

Safety and Security for Embedded Software Systems

www.xandar-project.eu

Key Facts

A three-year (1/2021 – 12/2023) Research and Innovation Action project funded under Horizon 2020 framework with 5 million Euros aiming at the delivery of a mature **SW toolchain** fulfilling the needs of the industry for rapid prototyping of interoperable and autonomous Embedded Systems.

With the contribution of diverse partners knowhow in Model-Driven Engineering, Software Systems and V&V, multicore architectures, code generation, and security enforcements from higher-level behavioral models to actual runnables, XANDAR, at the final stage, will be validated by an automotive OEM (BMW) and the German Aerospace Center (DLR)

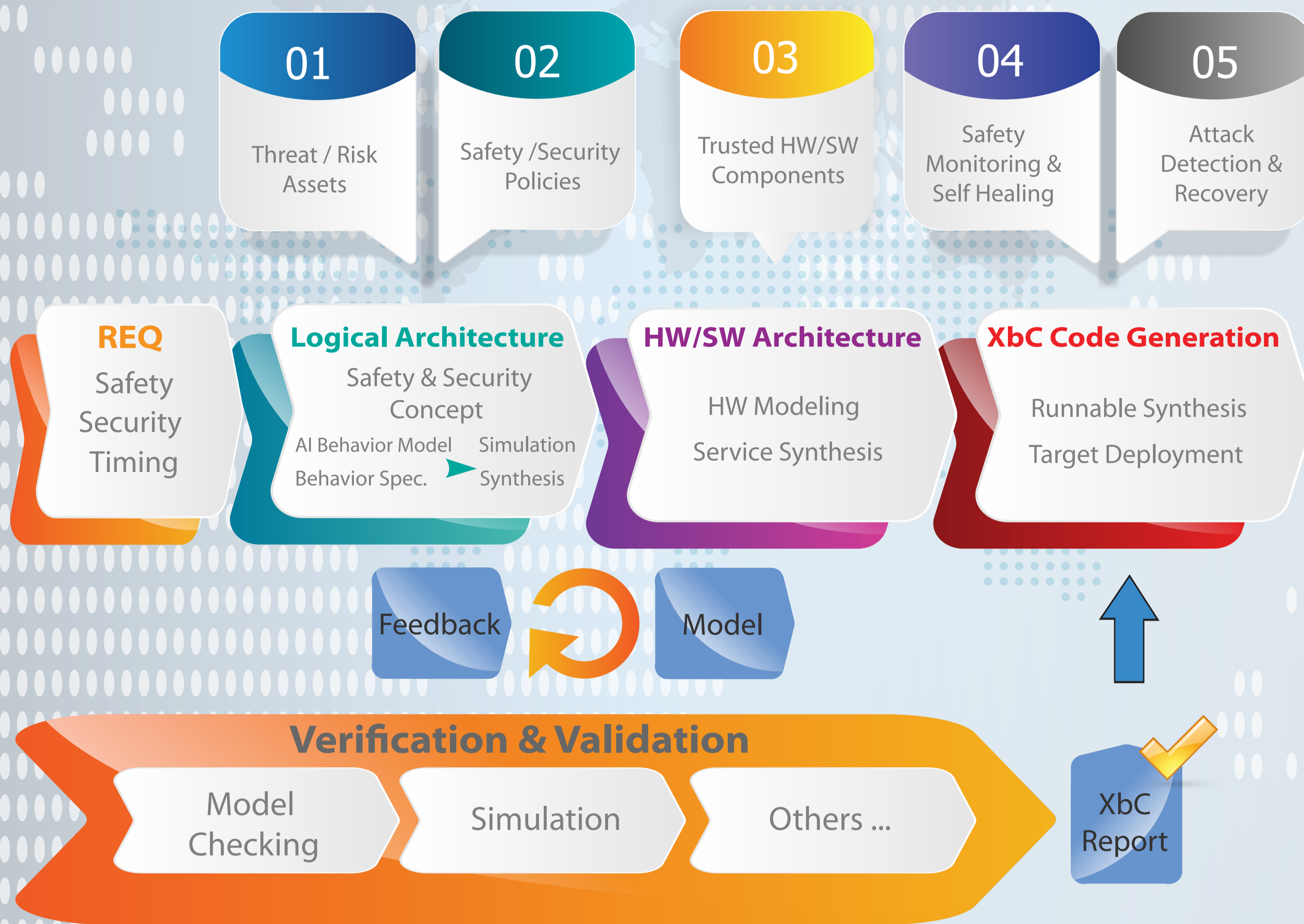
Starting point: Model-based system architecture

Target: Setting the foundation for novel real-time, safety-, and security- by-Construction (X-by-Construction)

Innovation point: XbC-guided code generation for non-deterministic ML/AI applications will be combined with novel runtime monitors

Technical need met: Ensure fail-operation in the presence of runtime faults and security exploitations

Advantage: Leverage of novel automatic model synthesis and software parallelization techniques



Objectives

- Holistic design methods and architectures that guarantee non-functional properties “by construction” throughout all phases of the SW & SDLC
- Improvement of productivity and SW quality via safety & security patterns, trusted HW/SW templates, and monitoring mechanisms
- HW/SW platform architecture that support runtime platform health monitoring and self-healing capabilities
- Verification and validation of functional and non-functional requirements using simulation and other V&V techniques
- Prototyping comprehensive avionics and automotive use-case applications
- Disseminate competence and raise awareness at European and worldwide scale



Consortium



Project Coordination

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