value data must systematically address three issues that the current regulatory framework fails to resolve explicitly: (i) which liability regime applies when published data is inaccurate or out of date, (ii) whether the exemption clauses inherent in open licences (in particular the CC BY 4.0 required by the Regulation) may limit or exclude such liability and (iii) what standard of organisational and technical diligence is required of the Administration acting as a permanent provider of high-availability data services. The following pages address these three issues in the order indicated.

The publication of HVDs constitutes, in Spanish law, the exercise of a public service mission within the terms of Article 1(2)(a) of Directive (EU) 2019/1024 and Article 3(1)(a) of Law 37/2007, of 16 November, on the reuse of public sector information. Therefore, the objective regime of State non-contractual liability for damages set out in Articles 32 et seq. of Law 40/2015 on the Legal Regime of the Public Sector (LRJSP) applies.

In this regard, special mention should be made of Article 38(2) of the LRJSP, which constitutes, as Martínez Gutiérrez[25] indicates,

[22] E. Gamero Casado, *Interoperabilidad y Administración electrónica: conéctense, por favor*, in *Revista de Administración Pública*, no. 179, 2009, 291–332, 295–298.

[23] M. Boyd, L. Vaccari, M. Posada and D. Gattwinkel, *An Application Programming Interface (API) Framework for Digital Government*, EUR 30226 EN, Publications Office of the EU, Luxembourg, 2020, doi: 10.2760/772503.

[24] FEMP, *Datos Abiertos. 80 Conjuntos de Datos*, 4th ed., Madrid, FEMP, 2024 (Depósito Legal M-25868-2024).

[25] R. Martínez Gutiérrez, *El desarrollo reglamentario (y la interpretación jurisprudencial) de la Administración Digital*, in *Revista de Derecho y Nuevas Tecnologías*,

the only direct legal reference to administrative liability in Digital Administration: 'The establishment of an electronic office entails the responsibility of the holder with regard to the integrity, veracity and updating of the information and services accessible through it.'[26]

Accordingly, if an individual or a company suffers economic loss after making decisions based on official data that are inaccurate or out of date, they could seek compensation, provided the four elements of the regime[27] are present: the existence of an act attributable to the Administration, the production of unlawful harm, a direct and effective causal link, and the absence of force majeure.

This creates a legal conflict with the liability disclaimers typically found in open licences (such as CC BY 4.0,[28] required by the Regulation), which usually provide data 'as is', without warranties or any liability regime.

However, as Martínez Gutiérrez[29] notes, domestic legal rules of statutory rank must prevail over a private-law licence, since the latter cannot modify a public-law liability regime.

Scholarship has also pointed out that, even if reuse legislation does not expressly clarify this, the general State-liability regime applies where disseminated data cause an unlawful harm to individuals.[30][31]

Many open-data portals include disclaimers attempting to exempt themselves, but this does not prevent the possible assertion of liability against the Administration under Article 32 of Law 40/2015. This normative tension generates legal uncertainty for both the public sector (which faces potential claims) and re-users (who cannot be fully sure whether the information is reliable or whether compensation would be available in the event of error).

A particularly sensitive area concerns personal data.[32] Although HVDs exclude protected data unless anonymised, borderline situations may arise (e.g., pseudonymised data). A breach in an API containing personal information could entail, in addition to State liability, liability for infringement of Regulation (EU) 2016/679 (GDPR). Administrations should therefore tighten quality controls and swiftly correct any erroneous data that could mislead the public.

In this context, reference can be made to the Fourth Additional Provision of Valencian Law 6/2024 of 5 December on administrative simplification.[33]

That law declares it to be of 'essential public interest' to process data held by the Administration (including the training of processes and algorithms, data analytics methodologies and AI) when used, inter alia, for designing proactive or personalised public services, automated administrative actions and the robotisation of procedures (Provision 4(1)(a)–(g)). It also enables the creation of 'data spaces' that must guarantee ex ante: (i) a DPIA, (ii) data protection by design and by default, and (iii) secure processing environments, prioritising non-personal or anonymised data and requiring periodic assessments of re-identification risks where relevant.

This regional provision raises the standard of organisational and technical diligence that can be expected from administrations throughout the data lifecycle, but it does not alter the objective liability regime. As Martínez Gutiérrez and Beltrán Castellanos note, where an unlawful harm derives from inaccurate official data,[34][35] poor governance

22, Madrid, Aranzadi, 2024, 76-78.

[26] See J.M. Beltrán Castellanos, *La innovación de las TIC en la responsabilidad patrimonial*, in *III Congreso Internacional de Innovación Tecnológica y Administración Pública*, Universidad de Castilla-La Mancha, 2015.

[27] R. Martínez Gutiérrez, *Servicio público electrónico y responsabilidad*, in *Revista española de derecho administrativo*, 2012, Cizur Menor, Civitas Thomson Reuters, 302-306.

[28] Creative Commons (2013). *International Attribution 4.0, Legal Code*, https://creativecommons.org/licenses/by/4.0/legalcode.es.

