Implementation and characterization of covert channels using the power-distribution network of an FPGA-SoC

Covert channels are a hidden communication channel between two parties which are not intended to be used for that purpose. Once implemented, such channels enable the transmission of critical information such as cryptographic keys between a sender and a receiver without being noticed from the rest of the system.

The goal of this work consists in the implementation and characterization of covert channels which relies on the shared power distribution network contained in an FPGA-SoC.

Prerequisites

- Good knowledge of C and VHDL/Verilog.
- Background in information theory/channel coding preferred.

Contact

If you are interested to work on this topic, don't hesitate to ask for further precision via mathieu.gross@tum.de

Advisors

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