Radical Collaboration for Industrial Software in multi-sided Data Ecosystems

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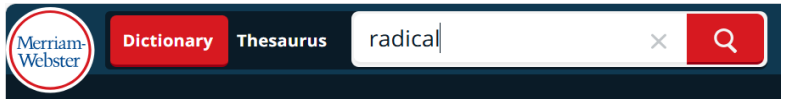
Berlin, June 4 2025 | Conference | Transform or Face Disruption – Executive Exchange on the Future of Corporate Software Production & AI

Intro - Radical Collaboration



radical | rad·i·cal

1) relating to, or proceeding from a **ROOT**
2) relating to the origin : **FUNDAMENTAL**
3) very different from the usual or traditional : **EXTREME**
4) **slang** : **EXCELLENT**, **COOL**

Copilot: **Radical collaboration** is a concept that emphasizes **deep, transformative cooperation among diverse groups** to achieve significant and impactful outcomes. Unlike traditional collaboration, which can often be transactional and limited in scope, radical collaboration **seeks to break down silos** and **foster genuine partnerships** based on **trust, transparency,** and **mutual respect**.

Key principles of radical collaboration include:

- **Diverse Perspectives**: Bringing together individuals from different backgrounds and disciplines to generate innovative solutions.
- **Openness** and **Trust**: Building relationships based on honesty and mutual respect.
- **Shared Goals:** Focusing on common objectives rather than individual agendas.
- **Continuous Learning**: Embracing new ideas and being willing to adapt and evolve.

This approach is particularly valuable in addressing **complex challenges**, such as those outlined in the United Nations Sustainable Development Goals (SDGs), **where no single organization can achieve the goals alone**.

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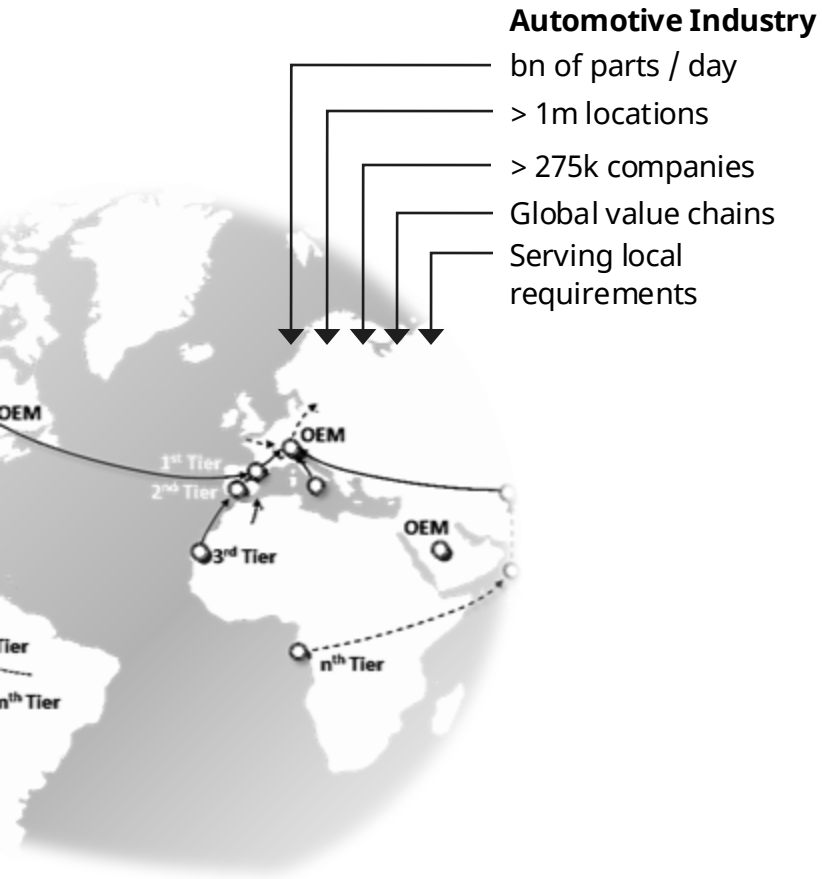
Our automotive business processes require an update of the industry operating model

Motivation: “License to operate and grow”



Resiliency

Resilient Supply Chains

- Business Partner Identification
- Location Certification
- Bolster supply performance
- Optimize inventory / logistics
- …

Compliance

Trusted Sustainability

- Report validated CO^2_e-Values
- Cover regional variance
- Release of Product Passports
- Supply Chain Due Diligence
- …

Cost down

Effective Quality

- Trace parts / campaign mgt.
- Live quality loops
- Behavior Twins
- …

require

multi-tier collaboration along the value chain

It is a digital challenge!

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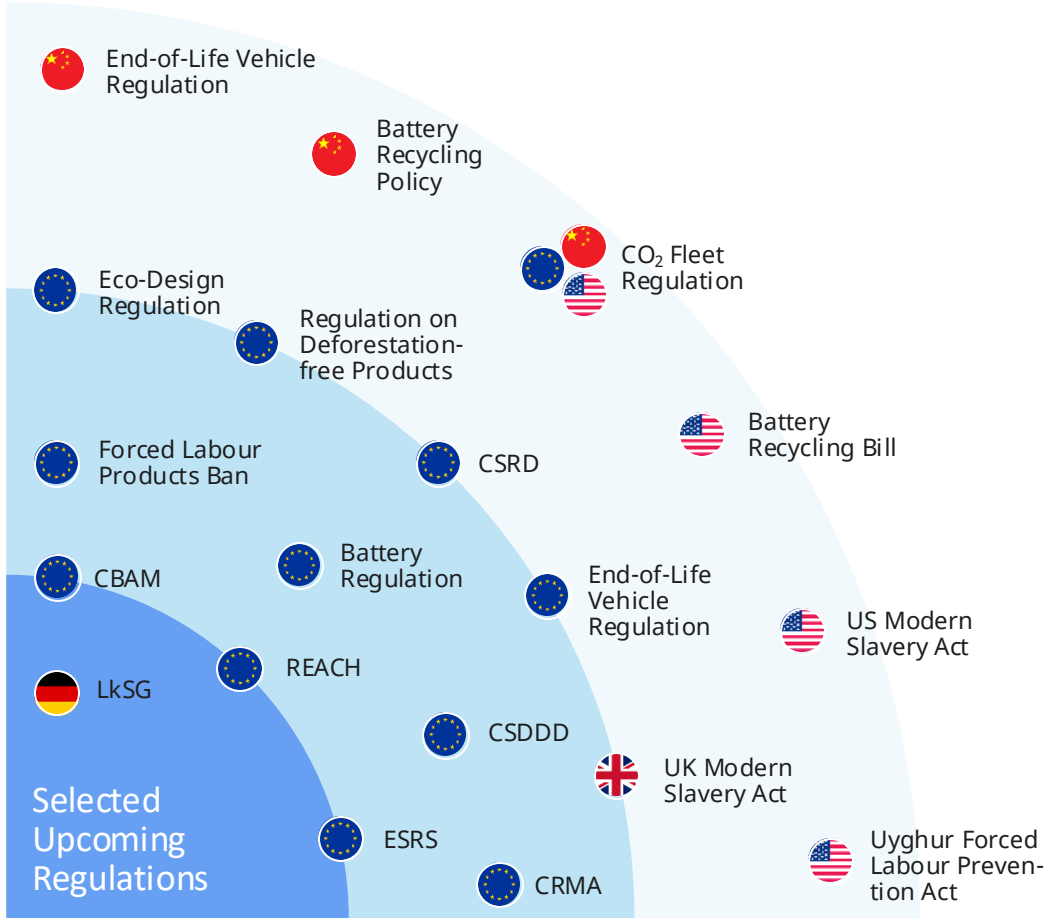
Challenge

Mastering the worldwide regulatory tsunami

New level of reporting incl. regional variances will hit our industry hard, if we are not prepared to scale.