[29] R. Martínez Gutiérrez, *Responsabilidad patrimonial en el acceso, difusión y reutilización de la información*, in J. Valero Torrijos and M. Fernández Salmerón (eds.), *Régimen jurídico de la transparencia del sector público*, Madrid, Thomson Reuters-Aranzadi, 2014, 427–458.

[30] J.M. Beltrán Castellanos, *Alcance de la obligación, seguridad jurídica y responsabilidad en la reutilización*, in J. Valero Torrijos and R. Martínez Gutiérrez (eds.), *Datos abiertos y reutilización de información del sector público*, Granada, Editorial Comares, 2022, 127–157.

[31] J. Valero Torrijos, *Responsabilidad de la Administración pública por información publicada en Internet*, in *Aranzadi Social*, no. 17, 2007, 1224–1226.

[32] Recital (8) of Regulation (EU) No. 138/2023*:* 'Member States should use appropriate methods and techniques (such as generalisation, aggregation, suppression, anonymisation, differential privacy or randomisation), thereby making as much data as possible available for reuse.'

[33] Ley 6/2024, de 5 de diciembre, de la Generalitat, de simplificación administrativa (DOGV), Disposición adicional 4.ª (*Espacios de datos e IA*).

[34] R. Martínez Gutiérrez, *Responsabilidad patrimonial*

(quality or updating, API security, etc.) or the administrative use of algorithmic models trained on public data, compensation remains possible under Articles 32 et seq. of Law 40/2015, the typical exemption clauses of open licences (e.g., CC BY 4.0) cannot modify that statutory regime.[36]

Nor does Article 4(7) of Law 37/2007 resolve the matter, according to which the use of datasets is carried out by users or reuse agents at their own risk and responsibility, with exclusive liability to third parties for any damages that may derive therefrom.

This provision operates on a different plane: it regulates the relationship between the re-user and third parties harmed by the re-user's use of the data, while Article 32 of Law 40/2015 regulates the direct relationship between the citizen and the Administration as the producer of the data, responsible for its quality and integrity. Both regimes are legally compatible and may concur: when the harm derives from an original defect in the official data (inaccuracy, obsolescence or a foreseeable failure in the integrity of the API), and not from a subsequent transformation or use by the re-user, the objective regime of Article 32 is fully applicable.[37]

Finally, reference should be made to the question of the applicable standard of diligence. The applicable standard is that of *organisational and technical diligence commensurate with the nature and purpose of the service.*

The Administration that promotes stable API endpoints for general reuse and large-scale automated decision-making assumes, by that very fact, a reinforced duty comprising, at a minimum: the implementation of documented update cycles proportional to the rate of change of the dataset, the maintenance of version control and change logs, the performance of periodic quality controls, the provision of complete metadata on limitations and provisional status, and the guarantee of security and integrity of the API.

The failure to comply with these organisational duties (particularly when the harm is foreseeable, as with company register data used for due diligence or with mobility data used in automated driving systems) may found the patrimonial liability of the Administration regardless of individual fault, in keeping with the objective nature of the regime under Article 32 of Law 40/2015, whose constitutional basis is found in Article 106(2) of the Constitution.[38]

In practical terms, the formalisation of service level agreements (specifying update cycles, availability rates and change notification protocols) serves a dual function: as an objective standard for assessing the required diligence, and as a transparency instrument that delimits the legitimate expectations of the re-user.

An additional layer of complexity arises when the same HVD is operated within a data space registered in the Trust List (Order TDF/1207/2025), whose Article 11[39] assigns to the entity owning the space liability to third parties for the truthfulness of the data supplied within the space and for the activity carried out there. In that situation, two chains of liability may concur. The key to mitigating this risk of double exposure is the ex-ante clarification of roles through the cooperation instruments proposed in section 5.1.1, documenting the transformations applied by the space so that results not produced by the Administration are not improperly attributed to it.

In summary, the above analysis leads to the following systematic conclusions regarding the standard of liability applicable to high-value data services: firstly, the strict liability regime under Article 32 of the LRJSP is fully applicable where the damage stems from an

en el acceso, difusión y reutilización, cit., 453–454.

[35] J.M. Beltrán Castellanos, *Alcance de la obligación, seguridad jurídica y responsabilidad*, cit., 127–157.

[36] R. Martínez Gutiérrez, *Servicio público electrónico y responsabilidad*, in *Revista Española de Derecho Administrativo*, no. 155, 2012, 291–318.

[37] J. Valero Torrijos, *Responsabilidad patrimonial de la Administración Pública por información publicada en internet*, Aranzadi Social, no. 17, 2007, 1224-1226. See also R. Martínez Gutiérrez, *Responsabilidad patrimonial en el acceso, difusión y reutilización de la información*, in J. Valero Torrijos and M. Fernández Salmerón (dirs.), *Régimen jurídico de la transparencia en el sector público*, Madrid, Thomson Reuters–Aranzadi, 2014, 427-458; and J.M. Beltrán Castellanos, *'Alcance de la obligación...'*, in J. Valero Torrijos and R. Martínez Gutiérrez (dirs.), *Datos abiertos y reutilización de la información del sector público*, Comares, Granada, 2022, 127-157.

