Sixth

ECLIPSE TRACTUS-X COMMUNITY DAYS

July 02–03, 2026
STUTTGART

Catena-X Automotive Network · Tractus X · Eclipse Foundation · ARENA2036

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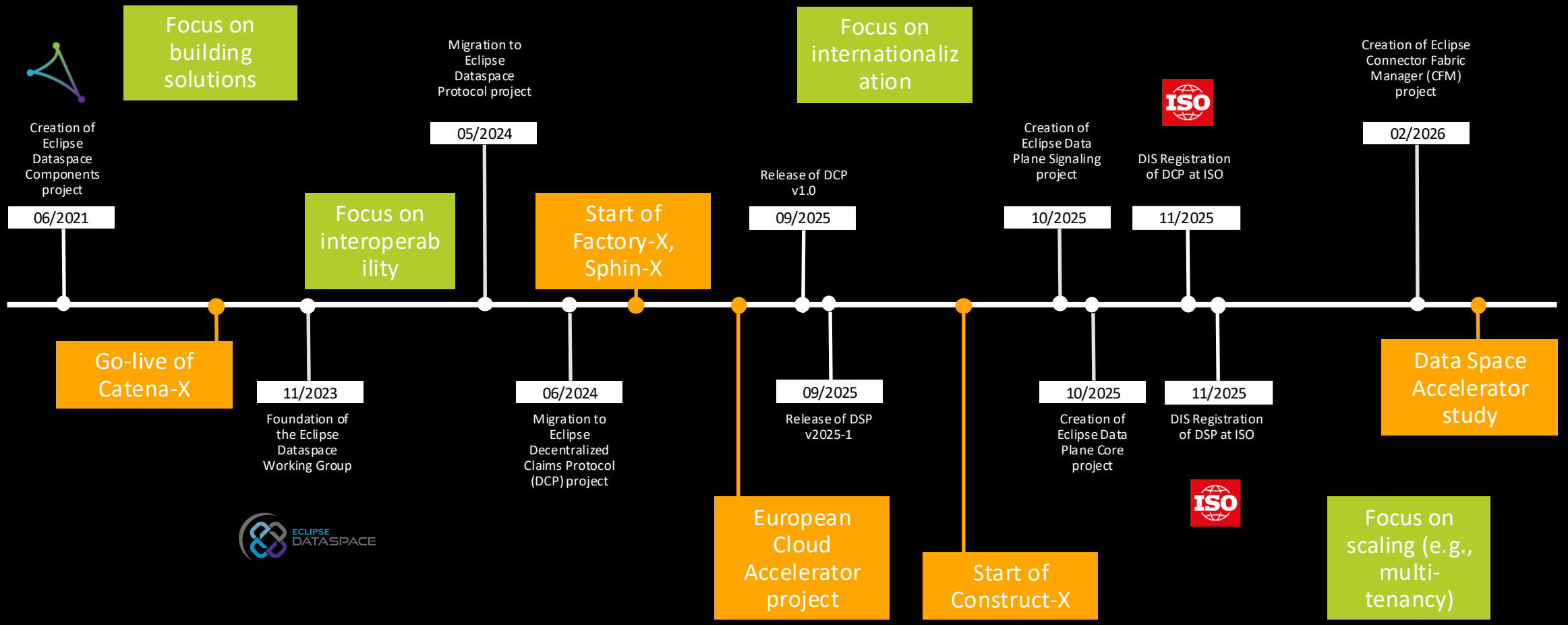
Next-Gen Data Space Tech

What every Tractus-X Developer Should Know Now

July 3rd, 2026

Julia Pampus (Fraunhofer ISST)
Thomas Obermeyer (Catena-X e.V.)

What Happens in the Wider Ecosystem



NB: Initiatives, capabilities etc. not exclusive, but illustrative. Logos from websites.

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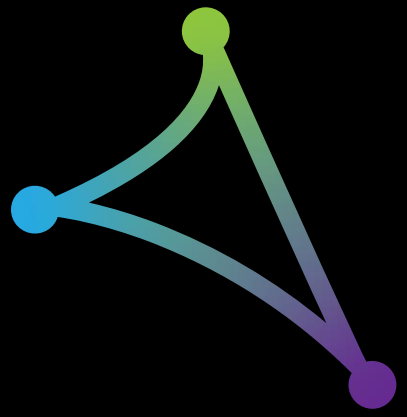


Beyond EDC

The Eclipse Dataspace Components (EDC) framework is just the start. We’re building an extensible data space stack that goes far beyond the original vision.

