



Model-driven, genAI-powered Digital Solution Development

A global co-innovation initiative of the Green Enterprise Architecture Working Group
of the MIT Club of Germany.

- 1 Project setup in discussion.
- 2 POCs with industry partner in planning phase.
- 3 Open-source project teams currently set up.

- 1 There is a clear market need
- 2 The genesis of the idea
- 3 Model-driven, genAI-powered Digital Solution Development
- 4 Open-Source Product Development Structure
- 5 Dataspaces as Eco-System
- 6 POCs for Digital Twins
- 7 Benefits are proven by research

There is a clear market need

- Organizations are forced by legislation to quickly build digital solutions to support sustainability reporting.
- Organizations, employees and other stakeholders expect organizations to become net-zero ASAP.
- Small and medium sized businesses often do not have the knowledge and budget to build digital solutions to improve efficiencies and be compliant.

The genesis of the idea

PLATTFORM INDUSTRIE 4.0



Offer to write a whitepaper on sustainable supply chains and data space for HICSS-56



Create task force with partner network



Co-create Sustainable Supply Chain Framework

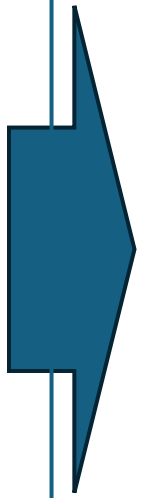


Create MITCG working group

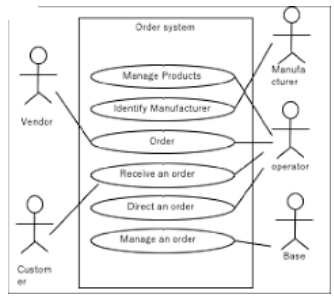


Sustainable Supply Chain Working Group

- Automotive
- Discreet Manufacturing
- Process Manufacturing
- Energy
- Transport & Logistics



