

Myrtus Project: A SHACL-based remote Danube extension

12:40 – 13:00



- Giulia Biagioni – TNO



In partnership with



Myrtus Project: A SHACL-based remote Danube extension



Giulia Biagioni, Coen Leeuwen & Bart Driessen



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Slide 69

GB1 Myrtus Project: A SHACL-based remote Danube extension
Biagioni, G. (Giulia), 2026-05-22T08:29:55.918

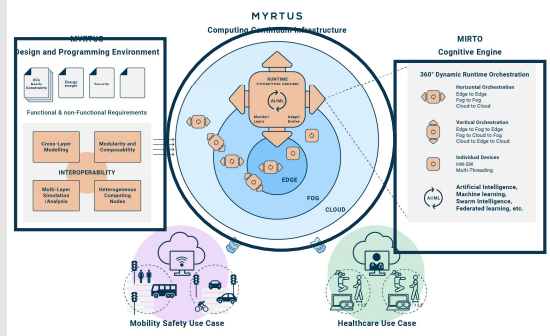
GB2 Ack bart
Biagioni, G. (Giulia), 2026-05-22T08:31:05.823



Financed by: Horizon Europe (Grant No. 101135183),
Topic: HORIZON-CL4-2023-DATA-01-04 – Cognitive Computing Continuum
Duration: 1 January 2024 – 31 December 2026

Creates a solution to orchestrate the cloud-fog-edge continuum
 – in a **sustainable** and **secure** way

Myrtus is built on three pillars
Design & Programming Environment
Reference Architecture
 AI Driven cognitive engine enabling dynamic orchestration, optimization, and autonomous decision-making across the continuum.



Myrtus Partners



Secure Onboarding of New Entities in Myrtus



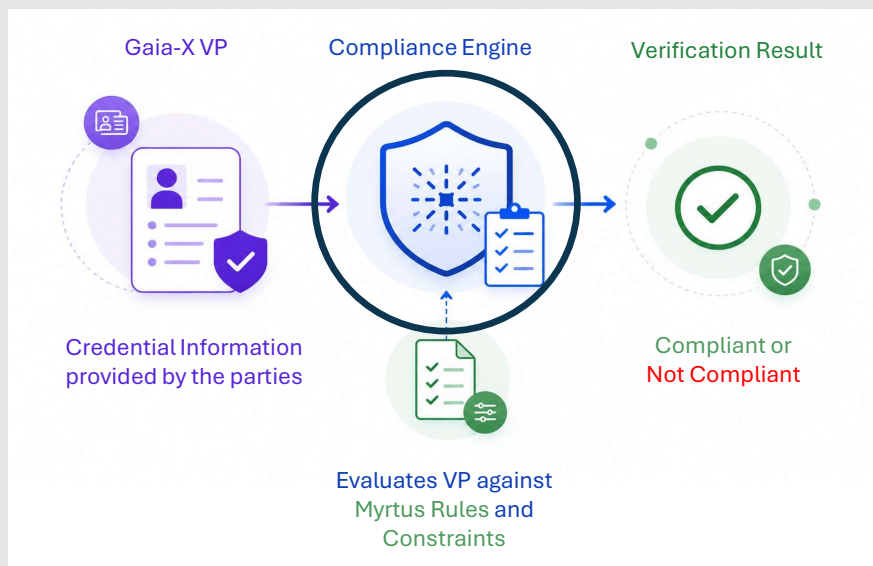
Myrtus AI cognitive engine leverages a compliance service using **Gaia-X Verifiable Presentations** and **Verifiable Credentials** to authorize new entities joining the ecosystem and ensure compliance with Myrtus requirements

Ensures trust in the ecosystem: only compliant and verified entities are allowed to join Myrtus.

#GaiaX #TechX

Compliance Validation

Gaia-X Compliance Framework



Myrtus Rules

Legal person:

- Subject must have valid registration number
- Subject must be based in EU

Legal Entity Identification (LEI) code

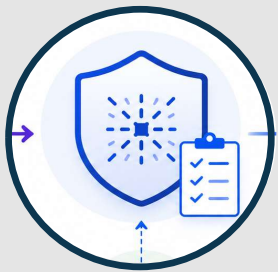
- Subject must have a valid LEI code
- LEI country code must be based in EU

Terms and conditions

- Subject must have accepted the Gaia-X legal terms and conditions

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Integration with Gaia-x Compliance Framework



Initially, from the [Gaia-X Compliance Framework](#), we only used the [Verifiable Presentation](#) (VP), which was evaluated using the compliance engine and compliance rules developed within Myrtus.