[38] R. Martínez Gutiérrez, *Responsabilidad administrativa por el uso de la Inteligencia Artificial*, in E. Gamero Casado (dir.) and F.L. Pérez Guerrero (coord.), *Inteligencia artificial y sector público: retos, límites y medios*, Valencia, Tirant lo Blanch, 2023, 232-233.

[39] Ministerio de Transformación Digital y Función Pública, Orden TDF/1207/2025, de 27 de octubre, por la que se regula la Lista de Confianza de Espacios de Datos, BOE no. 262, de 31 de octubre de 2025, art. 11.

inherent defect in the official data (such as inaccuracy, obsolescence or a breach of API integrity) regardless of the provisions of the associated open licence; secondly, the provision in Article 4(7) of Law 37/2007 operates on a different level, regulating the relationship between the re-user and third parties harmed by the use of the data, without precluding direct action by the citizen against the producing public authority; thirdly, the standard of care required is not that of individual subjective fault but that of organisational and technical diligence commensurate with the nature of the service, which includes, at a minimum, documented update cycles, version control, periodic quality audits and guarantees of the API's security and integrity and fourthly, the formalisation of service level agreements (SLAs) serves a dual purpose: it acts as an objective benchmark for the required standard of care and defines the legitimate expectations of the re-user, thereby reducing legal uncertainty for both the public sector and private actors.

4.5. *Lack of a Sanctioning Regime and New Cybersecurity Risks*

Unlike other areas (e.g., personal data protection, digital services), neither Spanish reuse legislation (Law 37/2007 and subsequent amendments) nor Regulation (EU) 2023/138 provides specific sanctions for failure to comply with open-data obligations. This can reduce the practical effectiveness of the rules: if an administration chooses not to prioritise the publication of an HVD, coercive options are limited. Although the Commission could, in theory, bring an infringement procedure against Spain as a whole, that mechanism is too general and slow to ensure timely data publication. An internal sanctioning framework is therefore missing, one that would deter inaction and guarantee equal conditions nationwide.

Additionally, mandatory exposure of data via APIs creates a broad new attack surface for administrations. Known vulnerabilities (SQL/NoSQL injection, DoS attacks, broken object level authorisation, etc., catalogued in the OWASP API Security Top 10[40]) can be exploited to disrupt services or extract sensitive information.

If personal data, including pseudonymised data, are compromised, GDPR infringements with serious consequences may follow. This transfer of legal, financial and security risks to administrations that often lack the resources to manage them is a structural weakness of the current framework.

In Spain, the National Security Scheme (ENS) and the National Cybersecurity Strategy (Order PCI/487/2019) establish general protection obligations, but the large-scale opening of APIs requires more specific measures: code audits, penetration testing, continuous monitoring, incident contingency plans, etc. Without national-level support and coordination on this front, small municipalities will struggle to ensure robust interfaces, exposing themselves and undermining trust in the open-data system as a whole.

4.6. *The Clash of Models: Tiered vs. Federated (Comparative Experiences)*

To contextualise the challenges above, it is helpful to look at pioneering experiences in other Member States that have already faced similar problems.[41] Countries such as Finland and Estonia[42] (with smaller, but highly digitalised populations) have adopted hybrid approaches that reconcile decentralisation with interoperability.

Both have deployed data-exchange infrastructures inspired by the X-Road model (Palveluväylä in Finland), where a national 'meta-registry' acts as a single catalogue

[40] OWASP Foundation, *OWASP API Security Top 10—2023 (2023 Edition)*.

[41] Data.europa.eu, *High Value Datasets Best Practices Report*, Luxembourg, Publications Office of the European Union, 2024, 7–14.

[42] The selection of the comparative legal systems is based on three explicit methodological criteria. First, institutional relevance: Finland and Estonia have been identified in European Commission reports as benchmark cases for the implementation of federated data-sharing models compatible with the 'publish-at-source' paradigm. Second, transferability: Denmark and the Czech Republic offer solutions adapted to administrative structures more complex than those of the Baltic states, with experiences directly transferable to larger contexts with greater territorial fragmentation. Third, thematic comparability: all the cases analysed share the challenge of reconciling European data publication obligations with decentralised administrative structures, regardless of their population size or budget. The comparison is deliberately limited to the institutional dimension (who is legally and operationally responsible for each function in the publication chain) leaving aside sectoral policy outcomes, so that the lessons learned are transferable to the Spanish context regardless of differences in budgetary or administrative contexts between countries.

while administrations publish data at source through web services. This reduces latency and avoids duplication, while assigning clear responsibilities: each body provides its data via the federated platform, and a coordinating entity ensures common standards.

Likewise, countries such as Denmark and the Czech Republic have focused on metadata quality and resource rationalisation. Denmark created a reference group that inventoried all identified high-value datasets, specifying the responsible authority and the access method for each, to ensure no gaps. Finland incorporated the new HVD requirements into existing INSPIRE metadata descriptions, avoiding duplicated efforts and maintaining coherence. These strategies reflect a pragmatic approach: leveraging pre-existing frameworks (INSPIRE, national open-data portals) and adapting them to Regulation 2023/138, rather than building from scratch.