2024

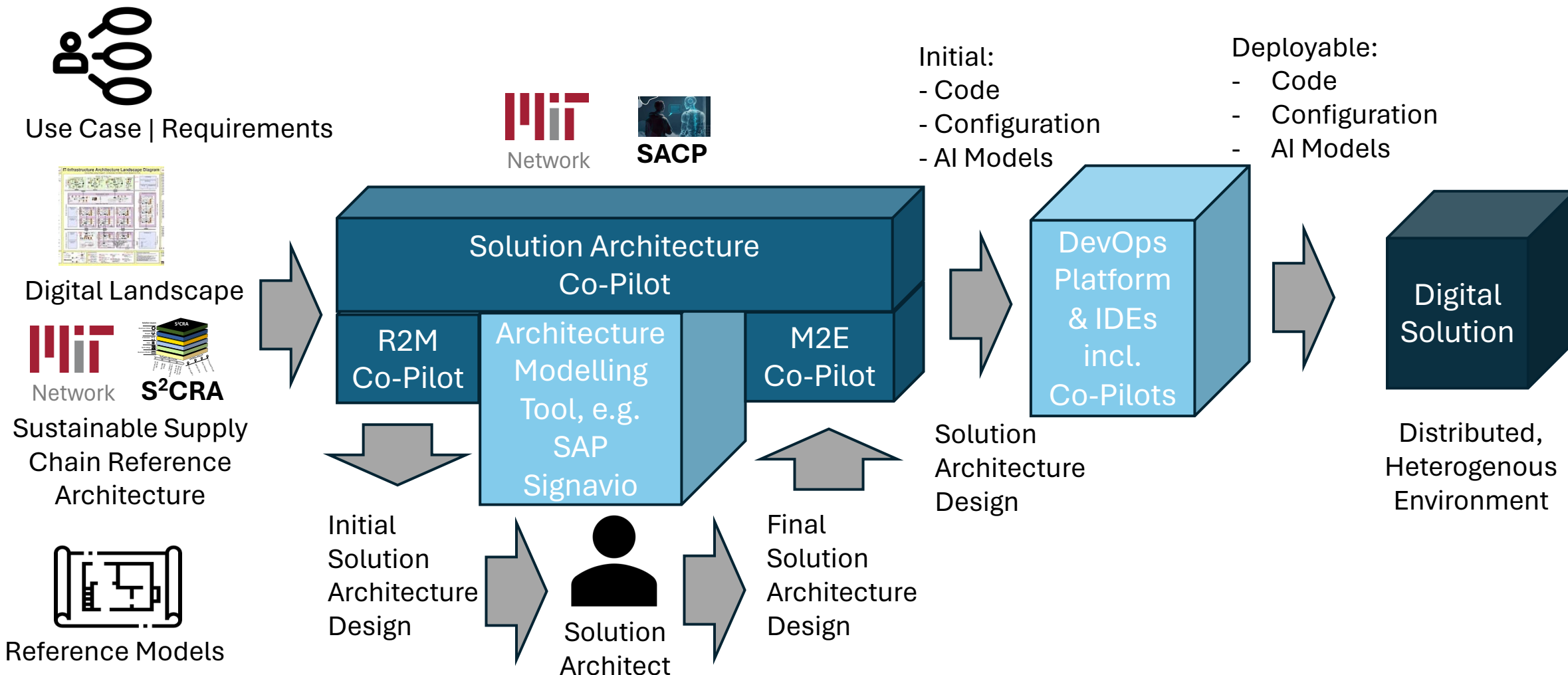


Open-source, use-case centric reference models



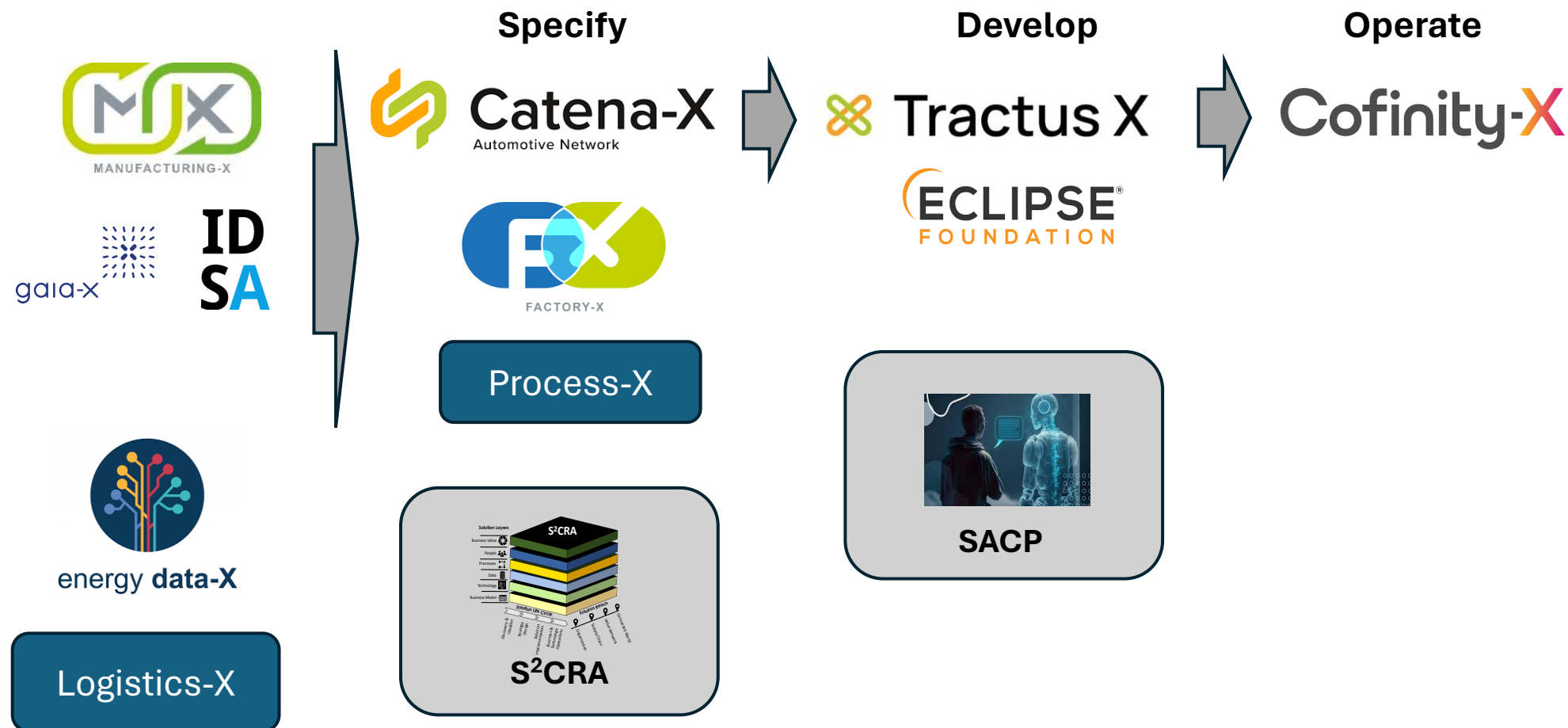
Open-source genAI SDLC tool

Model-driven, genAI-powered Digital Solution Development

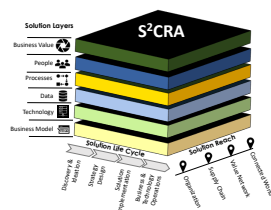


Dataspaces as Eco-System

PLATFORM
INDUSTRIE4.0



Open-Source Product Development Structure Idea



Sustainable Supply Chain Reference Architecture (S²CRA)



New Eclipse Open-Source Project (CC4.0-BY)



Solution Architecture Co-Pilot (SACP)



New Eclipse Open-Source Project (CC4.0-BY)

OR

New Workstream in Tractus-X Project



POC Candidate Pipeline

Use Case Driven



Process-X



Reference Implementation



Digital Twins & Data Spaces



Benefits are proven by research

Research shows that using genAI for solution architecture, design and development can increase speed by up to 54% and quality by up to 41%

Evaluating the Benefits of Model-Driven Development

Universidad San Jorge, SVIT Research Group

<https://www.researchgate.net/publication/341834755> Evaluating the Benefits of Model-Driven Development Empirical Evaluation Paper

The Impact of AI on Developer Productivity: Evidence from GitHub Copilot

MIT Sloan School of Management

<https://arxiv.org/abs/2302.06590>

Evaluating the benefits of empowering model-driven development with a machine learning classifier

Wiley

<https://onlinelibrary.wiley.com/doi/10.1002/spe.3133>

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