

DAIMLERCHRYSLER

Modular process-oriented engineering tester for diagnostics

Dr. André Marburger DSA, Michael Speidel DaimlerChrysler
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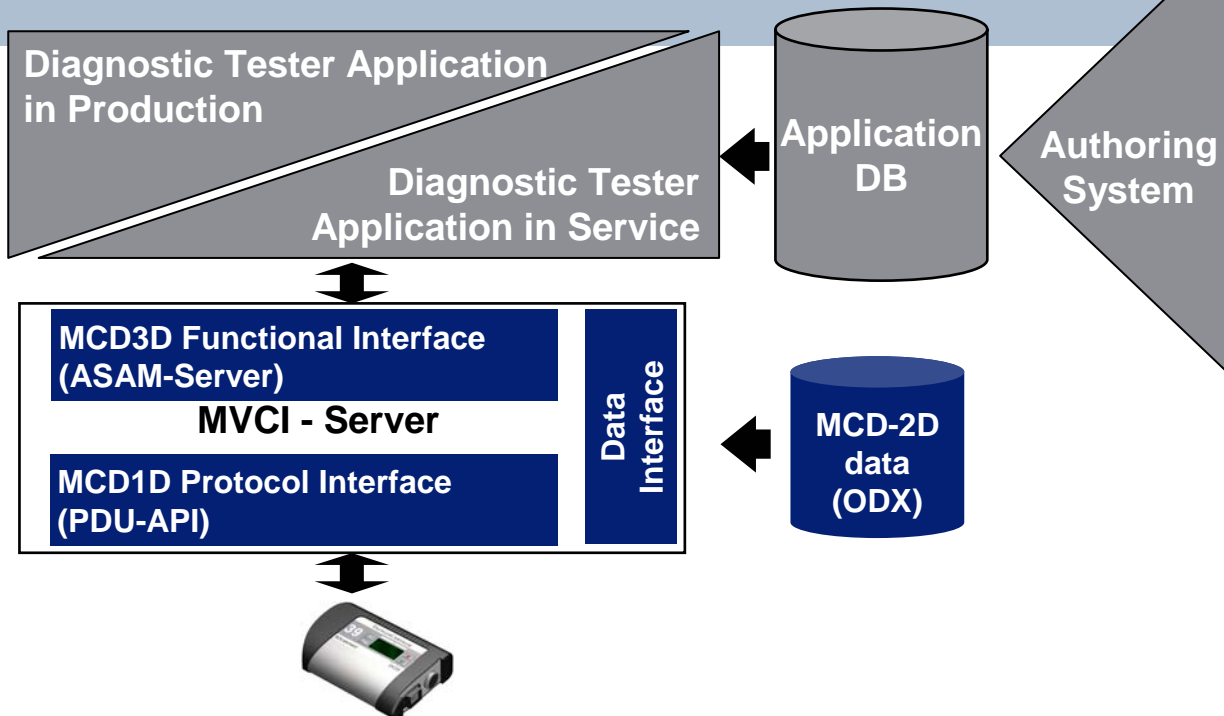
Part 1: Motivation, Scope, Users, Use Cases ...

- ASAM-Architecture in Production and Service
- Requirements to ASAM-based Diagnostic Tester from Engineering
- Engineering processes to be supported in Diagnostic Tester
- Scope of an Engineering Diagnostic Tester
- Area of use for Engineering Diagnostic Tester
- Use Cases and Users of Engineering Diagnostic Tester
- Engineering Diagnostic Tester in V-Cycle for Vehicle Development
- Conclusion

