The Construct-X Data Space

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Construct-X

Funded by the European Union
NextGenerationEU

Supported by:
Federal Ministry for Economic Affairs and Energy
on the basis of a decision by the German Bundestag

Construct-X – Fact Sheet

Funding directive	Cloud and edge infrastructure and services under the IPCEI-CIS of the Federal Ministry for Economic Affairs and Energy (BMWE)
Project duration	March 1, 2025 to February 28, 2028
Objectives	Development of an open, federated construction data space based on Gaia-X principles that securely, sovereignly, and in real time connects all project stakeholders — from construction-material manufacturers to owners. Provision of a cloud-edge reference architecture incl. standardized connectors, identity services, and policy services.
Scope	Total project volume: approx. EUR 45 million Funding volume: approx. EUR 27 million

Motivation

Productivity and cost pressure
Less rework, shorter construction time

Digital sovereignty & avoiding vendor lock-in
Open architecture, ensuring data sovereignty

Regulatory requirements
EU Taxonomy, CSRD, future ESPR/DPP

New data-driven business models
Monetization and partnerships

More efficient, resilient supply and value networks
Real-time tracking, early-warning systems

Harmonization and standardization
Consistent classifications and data models

Use Cases

Cloud-Edge Use Cases

- ESG Documentation and Environmental Reporting
- Creation of Digital Product Passports (DPP)
- Connected Design
- Construction sequencing based on BIM Lean principles
- Construction price estimation
- Jobsite control using sensor data
- Jobsite Automation, Robotics
- Optimal Supplier Selection
- Supply Chain / Logistics Management
- AI-Assisted Risk Management

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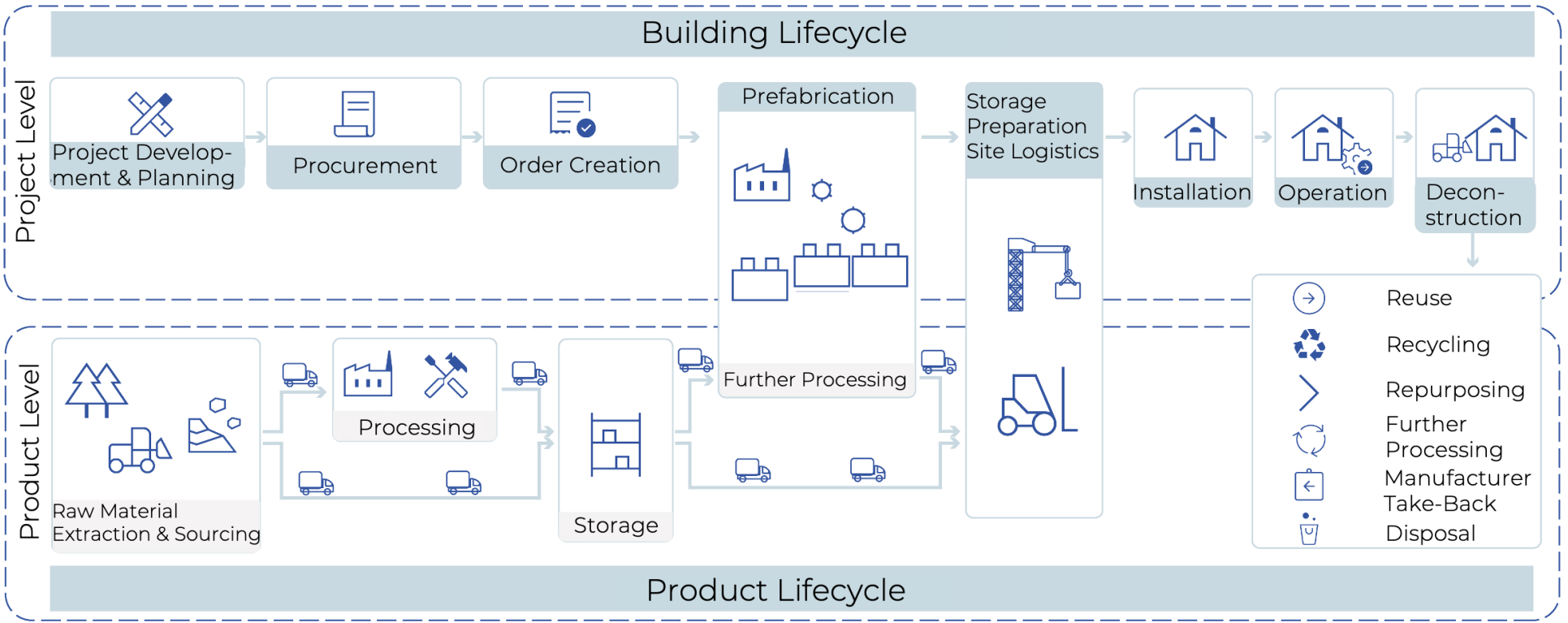
Building and Product Life Cycles



