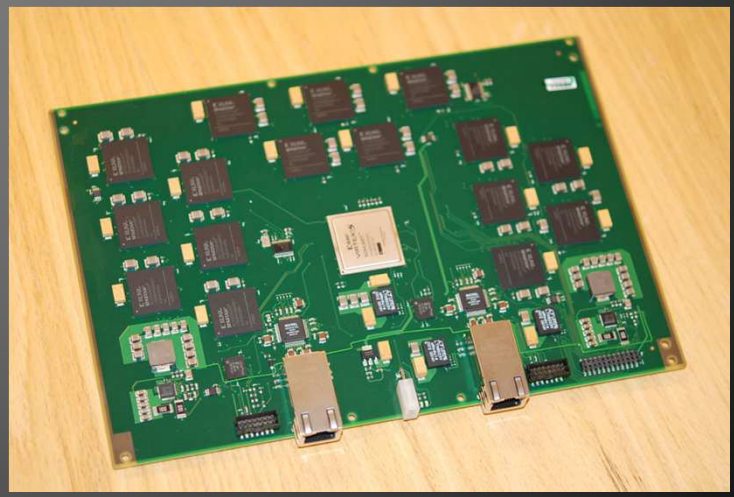

CEPIA
TECHNOLOGIES

About Cepia

- Small research company
- Started operation 3rd January 2009
- Located in Brno (Platinium at Veveri)
  - Secure offices for 12 people over 2 floors + meeting rooms and reception
  - Own ICT with high level of security for own research and production
  - Very comfortable working environment for staff

What we do?

- Main focus on developing crypto analytical systems for governmental customers
  - Strong focus within research activities
  - Maintaining high academic standards for our staff
- Building a generic processing platform for cryptanalysis
  - State-of-the-art of used components/technology
  - Prototype FPGA processing unit



Current and future projects

- Time-memory Trade-off (TMTO) attacks
  - A5/1, A5/2, A5/3 & Kasumi, GEA1/2, GMR1/2, etc.
- High Performance Computing (HPC)
  - Building a generic platform, HW/SW co-design
  - Cryptanalysis, financial analysis
- HW assisted password crackers
- Proximity systems security
  - DESfire, Keeloq, etc.

Why work for Cepia?

- Research in cryptology, information security and signal/protocol processing
- Allowing employees to publish results
- Ensuring employees have time to keep up to date in their fields of expertise
- Very high education level among colleagues
- Competitive salaries

Who are we looking for?

- Master or doctoral graduates in the fields of:
  - Number theory, algebra, statistics and probability
  - Cryptography and communication/IT security
  - VHDL, GPU and DSP algorithms design and programming
- Ability to think out-side ‘the box’ & to consume new ideas quickly
- Work in international teams

Typical roles

- Research:
  - Feasibility studies
  - Construction of models
  - Design of innovative algorithms
  - Large scale testing
- Implementation:
  - C/C++ programming
  - Perl/scripting in general
  - VHDL/GPU/DSP programming
  - HW/SW co-design

Pushing hardware to the maximum

Topics of theses for Autumn 2012

- Forensic analysis of HDDs/SSDs and common file-systems
  - Creating of a several analytical utilities for OS Linux (in C/C++)

- GPU accelerated encryption/decryption of satellite communication
  - Crating of fast GPU-based implementations of cryptographic algorithms GMR-1 and GMR-2
  - Attacking GMR by using GPU acceleration

Competitions

- Best Bachelor/Master thesis in IT security and cryptology
  - In cooperation with: TNS
  - Deadline for applications: 31.5.2012
  - Awards: Up to 30K CZK for all winners
- Competition for talented students at FI
  - In cooperation with: TNS, Ysoft, Lexical Computing
  - Awards: Paid working positions in several laboratories at FI MU

Thank you for your attention