

# D 6.6

## Animated pictures or Project Video – Second iteration

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<sup>1</sup> PU: Public, CO: Confidential, only for members of the consortium (including the Commission Services)

<sup>2</sup> RE: Report, OT: Other; ORDP: Open Research Data Pilot



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## Executive Summary

**Deliverable 6.6** presents the second ConnectedFactories 2 (CF2) video, providing a continuation of the first iteration by illustrating the CF2 pathway Data Spaces.

The CF2 project video is in English and is available at the following URL address:

<https://www.connectedfactories.eu/data-space-pathway-video>

The document gives a short overview of the video's development, structure and content, including screenshots of the different scenes and a voiceover transcript. S2i (task lead), together with EFFRA, planned the video and collaborated its realisation with a professional video production company.

The video starts by setting the scene regarding the CF2 pathway Data Spaces evolution. After that, it details the Data Spaces pathway dynamically and points out important cross-cutting factors needed for a safe and successful digitisation journey through five levels. Finally, it ends with a call to the audience to explore the project results in more depth and actively engage with the consortium.

The video provides a powerful tool to visualise the project context and results dynamically and together with the clear narrative, it will provide a wide reach and good accessibility to different audiences, including the manufacturing community and the broader public. The video builds on the project branding and communication materials like logo, website, and newsletter to ensure good recognisability. The EU emblem and the funding text are also presented at the end of the video.

## 1 Introduction and Context

The ConnectedFactories 2 (CF2) second iteration video was published on 31 August 2022 and is available at the URL address:

<https://www.connectedfactories.eu/data-space-pathway-video>

Videos represent one of the most influential media for disseminating project activities to a large and broad audience, raising awareness of project results and extending the community. The CF2 second iteration video targets stakeholders interested in digital manufacturing, companies are seeking digital transformation, end-user and solution providers of digital tools, and the broader public. Special attention has been paid to ensuring the accessibility of potentially complex information and presenting it in an easily digestible way.

The CF2 second iteration video is a continuation of the first iteration video (deliverable D6.4, available at <https://www.youtube.com/watch?v=AT78aMMYs2s>), providing a description and visualisation of the 'Data Spaces pathway' developed during CF2.

The Data Spaces (DS) pathway, like the other pathways, reflects how digitalisation and digital platforms can bring value to different manufacturing situations, such as factory automation, value networks or product-service development. Ultimately, the pathways have been developed to enhance the awareness among various stakeholders about the present and future use of digital technologies in manufacturing and facilitate the migration from legacy situations towards innovative approaches.



Furthermore, the DS pathway includes milestones. Like the other pathways, the DS pathway is composed of 5 levels, characterised by increasing maturity degrees of the manufacturing company / industrial case towards full exploitation of Data Economy in Manufacturing.

## 2 The second iteration Video

The CF2 second iteration video has been implemented in collaboration with the professional video production company Kambeck in Karlsruhe. S2i and EFFRA developed the video's concept, structure, text and overall storyboard. The video entails animations and film footage to explain and support the key messages presented in a clear narrative. The video is split into different scenes accompanied by engaging but non-distracting background music:

- Intro sequence
- Overview of pathways developed by ConnectedFactories
- Illustration of a Smart Autonomous Factories scenario for Data, Collaborative Product-Service scenario for Data Spaces and Hyperconnected Factories scenario for Data Spaces.
- Introduction of Data Spaces pathway
- A detailed description of the Data Spaces pathway by presenting five levels of the pathway
- Call for engagement
- Outro

The following pictures present screenshots taken from the video with short descriptions in the capture:



