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European Union Data Act Law (PoV)

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Hitachi Digital Services

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Introduction

The EU Data Act rebalances data value from manufacturer or platform lock-in to user agency, catalysing aftermarket, ancillary, and third-party services. It standardises access obligations for raw and pre-processed IoT data, frames fair commercial terms, and compels cloud exit and interoperability. The net effect is a shift from proprietary ecosystems to open, policy-enforced interfaces. For manufacturers, this is both a compliance uplift and an innovation lever: define data products, publish FRAND catalogues, instrument lawful access, and enable switching.

Hitachi understands that the EU Data Act is a significant piece of legislation aimed at harmonising the rules governing data access and use across the European Union. It is designed to unlock the value of data organisations hold, whilst ensuring a fair, competitive, and innovative digital economy.

Applicable from **12 September 2025**, the Act will have direct effect in all Member States, introducing a common legal framework for how connected-product data is accessed, shared, and monetised. Its goals are threefold:

- **Empower users** of connected products and services to access and share the data they generate, on transparent and non-discriminatory terms.
- **Foster competition** by curbing anti-competitive lock-in and enabling cloud and edge service switching.
- **Safeguard rights and investments** by protecting trade secrets, preserving GDPR primacy for personal data, and ensuring proportionate access for public bodies in cases of exceptional need.

By codifying these principles, the Data Act changes how manufacturers design products, negotiate contracts, and manage data flows. It will require operational, technical, and contractual readiness - while offering opportunities to monetise data more broadly, strengthen customer trust, and build interoperable ecosystems that can scale across the EU.

EU Data Act Context and Scope

The EU Data Act marks a structural shift in the European data economy, moving from proprietary control towards regulated, user-centred access. Its scope is deliberately broad, covering any sector in which connected products and related services generate data, and setting out clear rules for how that data can be accessed, shared, and used. For organisations, this is not a narrow compliance issue but a redesign of the contractual, technical, and operational frameworks that govern data value chains.

The Act's objectives are explicit: remove barriers to fair access, safeguard incentives to invest, strengthen user rights, allow proportionate public-interest use in exceptional circumstances, and improve cloud switching and interoperability. Its provisions span the full lifecycle of data - from generation and storage to access, sharing, and portability - applying FRAND (Fair, Reasonable, and Non-Discriminatory) principles to commercial terms, mandating machine-readable formats, and defining safeguards for trade secrets and personal data.

In its scope is raw and pre-processed data, with the metadata required to interpret it, generated during the use of connected products or provision of related services. Out of scope are derived or inferred outputs requiring substantial further processing, creative works intended for human consumption, and prototypes or embedded infrastructure sensors not owned or controlled by the user.

From our PoV (Point-of-View), this scope definition is critical. It allows Hitachi Digital Services (HDS) to help clients build data architectures, governance models, and commercial arrangements that comply with the law, whilst enabling data to be our clients unique strategic asset. We believe compliance and competitiveness are not opposing forces here; the same capabilities that meet the Act's requirements - interoperable interfaces, lawful-access control planes, and tested switching processes - also reduce integration costs, expand ecosystem reach, and accelerate innovation.

Main Objectives of the EU Data Act

- **Promote Data Portability and Sharing:** to enable individuals, organisations, and public sector bodies to access and share data on transparent, non-discriminatory terms, breaking down silos that constrain innovation and competition. (*Art. 3-6*)
- **Foster a Fair Digital Market:** by establishing clear, harmonised rules on access and use to prevent anti-competitive practices, giving SMEs and start-ups equal opportunity to use essential data. (*Art. 8-12*)
- **Enhance User Control and Rights;** empowering end-users - whether natural or legal persons - to control and utilise the data they generate, reinforcing digital sovereignty. (*Art. 3-8*)
- **Enable Public Interest Use:** with providing a framework for proportionate access by public bodies in cases of exceptional need, with safeguards and, where relevant, compensation. (*Art. 14-22*)
- **Support Cloud and Edge Portability:** by mandating switching between providers, interoperability of formats and services, and protection of EU-held data from unlawful third-country access. (*Art. 23-31*)

