

Position Paper

A European industrial data economy

The electrical industry's requirements for Common
European Data Spaces

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German Electrical and Electronic Manufacturers' Association

ZVEI – the Electrical and Electronics Industry

ZVEI represents the interests of a high-tech sector with a very dynamic product portfolio in the lead markets Industrie 4.0, health, energy, mobility, and building. ZVEI is committed to the common interests of the electrical industry in Germany, Europe, and at international level. Its member companies include both global players and medium-sized and family-owned companies – headquartered in Germany, Europe, and all over the world. In 2019, their turnover was approximately €190.1 billion and R&D spending is at €19.6 billion, which accounts for 23 percent of all innovation expenditures of the German industry.

Key Messages

Industrial Data Economy

1. Data access and data sharing within a European data infrastructure must be regulated according to the principles of companies' freedom of contract.
2. A European cloud infrastructure in the context of European Data Spaces should satisfy sector-specific requirements for access and further processing of data.
3. Before implementing further legislation, the European Commission should fully establish the Common European Data Spaces and very carefully assess potential market failure.
4. The re-use of data in different production and application contexts can be achieved by data portability, implemented by means of interoperable data formats and information models based on open standards.
5. EU-wide uniform product requirements for cybersecurity and a holistic approach to the security of data in the infrastructure is necessary.

European Health Data Space

1. The European Health Data Space must ensure standards which guarantee the secure exchange of health, industry, and research data in a cross-border European infrastructure.
2. Clarification of standards for anonymisation of personal health data is needed.
3. A European supervisory authority should be established in order to merge existing structures and clarify the framework for data access and protection of health research data at the individual level.
4. Consideration should be given to eliminating the opening clause in the GDPR concerning national regulations, in order to enable and promote further cross-border collaboration.
5. Promotion of the secondary use of health data for all types of research, including for industrial purposes.

Common European Data Spaces for Smart Manufacturing

1. Based on their own data classification, each user in the manufacturing context should decide where their own data is stored and by whom, and for what purpose it may be processed.
2. Linking devices and edge clouds on the production site to different cloud services is key for a data economy in order to generate large databases from which all players along the value chain can benefit.
3. Security must be safeguarded as comprehensively as possible through a holistic approach, including both security by design in the development phase and security lifecycle management.
4. ZVEI rejects the monopolisation of data and the introduction of new data ownership legislation in the industrial context.
5. Industry is already developing innovative forms of collaboration in many areas, which should be taken into account in the creation of new data spaces.

Introduction

Networked products and new storage options now enable companies to process huge volumes of data. Collected via platforms, evaluated and merged to create new findings, this data is valuable for the development of new products, services and business models. Linking the analog and digital worlds, the electrical industry is a key sector for the digital transformation of Europe's industry and is actively shaping it with its products and system solutions. This has already been outlined in ZVEI's [comments on the data strategy of the German federal government](#)¹.

The electrical industry welcomes the European Commission's plan to set up Common European Data Spaces to develop new business models and leverage new potential for added value. ZVEI represents companies within the five lead markets of (1) Industrie 4.0, (2) Health, (3) Mobility, (4) Building, and (5) Energy, and is therefore directly affected by the establishment of data spaces in these strategic sectors.

The Industrial Internet of Things (IIoT), constituting the basis for data management in B2B (business-to-business) contexts, would not be possible without the industry's innovations, for example in the areas of automation and processor technology, sensor technology, connectivity and software platforms. Electronics forms the core of any digital system. Further technological developments for the future, such as the fourth industrial revolution and artificial intelligence (AI), are not possible without secure electrical and electronic systems. The European Commission should therefore cooperate closely with the European electrical industry in developing rules and standards for Common European Data Spaces.

Creation of a trusted European data infrastructure will support data-driven innovations in the economy. Digital ecosystems based on European values are to permit data exchange across borders and sectors and thereby ensure the competitiveness of European companies. ZVEI has formulated this in its [guidelines for the responsible use of data and platforms](#)².

Data spaces for specific industrial sectors or value chains, e.g. in the field of smart manufacturing, are to be organised and designed by industry itself. Existing platforms and reference architectures should be integrated. As a matter of principle, participation must be voluntary, and participants should be able to decide for themselves what data is shared, for what specific purpose it is processed, and under what access rights. The conditions for participation in data spaces should be organised by the participants themselves. In general, actors from third countries should also be able to participate.

No general data sharing obligation

Data access and data sharing within the framework of a European data infrastructure must be regulated according to the principles of companies' freedom of contract and right to self-determination. ZVEI rejects a general "data sharing obligation" for industrial

¹ [ZVEI \(2020 a\): Stellungnahme zu den Eckpunkten einer Datenstrategie der Bundesregierung](#)

² [ZVEI \(2020 b\): Guidelines of the electrical industry for the responsible use of data and platforms, Ver. 2](#)

data, as industrial data usually contains sensitive information relevant to competition and is therefore a good worthy of protection³.

