BRNO UNIVERSITY OF TECHNOLOGY

BRNO UNIVERSITY OF TECHNOLOGY FACULTY OF ELECTRICAL ENGINEERING AND COMMUNICATION

CHESS Brokerage Event at JIC

Post-Quantum Hardware Encryptors

Jan Hajný

CHESS

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Post-Quantum Hardware Encryptors

- **Motivation**
  - **NIST PQC standards** released in 2024
  - **EU and US authorities** recommend post-quantum transition (and support it by many calls)
  - **NÚKIB recommends** post-quantum transition, part of mandatory requirements.

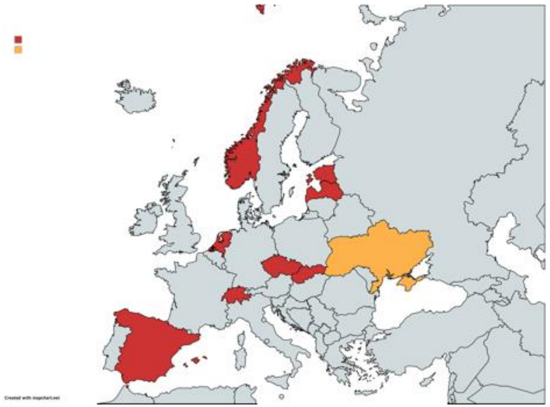
- **Solution**
  - High-speed network **cards based on FPGA** with accelerated encryption and key management, all PQC.
  - Based on **proven primitives** (CRYSTALS-Kyber, AES)
  - Advanced features, such as Quantum Key Distribution (**QKD**)
  - Developed and tested in **BUT Quantum Security Lab**.
  - Available for **purchase** (or distribution) as **IP Cores**.
  - **Functional samples** based on Intel (Altera) and Silicom Denmark available.
  - Free **open-source software** variants available.

Post-Quantum Hardware Encryptors

- **Collaboration Opportunities**
  - Joint research projects (Horizon Europe, MVČR, …)
  - Direct contractual research
  - Technology transfer, licensing
- **Other Relevant Activities**
  - Cryptographic protocol design
  - Implementation on specific platforms
    - FPGAs, constrained devices
  - Verification of secure implementations, testing

European Commission

Horizon Europe
2021-2027



Thank you for your attention!

hajny@vut.cz