Key Provisions to Understand

- **Data Access and Portability:** raw and pre-processed data, along with necessary metadata, generated by connected products or related services, must be made available to entitled users or their nominated third parties.
- **Interoperability and Standards:** data should be machine-readable, structured, and compatible across systems, enabling migration between platforms and integration with third-party services.
- **FRAND Conditions:** sharing must occur under fair, reasonable, and non-discriminatory terms, with protections against “grey-listed” unfair contractual clauses.
- **Public-Sector Access:** Certain public bodies may access data to serve critical public-interest needs such as safety, environmental protection, or crisis response, under strict proportionality and security measures.
- **Allocation of Responsibilities:** Clear delineation of roles for data holders, processors, and controllers, covering transparency, security, and lawful sharing obligations.

Broader Applicability

The EU Data Act applies across **all sectors** deploying connected products and related services, from industrial machinery and energy systems to consumer IoT, smart infrastructure, logistics, agriculture, medical and health devices, and public procurement of connected assets.

In Scope

- **Data:** raw and pre-processed data plus required metadata generated through the use of connected products or provision of related services.
- **Users:** natural or legal persons who own, rent, lease, or otherwise have rights to use the product or receive a related service. Multiple concurrent users per product must be accommodated.
- **Data Processing Services:** cloud and edge services must enable portability, switching, and safeguard EU-held data from unlawful third-country access.

Out of Scope

- **Derived or Inferred Data:** outputs requiring substantial further processing beyond normal operation.
- **Creative Content:** materials intended for human consumption such as media or artistic works.
- **Excluded Assets:** prototypes and embedded infrastructure sensors not owned or controlled by the user.

Sources:

- *Instrument and date:* The EU Data Act is Regulation (EU) 2023/2854. It entered into force on 11 January 2024 and becomes applicable on 12 September 2025.
Official Journal, EUR-Lex: <https://eur-lex.europa.eu/eli/reg/2023/2854/oj/eng>
- *Horizontal scope:* Applies across sectors to connected products and related services that generate data on use, performance, or environment, and to data processing services (cloud and edge) for switching and interoperability.
EC FAQs (v1.2, 03 Feb 2025): <https://digital-strategy.ec.europa.eu/en/factpages/data-act-explained> and *FAQs PDF:* <https://digital-strategy.ec.europa.eu/en/library/commission-publishes-frequently-asked-questions-about-data-act>

Rights and Duties: What the Law Actually Requires

The EU Data Act defines clear, enforceable rights for those who generate or use data, and corresponding duties for those who hold, process, or provide the infrastructure for it. These obligations cut across all sectors and are designed to create a predictable, fair framework for data access, sharing, and portability.

For Users

- Entitled to access and port *readily available* data from connected products and related services, in a structured, commonly used, machine-readable format, accompanied by necessary metadata.
- May designate third parties to receive their data directly, under FRAND (fair, reasonable, and non-discriminatory) terms.

For Data Holders

- Must provide in-scope data promptly, securely, and in compliance with agreed formats and metadata standards.
- Required to offer terms on a FRAND basis, disclosing pricing components transparently.
- May protect trade secrets where disclosure would cause serious harm, applying a proportionate “handbrake” through safeguards such as secure processing environments, access controls, or anonymisation.
- Obligated to implement technical and organisational measures to uphold GDPR requirements, including data minimisation, purpose limitation, and lawful processing.

For Third-Party Data Recipients

- May use the data only for the agreed purposes, and must not develop competing products or services where restrictions apply.
- Required to apply robust security and confidentiality controls, and to delete or return the data when it is no longer needed for the agreed purpose.

For Public Bodies (B2G)

- Can request access only in cases of *exceptional need*, such as emergencies or situations where the data is required to fulfil a specific public-interest mandate.
- Must respect compensation rules, and data holders are obliged to disclose any applicable legal restrictions.

For Cloud and Edge Service Providers

- Must enable switching within defined timeframes, removing contractual, technical, and commercial barriers.
- Required to publish portability interfaces and documentation that allow workloads, datasets, and identities to be migrated without undue burden.
- Must prevent unlawful non-EU access to EU-held non-personal data, applying safeguards aligned with EU law.