- One-time reporting
- Average values
- Discreet data point
- Reporting on secondary data
- Choose your own calculation method



2030

1. Continuous Reporting of LCA
2. Third party Verification
3. Instance Level
4. Reasonable assurance
5. Different prescriptive methodologies
6. Sensitive data
7. Methodology depending on regu-lation and region

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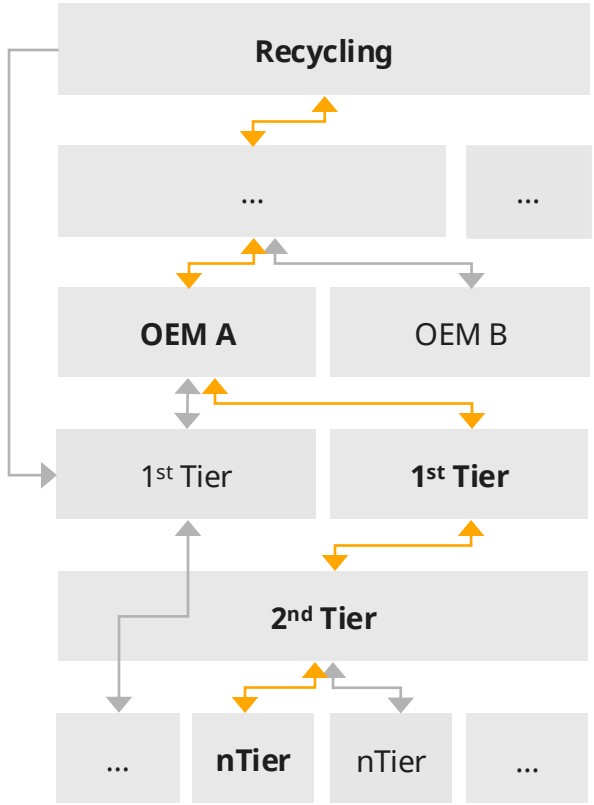
How to enable Multi-Tier Collaboration?

Four main alternatives

Automotive Value Chain
– Use Case X –



Alternative 1

1x central Data Base for all industry partners

+ No cost for supplier
+ Established / available

– Trust / Verification
– Data Protection / IP
– Cyber-Security
– Business Process Readiness

Alternative 2

One IT Provider for all partners of the same value chain

+ Trust / Verification
+ One solution provider

– Compliance / AntiTrust
– Scalability in Business
– Enforce Usage (nTier)
– Costs / Synergies

Alternative 3

Industry standards to create inter-operability between providers

+ Freedom of Choice (vendors) → Anti Trust
+ Data Protection / Cyber Security
+ Trust / Verification
+ Scalability in Business

– Industry Transformation
– Initial Complexity

Alternative 4

Every Partner has its own solution

+ Data Protection / IP
+ Freedom of Choice

– Trust / Verification
– Business Compliance
– Compatibility / Logic
– Scalability in Business
– Overall Costs

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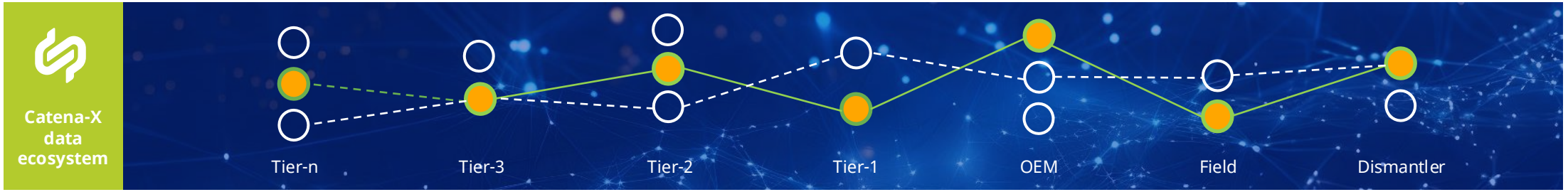
Catena-X developed an open, collaborative ecosystem for data exchange along the value chain



Trusted Identities

Verified and unique company identities

Self Sovereignty

Decentral Architecture with full control over your data

Interoperability

Unified open-source-based standards and KITs

Industry Governance

One global operating model and framework

Catena-X is **not a database** to store and collect data but an **open ecosystem** to share data in a better way – **standardized, secure and simple.**

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Catena-X is more than “ONE” use case

21x synergetic KITs are here to optimize your value chain processes

- CO_2 Footprint
- Circularity
- Industry Core
- Business Partner Mgt.
- EcoPass
- Environmental and Social Services
- Certificate Management
- Agents
- Data Chain
- Quality
- Traceability
- ...
- Demand & Capacity Mgt.
- Puris
- Connector
- Modular Production
- Remaining Useful Life

KITs

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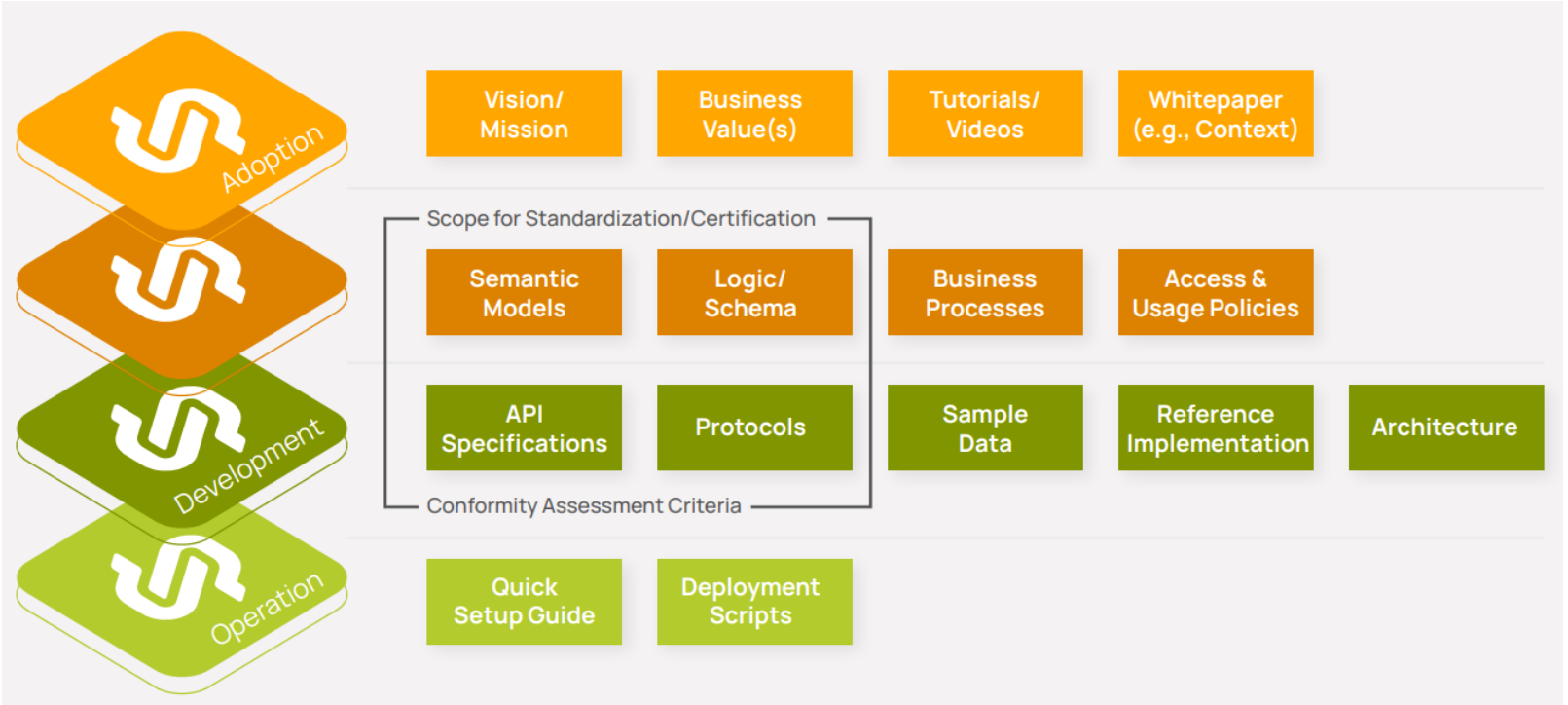
KITs = Keep it together = Ecosystem Builders