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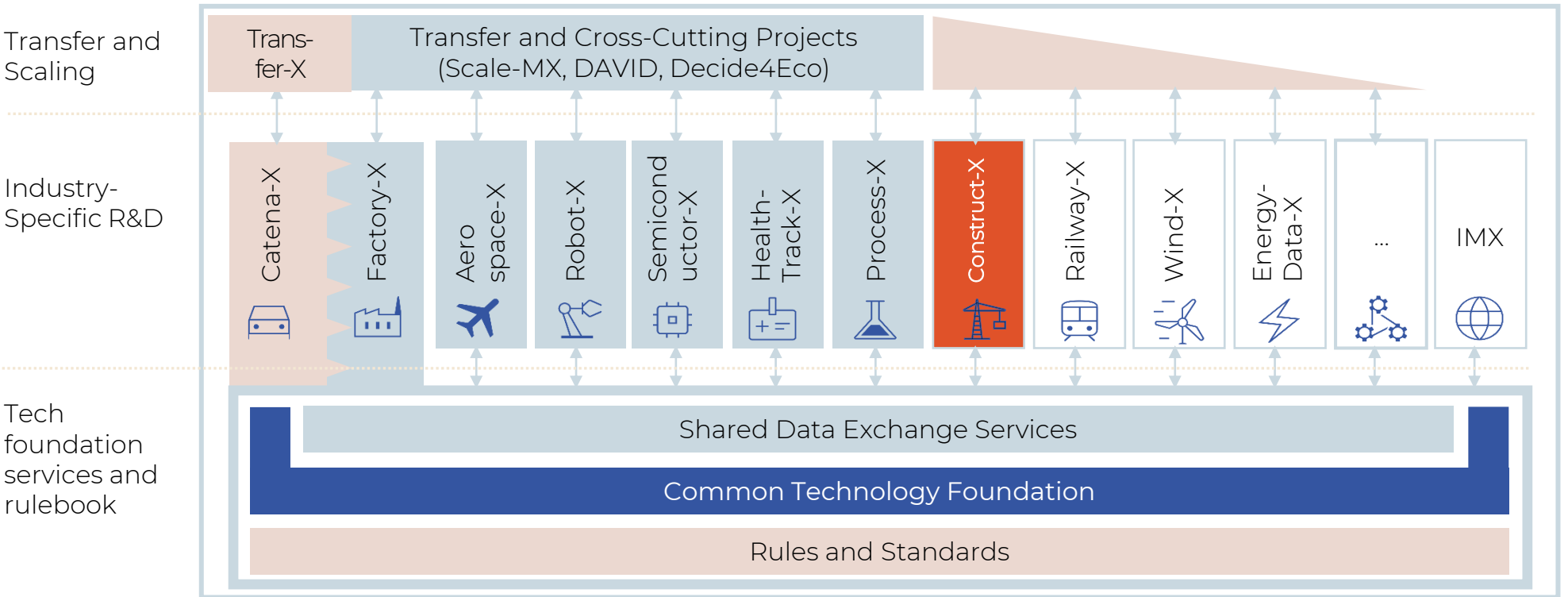
Construct-X inside Manufacturing-X



Source: https://www.bundeswirtschaftsministerium.de/Redaktion/DE/Dossier/manufacturing-x.html

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Construct-X GitHub Organization

Construct-X has its own GitHub organization and combines its **own repositories** with selected upstream **forks**.