What this means for organisations

The EU Data Act transfers real control over operational data from manufacturers and platform owners to the people and organisations that generate it. This is not an incremental change - it requires enterprises to redesign how they manage data rights, monetise access, and architect their cloud and edge ecosystems. The strategic imperative is threefold:

- **Redesign interfaces** for lawful, auditable access.
- **Reframe commercial terms** under FRAND, backed by transparent cost structures.
- **Embed portability and switching** as a first-class capability in cloud and edge environments.

Translating the EU Data Act into Organisational Change

The EU Data Act imposes specific rights and duties that cascade into concrete operational changes for every function in the enterprise. Compliance isn't confined to legal teams—it reshapes how executives, technologists, product owners, security leaders, and procurement operate. The table below maps the Act's regulatory drivers to the practical actions each role must take, highlighting where Hitachi Digital Services can enable consistent, scalable, and value-generating compliance.

Role	What changes (Regulatory driver)	So what (Required action)	HDS Can Deliver
CxO	Users and partners can lawfully request operational data	Treat data access as a product; plan for expanded third-party ecosystems	Strategic advisory, monetisation models, FRAND pricing frameworks
CTO/CIO	Must expose machine-readable data with metadata and audit	Build standardised APIs, identity, logging, and fulfilment pipelines	API and identity platforms, logging and compliance automation
CDO/Product	Define data products and data dictionaries	Document “readily available” datasets, quality SLAs	Data product frameworks, governance tooling
Legal/Privacy	GDPR primacy, FRAND terms, trade-secret handbrake	Draft standard clauses, apply safeguards, monitor compliance	Contract templates, compliance workflows
Security	New external interfaces to protect	Enforce policies, secure enclaves, audit trails	Secure API gateways, encryption, tamper-evident audit
Procurement	Switching rights and portability obligations	Build exit-as-code plans, evaluate providers	Cloud portability toolkits, migration runbooks

HDS PoV: Compliance should be built as an operational control plane, not as isolated policy documents. HDS enables organisations to meet EU Data Act obligations once—then apply them consistently across product lines, clouds, and markets. With transparent FRAND catalogues, automated request fulfilment, and evidence-rich audit trails, we help reduce disputes, accelerate partner onboarding, and unlock new revenue opportunities from compliant data sharing.

Impact Analysis

HDS analysis distils the EU Data Act’s obligations into practical implications, operational impacts, and the key challenges organisations must address to achieve both compliance and competitive advantage.

Implications	Impact	Key challenges
Users can access and port raw and pre-processed data from connected products and related services	Build and run reliable interfaces to deliver machine-readable data with metadata	Defining “readily available” data, dealing with legacy devices, ensuring completeness and timeliness
FRAND terms govern onward sharing to user-designated third parties	Create transparent pricing and non-discriminatory terms; standardise contracts	Proving non-discrimination across recipients; avoiding grey-listed clauses; handling disputes efficiently
GDPR remains primary for personal data	Embed lawful-basis checks, minimisation and selective disclosure into fulfilment workflows	Separating mixed datasets; managing multi-user products; coordinating DPO and product teams
Prospective scope of Chapter II data	Prioritise forward-looking pipelines and roadmaps; decide policy on historic data	Commercial pressure to include historic data; uneven quality in older datasets
Metadata and data quality become first-class	Publish data dictionaries and quality SLAs; invest in lineage and observability	Fixing metadata debt; aligning vocabularies across product lines; version control
Standardised, documented APIs are expected	Productise “data products” with versioned APIs, throttling, auth, and audit logs	Designing for scale and resilience; avoiding vendor-specific formats; change management for API evolution
Centralised operating model for requests	Stand up a control plane for intake, identity, purpose binding, fulfilment, logging and billing	Cross-functional RACI; integrating legal gates without slowing throughput; tooling selection
Cloud and edge switching must be feasible and timely	Implement exit-as-code, export formats, IAM mapping, and portability test suites	Data gravity and egress costs; identity sprawl; coordinating multi-provider runbooks
Interoperability expectations rise	Align on commonly used, machine-readable formats and reference standards	Avoiding lock-in while meeting performance needs; tracking evolving standards bodies’ guidance
B2G access in exceptional need	Maintain a playbook for scope checks, compensation logic, and audit trails	Rapid response under pressure; minimising disclosure; post-use deletion or return
Procurement must flow obligations upstream	Update supplier contracts for portability, formats, SLAs, and foreign-access safeguards	Renegotiating entrenched terms; obtaining verifiable attestations from providers
Economics shift from exclusivity to service enablement	Move to cost-recovery plus service tiers; meter usage and evidence fulfilment	Building fair cost models; preventing cross-subsidy that looks discriminatory
Assurance and enforcement focus on evidence	Produce regulator-ready records, KPIs and rationale for FRAND decisions	Harmonising logs across systems; independent assurance; preparing for audits and complaints
Change and skills uplift are required	Train product, legal, privacy, ops and support; publish external “how to request data” guidance	Sustaining adoption beyond launch; avoiding internal process bottlenecks; consistent messaging to customers