Figure 1: Video introduction with a European map and the CF2 logo

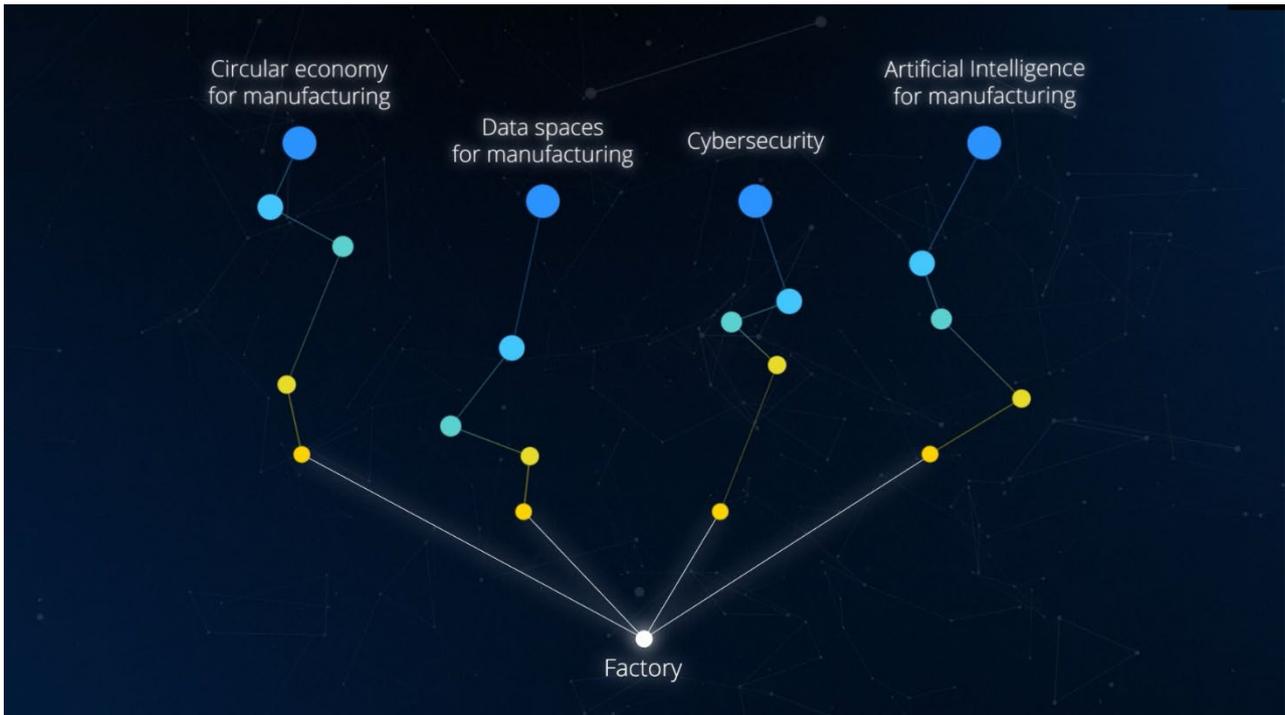


Figure 2: Overview of different pathways that are available and developed by CF as Circular economy for manufacturing, Data spaces for manufacturing, Cybersecurity and Artificial intelligence for manufacturing.

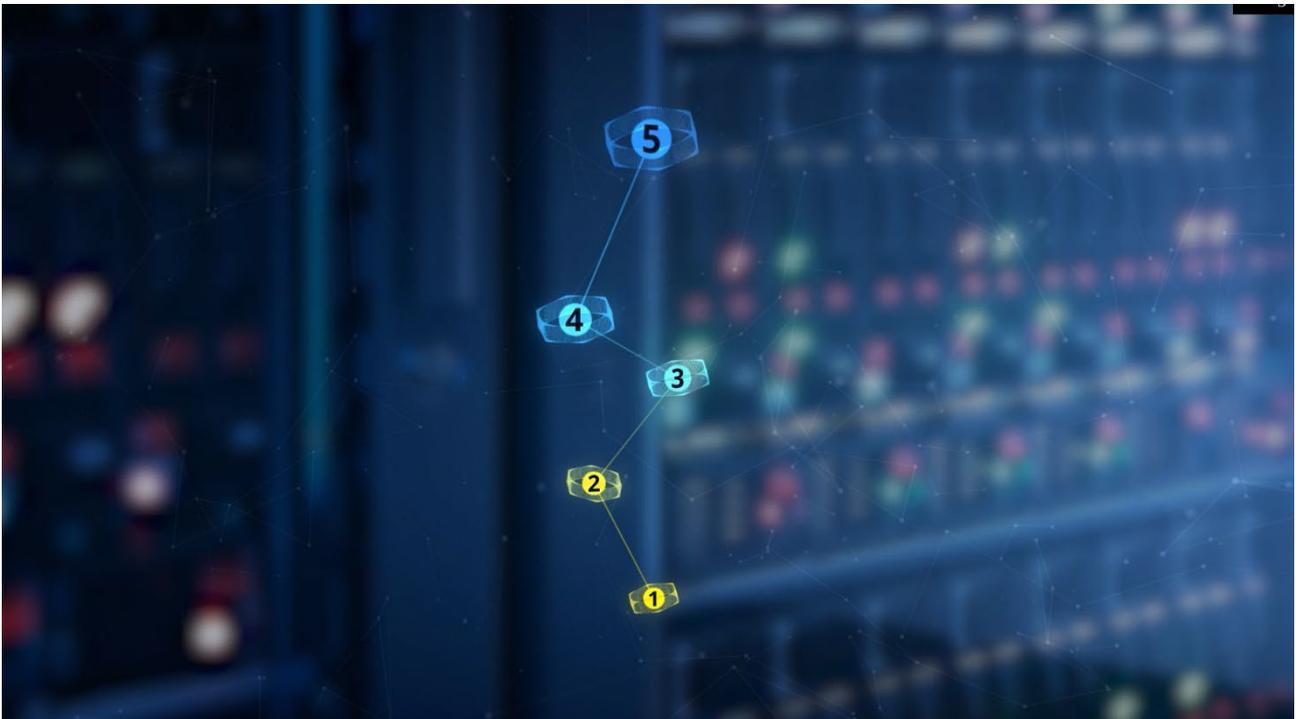


Figure 3: Introduction to levels 1-5, building a conceptual and operational framework where manufacturing companies could position themselves and their industrial cases for the Data spaces pathway.



