



Co-funded by the
Erasmus+ Programme
of the European Union



ISSES – Information Security Services
Education in Serbia

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field of Higher Education (CBHE) grant
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INFORMATION SECURITY SERVICES EDUCATION IN SERBIA (ISSES)

*Erasmus+ Key Action 2 – Capacity Building in
the field of Higher Education (CBHE)*

Coordinated by the University of Novi Sad

2017 – 2020

ISSES 2017-2020
Novi Sad, Serbia

Presentation at a glance...

- Project Overview
- Vision 2020
- Project partners
- Work packages





Project Overview

- **Goals:** Improve Information Security Education & Train new experts in Serbia
 - Novi Sad: MSc in Critical Infrastructure Security
 - Belgrade: MSc in Information Security and Digital Forensics & specialization in Network Security
 - Subotica: MSc in Cloud and IoT Security
 - Niš: New Information Security specialization(s) on the MSc level
- **Project Budget:** ~800,000 EUR, co-funded by the Erasmus+ program of the European Union (EU)
- **Project Duration:** October 2017 – October 2020
 - Enroll MSc students as soon as 2019
- **Coordinator:** University of Novi Sad, represented by Imre Lendak, PhD

Vision 2020: University of Novi Sad



- Develop MSc program in Serbian HEIs
- University of Novi Sad specializing in critical infrastructure security
- MSc “module” in 2019:
 - Advanced Network Security
 - Advanced Cryptography
 - Secure Software Development
 - Digital Forensics
 - Critical Infrastructure Security

Vision 2020: University of Belgrade - FON



- Information Security and Digital Forensics master program development
- New courses:
 - Cyber Security Strategies
 - Risk Analysis and Threat Modelling
 - Cyber Incident Analysis and Response
 - Data Mining in Digital Forensics
 - Digital Forensics Tools and Techniques
 - Mobile and Multimedia Forensics

Vision 2020: University of Belgrade - ETF



- New MSc courses:
 - Advanced Network Security
 - Secure Software Development
- New PhD courses:
 - Cloud Security (PhD)
- New topics:
 - Advanced Cryptography
 - Digital Forensics Tools and Techniques

Vision 2020: University of Nis



- Improve existing MSc program in Computer Systems Security
- University of Nis specializing in Secure Software Development, Network and IoT Security and Digital Forensics
- MSc “module” in 2019:
 - Advanced Network Security
 - Secure Software Development
 - Digital Forensics
 - Security and Privacy in IoT
 - Security Data Science

