



silver atena
A MEMBER OF ASSYSTEM

MODEL-BASED SYSTEMS ENGINEERING
MBSE

FROM SYSTEM ARCHITECTURE TO VIRTUAL INTEGRATION



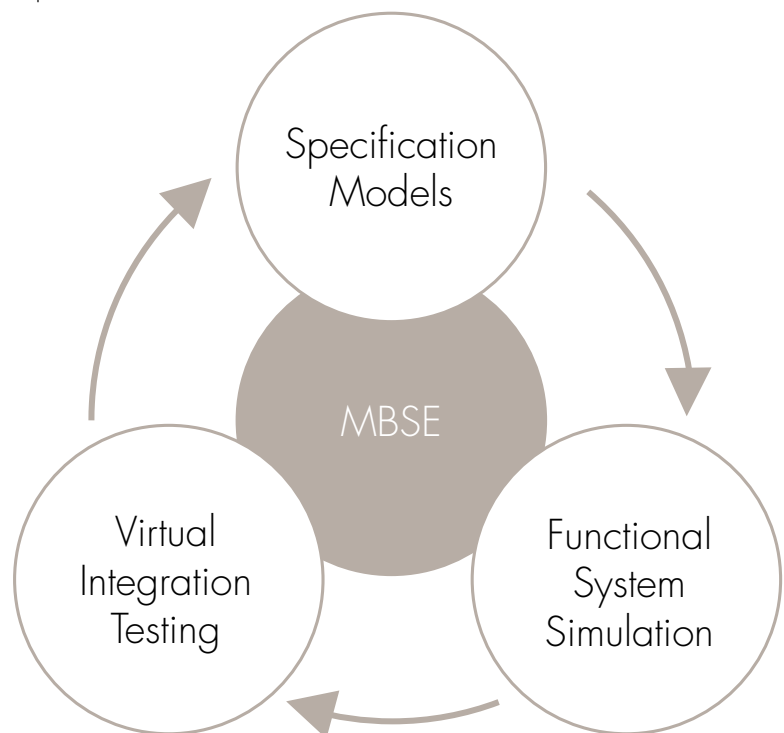
SILVER ATENA has comprehensive experience in the development of safety-relevant systems throughout the entire development cycle. To handle the increasing complexity of system design a closed model-based and requirement-based development process has been established. Taking into account different key aspects, adapted sub-processes are used, for example physical modelling and system optimisation or model-based specification and virtual integration.

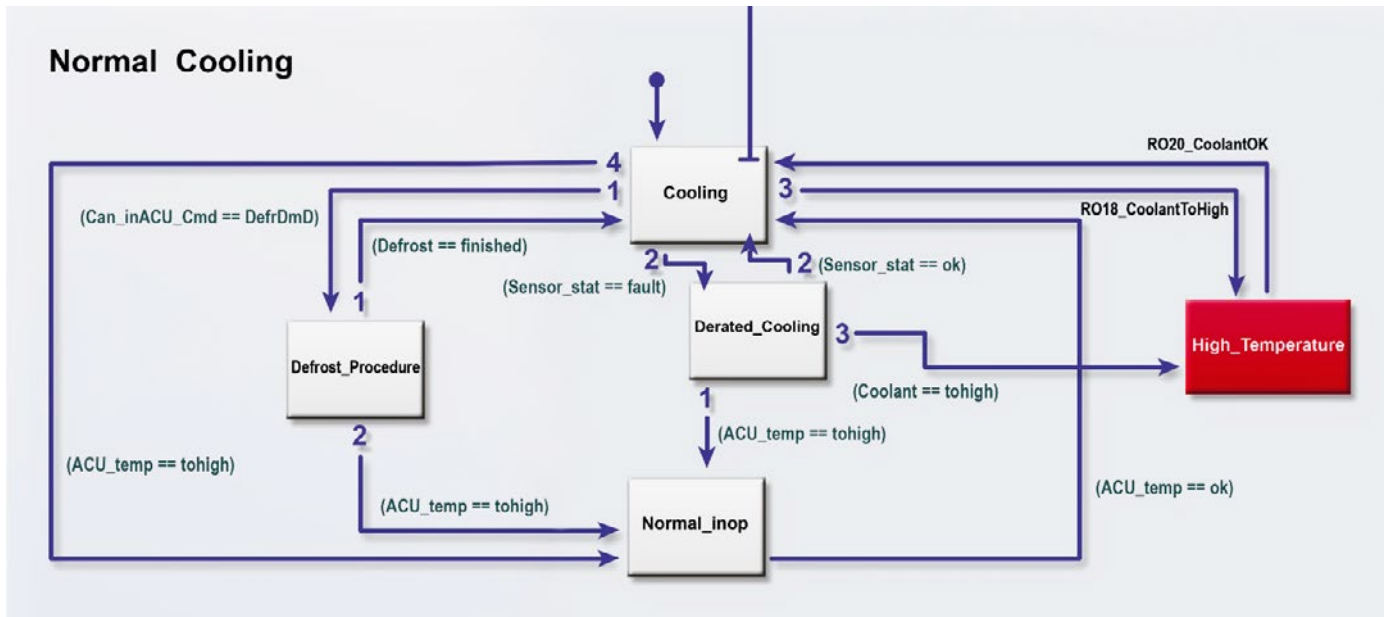
The multi-domain development for future applications is based on a highly traceable design validation and product verification. To ensure consistent integration of new technologies an aligned process between different domains such as system, software, hardware and test is applied. This aids identification of possible design errors early in the development process and therefore is an essential mean of quality improvement.