Figure 4: Illustration of a Smart Autonomous Factories scenario for Data Spaces support dynamic multi-stakeholder, enabling predictive maintenance and substantially reducing environmental footprint.



Figure 5: Illustration of a Collaborative Product-Service scenario for Data Spaces to collect, integrate and harmonise highly distributed datasets, in space and in time, along the whole lifecycle of the product, enabling new service-oriented business.

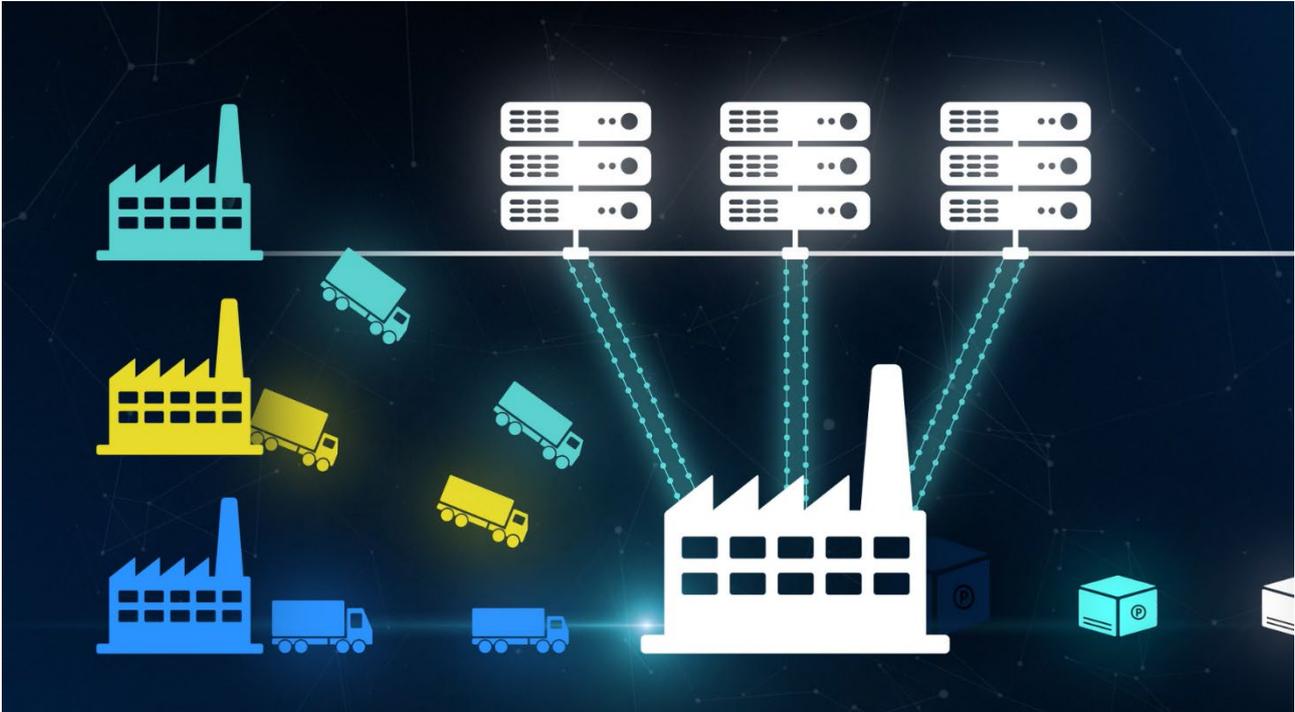


Figure 6: Illustration of a Hyperconnected Factories scenario for Data Spaces to model heterogeneous, complex and dynamic supply and delivery business ecosystems by adopting common standard data models and business processes, finally enabling order-capacity matchmaking.