Part 2: Process, Realization, Technology, Features

- To be presented by DSA

ASAM-Architecture used in Production and in Service

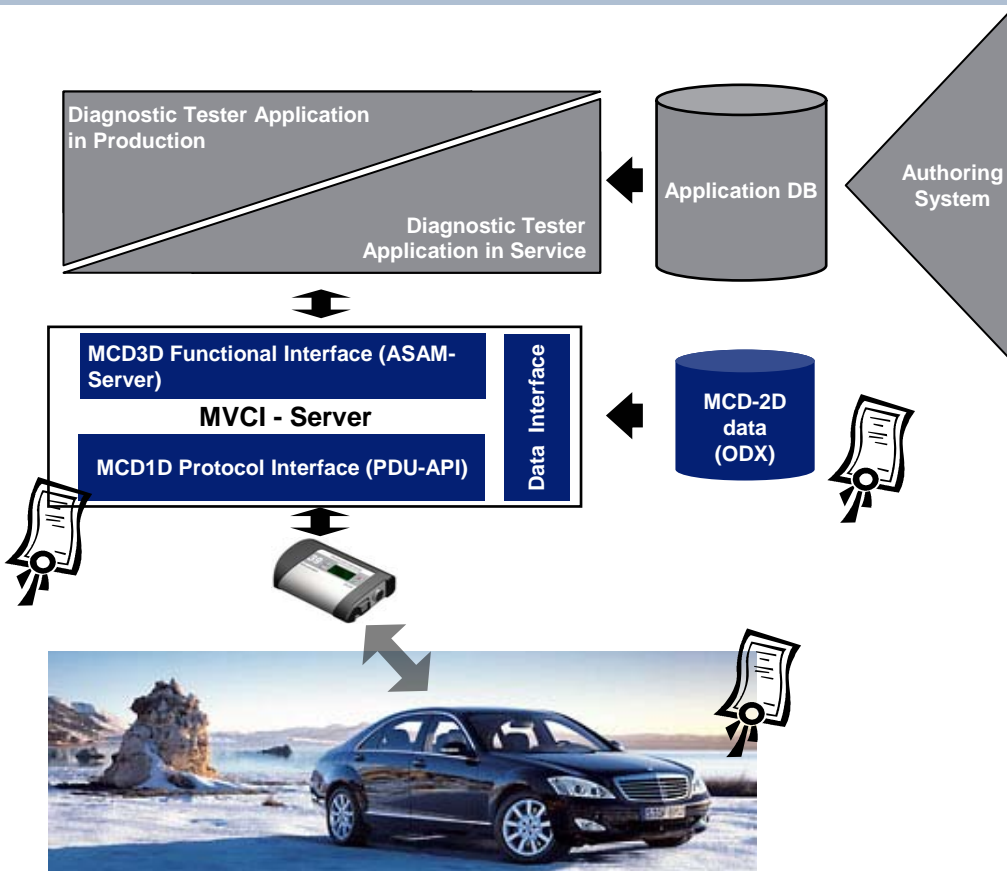


Application Database for

- **Test Procedures** (EOL, Setup, Test Stands)
- **Fault Detection Procedures** (decision trees, repair information)
- **Setup procedures** (calibration, adjustment)
- **Vehicle Data Set** based on Vehicle Models (Features, Variant Coding, Flash Data)
- **Personalization Procedures**

