

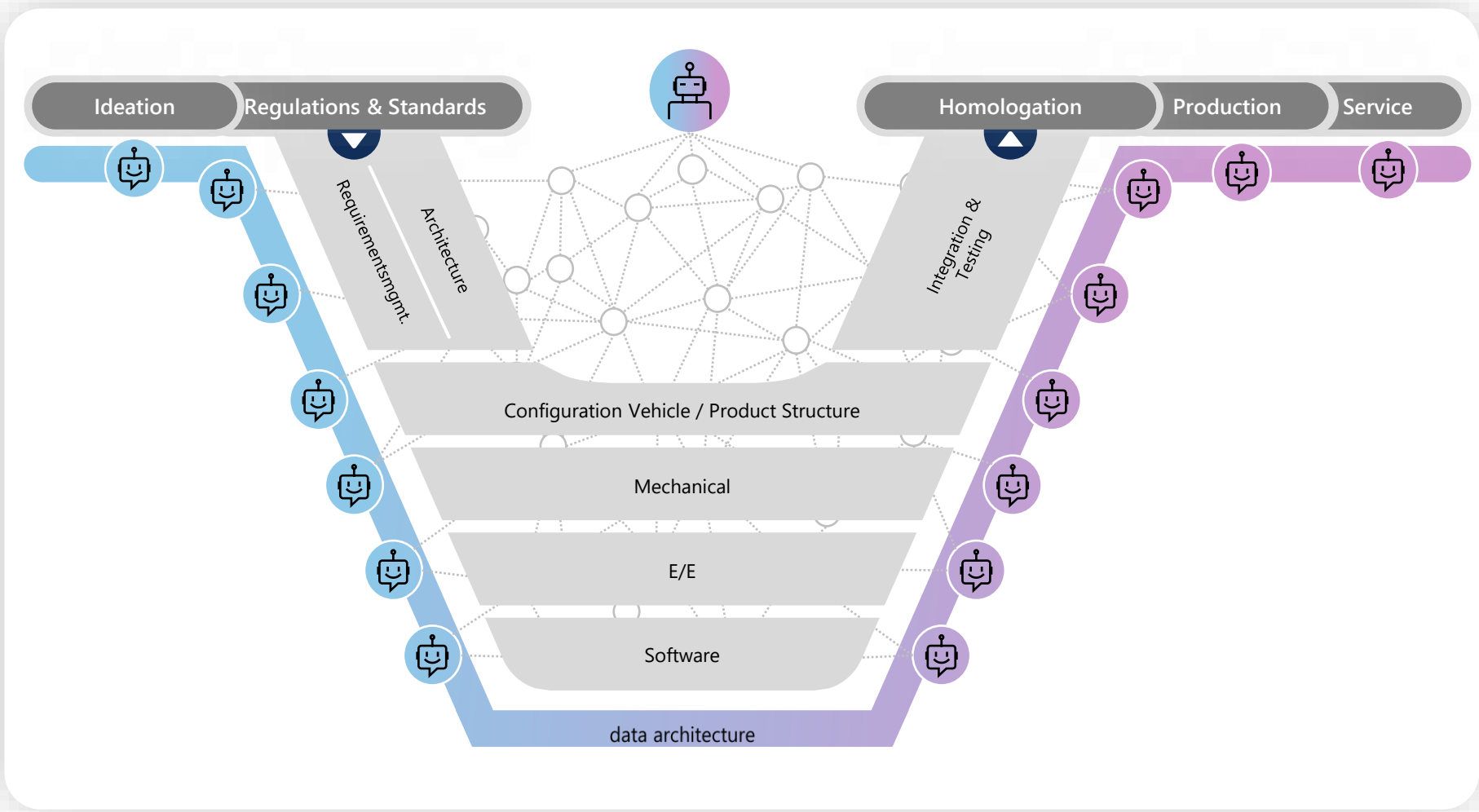
A futuristic office scene with a woman, a man, a standing man, and a small robot. The woman is seated at a desk, looking at a tablet. The man is seated next to her, looking at a computer monitor. A third man is standing in the background, holding a document. A small robot is in the foreground, looking at the woman. The office has large windows and modern furniture.