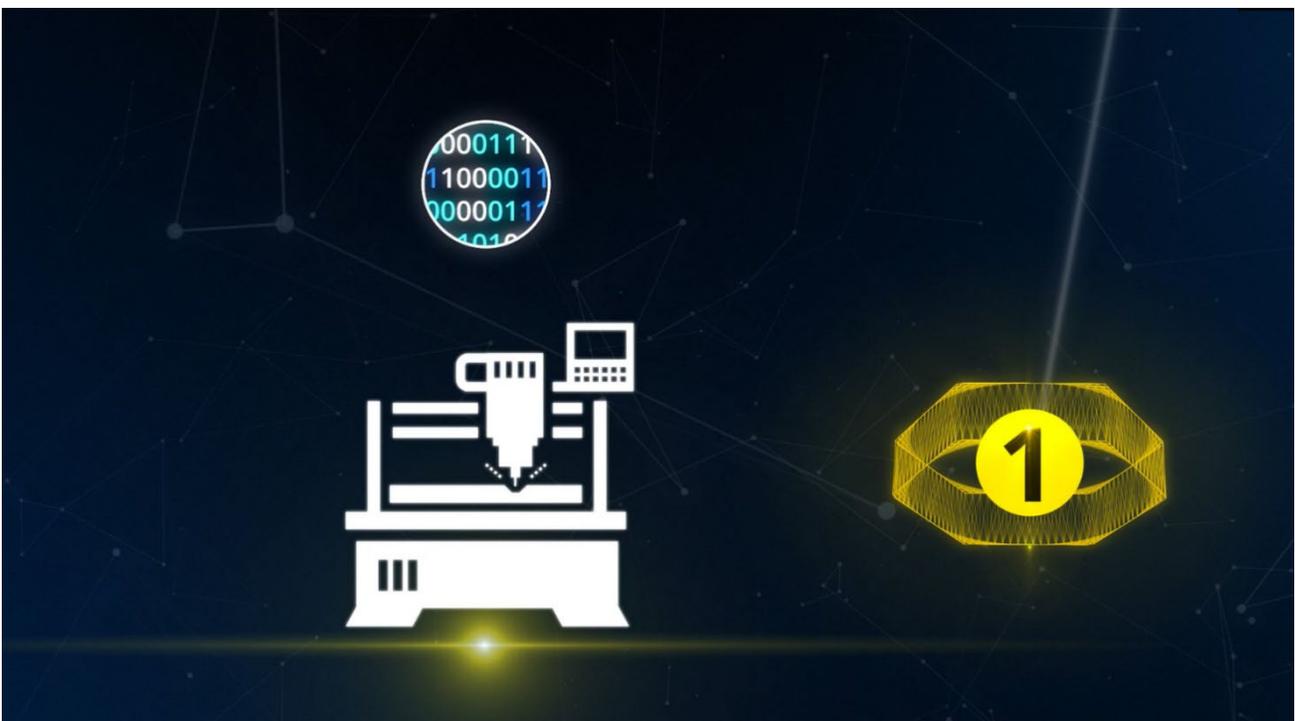


Figure 7: Start of description of the Data Space pathway divided into 5 levels. At Level I, data remain trapped inside the systems and is practically unavailable to Manufacturing Industry end users and further elaborations.

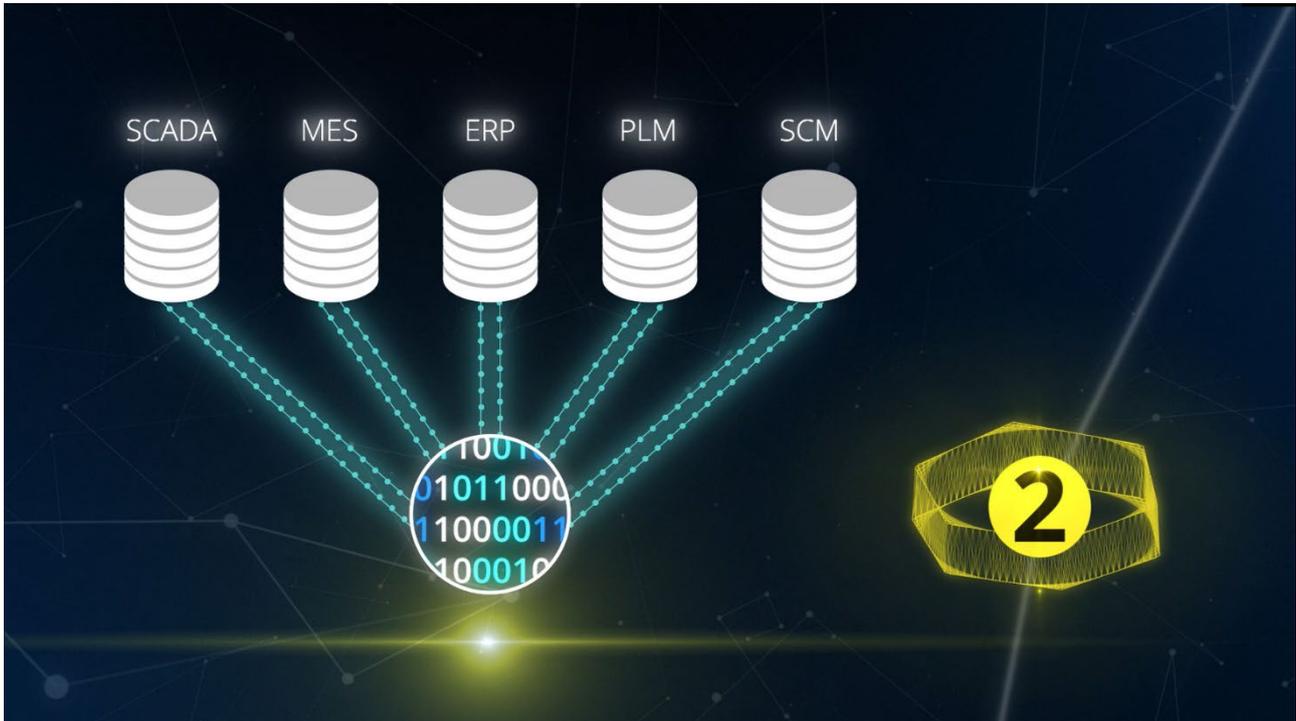


Figure 8: At Level II, the illustration shows traditional Enterprise Systems (SCADA MES ERP PLM SCM) that can capture most of the data produced, but owing to scarce adoption of open standards.