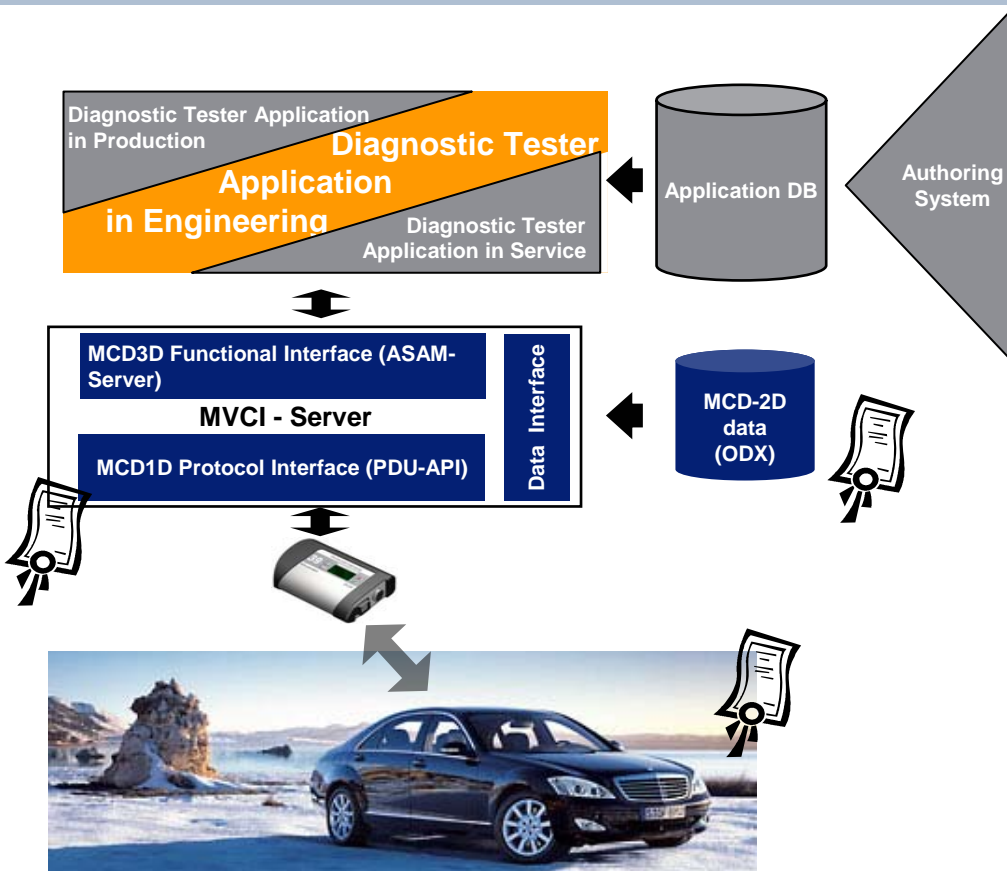


Requirements to ASAM-based Diagnostic Tester from Engineering



- Diagnostic data (ODX) need to be tested in engineering
- ECU diagnostics need to be developed and tested in engineering
- Integration of ECUs into the in-car network needs to be tested in engineering
- Diagnostic Server(s) need to be tested in engineering

Requirements to ASAM-based Diagnostic Tester from Engineering

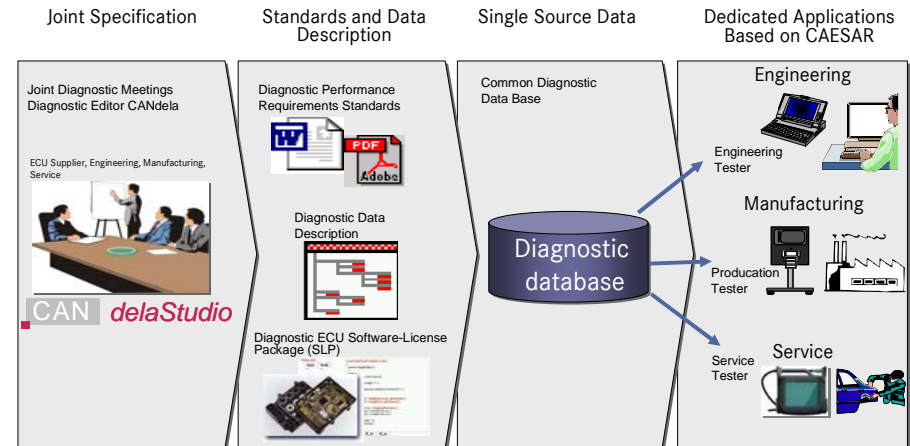
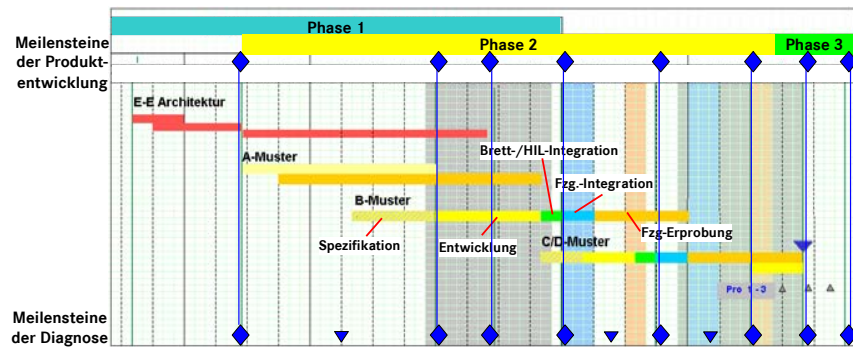


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Engineering processes to be supported in Diagnostic Tester