Myrtus: A Computing Continuum Platform, Gaia-X Summit 2025, Digital Ecosystems in Action

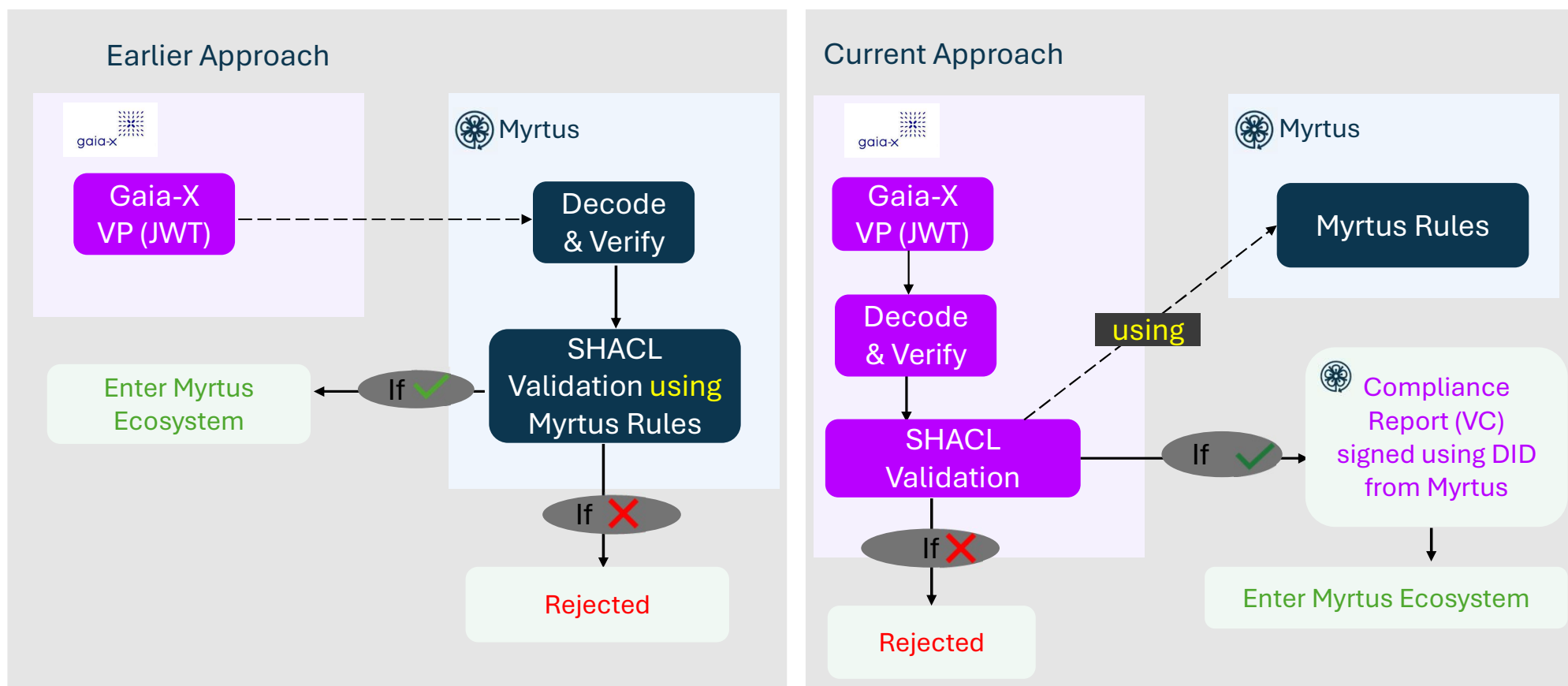


At the same summit, [Danube](#) was presented as the new extensible compliance engine of [Gaia-X](#), and we look forward to integrating it into our process.

January 2026 - May 2026: work on the integration of Danube with Myrtus

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Connecting Danube with Myrtus