Blueprint & foundation of each Business Solution

Standards

- Formal Documents
- Normative Clauses
- Specific Process

KITs

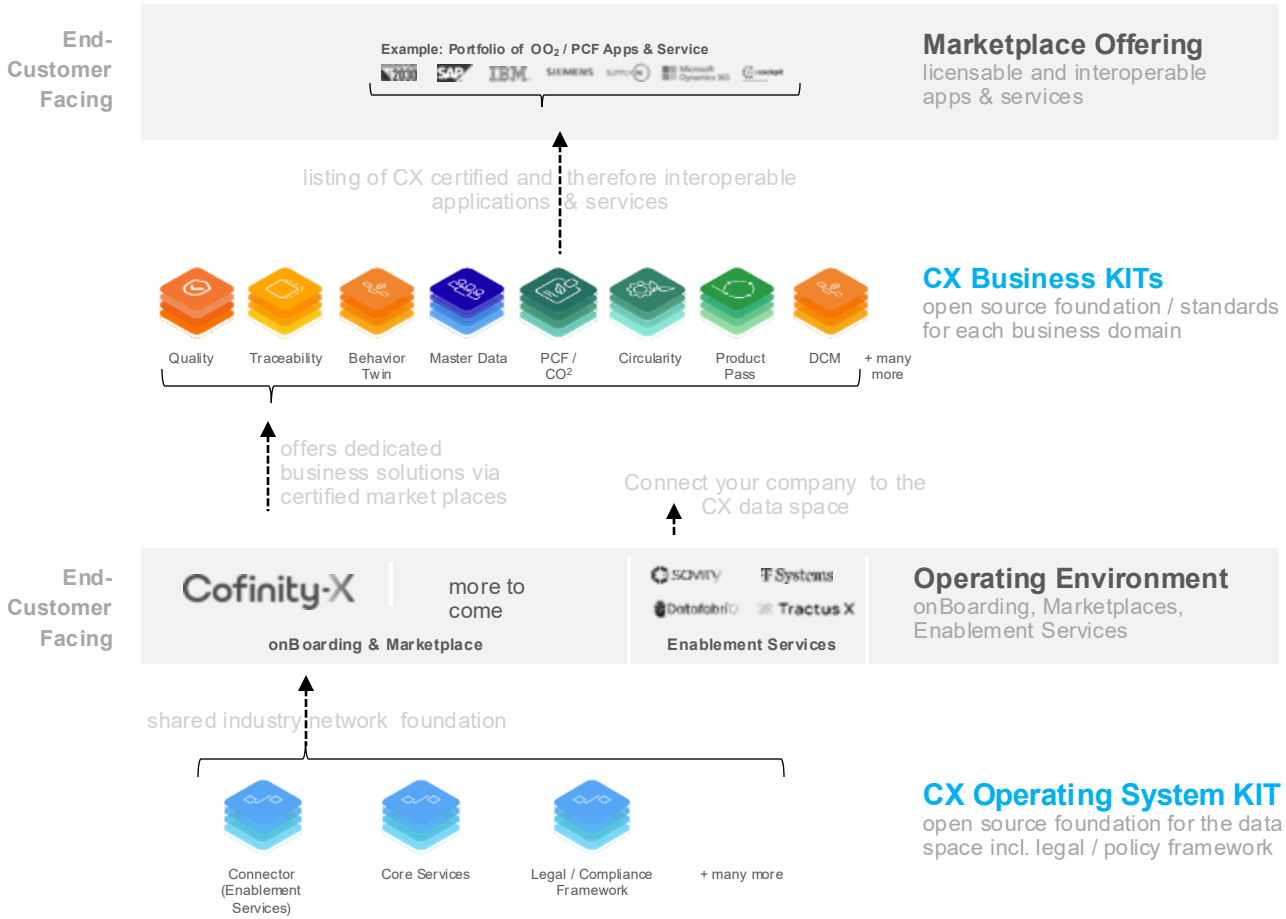


Publicly available under: https://eclipse-tractusx.github.io/

What we've created

CX KITs enable an interoperable multi vendor ecosystem.

Today's Structure



TODAY

Catena-X
Your Automotive Network

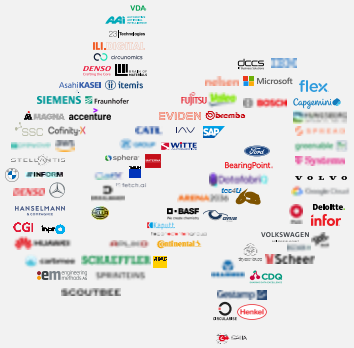
- → **65x** Standards
- → **21x** KITs
- → **1x** Operating Model
- → **1x** Gaia-X compliant Operating System
- → **1x** Core Service Provider
- → **1x** Legal / Policy Framework
- → **1x** Conformity Assessment Body

The 1st trusted multi-tier business collaboration network is LIVE

Layer 1: Build & Govern

Full industry re-presentation

→ OEM/ supplier/ recycler/ SME/ research
→ Solution-/ service provider/ transfer org.