Eclipse SDV AI SIG – Proposal Detail

SIG Proposal Backup – John Stenlake (Microsoft)

Context (can be skipped)

Generative AI supports every stage of the V-Model

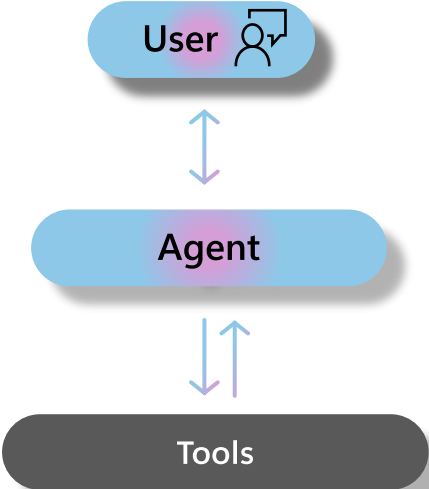


Use Cases

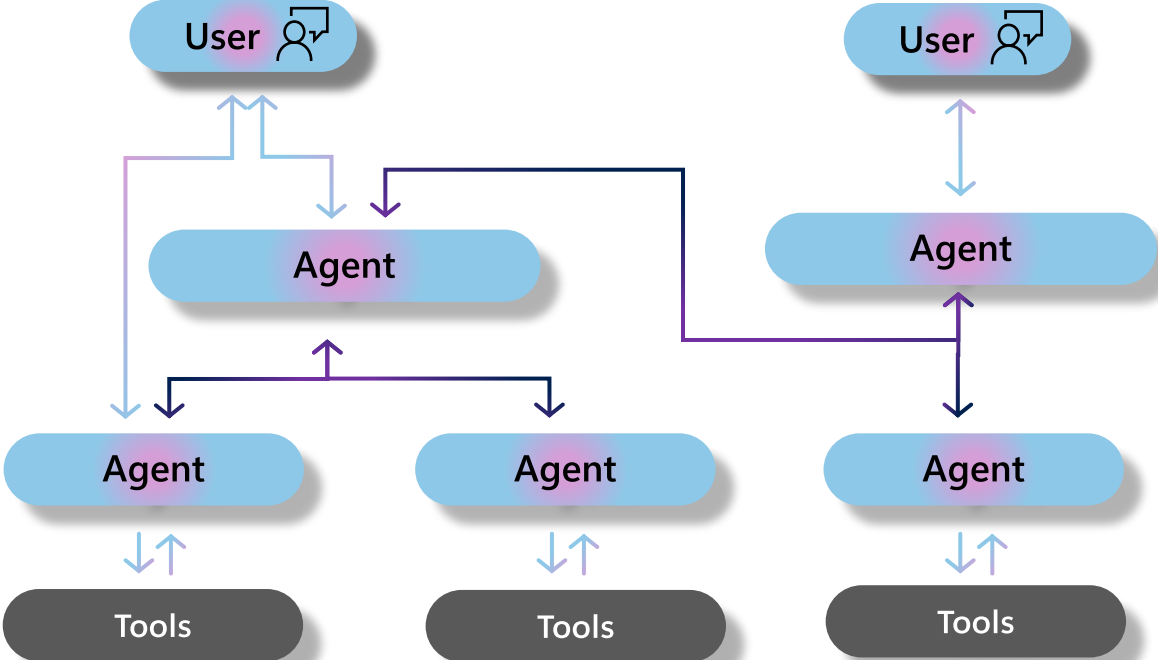
-  **Agents support within existing development tools**
-  **Agents support across tool boundaries**
-  **Agents can collaborate on tasks**
-  **Build on emerging Standards**

