



Czech CyberCrime Centre of Excellence
for training research and education

C4e

Education and research in the area of cybercrime

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Why it all started?

- Demand for research and development in the area of cybercrime
- Masaryk University
 - Institute of law and technology & CSIRT-MU
 - Institute of computer science
 - Faculty of Informatics
 - Faculty of social science
 - etc. (ad-hoc cooperation)



Institute of law and technology

- Focus on technology law (ICT law, data protection, intellectual property law, energy law, etc.)
- Long term cooperation with public authorities
- Expertise in the area of cybercrime & cyber security
- <http://cyber.law.muni.cz>





CSIRT-MU

- Computer Security Incident Response Team of Masaryk University
- Part of the Institute of Computer Science
- Accredited by Trusted Introducer
- Long term experience with R&D in the field of network security monitoring
- <http://csirt.muni.cz>





How it all started?

- Cooperation (CSIRT-MU, ILT, RAC & partners)
- Growing demand for expert advices
- Ability to find common language
- Establishment of C4e – EC DG Home project (2013)
- <https://www.C4e.cz>



What do we do?

- Cooperation
- Research
- Education
- Development
- Consultations



Cooperation

- What to focus on?
- What do we (or someone else) already know?
- What can we provide/share?
- How can we collaborate?



International cooperation

- Europol (EC3)
 - taxonomy,
 - lectures for LEA
- ENISA
 - taxonomy
 - sharing of knowledge
- NATO
 - taxonomy,
 - study programs
- UN
 - sharing of tools and knowledge
- TF-CSIRT
 - sharing of tools, knowledge, best practices, etc.
- National research and education institutions
 - ad-hoc cooperation, research projects, sharing of knowledge and tools



National cooperation

- National Security Authority
 - sharing of knowledge and tools
 - training and education: courses and exercises (Cyber Czech)
 - attendance at exercises: Locked Shields, Cyber Europe, EDA
- Police
 - sharing of knowledge and tools, consulting
 - training and education – cooperation with Police academy
- Army and Ministry of Defense
 - consulting
- Intelligence services
 - Consulting
- Ministry of Interior
 - Research and development projects (KYPO later today, SABU – sharing of cybersecurity events data)
- Judicial academy, Public prosecutors office, Judges
 - Training and education, consulting
- Expert board on cybercrime and cyber security
 - What to focus on?



Cooperation with private entities

- Attendance at conferences and workshops
- Expert opinions
- CERIT science park



Research

- Legal
 - Substantive and procedural law
 - What is and should be regarded to as the cybercrime?
 - What procedures are and should be followed during investigation?
 - How to investigate it?
 - How to handle evidence?
 - How to cooperate internationally?
 - How to cooperate with private and public authorities?
- Focus of the research is discussed at the meeting of the rectors expert advisory board.



Education - national

- Lectures and trainings
 - Judicial and police academy (cybercrime investigation, digital evidence handling, intellectual property, data protection)
 - Ad-hoc trainings (for investigators, experts, public prosecutors, etc.)
 - KYPO hands-on training and exercises (sysadmins, CSIRT members)
- Bachelor degree (ICT security) with University of technology
- Masters degree (Cyber security – interdisciplinary and law)
- Doctoral study programme



Education - international

- Joint doctoral degree – with University of Haifa
- Masters study programmes NATO (Multinational Cyber Defense Education and Training Project)
- Ad-hoc courses and trainings – NATO



Education - regular events

- Seminars:
 - iSysel
 - Cyber cake
- Conferences
 - Cyberspace
 - Czech law and information technologies
- Summer school on ICT law



Development

- Tools,
- methodologies,
- best practices.



Forensic tools

- Network and host forensics
 - Traffic reconstruction
 - Automated first sight overview
- Honeypots
- Digital forensic laboratory examination and management system
- Tutorials for users & virtual image with the tools



Taxonomy of CSI

- Tool for CERT teams and LEA
- Prepared in cooperation with NSA and Police, also presented and discussed at ENISA/Europol meetings
- Individual types of cybersecurity incidents
 - Is it crime? (czech law and CoC)
 - Who to notify?
 - What information to share and with whom?
 - How to proceed?
 - How to handle evidence?



Guidebook on digital evidence in criminal proceedings

- General overview of czech procedural law related to digital evidence handling
- Guidance for handling of specific types of evidence:
 - Email
 - Personal profile data
 - Website
 - Traffic and location data
 - Interception records
 - Mobile devices
 - Cyber security incidents data



Book on Interception and data retention

- Analysis of the legislature and case law related to interception of electronic communication
- Comparison with foreign approaches
- Liability of service providers
- Procedural tools for LEA
- Procedural tools for international cooperation
- Part of study from Max Planck Institute



Plans for the future?

- SENTER – followup project focused on:
Strengthen international cooperation of CoEs
- International research projects (H2020)
- Masters with NATO
- Cyber Olympics – Estonian led initiative for
highschool student (participation)
- Doctoral studies (with public authorities)
- Growth of the center – more specialized labs
- Methodologies based on the taxonomy



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THANK YOU