



EXP. Project Sustainability

MONTENEGRIN CYBER SECURITY EDUCATION CENTRE

Report on implemented activities for period: 1st May 2015- 1st October 2016

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1. Introduction

One of the main goals for sustainability of project is establishment of Montenegrin Cyber Educational center, which is established on 1st May 2015 as integral part of Institute of Modern Technology Montenegro. MCEC mission is to develop and disseminate knowledge and awareness on Cyber Security, creating the conditions for improving capabilities, skills, cooperation and communication between the different stakeholders involved in the use and protection of internet. In order that this purpose can be achieved, the MCEC intends to bring together the highest level of organizational and technical resources for the purposes of.

During the project duration, MCEC gave strong efforts to promote and disseminate its activities, and made cooperation with government bodies and the similar international institutions. As well as mentioned activities, MCEC is completely committed to secure sustainable and long-time work of MCEC.

This document gives overview of promoted activities of MCEC at national and international level from its establishment until now. The document is organized as follows: Section II present MCEC Timeline: One year of active participation in Montenegrin society, Section III explains sustainability levels, while Section IV describes planned activities of MCEC in future. Section V concludes this paper.



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2. MCEC Timeline: One year of active participation in Montenegrin society

From its establishment until now, MCEC has done a lot of activities that can be categorized, as follows:

i. Establishment and promotion

MCEC was founded on 1st May 2015 as integral part of Institute of modern technology Montenegro (IMTM), aiming to develop and disseminate knowledge and awareness on Cyber Security, creating the conditions for improving capabilities, skills, cooperation and communication between the different stakeholders involved in the use and protection of internet.

In order to summarize and keep all information about MCEC in one place, IMTM has launched separate tab on its website titled »ME Cyber Educational Center«, so all MCEC activities and news are published on that

[LINK](#).

Moodle platform titled MCEC Distance Learning System ([LINK](#)) has established to enable open access to published materials for different categories of users and citizens in Montenegro. All interested citizens can make their own account on Moodle platform, by filling simple registration form.

MCEC is main publisher of online newsletter »Cyber instructions for all« ([LINK](#)). The newsletter contains interesting articles about current trends in Cybersecurity, information about upcoming regional and national events in cyber security and short reports about ECESM activities. The newsletter is publishing twice per year, and now we prepare 5th number to announce.



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ii. Educational trainings

The project board has analyzed and made decision to provide trainings for two big interest groups – teachers at schools and ICT professionals. MCEC, in cooperation with Ministry of education, was the leader of training organization for teachers, and together with Chamber of Economy the hub of training organizations for ICT professionals.

After completing all anticipated courses, the participants got the certificate about successful attendance of training.

ii-a. Training for teachers

This group of trainings was intended to teachers and ICT coordinators from primary and secondary schools in Montenegro. The whole course was separated on two segments – basic level training and advanced level training. The finished basic level was obligatory for attendance of advanced training.

The Ministry of education suggested organizing trainings at school premises in Berane, Bijelo Polje, Budva, Podgorica and Nikšić.

- Training: Information security – part I

The programme of basic trainings was focused on issues related to importance of cyber security, concepts of cyber security, malicious applications and network security. At the beginning of each training, some of trainers welcomed participants and presented ECESM projects – overall objectives, planned activities, gained results and partner institutions. Also, printed books (deliverables 1.1 and 1.2 translated on Montenegrin) »EXISTING EU PRACTICES FOR CYBER SECURITY« and »EU PRACTICE FOR CYBER SECURITY EDUCATION« were distributed to all participants.

All participants are also introduced with Moodle platform created for supporting all learning and educational activities at national level in Montenegro. Each participant filled RegistrationForm.pdf and they are informed about created account for Moodle platform within 2 days.

The total number of trained teachers and ICT coordinators were 120.