COMPETENCE AREAS

SILVER ATENA realises complete model-based systems engineering projects from the first architecture studies up to the virtual integration.

- Customised model-based development process
- Definition of optimised integrated tool-chain
- Implementation of a MBSE methodology
- Modular model libraries
- Model-based specification
- Architecture studies and system optimisation
- Interface description
- Predictive health management
- Functional safety assessment
- Tool based test case generation
- Automated document generation
- Virtual integration
- Test automation





EXPERIENCE

SILVER ATENA is an approved partner for the development of safety-relevant systems specialised in the following domains:

- Air Systems
- Thermal Management
- Electronic Cooling
- Fuel Cell and Energy Storage Systems
- Electrical Drives
- Turbo Engines
- Power Electronics
- Cabin Electronics
- Avionics
- Data Management Systems
- Data Communications
- Wind turbine control software
- Virtual testing
- Automotive steering
- Power behavior

SILVER ATENA offers customised solutions that comply with the relevant industrial development standards, e.g. ARP 4754, DO-178, IEC 61508, ISO 26262 or EN 50128 up to the highest safety integrity level.

CONSISTENT PROJECT AND QUALITY MANAGEMENT

- Capability of managing complex projects
- Extended supplier management
- Independent quality assurance

SYNERGIES THROUGH

- References in several industries, e.g. Aerospace, Automotive, Aero Engines
- Experience in developing complete systems, hardware and software
- Product development, e.g. HiL test systems, virtual integration benches, control units

OUR ADDED VALUE

- Aligned model-based system and software development process
- Optimised system design
- Full requirements traceability
- High quality of system- and test specification
- Validated tool-chain
- Reuse of test cases in MiL, SiL and HiL
- Virtual integration
- Early product and design validation & verification
- Reduced development cost
- Faster time-to-market

SILVER ATENA

As one of the market leaders in high-integrity engineering, SILVER ATENA is known for professional competence and many years of experience in international development projects. The core competencies of SILVER ATENA cover the entire development spectrum of safety-critical systems, including systems, hardware, software and safety engineering. As an independent system supplier SILVER ATENA develops solutions for the growth markets automotive, aerospace, aero engines, rail, transportation and energy. By integrating teams and in tight cooperation with the customer, we produce holistic solutions to complex engineering challenges. SILVER ATENA offers the development, implementation and maintenance of customer-specific hardware and software applications. Extensive consultancy services in the areas of engineering, process and technology compliment the portfolio.

PORTFOLIO

- **Engineering:**
System, Hardware, Software, HMI, Safety, Security, Test
- **Control Units (Fail Safe/Fail Operative):**
Aircraft Engine Controller, Motor- and Hybrid ECUs, Chassis-ECUs, Power Electronics (recuperation, inverter)
- **Test and Simulation:**
HiL Modular Test System, E-Motor/Generator/Power Supply Simulation, Automatic model DLL
- **Development Tools:**
RBE/MBSE, Bus/Sensor Gateways, Network and Routing Software
- **Consultancy:**
Safety Consulting, Systems, Technology and Process Consulting, Training

LOCATIONS

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