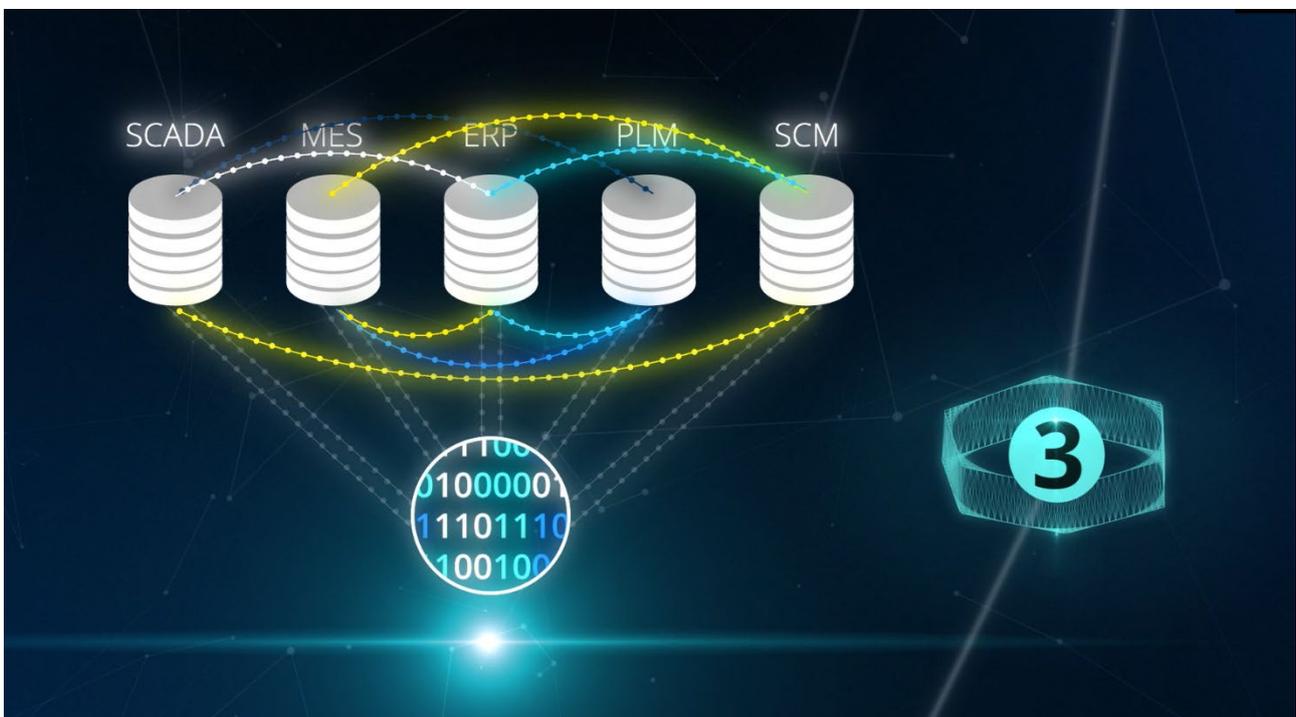


Figure 9: At Level III, the illustration shows ad-hoc data integration bridges created among systems and their repositories.