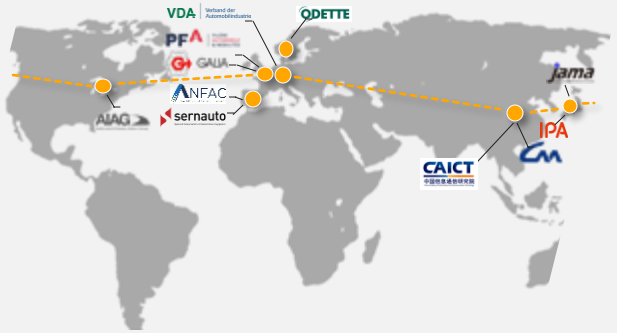


overall:
Global Industry Representation

Layer 2: Scale

Global re-presentation

→ regional alliances (US, FR, ES, JP, CN, …)
→ local hubs



overall:
~ pot. 7,000 companies addressed

Layer 3: Transfer

X-Industry re-presentation

→ comparability & interoperability
→ re-use/ synergies

Selected industry Eco-Systems Partners

Temp. guidance-/ Collaboration Partner
(when needed)

Trusted & interoperable data exchange: **Governed by the industry**

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Radical collaboration in action

Catena-X results as of 12/2024:

- → **Scalable / trusted standards for top industry problems** (21x KITs, >40 certified services)
- → **Fully operational development** (Tractus-X) **& operating environment** (Cofinity-X)
- → **Global and cross Industry Alignment** (US, EU, CN)
- → **Conformity Assessment Body** (Deloitte / TÜV)

Catena-X Development Environment

7,7 %

7,6 %

SW-Development "ready to use" CX **KITs**

Open Source Tractus-X [Eclipse Foundation]
Metric: # Commits Q4/2024

Standards for Top Industry Problems

Resiliency
Resilient Supply Chains

- Demand & Capacity Mgt.
- PURIS (Short term supply mgt.)
- Business Partner Mgt.
- Certificate Mgt.

Compliance
Trusted Sustainability

- CO_2 Footprint (CSRD, IKB)
- EcoPass / BatteryPass
- Environmental and Social Services
- Circularity

Cost Down
Effective Quality

- Quality Mgt.
- Traceability
- Remaining Useful Life
- Health Indicator

Network Foundation

- Industry Core
- Connector
- Data Chain
- Digital Twin
- Operating Model
- and many more

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Solution overview

Catena-X Solution Portfolio

Catena-X
Qualified Advisors

8020 · abat · accenture · BearingPoint · Capgemini · CGI · codecentric · Cofinity-X · CONSILEON · ekan · NEXUSCOGNITIVE · MATERNA · NOVATEC · NTT DATA · OPITZ CONSULTING · polygran · SAP · SIEMENS · SOVITY · SSC · T Systems · WITTE AUTOMOTIVE · MHP

Catena-X Capabilities

Final Step:
Create Value

Step 4:
Manage Identity

Step 3:
Get Connected

Step 2:
Get Registered

Step 1:
Get Informed

Resilient Supply Chains

Demand & Capacity
SAP · CatX · Solutions

Sustainability & Regulation

Ecopass · BASF · SIEMENS · circulor · EVIDEN · DENSO

Circularity
SAP

Product Carbon Footprint
SIEMENS · T Systems · SUPPLYON · SAP · BASF · IBM

Quality Improvement

Quality
SAP

Traceability
SOVITY · Cofinity-X · GEC · SAP

Value Added Services
aws CM · Cofinity-X CM · Cofinity-X BPDM

Enablement Service Provider (ESP)
Cofinity-X · T Systems · polygran · aws · SUPPLYON · SOVITY · BOSCH · e2open

Onboarding Service Provider (OSP)
polygran · T Systems · Cofinity-X · NTT Communications

Catena-X
CATENA-X Readyness Booster Programm

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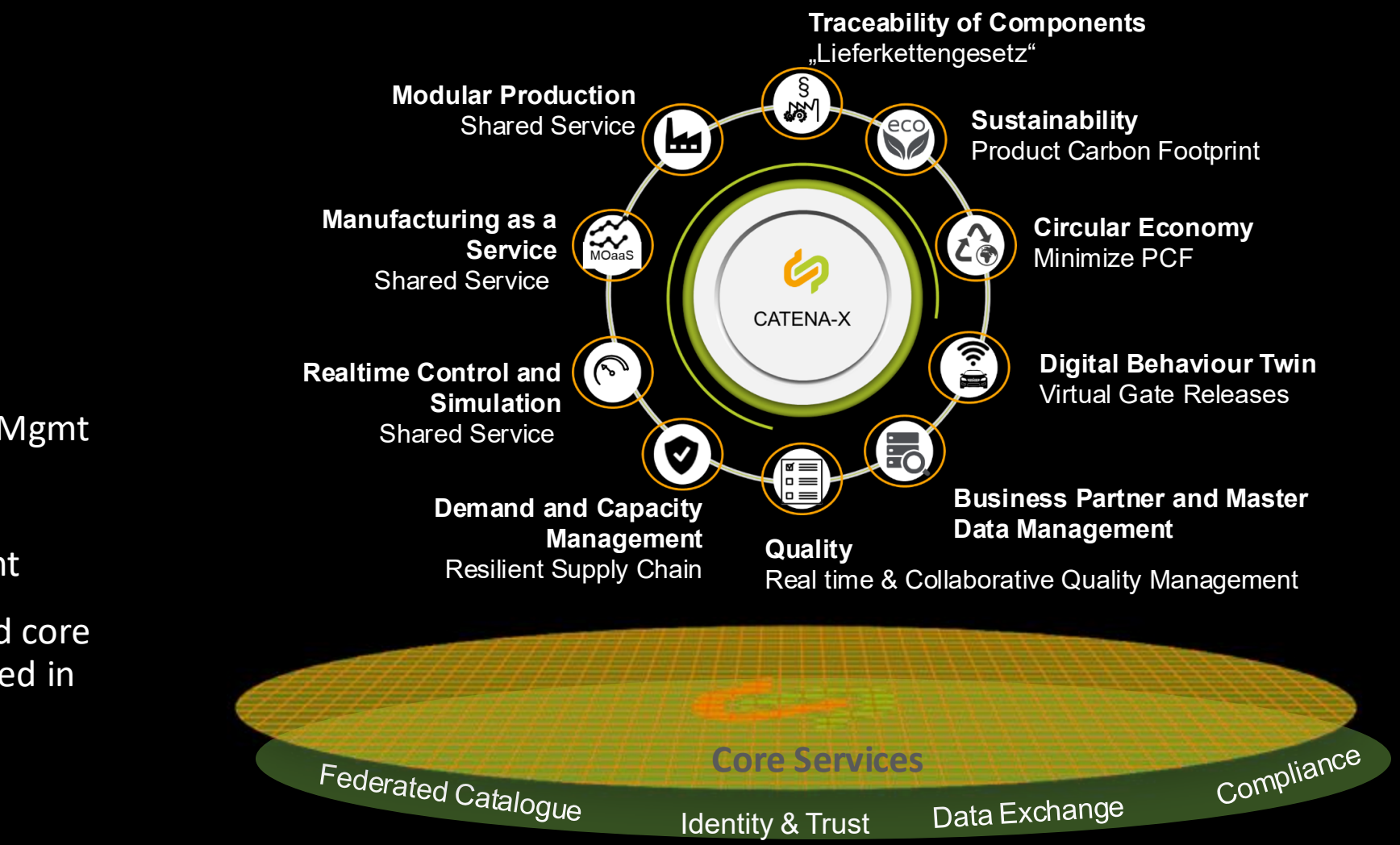
ZF contributed into C-X Core Services and Use Cases

ZF is participating in 7 **Use-Cases**

- Traceability
- Sustainability
- Circular Economy
- Digital Behaviour Twin
- BPDM – Business Partner Data Mgmt
- Quality
- Demand & Capacity Managment

To understand the architecture and core services, ZF also actively participated in the **Core Services** development.



