



## Invitation to a public habilitation lecture

By a candidate for habilitation in the field of Technical Cybernetics  
at the Faculty of Mechatronics, Informatics and Interdisciplinary Studies  
of the TUL

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Title:

# Hardware-Software Co-Design Methods in the Design of Systems on Programmable Devices

The increasing complexity of electronic devices brings new challenges for both hardware and software developers. Developers must cope with increasing system complexity and are driven towards higher levels of abstraction. In the field of system-on-chip design, programmable logic devices have been available for implementation for several decades. These devices are moving from the domain of custom-circuit emulation towards real world applications. The performance of modern hybrid programmable logic devices is comparable to that of commercial systems-on-chip, while offering greater flexibility. Development for these devices is shifting from a purely hardware-oriented approach towards a more software-centric one, which can, in specific cases, provide higher productivity.

The lecture will introduce modern programmable logic technologies and present practical examples based on hardware-software co-design methodology and the use of high-level synthesis.

The lecture will take place on **7 September 2026 at 1:00 p.m.** in the **DFM Meeting Room** (Hálkova 6, Building A, TUL, 2nd floor, A02028).

Remote access via [MS-TEAMS](#), (alternatively, using the following details:  
ID: 352 425 418 718 582, Passcode: Wu6tV3uh).