Multi Agents can collaborate on complex Tasks

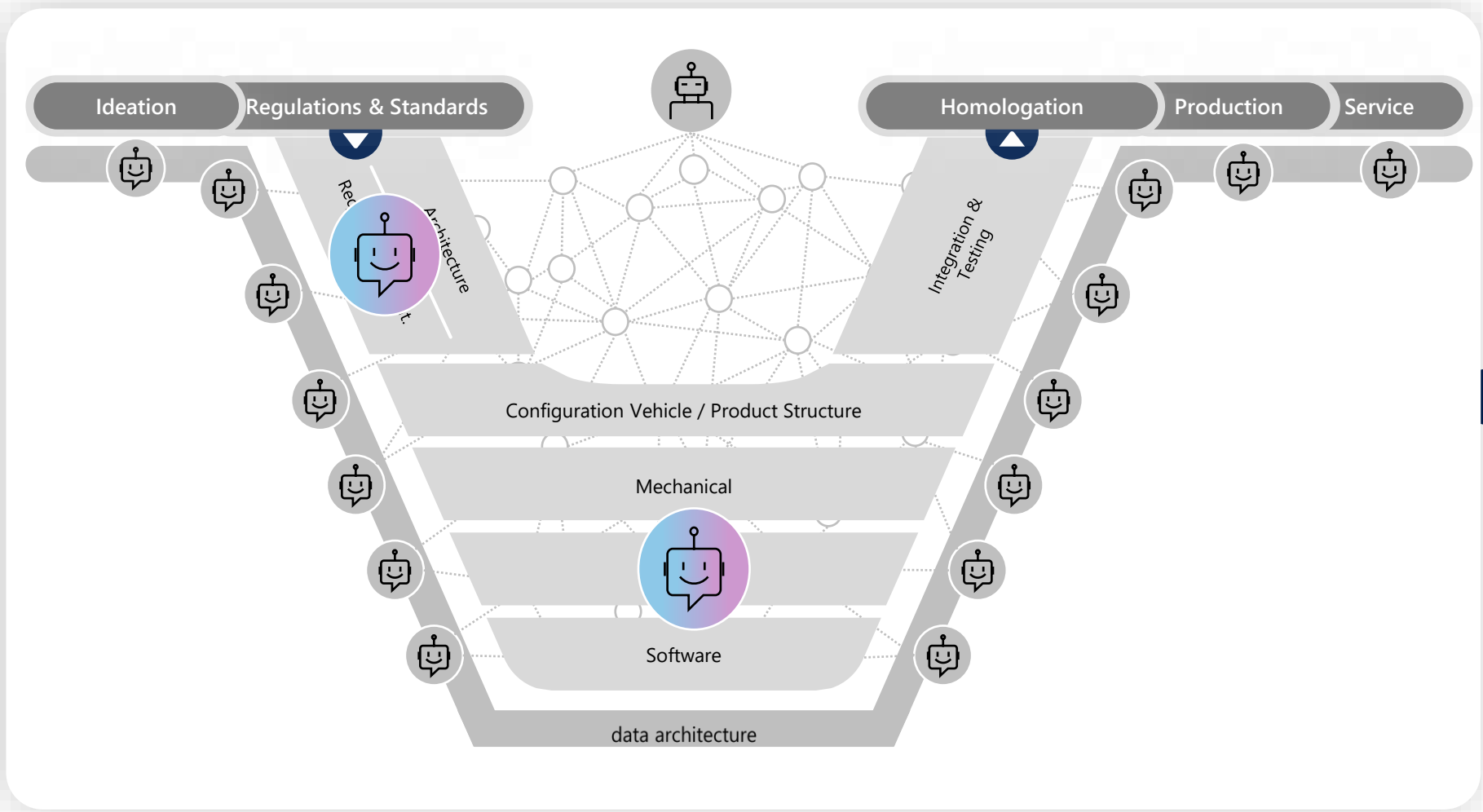
Single Tasks / Department



Multiple Tasks / Departments Interaction



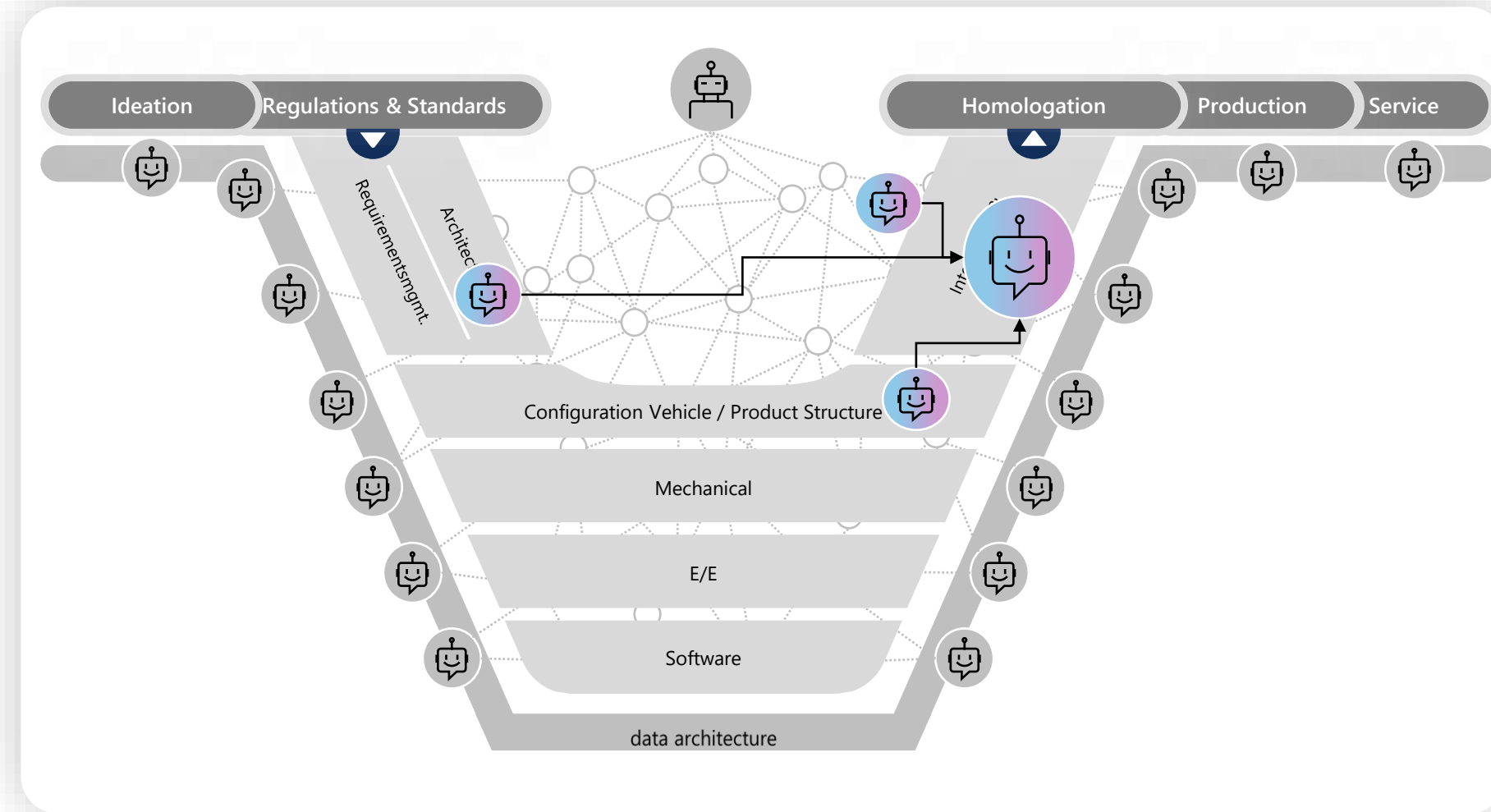
Single Focus Area Use Cases



Activities

-  **Requirement Level**
-  **Modeling**
-  **Coding**
-  **Issue Tracking**

Agent Collaboration across multiple Focus Areas



Main building blocks

-  **Ticket Agent**
-  **Architecture Agent**
-  **Integration Agent**
-  **Triage Agent**

Eclipse SDV AI SIG

Proposal: Rationale and Objectives for Forming the AI SIG

Unifying AI Experts

The AI SIG would bring together experts and enthusiasts to foster collaboration and innovation in AI technologies.