Another relevant lesson is the gradual adaptation of business models for certain datasets. Denmark implemented the Free Data programme to progressively release meteorological data that had previously been subject to fees (between 2020 and 2023). Italy, facing similar challenges with cadastral and business-register data, has planned phased transitions to remove charges as existing contracts expire. These experiences highlight the importance of planning the financial sustainability of open data, to prevent the Regulation's 'free of charge' imperative from resulting in disinvestment or the abandonment of certain services.

In summary, the European comparison confirms that the obstacles identified in Spain are not unique and that viable pathways exist to overcome them. In the next section, and drawing on these references, the article sets out specific proposals for normative and organisational reforms to align the Spanish model with the HVD paradigm, strengthening both legal and operational effectiveness.

4.7. *Proposed Table of Roles and Responsibilities in a Federated Governance Model*

This structure clearly distinguishes ultimate legal responsibility (Data Holder) from strategic responsibility (Data Owner), tactical responsibility (Data Steward) and operational responsibility (Data Custodian), assigning each to the most suitable figure at each administrative level and creating a clear, enforceable governance framework.[43][44]

The proposed role structure below is situated within the paradigm of data governance as a purpose-oriented, principle-based framework centred on the figure of the responsible steward. As Verhulst and Otero[45] have synthesised, an effective data governance framework requires specifying four elements: the purpose (why the data is governed), the principles (how decisions are taken), the people and institutions (who creates and enforces the policies) and the practices and technologies (what operational instruments implement those policies throughout the data lifecycle).

Within the HVD regime, the purpose is the maximisation of reuse and the generation of socioeconomic value (as provided in the recitals of Regulation 2023/138), the principles derive from the applicable legal order (availability, interoperability, security and non-discrimination) but the critical element that the Regulation does not resolve, and which this article seeks to address, is precisely that of people and institutions: who acts as the legal holder of the data (Data Holder), who defines the strategic policy for its exploitation (Data Owner), who ensures quality and regulatory compliance (Data Steward) and who provides the technical infrastructure (Data Custodian).

Before presenting the proposed allocation, it is appropriate to clarify the role of the provincial level. Provincial Councils (Diputaciones Provinciales) perform, in accordance with Articles 141 and 142 of the Constitution and Article 36 of Law 7/1985, a function of technical assistance and cooperation towards smaller municipalities. In the context of HVD governance, this level acts in a dual capacity: as a producing authority for its own data, assuming the roles of Data Holder, Data Owner and Data Steward with respect to those datasets and, simultaneously, as a potential provider of shared technical

[43] Secretaría de Estado de Digitalización e Inteligencia Artificial / AENOR, *Especificación UNE 0077:2023, Gobierno del dato*, Madrid, AENOR, 2023; and *Especificación UNE 0078:2023, Gestión del dato*, Madrid, AENOR, 2023.

[44] Secretaría de Estado de Digitalización e Inteligencia Artificial, *Guía de Gobernanza de Espacios de Datos*, version 1, 1 December 2025. Available at: https://cred.digital.gob.es.

[45] S. Verhulst and B.G. Otero, *What is Data Governance: 30 Questions and Answers*, Open Data Policy Lab (Incubator), February 2026, 4-5 and 15-16.

services for municipalities lacking the capacity to deploy and maintain their own APIs, assuming the function of Data Custodian by delegation.

Proposed roles by administrative level[46]

Administrative level	Legal role: Data Holder	Strategic role: Data Owner	Tactical role: Data Steward	Operational role: Data Custodian
Local (Municipality)	The municipality as a legal person.	The councillor responsible for the relevant area (Urban Planning/Environment).	The municipal technical expert in the subject matter.	The municipal IT department, or a service provided by the provincial council.
Provincial (Provincial Council)	The provincial council as a legal person.	The deputy responsible for municipal support/modernisation.	The provincial data unit/office supporting municipalities.	The provincial IT department managing the shared API platform.
Regional (Autonomous Community)	The autonomous community as a legal person.	The Director-General of the competent area.	The unit responsible for the regional open-data portal and interoperability.	The regional IT department.
State (Ministry/Central Administration)	The central State administration.	The Undersecretary or Director-General of the competent ministry.	The Data Office and the Secretariat-General for Digital Administration (SGAD).	The IT department of the ministry or of the SGAD.

This four-part allocation is not merely descriptive but defines the chain of responsibility that the current Spanish implementation framework does not resolve. Each role entails specific legal consequences: the Data Holder bears objective patrimonial liability under Articles 32 et seq. of Law 40/2015; the Data Owner is responsible for strategic decisions on the scope of publication and licence conditions; the Data Steward is responsible for quality, update cycles and compliance with DCAT-AP HVD profiles; and the Data Custodian assumes operational responsibility for the availability and security of the API.

The formalisation of this allocation through the inter-administrative cooperation instruments proposed in section 5.1.1 (in particular, service level agreements specifying update cycles, availability rates and incident notification protocols) would allow this governance model to be transformed into a legally enforceable structure.