process-oriented

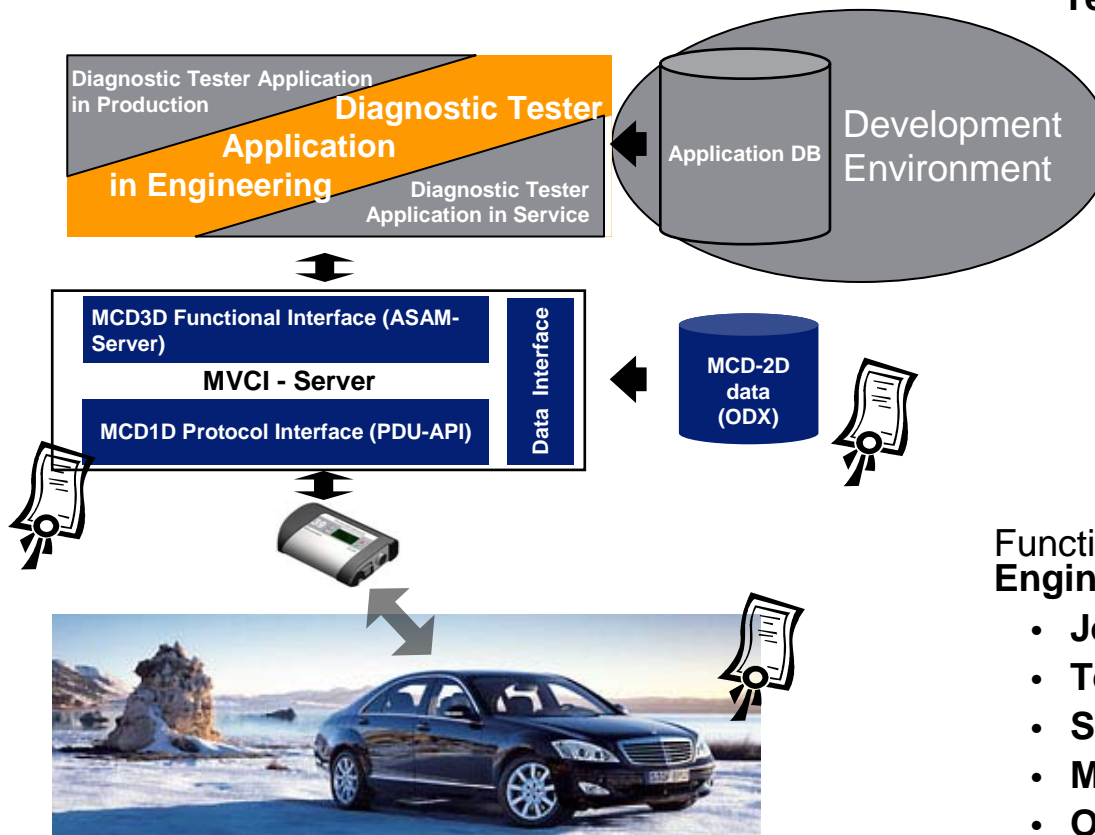
One tool for all requirements during the process of developing vehicle diagnostics, flashing and configuration



process-integrated

Tester to be integrated into the creation process of diagnostic communication data (ODX) and their quality assurance

Scope of an Engineering Diagnostic Tester



Features of a "classic" Engineering Tester:

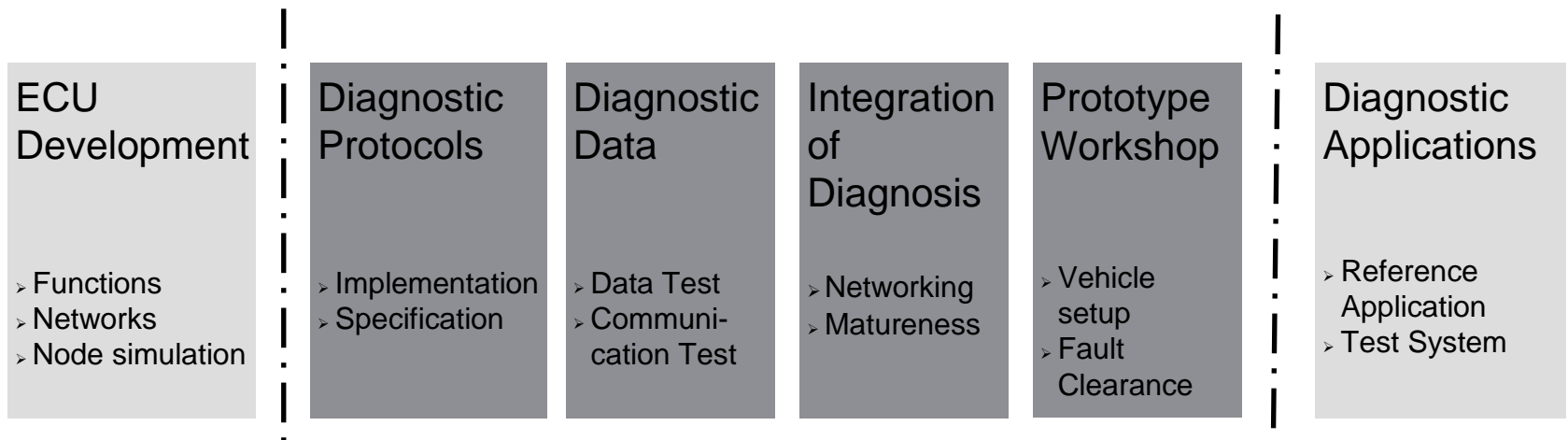
- **Diagnostic Service Execution** with views to
 - raw communication data
 - diagnostic messages
 - services input and output parameters
- **Flash Programming**
- **ECU Configuration**
- **Quicktest**
- **Bad-case testing** (e. g. beyond limits tests)