Knowledge Sharing

The group would promote sharing of insights and research to advance understanding and application of AI to SDV

Developing Best Practices

AI SIG focuses on creating frameworks, standards and best practices to address AI deployment challenges effectively.



Why Now

- **Rapid GenAI adoption** pressure in automotive tooling
- **Fragmented agent / tool interoperability** approaches
- **Opportunity to shape** neutral, open reference patterns
- **Based on industry standards** (MCP, A2A)
- **Ecosystem readiness** ahead of 2026 investment cycles

Why a SIG?

Need a Focus point for AI-related topics

While individual projects might also look at aspects of AI a joined-up approach can help accelerate AI benefits across the whole Eclipse SDV domain

Broad Scope

There are multiple aspects to AI relating to SDV to be considered – AI for Toolchains, AI in-vehicle stacks, Autonomous functionality, distributed Agents – which go beyond the scope of individual projects. Initial focus is on Toolchains.

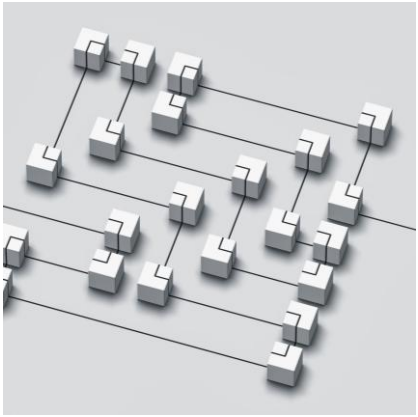
Flexible Governance

A SIG allows us to meet with individuals who are outside Eclipse membership (although they cannot vote or direct meetings). This enables close cooperation with other communities as appropriate. A cooperative approach with COVESA is proposed due to common interest and the ability to build broader support.



Vision Statement

Enable interoperable, agent-augmented automotive development tooling across the V-Model through open, practical service capability specifications and reference implementations.



AI Toolchain Design

Focus on designing AI toolchains that integrate seamlessly to support complex AI workflows efficiently. Specifically:

Enable interoperable, agent-augmented automotive development tooling across the V-Model through open, practical service capability specifications and reference implementations.



Implementation Strategies

Explore practical approaches for implementing AI toolchains to maximize performance and scalability. Seek collaborative opportunities to substantiate and demonstrate these approaches including:

- collaboration with COVESA on the above goal
- collaboration with Digital.auto and their SDV lab
- potential collaboration with EU funded projects



Impact on AI Adoption

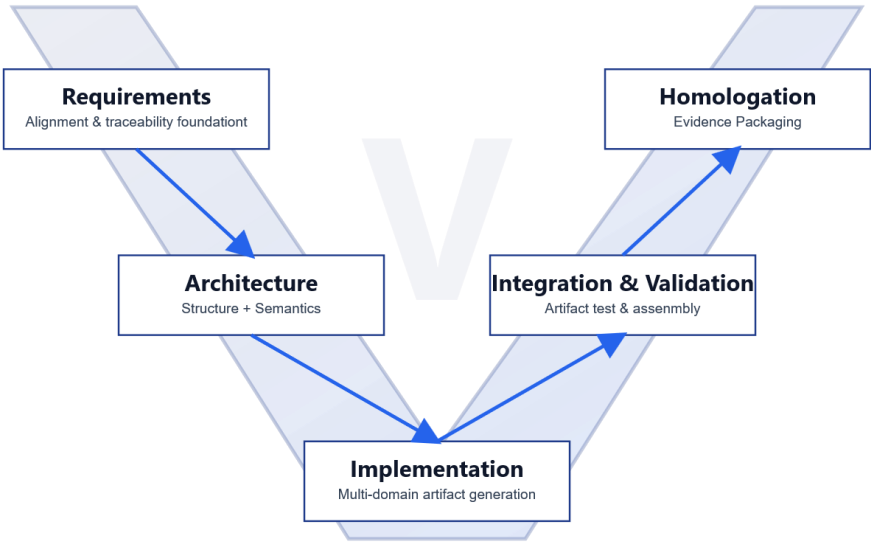
Examine how AI toolchains accelerate AI adoption across diverse industries, driving innovation and efficiency.