[46] The distinction between the four proposed roles (Data Holder, Data Owner, Data Steward and Data Custodian) follows the terminology and organisational structure established by UNE Specifications 0077:2023 and 0078:2023, promoted by the Data Office of the Secretariat of State for Digitalisation and Artificial Intelligence.

5. *Proposed Normative and Governance Improvements*

In light of the foregoing analysis and the best practices observed in other countries in the data.europa.eu report *'High-value Datasets Best Practices Report'*,[47] the following lines of action are proposed so that Spain can successfully implement Regulation (EU) 2023/138, ensuring effective, equitable and secure governance of high-value data.

Classification of proposals according to the implementation pathway

The following reforms are organised according to whether they require formal legislative or regulatory change, or can be implemented through organisational, technical or soft-law instruments:

Proposal	Implementation pathway	Legal/regulatory instrument required	Responsible authority
5.1.1: Explicit designation of competent authority	Legislative reform	Amendment of Law 37/2007 or new Royal Decree implementing Regulation 2023/138	Parliament (law) or Council of Ministers (decree)
5.1.2: Sanctioning regime	Legislative reform	Amendment of Law 37/2007 (Chapter on offences and sanctions)	Parliament
5.2.1: Federated publish-at-source model	Technical/organisational	Implementation through existing interoperability frameworks (ENI, NTI); no new legislation required	SGAD, in coordination with Autonomous Communities
5.2.2: Funding programmes for local entities	Administrative/budgetary	Budgetary allocation through existing programmes (ISA², EU cohesion funds, national digitalisation budget)	Ministry of Finance; SGAD
5.2.3: Security-by-design clauses and API audits	Technical/soft law	Ministerial Order or SGAD technical guide updating the application of ENS to HVD APIs	SGAD; CCN-CERT
5.2.4: Multi-level coordination group	Organisational	Decision of the Sectoral Conference on Public Administration (no legislation required)	Sectoral Conference / FEMP

[47] Data.europa.eu, *High Value Datasets Best Practices Report*, Luxembourg, Publications Office of the European Union, 2024.

5.2.5: Unified inventory and metadata management	Technical/administrative	SGAD guide on DCAT-AP HVD profiles; datos.gob.es portal functionalities	SGAD
5.2.6: Phased transition for fee-based datasets	Administrative/budgetary	Budgetary compensation agreements: no primary legislation required unless existing laws mandate fees	Relevant ministries; Council of Ministers

This classification clarifies the critical path: proposals 5.1.1 and 5.1.2 require legislative or regulatory action and are therefore subject to longer timelines and political negotiation. By contrast, proposals 5.2.1–5.2.7 can be advanced immediately through administrative decisions, technical guides or inter-administrative agreements, allowing faster progress while the normative reforms are being debated.

5.1. *Normative Reforms*

5.1.1. *Explicit Designation of the Competent Authority by HVD Category*

By explicitly including this in Implementing Regulation (EU) 2023/138, or alternatively through national legislation (law or regulation) or at least through a binding implementation guide, it is necessary to clearly assign which body acts as the main data publisher for each high-value dataset, following the coordination model used under INSPIRE. This would provide legal certainty and prevent a dilution of responsibilities (a 'competence vacuum'). It should be recalled that some Member States have introduced provisions of this kind in their domestic law (for example, Estonia in its Public Information Act), regulating internally who must do what. A clarification of this sort in Spain would ensure that, for each dataset, there is an identified entity responsible for exposing the API and keeping it operational. Depending on the case, this could be a State body (where one exists with national reference-point functions, e.g., the National Geographic Institute for geospatial data), the autonomous communities coordinated by the General State Administration, or even inter-administrative consortia or municipalities coordinated by the autonomous communities, where appropriate.

From the perspective of administrative law, this designation may be implemented through collaboration agreements between the General State Administration and the Autonomous Communities, in the framework of the relevant sectoral conferences, or through agreements within specialised inter-administrative consortia. As Cerrillo i Martínez[48] highlights when analysing cooperation mechanisms in digital infrastructures, the advantage of these instruments is that they allow voluntary agreement on the administrative level that will assume the operational burden of the service (in this case, the exposure and maintenance of the API) without this entailing a modification of the substantive competence regime. The key is that the cooperation instrument includes enforceable service level clauses and inspection mechanisms between the parties, so that the European obligation of HVD availability has a legally identified and internally accountable addressee.

5.1.2. *Sanctioning Regime and Effective Compliance Mechanisms*

Spain should introduce into its national reuse framework a graduated system of offences and sanctions penalising unjustified non-compliance with HVD publication obligations. This could be inspired by transparency laws (where authorities reluctant to provide information are sanctioned) or by Law 40/2015 in relation to breaches of agreements or inter-administrative obligations. In addition, an independent body (e.g., the Council for Transparency and Good Governance, with expanded competences) or the Secretary of State for Digitalisation should be granted powers of supervision and the ability to issue express requirements to lagging administrations. Clear consequences (fines, publicly disclosed warnings) would incentivise all entities (large and small) to prioritise the opening of their high-value data. In parallel, it would be advisable to create compliance indicators and a public dashboard (similar to Open Data Maturity) to track each administration's progress and detect non-compliance early.