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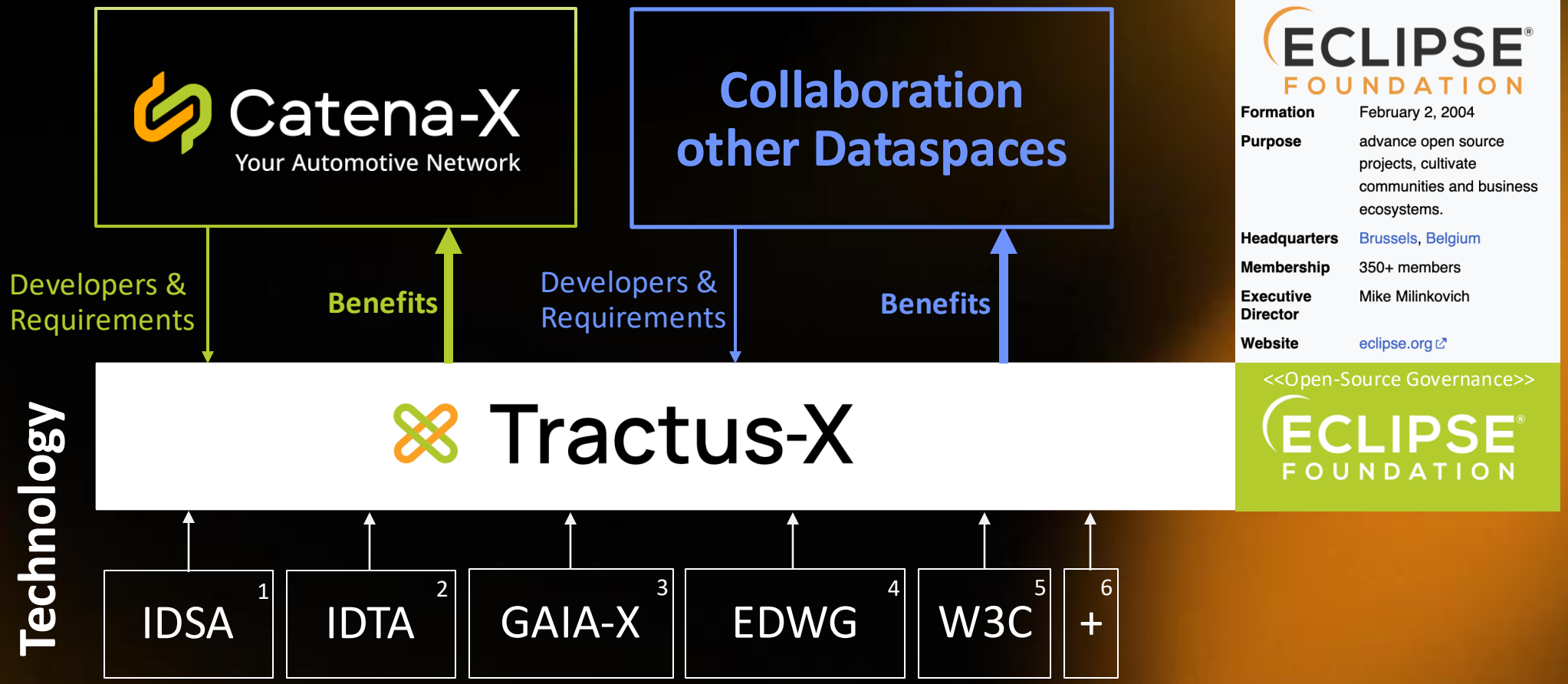
Tractus-X – The Open Source base of Catena-X



1. International Dataspaces 2. Industrial Digital Twins 3. Data Sovereignty 4. Decentral Data Exchange 5. Secure + Web3.0 6. Innovative

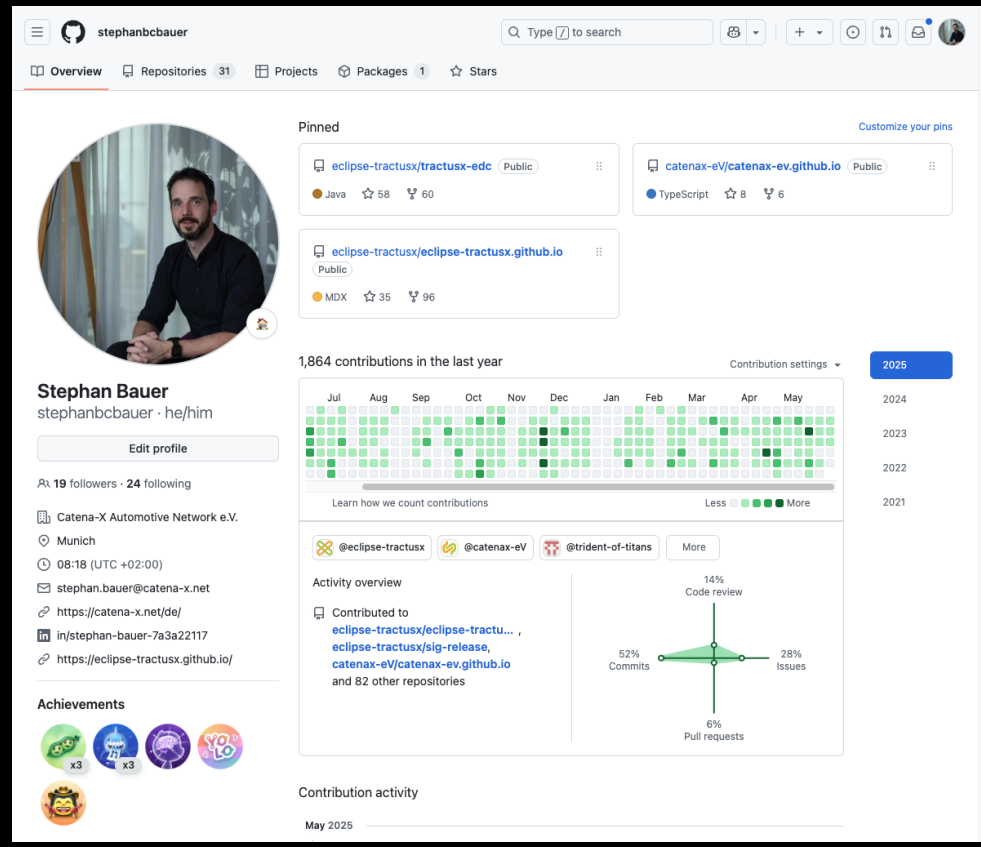
Tractus-X Community Days | Stuttgart, May 22-23, 2025

A Real-Life Report from the Eclipse Tractus-X Project

Radical Collaboration in Practice

Stephan Bauer – Project Lead, Eclipse Tractus-X

Tractus-X ECLIPSE FOUNDATION Catena-X Automotive Network



Stephan Bauer
Platform Domain Manager (Catena-X e.V.)
Project Lead (Eclipse Tractus-X)

Its all about the community

Why Open Collaboration Matters

Open Source as a Foundation

Break Silos, Build Together - enables cross-company collaboration by providing shared code, open governance, and transparent processes.

Shared code is shared success.

Trust Through Common Infrastructure

When everyone builds on the same open standards and infrastructure, it fosters interoperability, fairness, and trust — especially in federated environments.