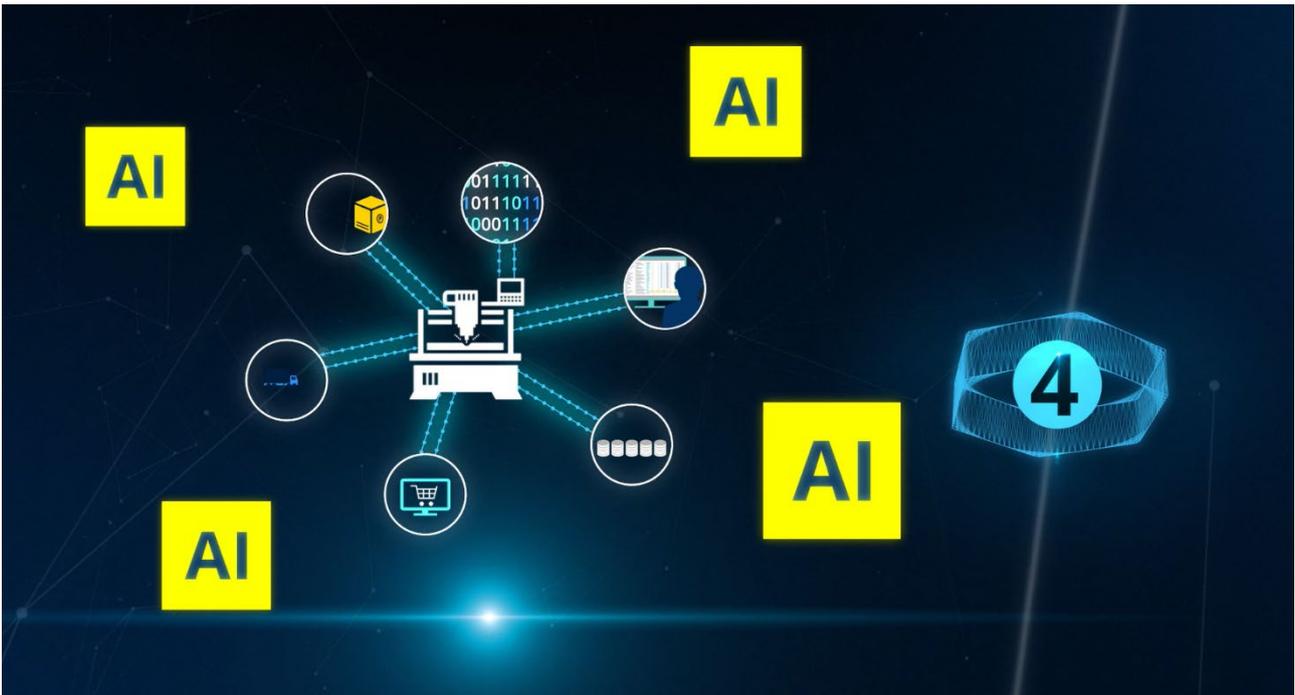


Figure 10: At level IV, the illustration shows the Technology perspective on Data Spaces. Industrial Data Platforms can integrate, process, analyse, visualise and share the data in a secure and trusted manner. Advanced rule- and AI-based decision support systems.

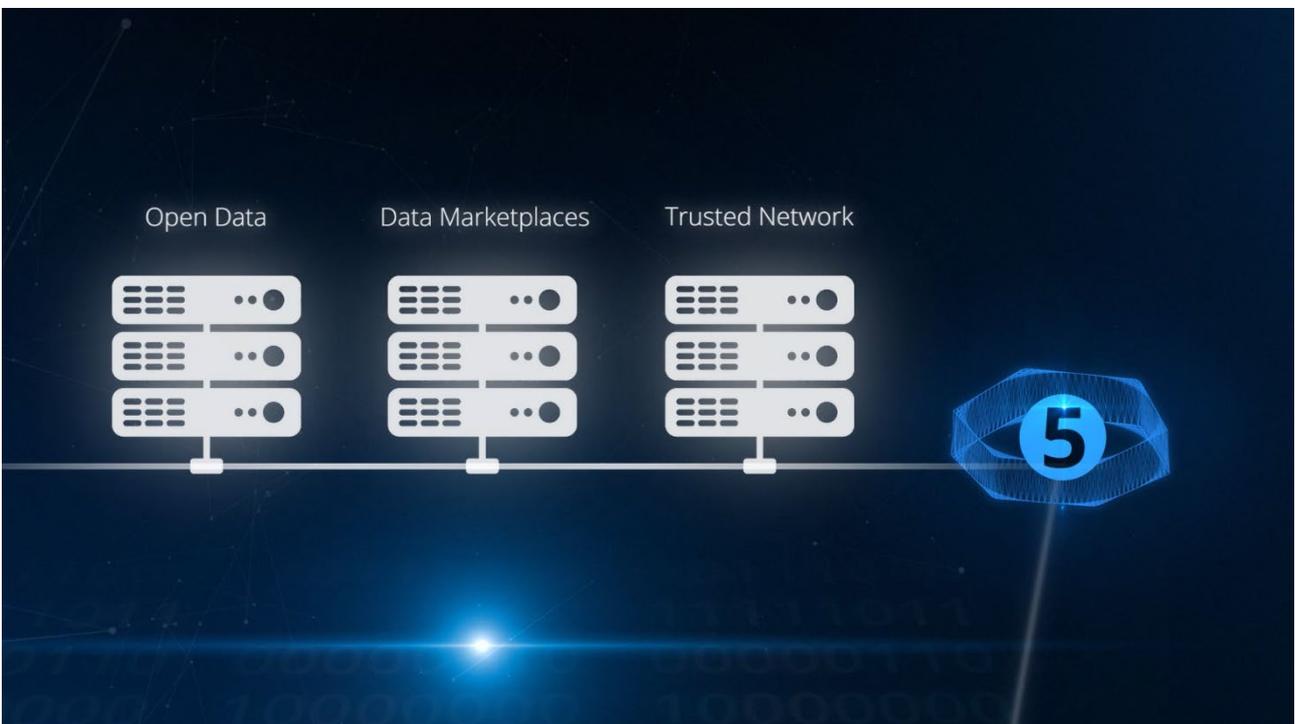


Figure 11: At level V of the Data Spaces pathway, the illustration addresses the Business challenges implied by the implementation of Data Spaces. Three main Business Models are enabled: Open Data, Data Marketplace and Trusted Network.