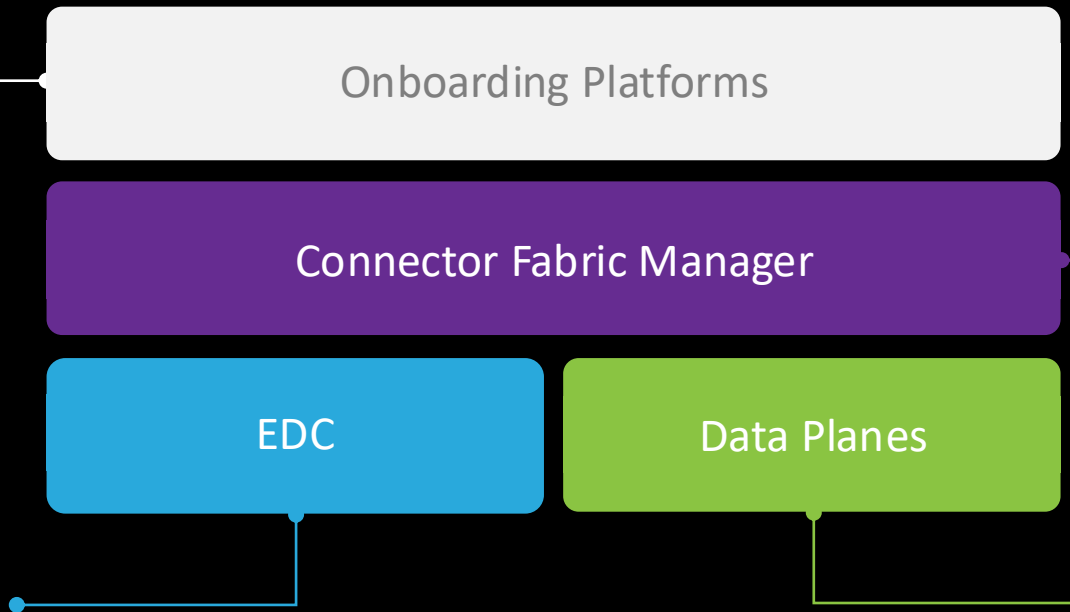
Dataspace Technology Foundation

New Onboarding Experience

- Connect diverse onboarding and management front-ends
- Differentiating per service provider

EDC Evolution

- EDC as control plane only
- Virtualization & single deployment option
- One Code base
- Supports multiple data spaces and participants in the same runtime



Automation in DevOps

- Extensible DevOps platform
- Tenant and resource management
- Agent-based messaging architecture (NATS)

Data Plane Signaling & Core

- Control/data plane interoperability
- SDKs - Rust, Go, Java, .NET
- Facet-RS Library
- Siglet Concept