Common ground builds trusted ecosystems.

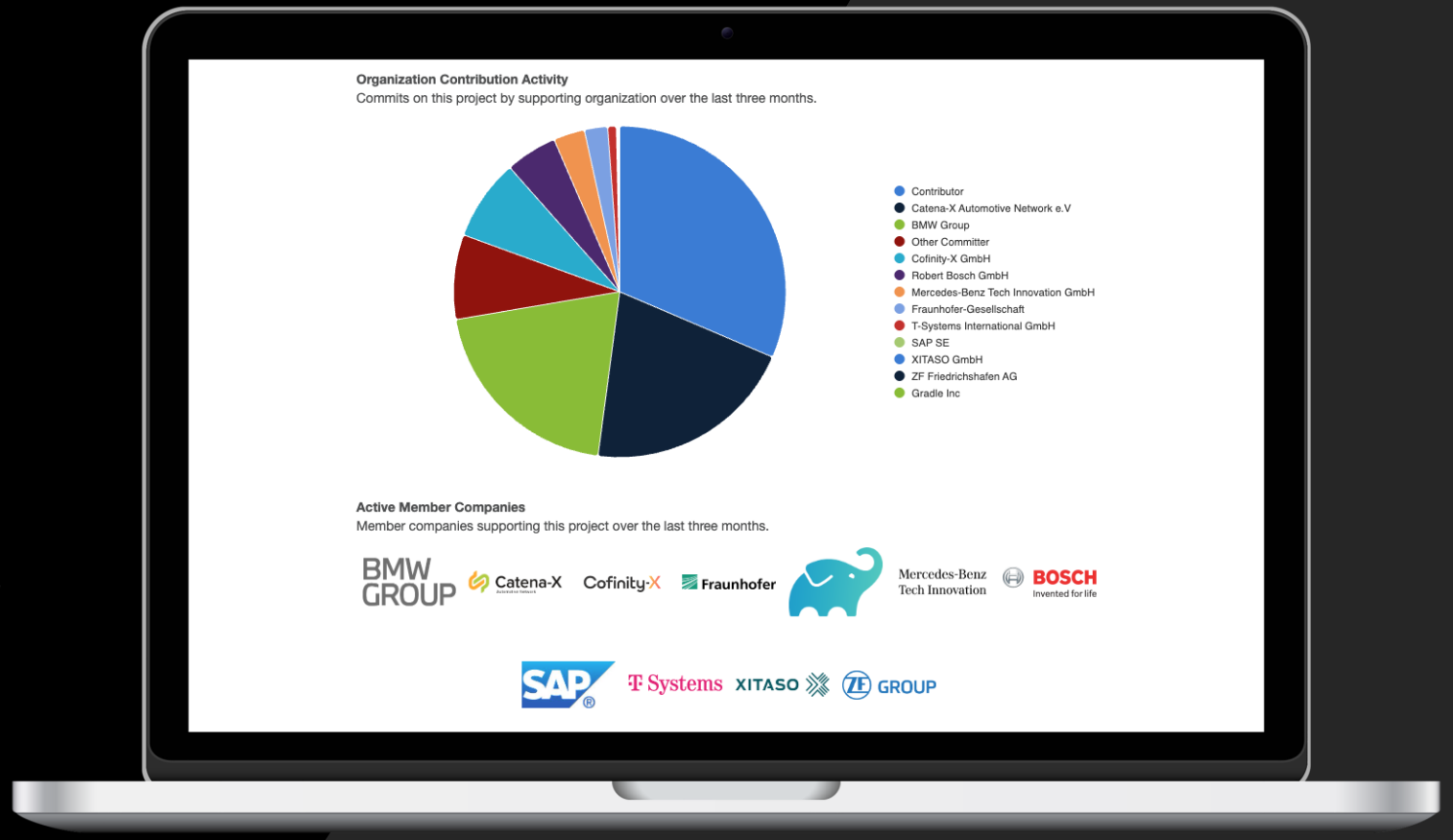
From Control to Contribution

Moving from closed control to open contribution shifts the mindset. Everyone becomes a stakeholder — not just a user, but a builder.

Empower Through Participation

What Makes It Work: Success Factors

- Neutral governance (Eclipse Foundation)
  - Project Handbook
  - Development Processes
  - Ressources (GitHub …)
- Transparency & openness
- Not only one company is involved
- Shared backlog & GitHub-based planning
- Real contributors from many companies
- Rituals: refinement, open planning, open calls



Roles in Eclipse Tractus-X

- **Contributor** – Anyone who proposes issues, makes pull requests, or contributes in discussions. -> No formal process.
- **Committer** – Can merge pull requests, manage issues, and steer development in a component. Responsible for quality -> Nominated by existing committers, approved via Eclipse vote process.
- **Project Lead** – Oversees the project, ensures governance, represents the project in the Eclipse Foundation. -> Must be an experienced committer, appointed through a formal process

Note: There are more tasks and duties described in the Eclipse Project Handbook

How to become a committer (in a nutshell)

Eclipse Handbook
Become a Committer
Member | The Eclipse Foundation

[Eclipse project roles | Eclipse Tractus-X (eclipse-tractusx.github.io)]

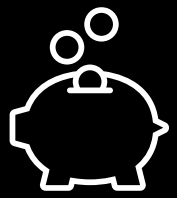
Get Elected

Nomination by an existing committer

Existing committers vote on the nomination.

If successful, you are accepted as a committer

Contribute



Regularly contribute to the project, such as through: Code contributions, Documentation, Bug reports, Tests

Contributions should be of high quality.

Show Committment

Demonstrate **long-term commitment** through:

Continuous contribution,

Participation in discussions and decisions

Build Trust

Gain the trust of existing committers through:

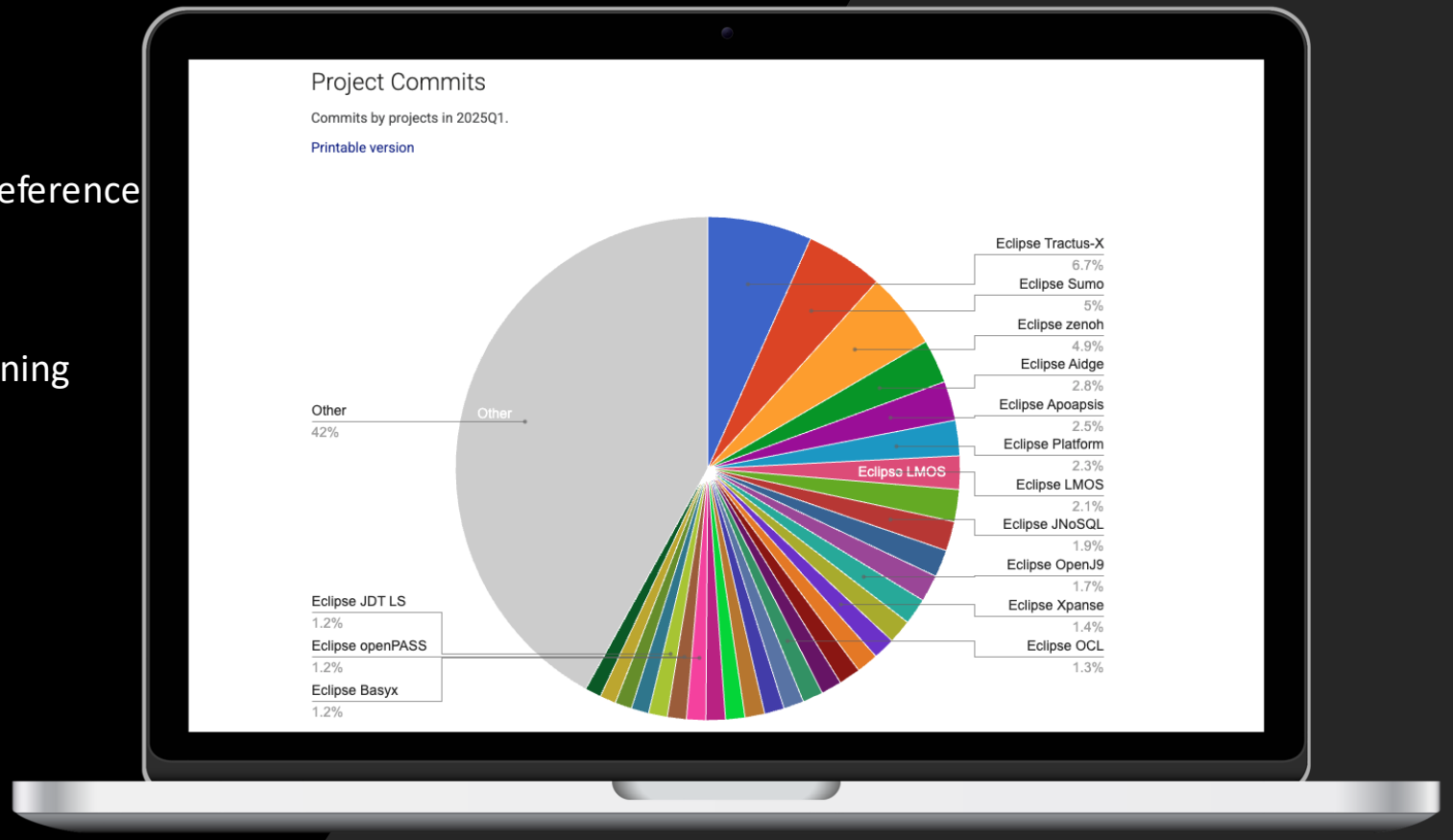
Quality and reliability of your contributions,

Effective collaboration with others

Eclipse Tractus-X at a Glance

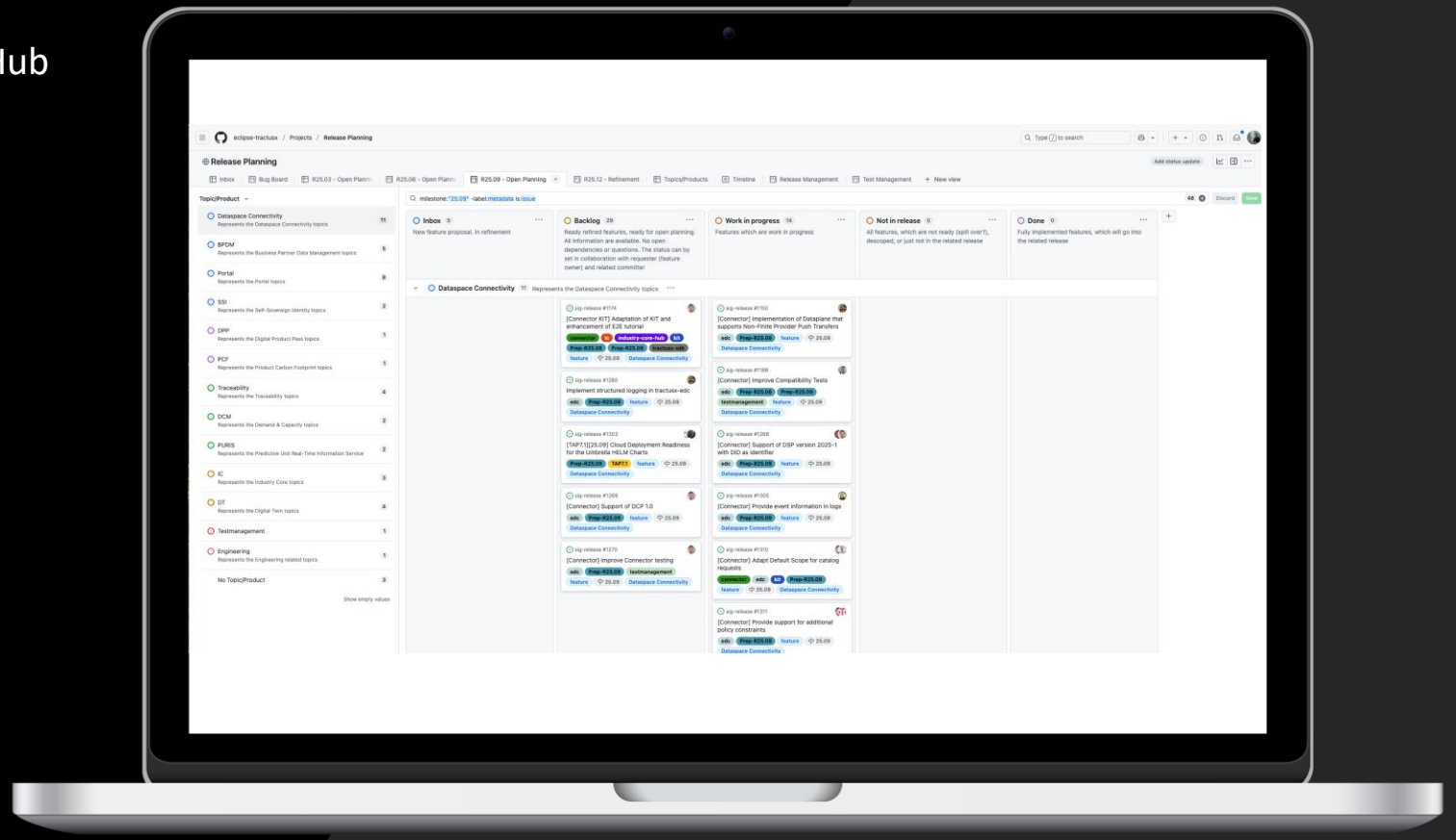
- Still #1 Project –> see the numbers
- Some “technical” Resources
  - 57 GitHub repositories -> 23 products (reference implementations)
  - 4 releases per year
  - Open refinement/alignments/open planning
- The community behind
  - 200+ contributors (not all are coder)
  - 15 (out of 43) active committer
  - 311 subscription to mailing list
  - 8 regular open meetings per week
  - 2 Community Days per year (with more than 200 participants “on site”)

Note: There is not only one company behind and we are not a company – we are a community