HDS Recommendations

Our recommendations are designed to be executed once, applied consistently across products, services, and clouds, and scaled to meet evolving regulatory and market demands. They reflect HDS's approach to building transparent, enforceable, and innovation-ready data ecosystems - where compliance is embedded in the control plane, and every investment strengthens competitive position.

Inventory connected products and related services

Map all in-scope datasets, distinguishing between personal and non-personal flows. Identify mixed datasets early to plan for segregation or minimisation.

Define “readily available” data

Establish and publish a data dictionary with agreed metadata minimums for each product line, ensuring clarity for both internal teams and external requestors.

Stand up an access gateway MVP

Deploy authentication, purpose binding, rate limiting, machine-readable exports, and evidence-grade logging to create a secure, compliant interface for lawful data access.

Write FRAND baselines

Implement non-discrimination testing, define rate-card components, document acceptable use policies, and embed trade-secret protection measures into access workflows.

Prepare switching runbooks

Document export formats, IAM mapping, and time-bound migration procedures; rehearse at least one full-scale exit scenario to prove readiness.

Invest in Data Management Capabilities

Strengthen IT infrastructure and data governance frameworks to ensure compliance and secure data sharing. This includes adopting advanced cybersecurity measures and interoperable data formats.

Embrace Collaborative Innovation

Seek strategic alliances with tech companies (like HDS) and startups to explore new business models. Embracing open innovation can help transform data into a competitive asset.

Develop Customer Centric Data Policies

Enhance transparency with consumers about data usage and ensure robust privacy protections. This approach not only complies with regulations but also builds trust and brand loyalty.

Monitor Regulatory Developments

Stay informed about changes to the EU Data Act and related policies. Active participation in industry discussions can help anticipate shifts and adapt strategies proactively.

How can Hitachi help

Hitachi Digital Services helps organisations transform their data ecosystems to comply with the EU Data Act while unlocking opportunities for innovation, efficiency, and growth. Our approach combines strategic advisory, technical integration, and operational execution, ensuring that compliance is embedded into the enterprise control plane and that every investment strengthens competitiveness.

Digital Transformation and Data Strategy Consulting

- **Regulatory Readiness Assessment:**
Conduct comprehensive reviews of current data infrastructures, governance models, and processes to identify gaps against EU Data Act requirements, covering accessibility, portability, interoperability, and security.
- **Roadmap Development:**
Design strategic roadmaps that align digital transformation programmes with compliance milestones, ensuring smooth integration of new data management practices.
- **Business Model Innovation:**
Advise on revenue models that leverage shared data ecosystems, such as service-based offerings, subscription models, predictive maintenance, or data-as-a-service propositions.

Data Integration and Platform Services

- **Interoperability Solutions:**
Build data platforms that support seamless exchange between systems, partners, and applications, adhering to standardised protocols, machine-readable formats, and FRAND principles.
- **Data Lakes and Warehouses:**
Implement scalable, compliant storage architectures to centralise disparate data streams for analytics, reporting, and audit readiness.
- **API Development and Management:**
Create secure, performant APIs with authentication, purpose-binding, and rate-limiting, enabling lawful data sharing under non-discriminatory terms.

Internet of Things (IoT) and Edge Solutions

- **Connected Product Platforms:**
Deploy IoT frameworks that collect, process, and share telemetry from connected devices to enable operational optimisation and enhanced service delivery.
- **Edge Computing Architectures:**
Process data closer to the source to reduce latency, optimise responsiveness, and maintain compliance with data localisation and sharing policies.
- **Remote Monitoring and Control:**
Deliver telemetry-based solutions for proactive maintenance, operational insights, and improved asset utilisation.