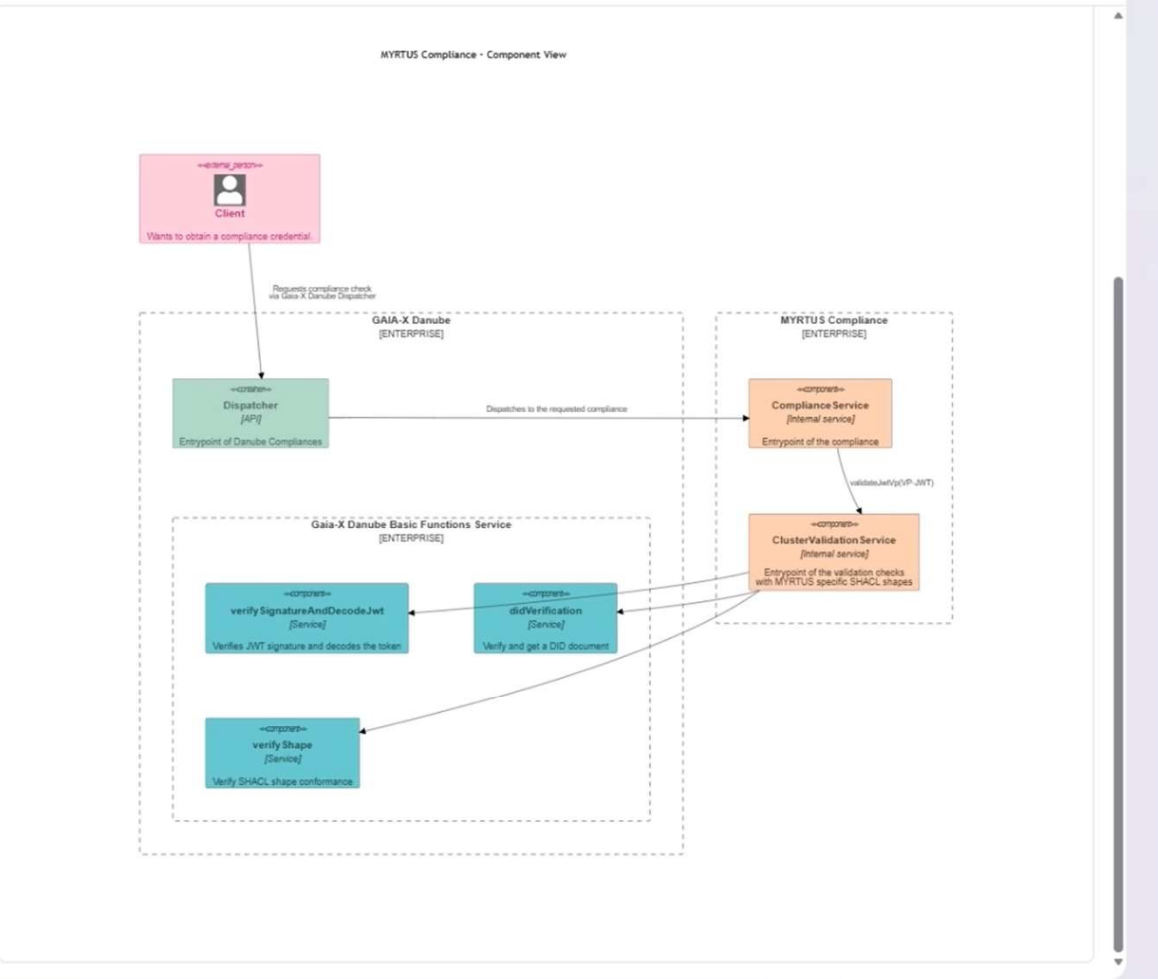
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DEMONSTRATION

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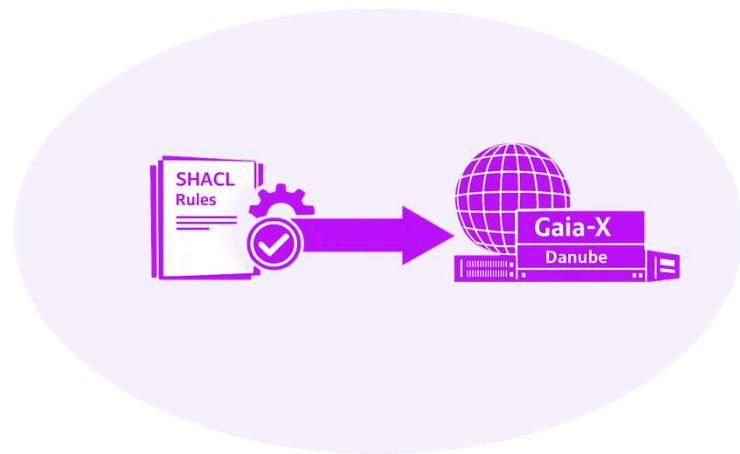
- TNO-CI
- Project
- Trust_Framework
 - Pinned
 - Work items
 - Merge requests 0
 - Branches
 - Issue boards
 - Manage
 - Plan
 - Code
 - Merge requests 0
 - Repository
 - Branches
 - Commits
 - Tags
 - Repository graph
 - Compare revisions
 - Snippets
 - Locked files

- MYRTUS / Trust_Framework / Repository
- Files
- Search files (*.vue, *.rb...)
- .idea
 - compliance_api
 - shapes
 - ui
 - .dockerignore
 - .gitignore
 - Dockerfile
 - README.md
 - compliance-api.yml
 - components.md**
 - deployment.yml
 - pyproject.toml
 - requirements.txt
 - ruff.toml
 - sequence.md



back

Benefits of Delegating Validation to Danube



Separation of concerns Maintain SHACL rules independently from the validation engine

Reduced maintenance effort No need to maintain a custom validation service

Standards alignment Leverage the Gaia-X compliance framework for interoperable validation

Improved interoperability Rules can be reused across systems supporting Gaia-X

Faster development Focus on rule definition rather than implementation of validation logic

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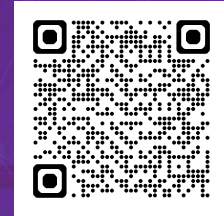
Thank you!



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Special Thanks to



Delphine Clearhout



Giuditta Del Buono

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