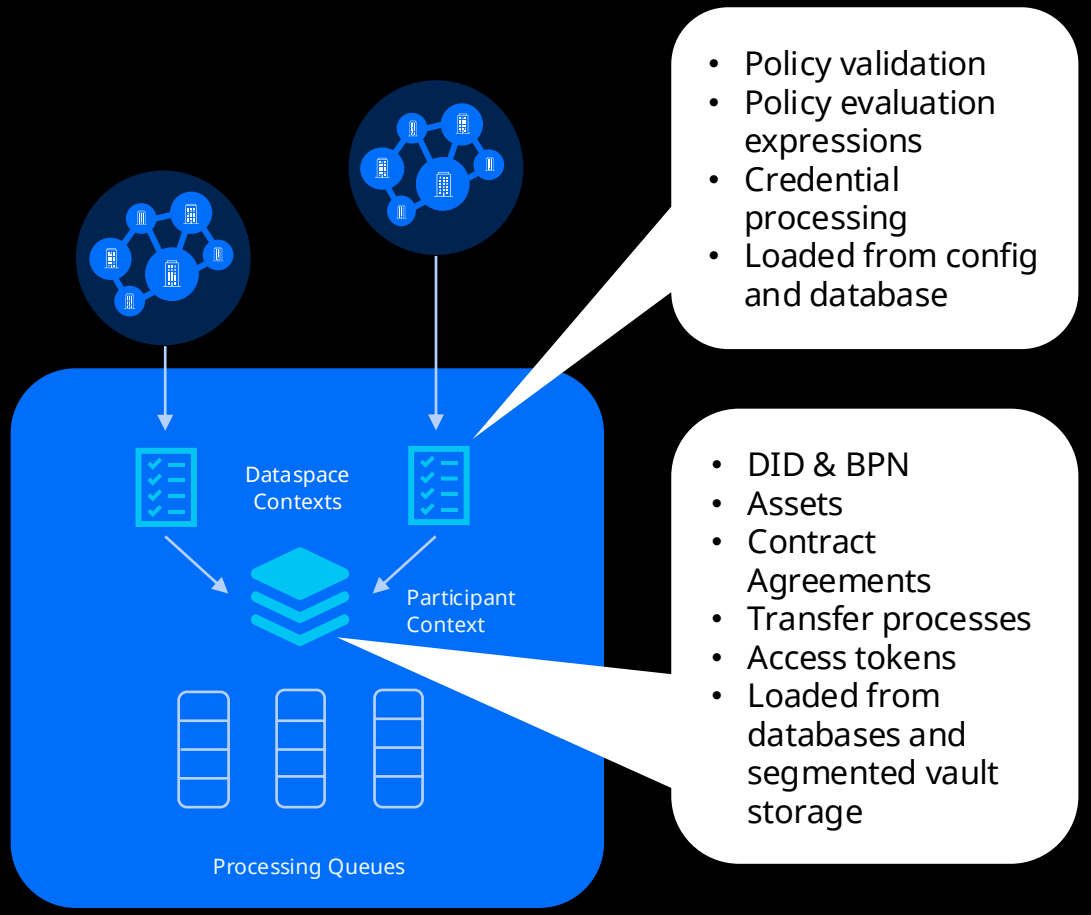
The Concept of Virtualization

Problem

- Runtime-per-tenant model (on demand) is resource-intensive → too costly, especially for SMEs
- Exponential operational complexity: K8S namespaces insufficient for isolation, complex scheduling of runtime passivation