Functionality to be added to a future Engineering Tester:

- **Job Development Kit**
- **Test Automation**
- **Scripting**
- **Modularity**
- **Open Interfaces**
- **Enhanced quicktest**

Area of Use for an Engineering Diagnostic Tester

Development of Diagnostics



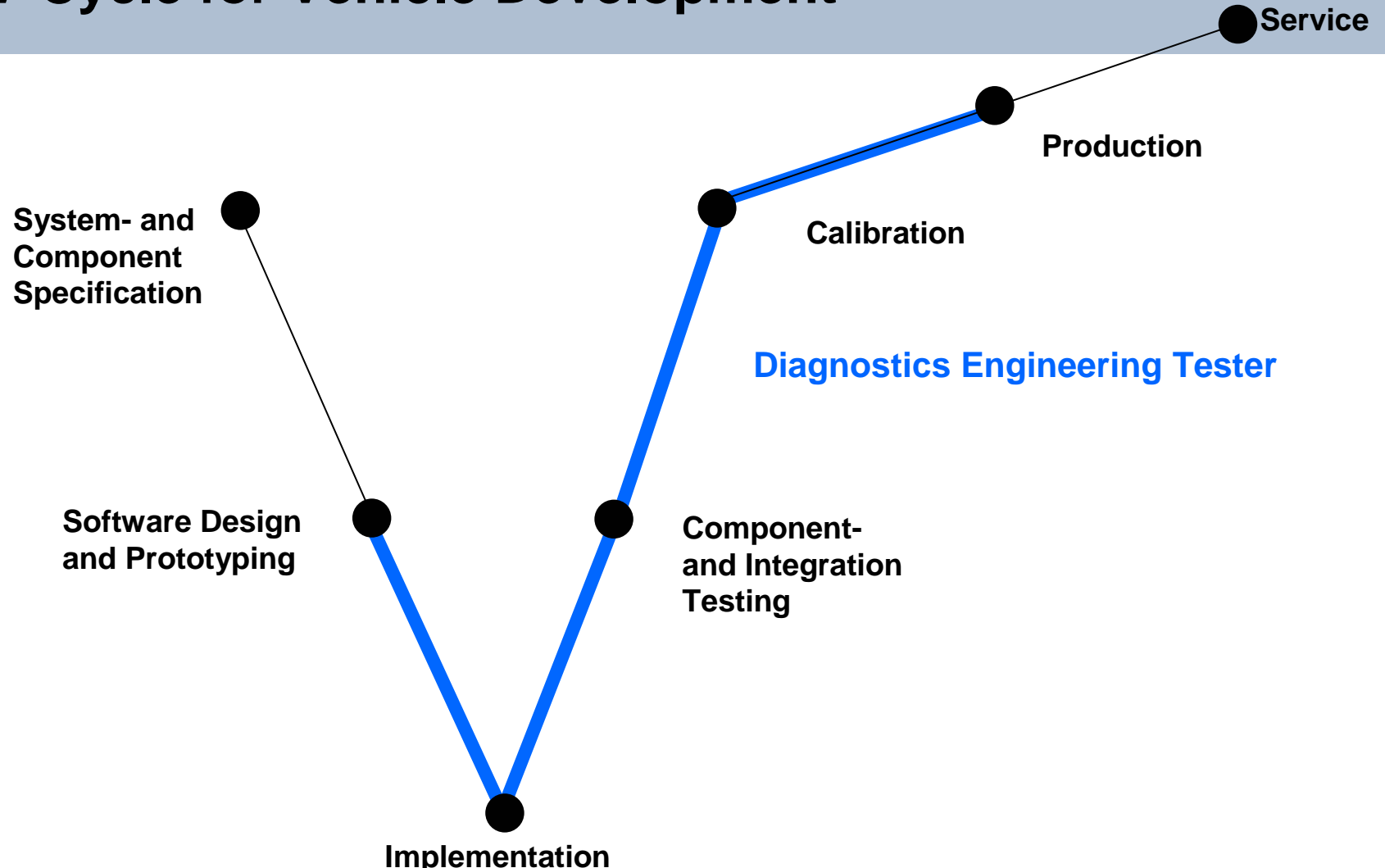
Diagnostics Engineering Tester

Many different use cases – One tester

Users and Use Cases of an Engineering Diagnostic Tester

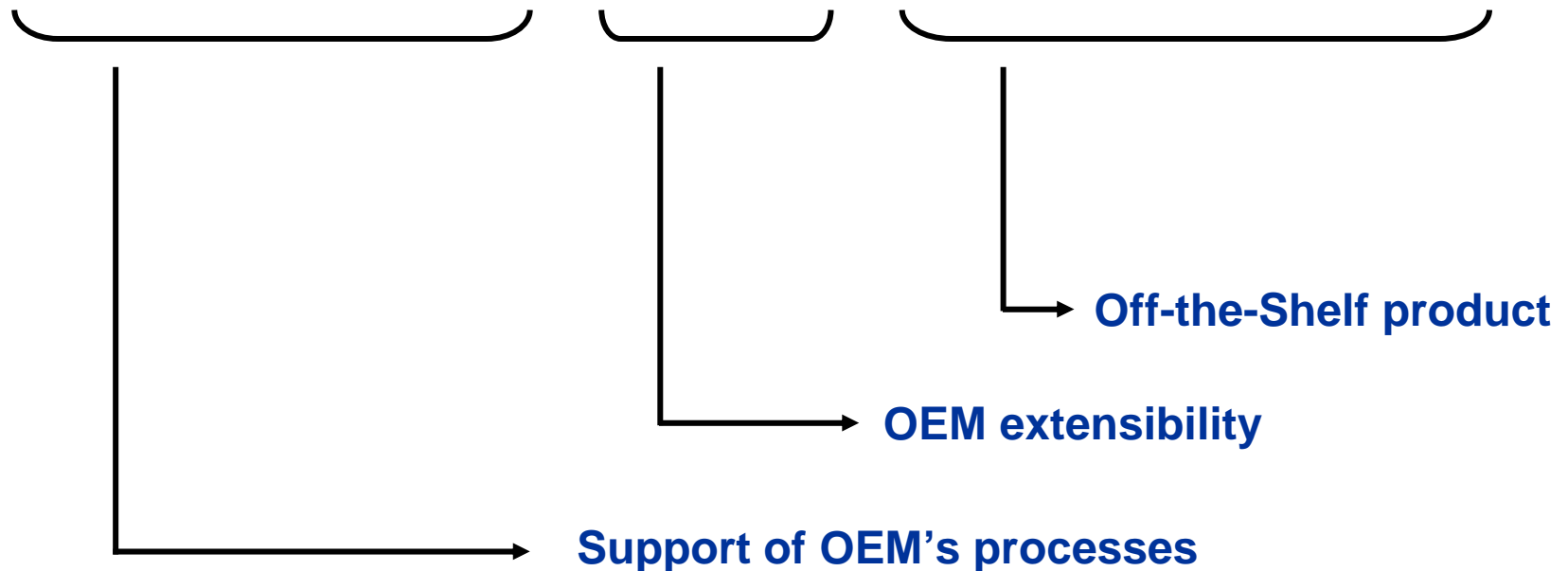
- Diagnostic protocol developers
- Diagnosis authors
- Flash and variant coding authors
- Diagnosis integrators
- Flash and variant coding integrators
- Prototype workshop employees
- OEM ECU developers
- Supplier ECU developers
- Diagnostics application developers
- Diagnostic Protocol verification
- Diagnostic Service execution and test
- Flash Programming
- ECU Configuration (Variant Coding)
- Diagnostic- Flash- and VC Data viewer (ODX-Viewer)
- Bus monitoring
- Node simulation
- Test automation
- Reporting
- OEM specific use cases (support of OEM processes)

Engineering Diagnostic Tester in V-Cycle for Vehicle Development



Conclusion

Process Oriented Modular Engineering Tester



Based on ASAM MCD-3D (and ODX)