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Group	Place	Date	Trainers	No. of Participants	Official report
I	Berane	27/08/2015	Igor Vujačić, Ramo Šendelj, Dejan Tomović	21	LINK
II	Bijelo Polje	27/08/2015	Srđan Jovanovski, Adis Balota, Mladen Bukilić	21	LINK
III	Nikšić	19/09/2015	Srđan Jovanovski, Adis Balota, Mladen Bukilić	25	LINK
IV	Podgorica	19/09/2015	Ivana Ognjanović, Igor Vujačić, Ramo Šendelj, Dejan Tomović	28	LINK
V	Budva	30/09/2015	Ivana Ognjanović, Ramo Šendelj, Igor Vujačić, Massimo Capeli, Indachapra Bandara, Marko Holbl, Elena Vaarmets, Toomas Lepik	25	LINK

- Training: Information security – part II

The curriculum of advanced trainings was focused on complex cyber security issues, such as cyber terrorism, cyber treats, and preventive reactions. Trainers again presented to participants how to use Moodle platform, and invited them to access to open materials, in order to be updated about last cyber security trends.



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This training event has particular added value since, after each training session, trainers gave realistic examples from their countries related to the topic.

Trainers also used the occasion to inform participants about testing process, and about quizzes and trial tests at Moodle platform.

The total number of trained teachers and ICT coordinators were 128.

Group	Place	Date	Trainers	No. of Participants	Official report
I	Berane	10/10/2015	Srđan Jovanovski, Adis Balota, Mladen Bukilić	17	LINK
II	Bijelo Polje	10/10/2015	Ramo Šendelj, Ivana Ognjanović, Igor Vujačić	21	LINK
III	Nikšić	17/10/2015	Ramo Šendelj, Dejan Tomović, Igor Vujačić	23	LINK
IV	Podgorica	17/10/2015	Srđan Jovanovski, Adis Balota, Mladen Bukilić	36	LINK
V	Budva	24/10/2015	Srđan Jovanovski, Adis Balota, Mladen Bukilić	31	LINK

- Certificate Award

Certificates were officially awarded to trainers at national level who participated in set of trainings organized for professors and ICT coordinators, as well as ECESM Thanksgivings to Directors of educational institutions which hosted training events at different regions of Montenegro, as follows:



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- Elementary school »Radomir Mitrović«, Berane
- Electro-Economic High School, Bijelo Polje
- Elementary school »Pavle Žižić«, Bijelo Polje
- Gymnasium »Stojan Cerović«, Nikšić
- Faculty for Business and tourism, Budva
- University Donja Gorica

Almost 200 professors and ICT coordinators participated at ceremonial protocol.

Official report: [LINK](#)

ii-b. Training for ICT professionals

MCEC as the leader of informal educational activities at national level, in cooperation with Chamber of Commerce, had the role to educate ICT professionals to be prepared for cyber attacks and to react preventive. ICT professionals need advanced training to be globally competitive and up-to-date, and to guarantee the security of their organization's assets and infrastructures.

It has been hold 9 advanced trainings in the premises of the Chamber of Commerce with actual topics and lead by eminent international speakers, as follows:

No.	Trainer (institution)	Theme	Date	Number of participants	Official report
1.	Marko Holbl (University of Maribor)	»Security treats on the Internet«	16/02/2016	23	LINK
2.	Flavio Lombardi (Roma Tre University)	»Introduction to network security« – part I	30/03/2016	32	?
3.	Stefano Guarino (Roma Tre University)	»Access Control« – part I	30/03/2016	27	LINK
4.	Toomas Lepik (University of Technology Tallin)	»First Responder Intro to Internet«	08/04/2016	26	?
5.	Stefano Guarino (Roma Tre University)	»Access Control« – part II	16/05/2016	19	LINK