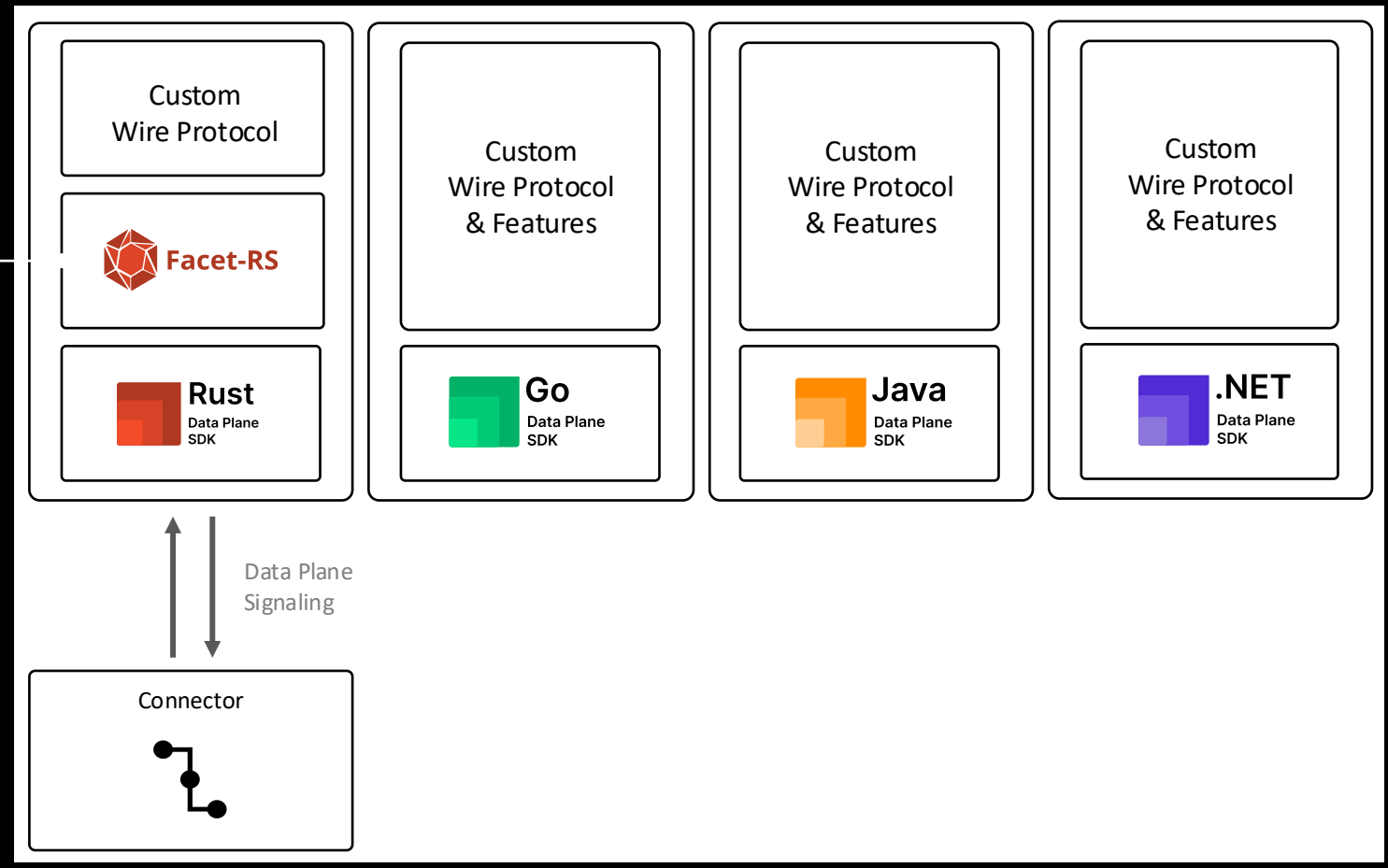
Key Considerations

- Configuration-based isolation contexts
  - Data space context with dynamically loaded policy expressions based on CEL
  - Participant context
- Message-based state machines



An Ecosystem of Data Planes

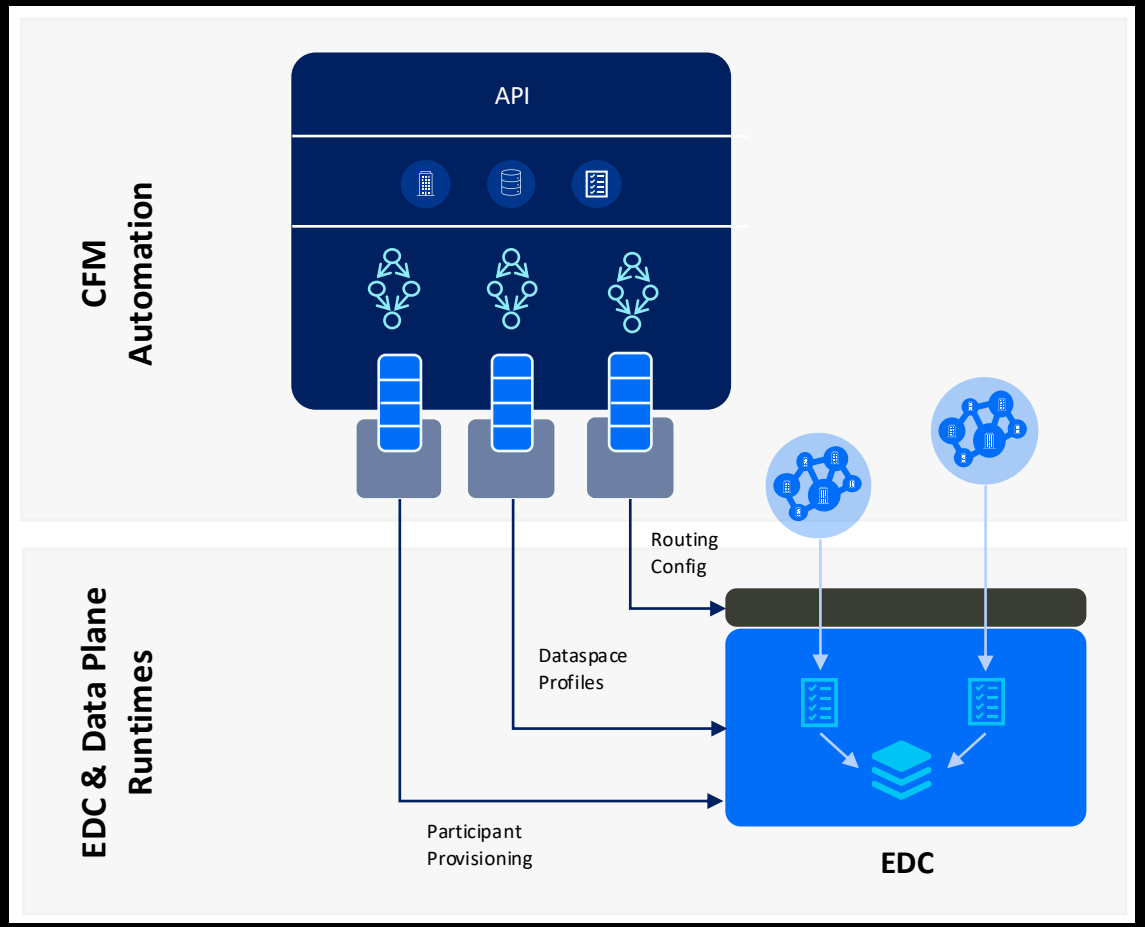
- Token Client
- Token Provider
- Authentication
- JWT Generator
- Lock Manager
- Object Storage auth proxy