[48] A. Cerrillo i Martínez, *Cooperación entre Administraciones Públicas para el impulso de la Administración Electrónica*, in E. Gamero Casado and J. Valero Torrijos (Coords.), *La Ley de Administración Electrónica*, 3.ª Ed., Cizur Menor, Aranzadi-Thomson Reuters, 2010, 762 ff.

5.2. *Implementation Toolkit*

5.2.1. *Federated, 'Publish-at-Source' Model with Synchronised Catalogues*

Spain should evolve towards a hybrid architecture in which data remain on each administration's platforms (or on platforms shared by groups of administrations) but are accessible through a federated national meta-catalogue. This implies deploying standard-compliant APIs at the data-producing bodies, while regional and State levels take on the role of 'interoperability nodes'. In practice, autonomous communities could act as regional aggregators and guardians of quality and interoperability, federating their catalogues with the national portal (datos.gob.es) through DCAT-AP and harvesting services. The General State Administration, in turn, would aggregate the references to meet mandatory submissions to the EU. This federated–distributed approach is already being promoted in countries such as Finland and Denmark, where each agency maintains its own data and metadata, while the national platform merely monitors the overall system. The advantages are clear: reduced latency (direct access to source data), elimination of duplication (the 'only-once' principle), improved traceability, and preservation of local granularity. To operationalise this, Spain could rely on existing infrastructures (Red SARA, the Data Intermediation Platform, etc.) or adopt X-Road-type solutions adapted to Spain's administrative ecosystem.

5.2.2. *Funding Programmes and Technical Support for Local Entities*

To avoid a capability gap, mechanisms of economic and technical assistance targeted at municipalities and low-resource entities should be established. This may include: dedicated funds (European, national, or co-financed) to modernise local information systems and develop the required APIs, the creation of shared platforms or State-provided cloud services where small municipalities can simply upload their data and have them automatically made available via API (reducing their technological burden) and the deployment of mobile teams or agreements with universities to support the creation of high-quality metadata, documentation, and related tasks. Some countries have overcome the budgetary obstacle through external or central funding (for example, Finland allocated specific government funds, and the Czech Republic has used European projects to finance the opening of certain data). Spain could leverage EU funds or programmes such as ISA² to advance this chapter. Investing in local capacity not only closes territorial gaps; it also results in a more robust and homogeneous national system.

5.2.3. *Security-by-Design Clauses and Periodic API Audits*

HVD implementation guidance should include an explicit 'security by design' section aligned with OWASP recommendations and the obligations of Spain's National Security Scheme (ENS). Any API deployed for HVDs should undergo a technical vulnerability assessment before being opened to the public. The General State Administration, in coordination with CCN-CERT, could offer centralised penetration testing and security scanning services for the APIs of smaller administrations, or even require compliance as a condition for inclusion in the national catalogue. Regular intrusion tests (e.g., annually) and continuous monitoring of API traffic are also recommended to detect anomalous access or denial-of-service attacks. Robust logging and the exchange of cyberattack alerts between administrations (e.g., via the CCN Early Warning System) should be integrated into HVD governance. These measures are indispensable to maintain trust in governmental open data. In parallel, it should be clarified normatively that compliance with security standards will be considered a legal duty for administrations (possibly through a ministerial instruction or an update of the ENS), so that serious negligence in this field could also entail consequences (disciplinary or patrimonial liability, as appropriate).

In this regard, the set of UNE standards approved in 2023 provides three complementary specifications directly applicable to the governance of HVDs: UNE 0077:2023 (on data governance), UNE 0078:2023 (on data management) and UNE 0079:2023 (on data quality management). These standards constitute a technical concretisation of the organisational and quality control duties that form the minimum standard of diligence required of Public Administrations publishing HVDs. Their compliance, or that of equivalent standards,

could operate in a dual sense: as evidence of administrative diligence in the event of a patrimonial liability claim under Article 32 of Law 40/2015, and as a criterion of technical conformity for the inclusion of datasets in the proposed national HVD catalogue in section 5.2.5.

In connection with the foregoing, the adoption of standardised SLAs for HVD APIs is presented as a central instrument of the governance of high-availability public data.[49] The INSPIRE Infrastructure has already established precedents in this area: Regulation (EC) No 976/2009 sets availability criteria (99% of the time during normal hours) and performance criteria (response in less than 3 seconds for visualisation services) that constitute a reference model applicable to geospatial HVDs. Logically extending this approach to the remaining high-value data categories requires a clear legal framework: SLAs must be integrated into the implementing rules of Regulation 2023/138 or, at least, in inter-administrative cooperation instruments, so that their breach may give rise to legal consequences.