Foundational Principles

1. Open and implementation-neutral
2. Incremental & reference-driven (specify and demonstrate)
3. Collaborate with other industry consortia (COVESA), and also other projects (digital.auto, EU funded initiatives) where beneficial
4. Align with existing standards (AUTOSAR, ISO 26262, ASPICE) where beneficial
5. Minimize complexity; focus on pragmatic adoption
6. Vendor + OEM co-shaping

V-Model Focus areas (simplified)

Stage	Why It Matters	Agent / AI Leverage
Requirements	Alignment & traceability	Summaries, gap suggestions
Architecture	Consistency checks	Model ↔ requirement validation
Implementation	Artifact generation	Code/model scaffolds, impact hints
Integration & Validation	Test & assembly	Test gap clustering, planning
Homologation	Compliance evidence	Automated collation



main focus areas

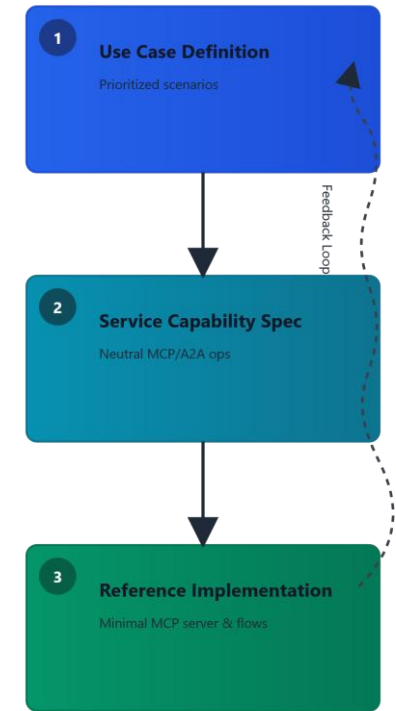
Initial Focus Area (Pilot)

Pilot Scope:

Establish the working pattern

Three pilot phases (repeated for each V-Model stage):

1. **Curate & prioritize** key requirement scenarios
2. **Specify neutral MCP/A2A service** capabilities
3. **Build** and validate a minimal **MCP server + sample** client



Three-Phase Pilot Pattern

Sample Timeline (Illustrative)

Month	Milestone
Oct 2025	Kickoff + finalize pilot scope
Nov 2025	Use case consolidation (Req Mgmt)
Dec 2025	Draft service capability spec v0.1
Jan 2026	Reference implementation alpha
Feb 2026	Vendor feedback + spec v0.2
Mar 2026	Broader outreach + 2nd stage selection

Deliverables (Foundation)

The initial phase deliverables aim to establish a solid foundation for the working group:

1. Tool landscape analysis (initial)
2. Requirements management use case pack
3. Working group operating procedures

Ongoing the working group will maintain and grow a set of living outputs:

- Updated tool category mapping (quarterly)
- Use case library expansion
- Best practices & integration guidance

Success Indicators

- **Technical**: Reference MCP service running for pilot category
- **Adoption**: At least one vendor trial / feedback cycle
- **Ecosystem**: Growing participation across roles
- **Quality**: Clear specs + example-driven documentation

Plans for Participation, Collaboration, and Next Steps

Community Participation and Interest

Encourage active community involvement to build engagement and shared ownership in the AI SIG.

Finalize Proposal

Outline clear goals and deliverables and finalize written proposal for distribution in mailing list, and propose to the Technical Advisory and Steering Committees

Kick off SIG Activity

Subject to support, initiate workshops to foster knowledge exchange and initialize SIG activity.

Interested? Please get in touch!



Thank You

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Questions, feedback, offers to contribute welcome.

Contact: john.stenlake@microsoft.com