Goal: Enable rapid integration of industry data formats and protocols through reusable components

Introducing Connector Fabric Manager

- New Eclipse Foundation Project
- Extensible DevOps platform
  - Standardized automation to remove operational complexity
- Tenant and resource management
  - Simple resource management API
  - Workflow-based provisioning
- Agent-based messaging architecture



What You Should Not Worry About

What you should not worry about

- Tractus-X EDC is a reference implementation, EDC-V is for running EDC as a service
- Tractus-X does not need an EDC-V distribution
- Tractus-X EDC should continue to use the “classic” EDC deployment mode

What You Should Put Your Focus On

Project Goals (Upstream EDC)	Plan (Upstream EDC)	Recommendations (Tractus-X EDC)
EDC as control plane only	**Data Plane Deprecation** • EDC data plane framework is deprecated and will be removed	• Use Data Plane Core project • Build use-case-specific data planes and incorporate directly into apps
Support ~80% uses cases out-of-the-box without custom extensions	**Dynamic Runtime** • CEL-based policy functions • Schema-based validation • Configurable scope mappings	• Create new policy functions using CEL • Replace code validation with JSON-Schema-based validation
Reduce integration effort → simplify Management API	**Management API v4/5** • Limit Json-LD • Participant context-aware • Expressed through Json Schema • Facilitates client generation	• Upgrade relevant applications now

Eclipse Dataspace Hub

SAMPLE CODE & TEMPLATES

Reusable reference implementations for EDC extensions, integration examples with external systems