Open-source foundations

- Eclipse Tractus-X
  https://github.com/eclipse-tractusx/
- Eclipse EDC
  https://github.com/eclipse-edc

used by

Construct-X GitHub Organization

https://github.com/project-construct-x/

Hosts the Construct-X repository portfolio: own repositories plus maintained forks

Own Repositories

Native Construct-X components

Forks & Extensions

Selected upstream forks

Construct-X Layered Architecture

Applications	Weather App (Demo)	Data Space Simulator	Use-Case Apps	Existing Applications
Data Space Components	Construct-X EDC	Wallet (IdentityHub)	Registry / Discovery	Policy Hub
Trust, Protocols & Semantics	DSP / DCP	AAS / BIM	SSI / DID	EPCIS Events
Baseline & Runtime	Docker (Compose)	Helm Charts	Kubernetes	Edge / Cloud

Important Note: The Construct-X GitHub organization is used for fast-track publishing to contribute to the Eclipse projects. Repos are partly demos, forks, and domain-specific.

GitHub Organization: Repository Overview

Applications

`dataspace-simulator` `portal-*`

Own implementation

Based on Eclipse Tractus-X

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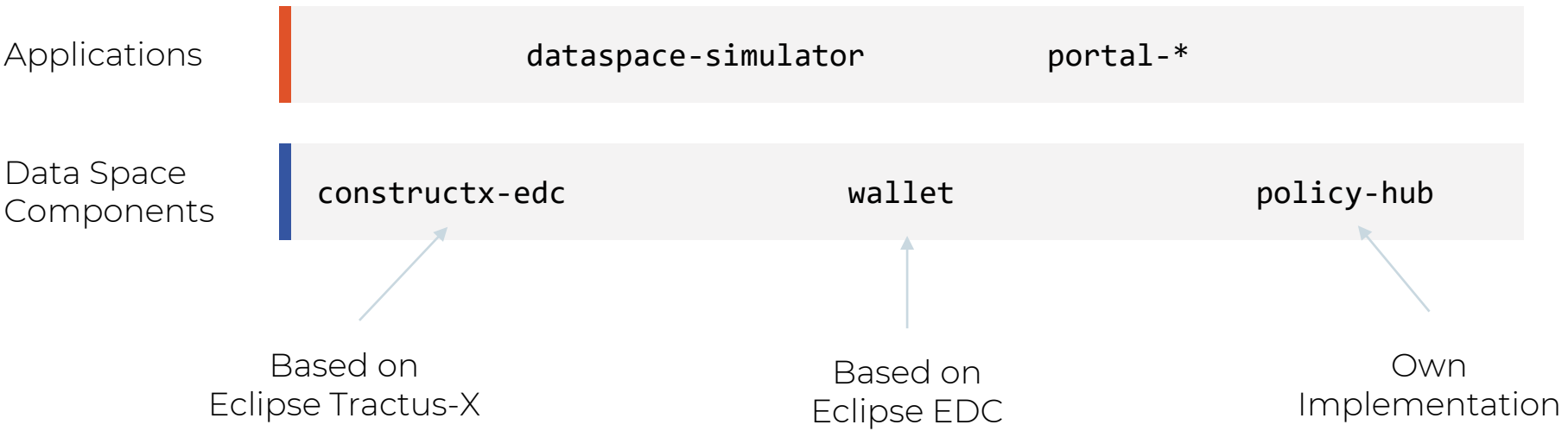

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GitHub Organization: Repository Overview

Applications	`dataspace-simulator`	`portal-*`		
Data Space Components	`constructx-edc`	`wallet`	`policy-hub`	
Trust, Protocols & Semantics	DSP / DCP	AAS / BIM	SSI / DID	EPCIS Events
Baseline & Runtime	`edc-management-console`	`repository-template`		