Advanced Analytics and GenAI

- **Predictive Analytics:**
Apply AI and GenAI to identify patterns, forecast events, and support preventative actions across operations, maintenance, and service delivery.
- **Data-Driven Decision Support:**
Develop dashboards and analytics tools that provide real-time, evidence-based insights to improve performance and efficiency.
- **GenAI-Enhanced Services:**
Personalise offerings and decision-making through AI-driven recommendations, dynamic pricing, or operational routing, turning raw data into competitive intelligence.

Cybersecurity, Data Governance, and Compliance

- **Robust Cybersecurity Frameworks:**
Implement advanced security measures, including secure enclaves, encryption, and tamper-evident audit, to safeguard sensitive and regulated data.
- **Data Governance Models:**
Establish clear ownership, access protocols, and accountability frameworks that ensure transparency and compliance across the data value chain.
- **Compliance and Risk Management:**
Provide continuous monitoring, audit readiness, and remediation strategies to align with evolving EU Data Act provisions and related regulations.

Operational Technology and Industrial IoT Solutions

- **Smart Operations Integration:**
Extend digital capabilities into production and operations through Industrial IoT, integrating sensor data to improve efficiency and resilience.
- **Digital Twin Technology:**
Create virtual replicas of systems and processes to simulate scenarios, identify inefficiencies, and predict potential issues before they occur.
- **End-to-End Supply Chain Visibility:**
Deliver platforms for real-time tracking and transparency, enhancing both operational performance and regulatory compliance.

The EU Data Act sets a new baseline for data transparency, interoperability, and lawful sharing. Organisations that address it narrowly as a compliance obligation will meet the letter of the law, but they will miss its strategic potential. Those that embed its principles into their operating model will unlock the real prize: a trusted, governed data ecosystem ready to fuel the next generation of autonomous, AI-driven services.

At Hitachi Digital Services, we see the EU Data Act not as a constraint but as an accelerator - one that, when paired with **Agentic AI**, redefines the boundaries of efficiency, innovation, and value creation. The organisations that act now will set the standards others will be forced to follow.

Agentic AI is the natural progression. Once data is discoverable, portable, and governed under FRAND principles, AI agents can securely and autonomously reason, plan, and act - executing complex workflows across systems and partners without human micromanagement, yet within defined legal and commercial guardrails.

TimeSeries – Hitachi own industry LLM for Car Manufacturing

We have been working on a Time Series language model, which offers significant advantages for car manufacturing industry and related digital ecosystems by transforming vast streams of temporal data into actionable insights. Below are several detailed ways in which Hitachi TimeSeries Model can help, particularly in environments impacted by regulatory frameworks like the EU Data Act:

Predictive Maintenance and Operational Efficiency

- **Anomaly Detection & Early Warning Systems:**

HDS TimeSeries can continuously analyse sensor and telematics data from connected vehicles or manufacturing equipment. By identifying unusual patterns or deviations in real time, it enables early detection of potential failures. This proactive approach minimizes downtime and extends the lifespan of critical components.

- **Forecasting Equipment Health:**

By leveraging historical time series data, HDS TimeSeries forecasts when a component is likely to fail or require maintenance. This supports scheduling repairs during planned downtime, optimizing inventory management for spare parts, and reducing overall maintenance costs.

Enhanced Real-Time Analytics

- **Dynamic Performance Monitoring:**

HDS TimeSeries excels in processing real-time data streams, providing automotive manufacturers with up-to-the-minute insights on vehicle performance, production line efficiency, and energy consumption. This capability supports continuous operational improvements and agile responses to evolving conditions.

- **Driving Insights from IoT Data:**

In the context of connected vehicles and smart manufacturing, HDS TimeSeries can integrate with IoT platforms to analyse data from multiple sources. This results in comprehensive dashboards that correlate vehicle diagnostics, environmental conditions, and operational metrics to support decision-making.