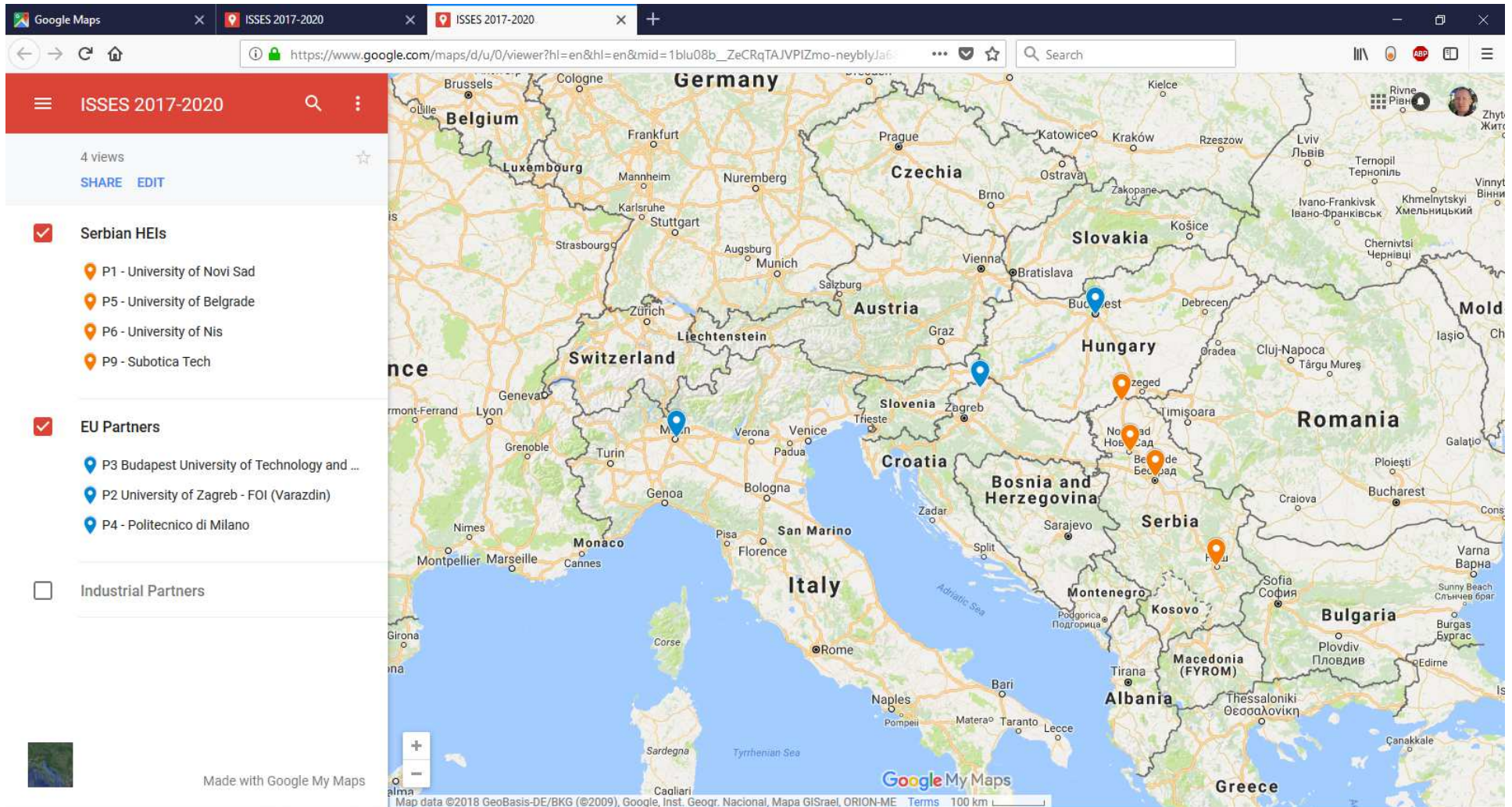
Information Security Services Education in Serbia (ISSES)

PARTNERS

Partners

- Politecnico di Milano (**Polimi**), Milano, Italy
- Budapest University of Technology and Economics – **CrySys Lab**, Budapest, Hungary
- Faculty of Organization and Informatics (**FOI**), University of Zagreb, Varaždin, Croatia
- Industrial partners
 - Unicom-Telecom (**UT**), Serbia
 - Innovation Center Of The University In Niš (**ICUN**), Serbia
- Higher Education Institutions in Serbia
 - University of Belgrade
 - School of Electrical Engineering (**ETF**)
 - Faculty of Organizational Sciences (**FON**)
 - University of Novi Sad
 - University of Nis
 - Subotica Tech

Geographic coverage



Associated partners

PID	Name	City
P11	M&I Systems	Novi Sad
P12	Singi Engineering Ltd	Belgrade
P13	Evopro System Engineering	Budapest
P14	NetVisor	Budapest
P15	Advanced Security Technologies	Nis
P16	TIAC Ltd	Novi Sad
P17	Eccentrix Ltd	Belgrade
P18	Verisec Labs d.o.o.	Belgrade
P19	Cisco Serbia Ltd	Belgrade
P20	Schneider Electric DMS, Serbia	Novi Sad

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WORK PACKAGES

Work Packages



ID	Phase	Description
WP1	Preparation	Project Design
WP2	Development	Curriculum Development
WP3	Development	Laboratory Development
WP4	Development	Education Programme Development
WP5	Quality Plan	
WP6	Dissemination & Exploitation	
WP7	Management	

WP1 – Project Design (UNS)



- Period: M1 – M6 (October 15th, 2017 – April 14th, 2018)
- Key outputs:

ID	Title	Institution
1.1	Baseline Curricula Report	UB, UNS, UNI, VTS
1.2	Repository of Information Security Concepts	UNS
1.3	Course Development Plan (CDP)	UB
1.4	Laboratory Development Plan (LDP)	UNI

WP2 – Curriculum Development (UNS)