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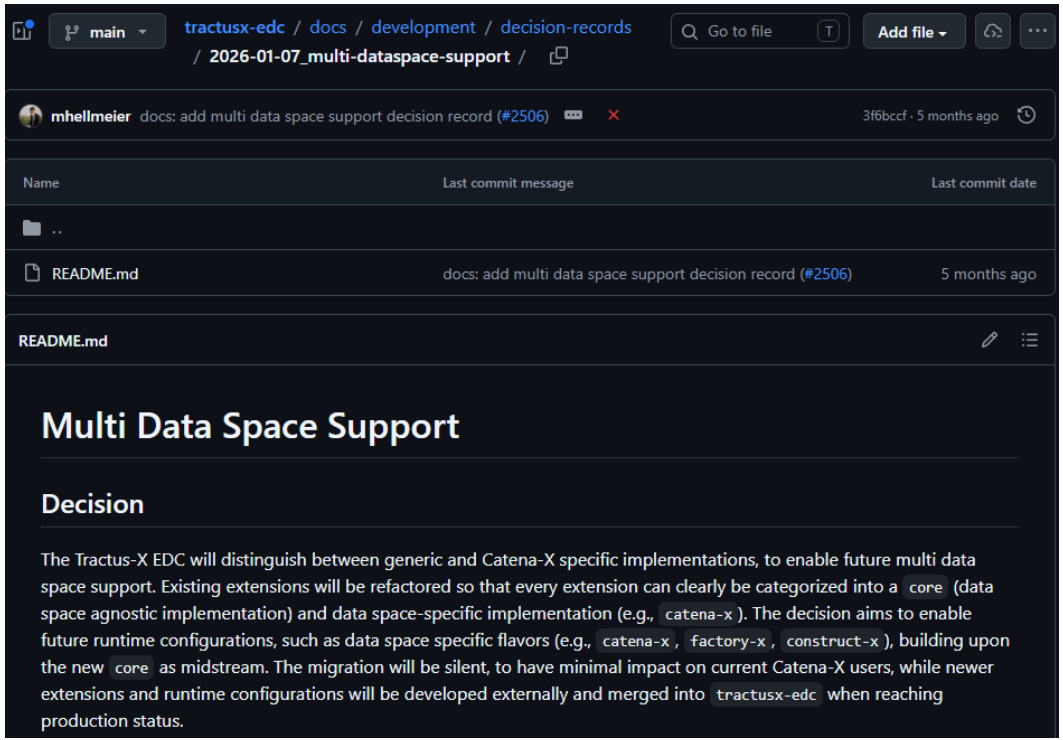
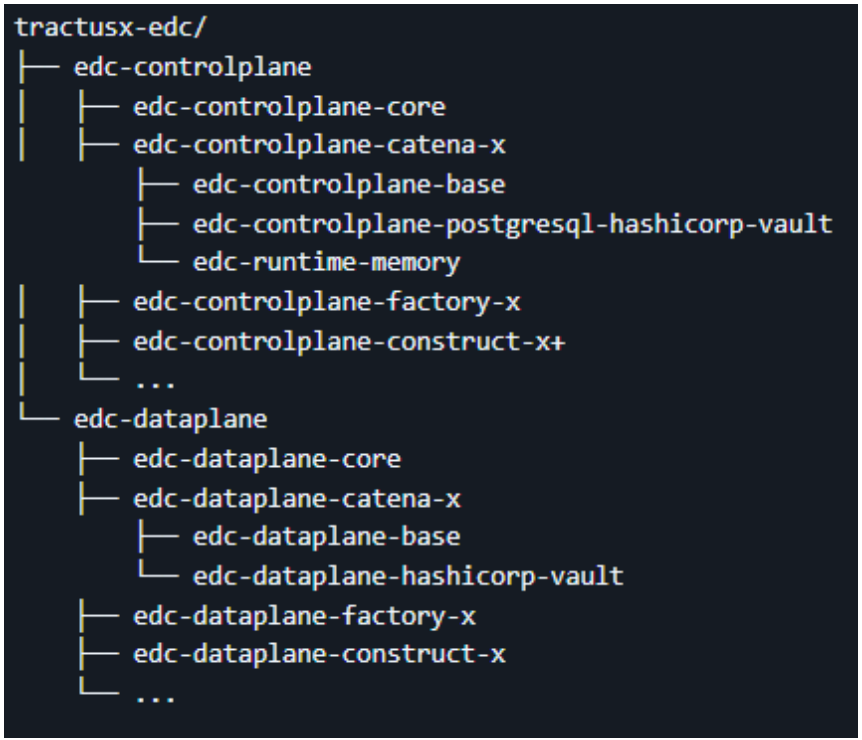
EDC Multi Data Space Support





https://github.com/eclipse-tractusx/tractusx-edc/tree/main/docs/development/decision-records/2026-01-07_multi-dataspace-support

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Live Demo:
Construct-X GitHub Organization Overview

Live Demo:
Dataspace Simulator

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Takeaways & Next Steps

> Multi-Industry: Eclipse Tractus-X components become usable beyond automotive

> Edge-Cloud-Continuum: Construction use cases often work on the edge without stable networking

> Experimentation first: We are fully in development, testing, and learning. Let us play first and discuss how to bring everything together afterward

Review our Construct-X GitHub organization, give us feedback and discuss with us how generic and construction-specific implementations can flow back to Eclipse Tractus-X

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