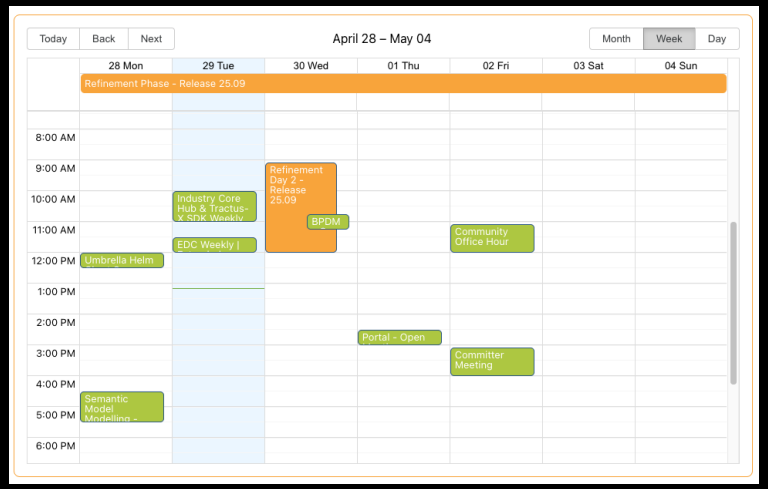
The Working Model

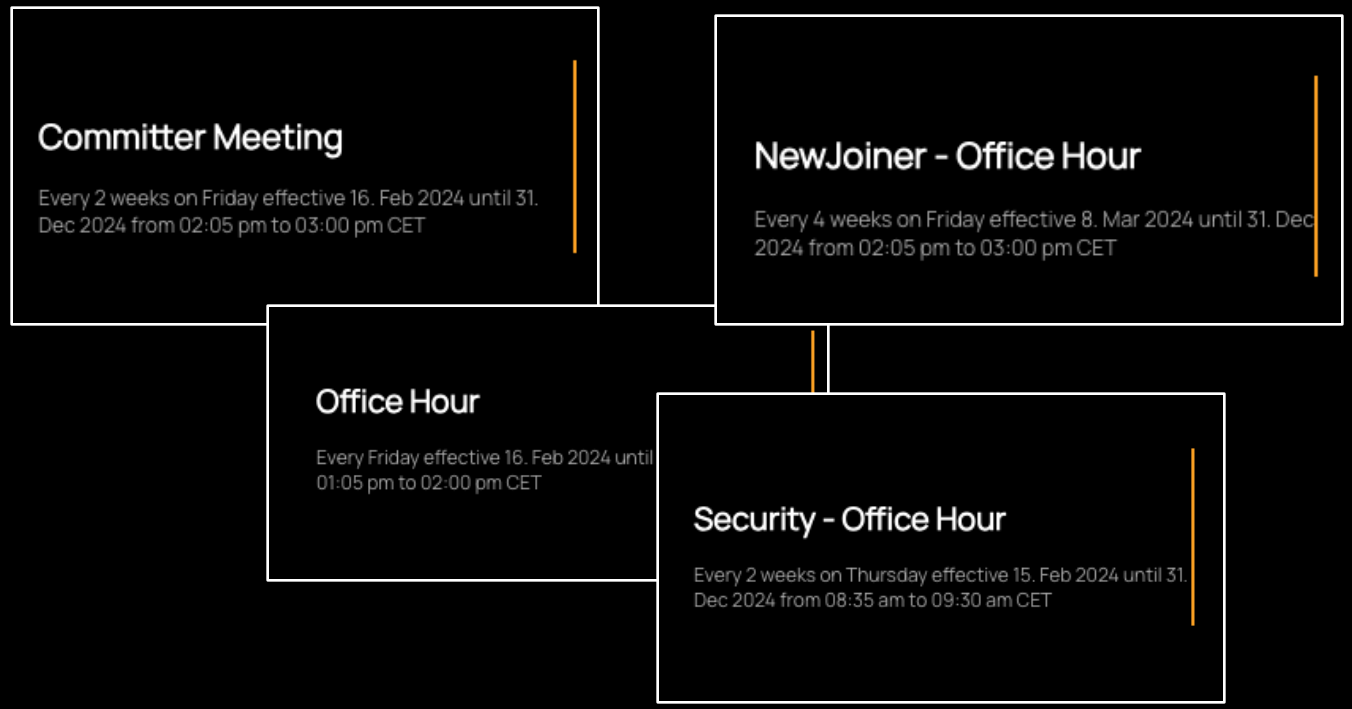
- Open and Transparent collaboration with GitHub
  - Timelines
  - Projects/Boards & Milestones
  - Open Planning & Refinement
  - Feature planning and alignment
  - Communication/Discussions
  - Documentation
  - Development



Note: Everybody (even without an account) can join and follow the progress

Tractus-X - Open Meetings





- 6 regular open meetings per week, 5 open planning meetings every 3 month (with up to 160 participants)
- eclipse-tractusx.github.io/community/open-meetings
- Register to our mailing list: https://accounts.eclipse.org/mailing-list/tractusx-dev

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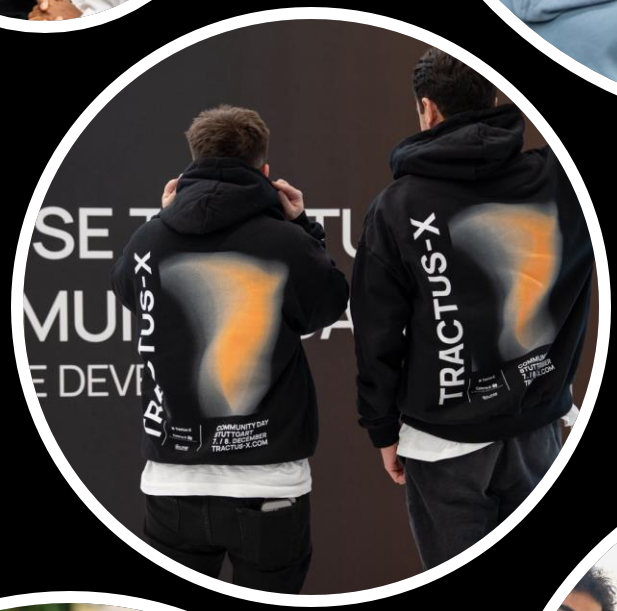
We are Eclipse Tractus-X …

- We are passionate for technology and innovation
- We share real innovation
- We are live
- We shape the future of the different industries
- We are the blue print for sucessful dataspaces
- … and we are a really great community



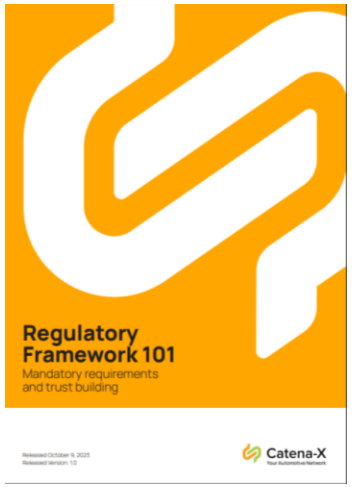
Developer

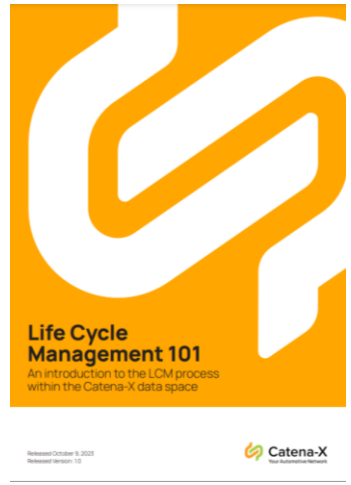
Let´s work together and join our community

tractus-x.com

Want to read more?

This value creation is based on trusted and standardized interactions for all participants of the data space.





Catena-X
Your Automotive Network

Questions?
Get in touch with us!

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