LIT SECURE AND CORRECT SYSTEMS LAB

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The **LIT Secure and Correct Systems Lab** is a cross-institute, interdisciplinary research platform, founded in 2019 by several JKU institutes and with support from the State of Upper Austria.

Our focus is research on secure and correct IT systems at the leading edge of international state of the art.

To expand, disseminate, and apply knowledge as well as to promote young scientists, the LIT Secure and Correct Systems Lab focusses on two main pillars:

- **Graduate School for Secure and Correct Systems:** a new, structured JKU PhD program at the Faculty of Engineering and Natural Sciences (TNF) with a special focus on secure and correct systems.

- **Basic and applied research** with partners from industry, business, government, and science: Offering a wide spectrum of potential research collaborations such as short-term analysis, feasibility studies, prototype development, R&D projects, or foundational research programs. The overall goal is to conduct research and development covering all aspects of the design and application of secure and correct systems from the initial specification to the final realization as well as from the first execution to the eventual decommission.

More precisely, we address challenges that arise
- during design & implementation (Secure and Correct Systems Design)
- during operation (Secure and Correct Systems Operations)
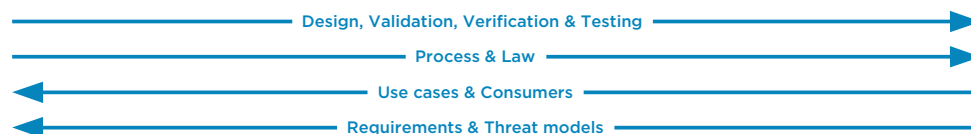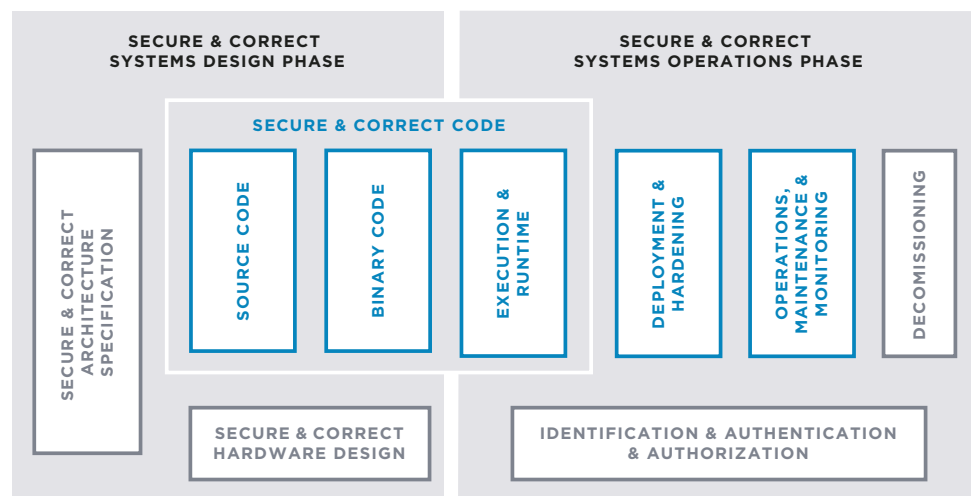
INVOLVED INSTITUTES

The **LIT Secure and Correct Systems Lab** combines the expertise of several JKU institutes across different fields. The resulting synergies allow to not only concentrate on a single aspect, but to take the entire lifecycle of secure and correct IT systems into account.

APPLICATION-ORIENTED KNOWLEDGE PROCESSING — Prof. J. Küng
Data – Information – Knowledge are the core domains of our institute in teaching, research and development. With the LIT Secure and Correct Systems Lab, we focus on security aspects in information systems.

BUSINESS INFORMATICS - SOFTWARE ENGINEERING — Prof. J. Sametinger
We contribute to research and education in Business Informatics and Software Engineering. Both are seen as interdisciplinary areas that must integrate technical, business management and social science contents.

COMPUTATIONAL PERCEPTION — Prof. J. Scharinger
We develop algorithms that permit computers to perceive and 'understand' aspects of the real world. We focus on artificial intelligence methods, but also do research in biometric identification and cryptography.

FORMAL MODELS AND VERIFICATION — Prof. A. Biere
We contribute to the research and development of tools for automated reasoning. This stretches from logic, over artificial intelligence to applications and includes support for software and hardware.

INTEGRATED CIRCUITS — Prof. R. Wille
Our institute provides expertise for all main steps in the design and realization of integrated circuits, embedded systems, as well as cyber-physical systems.

NETWORKS AND SECURITY — Prof. R. Mayrhofer
We provide expertise on the analysis and design of security and privacy properties including the operating system and network layers. Particular focus areas are digital identities, embedded and mobile systems security.

SEMICONDUCTOR AND SOLID STATE PHYSICS — Prof. A. Rastelli
Our institute provides expertise on the growth, nanofabrication, characterization, modification and applications of semiconducting nanostructures and novel materials.

SOFTWARE SYSTEMS ENGINEERING — Prof. A. Egyed
We develop theories, methods and tools for specification, design, implementation, testing, monitoring, and evolution of large and complex software systems.

SYSTEM SOFTWARE — Prof. H. Mössenböck
We work on programming languages, compilers, virtual machines, and performance analysis. We focus on dynamic compilation, speculative optimizations and self-optimizing interpreters.