5.2.4. *Multilevel Coordination and Training of the Actors Involved*

Implementing HVDs in a decentralised country requires collaborative governance. It is proposed to create a specific inter-administrative working group on HVDs, under the umbrella of the Sectoral Conference on Public Administration (or similar), meeting regularly and bringing together representatives from ministries, autonomous communities and local entities (possibly through the Spanish Federation of Municipalities and Provinces, FEMP). This group (akin to Danish reference groups or Finnish coordination groups) would allow technical and legal issues to be resolved by consensus, best practices to be shared, and the national HVD inventory to be monitored. It is also advisable to strengthen international cooperation by participating in European workshops and forums on HVDs, and even by establishing bilateral collaborations. Finally, the strategy should include training and awareness-raising: webinars and courses for public officials on metadata creation, use of DCAT-AP standards, dataset anonymisation, etc. These initiatives foster a data culture based on quality and shared responsibility and prepare both data holders and users to better harness the public value of data.

5.2.5. *Unified Inventory and Improved Metadata Management*

As a critical operational step, a national inventory of high-value datasets[50] should be created (and maintained), detailing for each dataset: the source administration, format, update frequency, the corresponding API or bulk-download resource, and its compliance status with the Regulation's requirements. This task, undertaken in other countries by specialised working groups, makes it possible to identify gaps and plan improvements in a structured way. In parallel, improving metadata quality at source should be prioritised, i.e., each body should publish rich and correct metadata from the outset, before federating them to the central portal, to avoid inconsistencies or duplication. To achieve this, full adoption of DCAT-AP HVD guidelines is recommended, as well as leveraging compatibility with INSPIRE via GeoDCAT-AP, so that bodies already reporting INSPIRE metadata can extend them easily to DCAT. Spain could develop national metadata profiles or mandatory-field guides, as the Czech Republic and Denmark have done. A substantial improvement in metadata description will make Spain's HVDs easier to find on data.europa.eu and facilitate effective reuse.

5.2.6. *Planned Transition for Datasets Currently Subject to Fees or Restrictions*

Spain should identify which HVDs are still governed by fee-based revenue models or restrictive licences (for example, potentially company register data, certain cadastral datasets, or historical cartography) and develop a phased plan to open them free of charge. This plan should include an analysis of the financial impact on the body currently charging for them and provide for budgetary compensation or alternative sustainability arrangements. Denmark's experience shows that it is possible to move from a data-sales business model to an open-data model without

[49] Iniciativa Aporta (datos.gob.es), 'Los acuerdos de nivel de servicio en la publicación de datos abiertos', Blog datos.gob.es, 13 February 2026.

[50] Data.europa.eu, *High Value Datasets Best Practices Report*, Luxembourg, Publications Office of the European Union, 2024, 17–18.

serious detriment, provided it is done gradually and with political support. In Denmark, the Free Data initiative progressively released meteorological and climate data between 2020 and 2023, starting with raw data and later adding processed data of higher added value. In Spain, an analogous case could be AEMET or ministerial publication units that used to sell statistics. The guiding principle is that no HVD should fall behind for financing reasons: if it is high-value, opening it generates more medium-term economic growth than the direct revenue lost, and the State should therefore facilitate this transition.

5.2.7. *Assisted Implementation of APIs and Bulk Downloads*

Finally, to ensure that all Spanish HVDs meet the required availability modalities (API and bulk download), it is suggested that datos.gob.es be equipped with advanced features that can serve as a technical backstop. For example, if a small body holds the dataset but lacks capacity to deploy an API, the national portal could offer (after the dataset is uploaded) a native API endpoint enabling real-time querying. Estonia's national platform already provides something similar: it acts as an API provider by delegation when the source entity does not implement its own. This would guarantee a uniform minimum standard, preventing a lack of resources from resulting in non-compliance. In addition, centralising certain portal functionalities (such as bulk-download services or the generation of basic visualisations) creates economies of scale and a more homogeneous user experience for re-users.

Overall, these proposals aim to complement and reinforce those already being discussed within the Spanish public sector with a comparative and realistic perspective. The goal is not merely to comply with the letter of the European Regulation, but to seize the opportunity to improve the governance of public data in Spain, making it more distributed, trustworthy and oriented towards public value.

6. *Conclusions*

The implementation of Regulation (EU) 2023/138 on high-value datasets in Spain reveals a significant tension between the traditional reporting framework and the new demands of an agile and open data economy. The stepped model, although legally valid and functional for pre-existing hierarchical flows, proves inefficient and rigid when it comes to meeting the requirements of interoperability, immediacy and granularity demanded by European data spaces.

This article has identified five structural frictions: competence vacuum, interoperability gaps, capacity asymmetries, liability tensions and enforcement deficits that collectively undermine effective HVD compliance.

The central issue identified is the Regulation's legal ambiguity: by not explicitly designating the body responsible for publishing the APIs, it creates, *de facto*, a competence vacuum.

This vacuum foster inaction and the risk of divergent solutions, generating uncertainty around key issues such as the public sector's non-contractual liability for inaccurate data, or the management of the capacity gap between administrations. In addition, the absence of a specific sanctioning regime, together with technical challenges (security, standards and maintenance), threatens to dilute the effectiveness of the openness mandate.