An essential guideline for ZVEI is that data generators should be free to decide how to handle the data they generate⁴. ZVEI rejects the monopolisation of data and the creation of a new right to data ownership. As a rule, access and use should be regulated between partners in fair contracts that take the interests of both sides into account in an appropriate manner.

This ensures that customers and business partners can determine and control what data is accessed and for what purpose it is used. The concept of data sovereignty can be a common starting point along the digital value chain to ensure that any user, whether a private individual or commercial entity, can decide for themselves how data is stored, who is permitted to access it, and by whom and for what purpose it may be processed.

Regulations aimed at the B2C sector should also be prevented from impacting upon on purely B2B transactions. A distinction must be drawn in data usage between B2C transactions based primarily on personal data and industrial B2B transactions based primarily on non-personal, machine data. This is relevant during discussions of the obligation to share data on digital platforms and in legislation governing general terms and conditions for business transactions⁵.

Expanding the European data infrastructure

In order for the competitiveness and innovative capacity of companies to be developed further, the greatest possible variety of powerful cloud providers is needed. A European cloud infrastructure in the context of Common European Data Spaces should satisfy sector-specific requirements on access and further processing of data, and also ensure the security of data worthy of protection. The highest possible scalability of the platforms strengthens European capacities and thus also attains the goal of digital resilience.

In addition to the cloud, the expansion of edge technologies will play a key role in the future. Device-oriented processing of data has numerous advantages, including security, robustness and the ability for decisions to be taken and executed directly in the field. The electrical industry is making a substantial contribution here, particularly in the provision of electronic components and systems⁶.

Industrial platforms should provide non-discriminatory, transparent and open access for all interested parties. Quality requirements or technological prerequisites for the security and functionality of the platform must not be imposed unilaterally to the detriment of individual market participants. By way of appropriate opt-in/opt-out

³ Cf. ZVEI (2020 a): p. 4

⁴ Cf. ZVEI (2020 b): Guideline No. 2

⁵ Cf. ZVEI (2020 a): p. 4

⁶ Cf. ZVEI (2020 a): p. 8

functions, platform users should be given the means for selective tracking and controlling of how the data they contribute are used and exploited in platform operation⁷.

Platforms should therefore be designed in a way that does not give rise to anti-competitive lock-in mechanisms which artificially impede users from switching to other platforms. In particular, the migration of data should be ensured, and the simultaneous use of several platforms should be made possible⁸.

Promote standardisation and increase interoperability

In the context of European, cross-border data exchange, versatile use of the data in different production and application contexts is to be enabled. The support of data portability through interoperable data formats and standardised information models is an important prerequisite for selective data pooling in unrestricted competition⁹.

The re-use of data in different production and application contexts can be achieved by data portability, implemented by means of interoperable data formats and information models based on open standards¹⁰. Such standards are already used by companies in the electrical industry, for example in the asset administration shell of Industrie 4.0, in the health sector for data sharing in medical research, and in the ecl@ss data standard. These standards permit data exchange and data pooling between different providers and thereby encourage competition.

Standardisation should also continue to be a task for industry in the sector-specific use of data spaces. The principle of the "New Legislative Framework" has proved its value, both for companies and for standardisation authorities. The electrical industry sees no further need for action by the legislator, who can continue to set the legal framework for standardised data formats. According to the principle of the New Legislative Framework, the legislator should refer to standards, but leave their definition to industry¹¹.

A horizontal approach to cybersecurity

In order for data to be shared and exploited, access control against misuse, secure processing, storage and handling of data and preservation of its integrity and confidentiality are basic requirements. Companies in the electrical industry are therefore committed to promoting security as comprehensively as possible through a holistic approach. This includes both security by design in the development phase and security lifecycle management throughout the entire product and data lifecycle. ZVEI

⁷ Cf. ZVEI (2020 b): Guideline No. 9

⁸ Cf. ZVEI (2020 b): Guideline No. 10

⁹ Cf. ZVEI (2020 b): Guideline No. 5

¹⁰ Cf. ZVEI (2020 b): Guideline No. 5

¹¹ Cf. ZVEI (2020 a): p. 7 f.

also actively advocates this approach in its guidelines for responsible handling of data and platforms¹².

EU-wide uniform product requirements for cybersecurity are of great importance for the electrical industry¹³. The security of networked systems provides the basis for trusted data spaces in Europe. In this context, the resilience of products, processes, services and infrastructures must be viewed as a whole, in order to strengthen a European data economy¹⁴.