Strategic Decision Support

- **Demand and Supply Chain Forecasting:**

By modelling and forecasting time series data, HDS TimeSeries can predict fluctuations in demand for vehicle components, streamline production planning, and manage supply chain disruptions. This ensures that manufacturers maintain optimal inventory levels and meet delivery targets.

- **Regulatory Compliance Monitoring:**

With the EU Data Act emphasizing transparent data sharing and rigorous data governance, HDS TimeSeries can help by continuously monitoring data streams for

compliance-related anomalies. This not only aids in regulatory reporting but also enhances overall data quality and governance practices.

Integration with Digital Transformation Initiatives

- **Seamless Data Ecosystem Integration:**

HDS TimeSeries can be embedded into broader digital platforms, such as those offered by other industry partners, to enhance data-driven applications. Whether integrated into cloud-based analytics solutions or edge computing systems, it supports a unified approach to digital transformation.

- **Enhanced Decision Dashboards:**

By translating complex time series data into user-friendly visualizations, HDS TimeSeries empowers stakeholders - from factory managers to executive leadership - to make informed, timely decisions based on predictive insights and trend analyses.

Supporting Innovation and Business Model Evolution

- **Enabling New Data-Driven Services:**

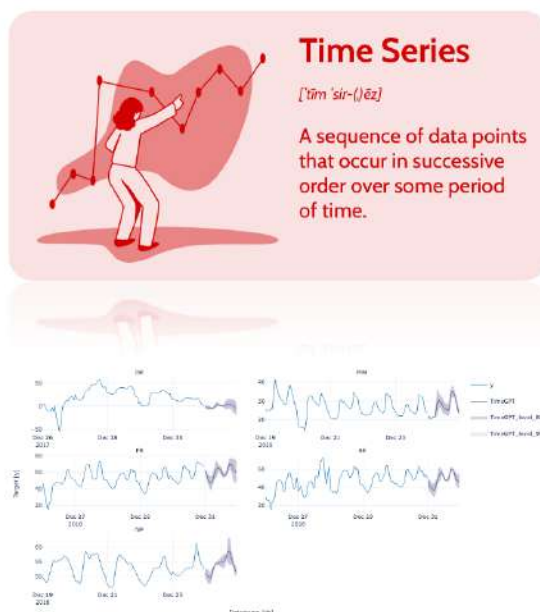
The insights generated by HDS TimeSeries can support the development of innovative services such as usage-based insurance, personalized maintenance packages, and advanced driver assistance systems (ADAS). This aligns with business model shifts encouraged by increased data accessibility under the EU Data Act.

- **Boosting Competitiveness:**

With its ability to process and analyse vast amounts of time-dependent data, HDS TimeSeries provides manufacturers with a competitive edge, enabling rapid response to market changes and technology trends while maintaining compliance with regulatory standards.

Industry Specific LLM's

Hitachi Digital Services



Generative pretrained transformer for time series

Capable of accurately predicting various domains such as retail, utilities, finance, and IoT

- **Zero-shot Inference:** Generate forecasts and detect anomalies straight out of the box, requiring no prior training data. This allows for immediate deployment and quick insights from any time series data.

- **Fine-tuning:** Enhance capabilities by fine-tuning the model on own specific datasets, enabling the model to adapt to the nuances of your unique time series data and improving performance on tailored tasks.

- **Add Exogenous Variables:** Incorporate additional variables that might influence predictions to enhance forecast accuracy. (E.g. Special Dates, events or prices)

- **Multiple Series Forecasting:** Simultaneously forecast multiple time series data, optimizing workflows and resources.

- **Custom Loss Function:** Tailoring the fine-tuning process with a custom loss function to meet specific performance metrics.

- **Cross Validation:** Implement out of the box cross-validation techniques to ensure model robustness and generalizability.

- **Prediction Intervals:** Provide intervals in the predictions to quantify uncertainty effectively.

- **Irregular Timestamps:** Handle data with irregular timestamps, accommodating non-uniform interval series without preprocessing.

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Hitachi Digital Services

Hitachi Digital Services, a wholly owned subsidiary of Hitachi, Ltd., powers mission-critical platforms with cloud, data, IoT, and ERP solutions, underpinned by advanced AI. With over 110 years of expertise, we drive innovation and growth for a more sustainable future.