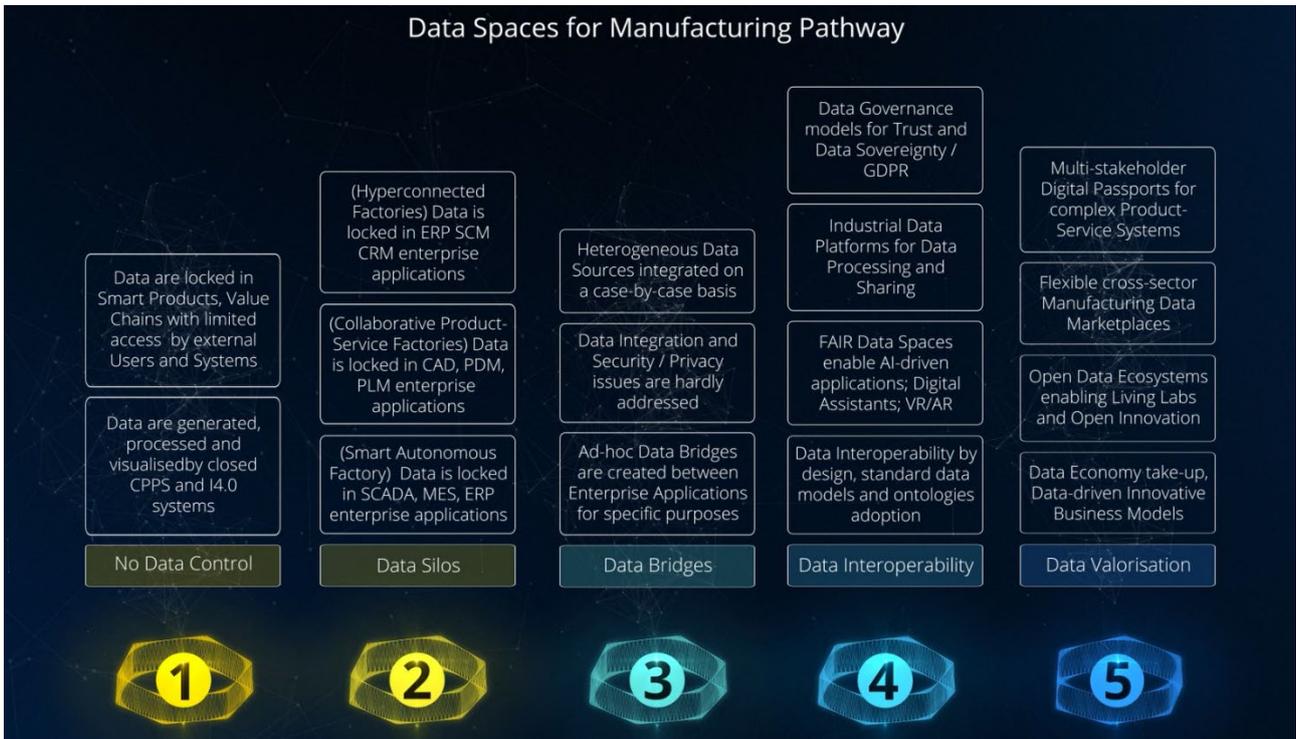


Figure 12: Overview of the Data Space pathway composed of 5 levels, characterised by increasing maturity degrees of the manufacturing company / industrial case towards full exploitation of Data Economy in Manufacturing.