ID	Title	Institution ?	
2.1	Critical Infrastructure Security	BME, Polimi, UNS	M13-M21
2.2	Secure Software Development	BME, UNS, UNI	M6-M12
2.3	Cloud Security	UNS, UB/ETF, VTS	M24-M32
2.4	Security and privacy in the Internet of Things	FOI, Polimi, BME, VTS, UNS	M16-M24
2.5	Advanced Cryptography	BME, UNS	M16-M24
2.6	Advanced Network Security	Polimi, UB/ETF, UNS, UNI	M7-M15
2.7	Cyber Security Strategies	BME, UB/FON	M7-M15
2.8	Security in E-business Systems	Polimi, UNS	M18-M28
2.9	Risk Analysis and Threat Modelling	Polimi, UB/FON, UNS	M25-M33
2.10	Cyber Incident Analysis and Response	FOI, UB/FON, UNS	M9-M17
2.11	Data Mining in Digital Forensics	FOI, Polimi, UB/FON, UNS	M17-M24
2.12	Digital Forensics Tools and Techniques	FOI, UB/FON, UNI, UNS	M13-M21
2.13	Mobile and Multimedia Forensics	FOI, UB/FON	M22-M30



WP2 – Outputs

- Course Development Plan (M5)
 - List of courses & topics + timeline of development

- Course content
 - ~12 lectures – Wiki or textbook
 - ~6-7 laboratory exercises – strong 2-way link to the laboratory development activity

- Course content will be open access

WP3 – Laboratory Development (UNI)

ID	Title	Institution	
3.1	Lab Design: Critical Infrastructure Security Laboratory (CIS Lab)	BME/Polimi	M13
3.2	Lab Design: Digital Forensics Laboratory (DF Lab)	FOI	M13
3.3	Lab Design: Network Security Laboratory (NS Lab)	BME, Polimi	M13
3.4	Lab Design: Cloud Security Laboratory (CS Lab)	FOI/VTS	M14
3.5	Hybrid CIS, CS and NS Lab implementation (P1)	UNS, BME, Polimi	M14-M24
3.6	Hybrid NS and Crypto Lab Implementation (P5)	UB-ETF, BME	M14-M21
3.7	Hybrid NS and IoT Lab implementation (P6)	UNI, Polimi	M18-M24
3.8	DF Lab Implementation – Belgrade (P5)	UB-FON, FOI, Polimi	M13-M24
3.9	DF Lab Implementation – Nis (P6)	UNI, FOI, Polimi	M25-M30
3.10	DF Lab Implementation – Novi Sad (P1)	UNS, FOI, Polimi	M31-M36
3.11	Hybrid CS and IoT Lab Implementation (P9)	VTS, BME, FOI	M15-M24

WP3 Outputs

- Laboratory Development Plan (LDP) – **under development**
- 4 laboratory designs (by M14, i.e. end of 2018):
 - Digital Forensics Lab
 - Network Security Lab
 - Critical Infrastructure Security Lab
 - Cloud Security Lab
- 7 laboratories built:
 - 3x Digital Forensics Lab (DF Lab) in Belgrade, Nis & Novi Sad
 - Network and Systems Security Lab (NS Lab) in Belgrade
 - Hybrid Cloud & IoT Security Lab in Subotica
 - Hybrid CIS, CS and NS Lab implementation
 - Hybrid Network & IoT Security Lab in Nis
- Lab quality reports twice a year

WP4 – Program Development (UBG)



- Introduce new MSc programs in information security at 3 Serbian HEIs
- Upgraded MSc program in Computer Systems Security at 1 Serbian HEI

ID	Title	Institution
4.1	MSc Program: Information Security in Critical Infrastructures	UNS
4.2	MSc Program: Information Security and Digital Forensics	UB/FON
4.3	MSc Program: Security in the Cloud and Internet of Things	VTS



Supporting Work Packages

- WP5 – Quality Plan (Polimi)
 - Key activities: Quality Board meetings
 - Outputs: Quality Plan, course & lab quality report (tied to the 1.2 RISC!), external quality assessment
- WP6 – Dissemination & Exploitation (UBG)
 - Key activities: continuous dissemination & exploitation
 - Outputs: Dissemination & Exploitation Plan, website, social network profiles, events, mass media dissemination
- WP7 – Project Management (UNS)
 - Key activities: Steering Committee meetings
 - Outputs: financial & progress reports, successful project 😊

Summary



- Project Overview
- Vision 2020
- Project Partners
- Work packages





Thank you for your attention!