In response to this challenge, the analysis concludes that the most robust solution is not to discard the tiered model entirely, but to promote its evolution towards a hybrid federated model. This approach combines a distributed architecture for real-time data reuse (thus complying with the spirit of the HVD Regulation) with an optimised reporting structure that *consumes* those APIs in order to meet the legal obligations of information consolidation. This coexistence enables compliance with the 'once-only' principle, reduces administrative burdens on local entities, and redefines the role of intermediate bodies as interoperability governors and value-added re-users. However, the success of this hybrid model unavoidably depends on normative action that provides clarity and on strong coordinating leadership. It is imperative that, whether at EU level through additional acts or, more likely, at national level, responsibility for API publication be explicitly assigned for each data category, and that incentives and sanctions be established to ensure compliance. Without this legal certainty and without continuous institutional support (financial and technical), any technical progress could be jeopardised.

The European Commission's

Communication 'Data Union Strategy – Unlocking Data for AI' (COM(2025) 835 final, 19 November 2025) announces that a legislative proposal will be submitted in 2026 to expand the list of HVDs to include legal, judicial and administrative data (including case law, legislation and administrative decisions), subject to the same publication requirements: free availability, machine-readable formats, standardised APIs and, where relevant, bulk download.[51] Extending the list will facilitate access to data for SMEs, start-ups and AI developers, lowering entry barriers and encouraging innovative reuse of public-sector information.

From an implementation perspective, 'legal and judicial data' present additional governance challenges (fragmented information systems, anonymisation constraints and the need for interoperable identifiers and metadata) making standardisation (e.g., ELI/ECLI-compatible identifiers and linked data approaches) particularly important for scalable cross-border reuse.[52]

This prospect of expanding the material scope of HVDs converges, moreover, with a parallel process of structural reform of the technical framework underpinning the Spanish model. Proposal for a Directive COM(2025) 985 final on the simplification of the INSPIRE Directive proposes to delete Articles 7, 8, 11 and 12 of that Directive and to repeal Implementing Regulations 976/2009 and 1089/2010, with a planned application date of 1 March 2027.[53] At the same time, the Digital Omnibus Regulation (COM(2025) 837 final) proposes to repeal Directive (EU) 2019/1024 and to integrate it into an expanded Data Regulation of direct application. Both initiatives are consistent with the thesis of this article insofar as they consolidate the logic of publish-at-source via API and dismantle the normative scaffolding that institutionalised vertical aggregation. However, neither designates the responsible API publisher in multilevel systems: the INSPIRE proposal deregulates the architecture without resolving the governance, and the Digital Omnibus does not substantially modify the provisions on access to HVDs. The 1 March 2027 application deadline gives concrete urgency to the measures proposed in heading 5: the explicit designation of competent authorities (5.1.1) and the federated publish-at-source model (5.2.1) must be adopted before the inherited technical architecture loses its legal backing, lest the dismantling of the old not be accompanied by the operational consolidation of the new.

Ultimately, the transition towards a federated data-governance model is legally viable, normatively necessary and technically feasible. It represents the effective application of the principle of subsidiarity in the digital sphere and is the indispensable path for Spain not only to meet its European obligations, but also to position itself as a proactive actor in building the European Data Space. The proposals outlined here seek to pave that path, learning from comparative experience and strengthening trust in public data as a key infrastructure of our knowledge society.

This transition towards a federated model of public data governance is situated, beyond the purely European context, within a global trend that conceives data governance not as a compliance exercise but as a purpose-oriented, principle-based practice exercised through the figure of the responsible steward. As Verhulst and Otero[54] have synthesised, a robust data governance framework must be *subsidiary* (decisions must be taken at the level closest to the affected community, with localised capacity building), *resilient* (principles and incentives cannot vary with changes in political leadership) and *collaborative* (public, private, academic and civil society actors must participate in the articulation of the rules governing data use). The proposals formulated in this article for the Spanish model of HVD implementation meet these three criteria: the functional allocation of responsibilities to the level of data production responds to the subsidiarity criterion, the formalisation of SLAs and the creation of sanctioning

[51] European Commission, Communication 'Data Union Strategy–Unlocking Data for AI', COM(2025) 835 final, 19 November 2025, 13.

[52] E. Filtz, S. Kirrane and A. Polleres, *The linked legal data landscape: linking legal data across different countries*, in *Artificial Intelligence and Law*, vol. 29, 2021, 485–539.

[53] COM(2025) 985 final, cit., Article 3(2): 'Article 1, points 5, 9, 10 and 11, shall apply from [1 March 2027].' Those points correspond to the deletion of Articles 8, 11-12 and 16 of Directive 2007/2/EC.

[54] S. Verhulst and B.G. Otero, *What is Data Governance: 30 Questions and Answers. A practical reference for policy, institutional, and operational design*, Open Data Policy Lab (Incubator), February 2026, 15-16, available at: https://incubator.opendatapolicylab.org/files/what-is-data-governance-report.pdf.

mechanisms responds to the criterion of institutional resilience and the proposal for legally binding inter-administrative agreements (formalised through the cooperation instruments provided for in Articles 140 et seq. of Law 40/2015, including sectoral conferences, conventions and consortia) as the primary mechanism for multilevel collaboration responds to the criterion of institutional collaboration, with the specific inter-administrative working group serving as the operational forum through which those agreements are prepared, monitored and updated.