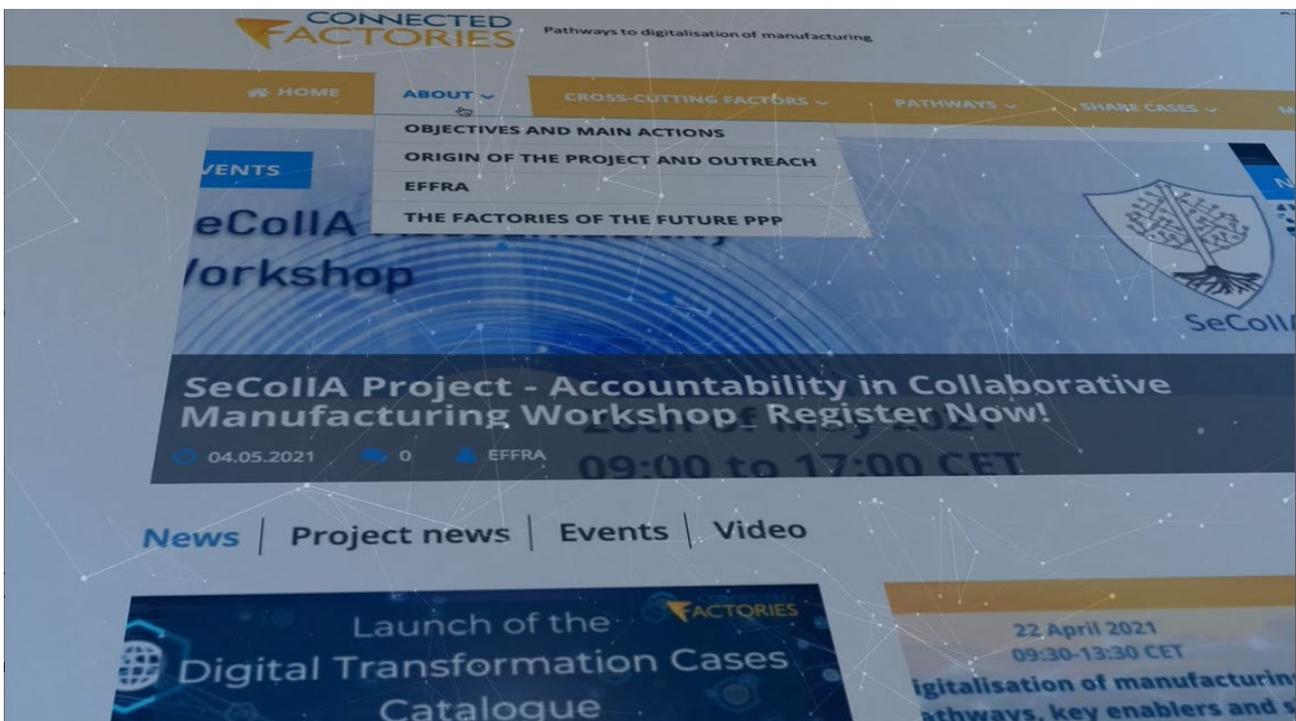


Figure 13: Teaser how to get involved with the ConnectedFactories project



Figure 14: Outro with the ConnectedFactories logo and the EU funding statement.

### 3 Transcript of the Video

The Data Space pathway of the Connected Factories project aims at providing a conceptual and operational framework where manufacturing companies could position themselves and their industrial cases with respect to a more mature and aware take-up and exploitation of the Data they produce.

Data Spaces represent one of the fundamental enablers, allowing the full exploitation of Data Economy business models of Open Data, Data Marketplaces and Trusted Data Ecosystems. For instance, in a Smart Autonomous Factories scenario, Data Spaces support dynamic multi-stakeholder industrial assets monitoring and control, enabling predictive maintenance and substantial reduction of environmental footprint. In a Collaborative Product-Service scenario, Data Spaces (often associated to Digital Product Passports) are able to collect, integrate and harmonise highly distributed datasets, in space and in time, along the whole lifecycle of the product, enabling new service-oriented business. In a Hyperconnected Factories scenario, Data Spaces are able to model heterogeneous, complex and dynamic supply and delivery business ecosystems by adopting common standard data models and business processes, finally enabling order-capacity matchmaking and One-of-a-Kind production.

The Data Space pathway is composed of 5 levels, characterised by increasing maturity degrees of the manufacturing company / industrial case towards a full exploitation of Data Economy in Manufacturing.

At Level I, data remain trapped inside the systems and is practically not available to Manufacturing Industry end users and further elaborations. At Level II, traditional Enterprise Systems (SCADA MES ERP PLM SCM) are able to capture most of the data produced, but owing to scarce adoption of open standards, data silos are created so that processing and analytics is just possible from inside such applications. At Level III, ad-hoc data integration bridges are created among systems and their repositories, but every integration project remains isolated and needs to start from scratch.

We start speaking of Data Spaces at Level IV of the pathway's scale, named Interoperability. At this level, the Technology perspective to Data Spaces is addressed. As an integral part of common unified Industrial Architecture Models (like the OPC Unified Architecture), Findable Accessible Interoperable and Re-usable Data Sets are implemented thanks to open standard data models (like the RAMI Asset Administration Shell) and semantic interoperability (like the Industrial Ontology Foundry);

Industrial Data Platforms are able to integrate, process, analyse, visualise and share the data in secure and trusted manner. Advanced rule- and AI-based decision support systems implement the business and governance agreements and let the ecosystem work and evolve along time.

In conjunction with the Level IV Technical approach, Level V of the Data Spaces pathway addresses the Business challenges implied by the implementation of Data Spaces. Three main Business Models are enabled: Open Data, Data Marketplace and Trusted Network.

The evolution of Data Aggregation, Data Anonymisation and above all synthetic Data Generation techniques as well as the flourishing of open innovation business models is opening new interesting perspectives for Manufacturing Open Data development.



## 4 Conclusion

A CF2-second iteration video has been developed to explain and visualise the Data Spaces pathway. This dynamic format has been chosen to communicate the key messages widely and actively engage interested stakeholders.

After the CF2-first iteration video with an overview of all available pathways developed by CF2, the second iteration was a matching continuation by presenting the Data Spaces pathway in more detail. With this example, the video shows how digitalisation and digital platforms can bring value to different manufacturing situations, such as factory automation, value networks or product-service development.

Moreover, one extra video is planned to showcase the use cases associated to the Data Spaces pathway as well as an additional Video to explain the Circular Economy pathway more in detail.