Personal data is worthy of protection¹⁵

The General Data Protection Regulation (GDPR) builds a coherent legal framework that enables personal data to be shared within European Data Spaces based on common values and data protection standards. ZVEI considers the individual's self-determination with respect to their own data to be a central tenet of the digital economy. We see the requirements for data protection set out in the GDPR as a competitive advantage in global competition.

However, unresolved legal uncertainties and non-cohesive implementation in the member states still need to be addressed. Deleting the opening clause of the GDPR concerning national regulations should be considered, in the interests of enabling and promoting further cross-border collaboration. In this context, standards for the anonymisation of personal data should also be clarified, as this would facilitate their use on a larger scale for industrial and research purposes.

EU Data Act – facilitate voluntary data sharing

The EU Commission's digital package, published in February 2020, presents a prospective Data Act (2021) for legislative action on issues affecting relations between actors in the data economy and the provision of incentives for horizontal data sharing across sectors. The electrical industry welcomes the aim of supporting business-to-business data sharing, in particular addressing issues related to usage rights for co-generated data (such as IoT data in industrial settings), and clarifying rules for the responsible use of data (such as legal liability).

However, the electrical industry rejects any attempts to introduce data sharing obligations through a potential Data Act. The general principle is that of facilitating voluntary data sharing. Before implementing further legislation in the form of a potential Data Act, the European Commission should first fully establish the Common European Data Spaces and very carefully assess potential market failure. Demonstrable market failures and the question whether such failures arise from anti-competitive behaviour

¹² Cf. ZVEI (2020 b): Guideline No. 3

¹³ [ZVEI \(2018\): Horizontal Product Regulation for Cybersecurity \(Whitepaper\)](#)

¹⁴ [BDI \(2020\): Statement: Public consultation procedure on the EU Data Strategy](#), p. 22 f.

¹⁵ Cf. ZVEI (2020 b): Guideline No. 9

or as a result of a merger/acquisition should normally be addressed by competition law. An injunction to make certain data available is a remedy already available to the competition authorities.

Incentives for business can help to improve sharing of data or data-related services. Digital value creation is essentially based on the processing and evaluation of data, for example through data analysis techniques or the application of artificial intelligence. Digital value creation through data processing and evaluation is therefore an economically significant asset worthy of protection¹⁶. In order to spread this message to a broader spectrum of small and medium-sized companies, ZVEI has published an [Opportunity Compass Data Economy](#) as an orientation guide for new data-driven business models¹⁷.

Data trustees

The establishment of data trustees is potentially a promising aspect of a functioning data economy in certain fields of application in Europe. The development of data-driven business models is obstructed when organisations do not fully trust each other when exchanging data or when direct data exchange is technically or legally impossible. A data trustee can intervene as a trusted partner of both organisations. The original data is transferred to the data trustee and analysed and processed according to the agreed data governance. Only the result is passed on to the authorised organisation.

In industrial contexts however, huge volumes of IoT-generated big data must often be processed and organised. This leads to significant challenges regarding the data layer architectures and the costs entailed by additional layer structures for a data trustee. Here, it is often more efficient to define data access and the purpose of data usage clearly and directly in contracts between the partners involved, and to offer independent audits of these contractual agreements.

Data trustee arrangements should therefore be designed and applied only in sectors presenting a certain need for intermediation. A data trustee could have a valuable role particularly in the area of health or GDPR-related data. In other areas, especially in the industrial context – in which huge volumes of machine data are transferred and processed, often directly at the edge – an intermediary is often not necessary and implies additional complexity and a decrease in efficiency.

¹⁶ Cf. ZVEI (2020 b): Guideline No. 4

¹⁷ [ZVEI Services GmbH / McKinsey / ZVEI \(2019\): Opportunity Compass for the Data Economy: Guidance for data-based business models in the electrotechnical and electronics industry](#)

European Health Data Space

The European healthcare industry generates direct added value for citizens and society as a whole and has great potential in the field of digital technologies. ZVEI supports the creation of a data space for the health sector. Unlike data spaces for other industries, the European Health Data Space (EHDS) is not only a business-to-business solution but will also create an opportunity for European citizens to store and manage their health data safely. This will enable all players in the health sector – companies, public institutions, medical centres, research institutions and patients – to develop, deploy and utilise new digital services and innovations and to improve public healthcare and healthcare delivery significantly. The EHDS must ensure that standards are in place which guarantee the secure exchange of health, industry and research data in a cross-border European infrastructure. Central requirements are:

- Creation of a European supervisory authority to supervise data trustees¹⁸. In the healthcare sector, data sharing and storage is often channelled through “data access committees”. These committees take various organisational forms and perform diverse roles and functions. A supervisory authority can merge existing structures and clarify the framework for data access and protection of health research data at the individual level.
- Definition of common minimum requirements for the establishment and operation of data trustees created by private or public entities.
- Establishment of European communication and data access standards to avoid lock-in/lock-out mechanisms and promote interoperability of health data¹⁹.
- Application of the GDPR as a legal framework for the exchange of (personal) health data to protect the citizen and the economy. Consideration should be given to eliminating the opening clause in the GDPR concerning national regulations, in order to enable and promote further cross-border collaboration.
- Clarification of standards for anonymisation of personal health data.
- Development of transparent quality standards for data²⁰.
- Initiation of standards defining the annotation of health data and assurance of the transparency of such standards. All relevant stakeholders in the health sector should be included in the standardisation process.
- Promotion of the secondary use of health data for all types of research, including for industrial purposes.
- Promotion of the implementation of high cybersecurity standards with horizontal process requirements and a holistic approach to the security of data in the infrastructure of the EHDS²¹.

¹⁸ [Federal Ministry of Economic Affairs \(2020\): GAIA-X: A Pitch Towards Europe – Status Report on user Ecosystems and Requirements](#), p. 27

¹⁹ Cf. ZVEI (2020 b): Guideline No. 5 & 10

²⁰ Cf. BDI (2020): p. 30

²¹ Cf. ZVEI (2020 b): Guideline No. 3

Common European Data Spaces for Smart Manufacturing

The European manufacturing industry is a world leader in many areas. Common European Data Spaces for Smart Manufacturing present new potential for further development of this position and increased participation in the industrial data economy. In this context, the existing industrial B2B data ecosystem in Europe, which is indeed very diverse and innovative due to the particular conditions of manufacturing industry, should be examined more closely. A functioning open data economy is in the interests of the electrical industry. Basic requirements are:

- Access to and use of industrial data should be regulated between partners in fair contracts that give appropriate consideration to the interests of all parties involved. ZVEI rejects the monopolisation of data and the introduction of new data ownership legislation in the industrial context.
- Data sovereignty is a foundation for data-driven business models, the emergence of sectoral and cross-sectoral data ecosystems, innovations, economic competitiveness and ultimately the prosperity of Europe. It implies that based on their own data classification, each user in the manufacturing context decides where their own data is stored and by whom, and for what purpose it may be processed.
- In an industrial context, security must be safeguarded as comprehensively as possible through a holistic approach. This includes both security by design in the development phase and security lifecycle management throughout the entire product and data lifecycle.
- The ability to use data in parallel across different generation and application contexts in the manufacturing sector can be achieved by supporting data portability through interoperable data formats and information models based on open standards. The concept of German industry's asset administration shell should be considered in this context.
- By the provision of suitable opt-in/opt-out functions, platform users should be given the facility for selective tracking and control of the use and exploitation of the data they have contributed in platform operations.
- The design of platforms should prevent the creation of anti-competitive lock-in mechanisms that artificially obstruct users from switching to other platforms. In particular, the migration capability of data should be ensured, and the simultaneous use of multiple platforms made possible.
- Linking devices and edge clouds on the production site to different cloud services, for example for collaborative condition monitoring²², is key for a successful data economy and should take the usability of data into account. This requires component suppliers, machine suppliers and operators to work together across company boundaries. This is the best way of creating a correspondingly large database from which all players along the value chain/network can benefit.
- Industry is already developing innovative forms of collaboration in many areas of digital manufacturing. The data spaces should therefore take these new

²² [BMW, Plattform Industrie 4.0 \(2020\): Ergebnispapier – Kollaborative datenbasierte Geschäftsmodelle](#)

forms of industry collaboration into account and enable all participants to join them. The digital transformation of Europe's industry, accompanied by data sharing business models for value-chain improvement and logistics and for certain use cases in production, have great potential for the development of more efficient business models and production processes with a smaller CO₂ footprint and lower material input. The value for European society already created by the manufacturing sector would thus be further enhanced by more intensive data usage.

- Existing legislation must be evaluated to determine what legal framework is suitable for the European Commission's objectives. This is particularly the case for data that may also be deemed a trade secret, carry an element of personal data with it or be critical for security. Any form of sharing must be legally clarified in this regard. By clarifying various rules which, through their interaction, affect B2B data sharing, the EU could create the required foundation for greater voluntary data access and sharing, besides ensuring the portability of industrial data.

In order for Common European Data Spaces to be created, we call for a flexible policy approach. However, it is important to recognise that there is no 'one size fits all' solution. We will need to work on an overall policy approach, built through dialogue with all relevant stakeholders. Policy action at this stage must be examined carefully and the assessment should involve industry, in order for industrial players to be incentivised further to share their data. Huge potential exists in full exploitation of the data economy, and industry makes a tremendous contribution to the overall benefit of societal welfare in Europe. The electrical industry is a key enabler for this smart data usage.



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