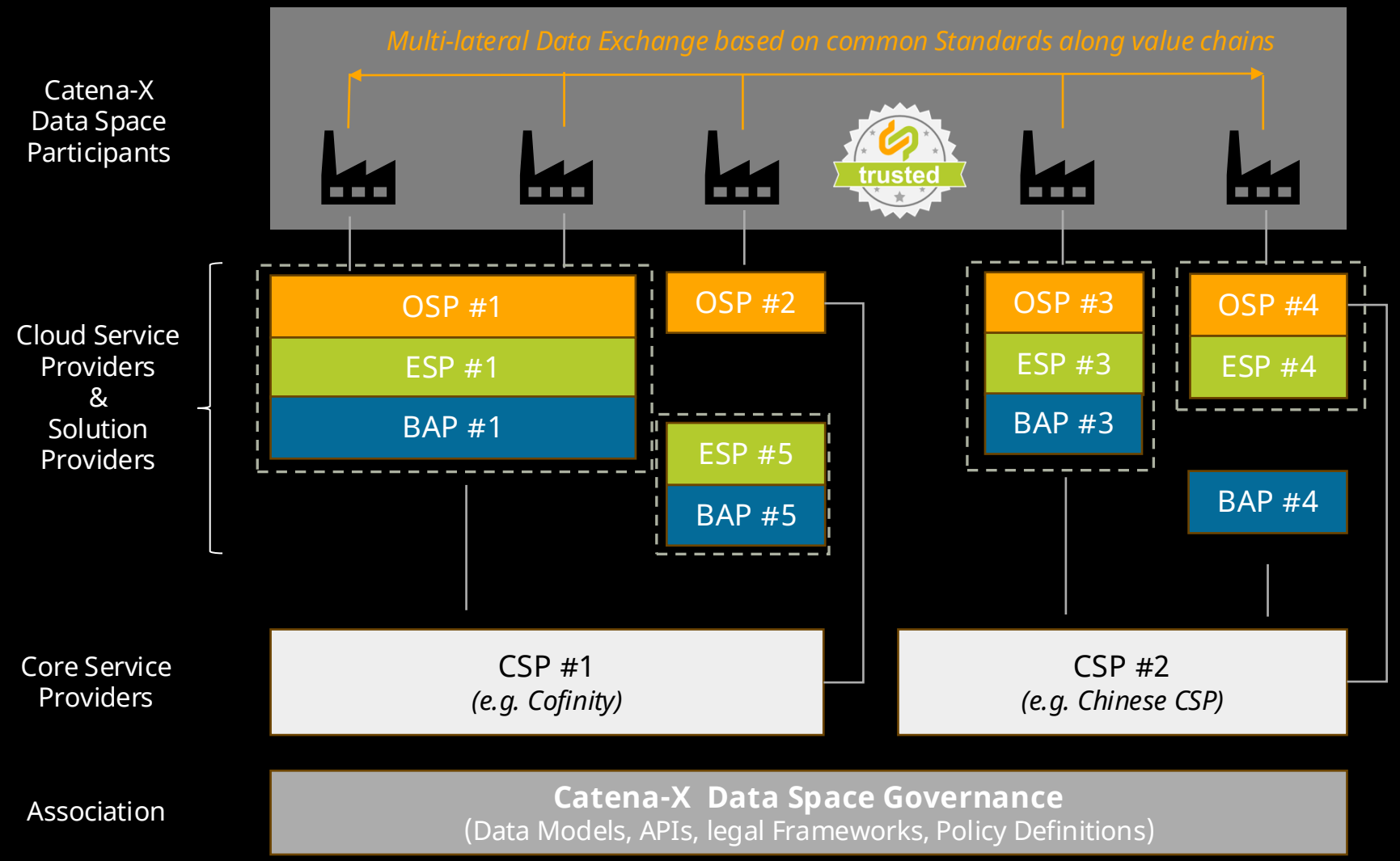
END-TO-END DEMONSTRATORS

Fully functional cross-organizational data sharing scenarios, interactive tutorials & sandboxes

KNOWLEDGE BASE

Community-maintained docs on connectors, catalogs, trust frameworks & component interactions

How do we scale an Ecosystem based on Trust & Freedom of Choices



Key Ambitions

- OSP role evolves into an extended role to support broad scalability & adoption
- Multiple Providers offer **multi-tenant capable turnkey solutions**
- Multiple Core Service Providers exist to address **regional regulations**.

Ecosystem Roles
OSP: Onboarding Service Provider
ESP: Enablement Service Provider
BAP: Business Application Provider
CSP: Core Service Provider

