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Time-to-digital converters

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Time-to-digital converters (TDC) are devices which allow, with a certain precision, to digitally represent the time occurred. Their usage spawn over a large number of applications where a precise time time stamp is required. Due to technological progresses, reconfigurable hardware devices (such as FPGAs) have become an attractive platform for implementing low cost and high performances TDCs.
This module presents the design and the implementation of a TDC on FPGA. More in details, the module will cover the basics of TDCs and of hardware design, with particular emphasis on design for re-configurable devices, their hardware description language and the tools used for programming them.

Brief biography of the speaker

Dr. Francesco Regazzoni is a postdoctoral researcher at the Technical University of Delft (Delft, The Netherlands). After receiving his Master of Science degree from Politecnico di Milano (Italy), he completed his PhD degree at the ALaRI Institute of University of Lugano (Lugano, Switzerland), where he is still actively involved. He has been assistant researcher at the Crypto Group of the Université Catholique de Louvain (Louvain-la-Neuve, Belgium) and visiting researcher at several institutions, including NEC Labs America (Princeton, NJ, USA), Ruhr University of Bochum (Bochum, Germany), and EPFL (Lausanne, Switzerland). His research interests are mainly focused on embedded systems security, covering in particular side channel attacks, cryptographic hardware, and electronic design automation for security.

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