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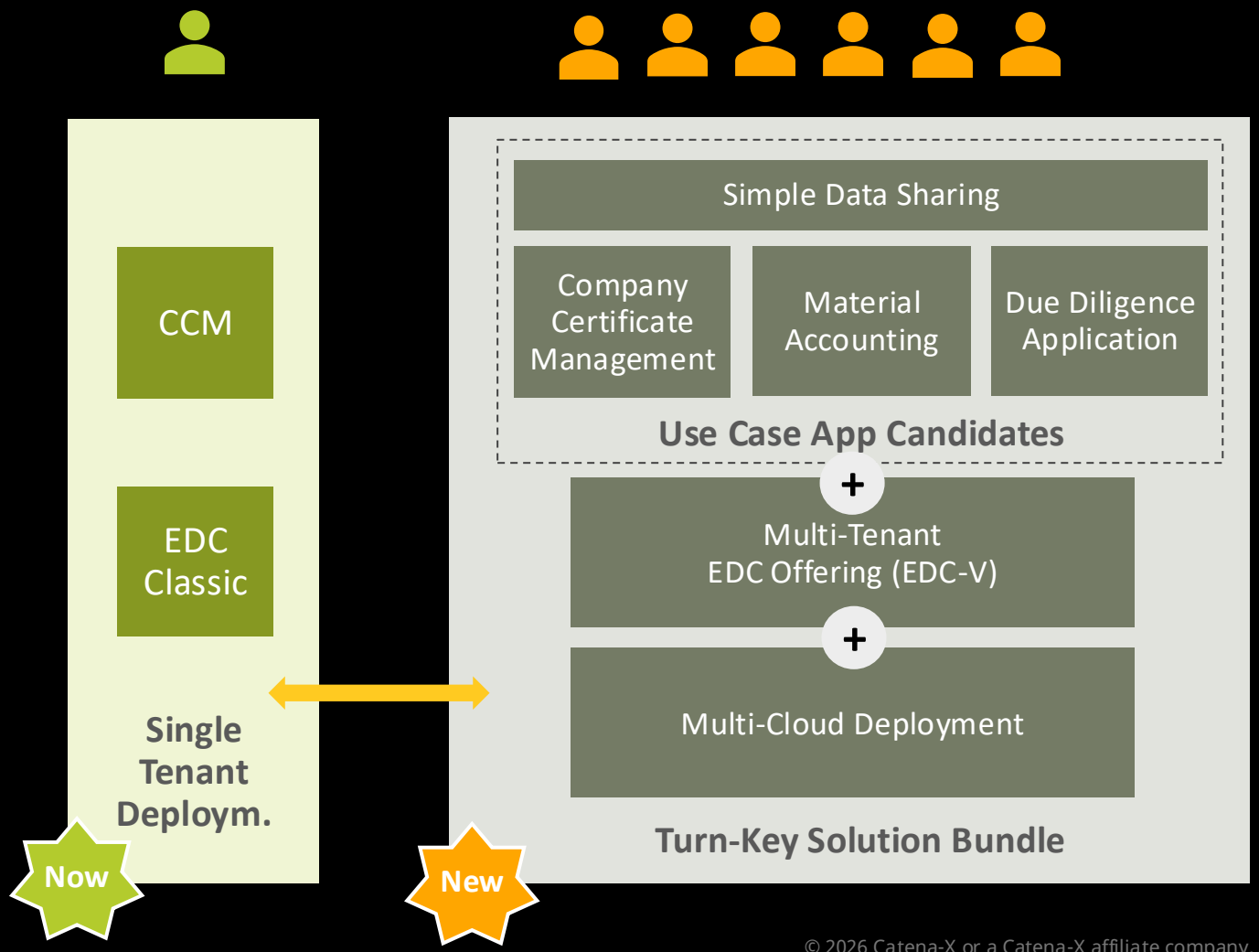
Data Space Acceleration

Building integrated solution offerings and extending the diversity of marketplace offerings for data space participants



Scope

- Technology bundled with business solution(s) to provide immediate business value
- Virtualized EDC (multi-tenant) designed towards scalability and reduced resource consumption for each individual participant
- Combined with onboarding services to bring SMEs seamlessly into a data space

Opportunity

- Solution providers can offer targeted turn-key solution (EDC + Apps)

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Key Takeaways

1. Choose your path – Same codebase. Different deployment models.
2. Make yourself familiar – Newest data plane technology stack is available
3. Shape the future – Your feedback matters

ECLIPSE DATASPACE HUB

Your entry point for learning

DATA PLANE

Build use-case specific planes

CONNECTOR FABRIC MANAGER

Automate your operations

Developer

Let´s work together

Build your own data plane