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6.	Flavio Lombardi (Roma Tre University)	»Network and security« – part II	16/05/2016	19	?
7.	Marko Holbl (University of Maribor)	»Security treats on the Internet«	24/05/2016	32	?
8.	Elena Agresti (Global Cyber Security Center)	»Information security management systems«	13/09/2016	26	?
9.	Toomas Lepik (University of Technology Tallin)	»Digital Forensics«	02/11/2016– 04/11/2016	13	LINK

The National Board pointed out the absence of ICT professionals from the north and south of country, and made decision that the best way to overcome this issue is to organize 3day training and invite companies, from 14th to 16th May in one of the biggest towns in North Montenegro – Bijelo Polje, and from 18th July to 20th July in Budva (South of Montenegro). The 3day training covered all themes as the trainings at Chamber of Economy, and the speakers were MCEC researchers: Dragan Đurić, Igor Vujačić and Dragan Đurić. The materials from trainings at CEM were also used at this training.

The number of participants:

14-16/05/2016 – 21 participants

18-20/07/2016 – 19 participants

iii. Promotions and disseminations

iii-a. MCEC Promotion at School Portal

[The article](#) about ECESM project, with highlight on Montenegrin Cyber Educational Centre (MCEC) and its activities has published on School portal. The School Portal has been created to provide support to teachers, as a source of information and materials that will help them in their regular work. On this site they can find a collection of regulations, many useful links, manuals and the other interesting materials. Teaching staff from all primary and secondary schools in Montenegro have accounts on this portal.



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The promotion of MCEC on this site is a good way to inform and attract professors to use modern, latest techniques and materials about cyber security in the teaching process, and thus transfer new knowledge on students. This approach of preparing class will give significant contribution in raising awareness and extending knowledge about cyber security.

Official report: [LINK](#)

iii-b. MCEC presentation and partnership with University of economics Bratislava, Slovakia

Representatives of UDG presented ECESM project and recently developed Moodle platform for education and training in cyber security. Students from EUBA expressed high interests to access all materials and enroll the courses. To this sense, link to MCEC Moodle platform is uploaded on [EUBA Moodle platform](#), and accounts are created for all interested students.

Official report: [LINK](#)

iii-c. MCEC presented at Faculty of business and tourism Budva

Activities of MCEC have been presented to students at Faculty of Business and Tourism, in Budva, on 25th May. The participants were introduced about main activities and objectives of ECESM project, with highlight on work of MCEC, especially on its Moodle platform, aimed on establishing sustainable cooperation with MCEC for education and training in Cyber security.

As Faculty has its own distance learning platform, the management were pleased to promote MCEC Moodle on it, and invite all interested students to register on platform and learn more about cyber security. ([LINK](#))

Official report: [LINK](#)



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iv. Sustainability

iv-a. Partnership with Ministry of Education of Montenegro - operational sustainability

As proof of commitment of Ministry of Education on continuous education of students and teachers in ICT area, and enhancement the use of ICT equipment and services in teaching process, the Ministry has prepared document Framework for raising level of teachers' computer literacy and increasing ICT use in teaching process. This document is now in adaption process at Government of Montenegro. This Framework will ensure strong cooperation with MCEC in future.

iv-b. New IPA projects - financial sustainability

IMTM have different roles at new IPA Europe/Aid/136938/ID/ACT/ME projects – as coordinator at one, and as partner at the other project. The participation in these projects will significantly enhance ECESM project sustainability, as MCEC will be the hub of training and workshop organization related to security issues in both, medical information systems and cloud based solutions.

More information about projects on the following [LINK](#).

iv-c. MCEC in Tehopolis - social and operational sustainability

Montenegrin Cyber Educational Center hosted by Institute of Modern Technology Montenegro is one of the first occupants at Innovative Entrepreneurship Centre [Tehnopolis](#) in Nikšić. It is great opportunity for MCEC to continue its development and work in innovative environment.

Innovative entrepreneurship centre TEHNOPOLIS is the first part of the capital project of the Government of Montenegro – creation of Science and Technology Park Montenegro.

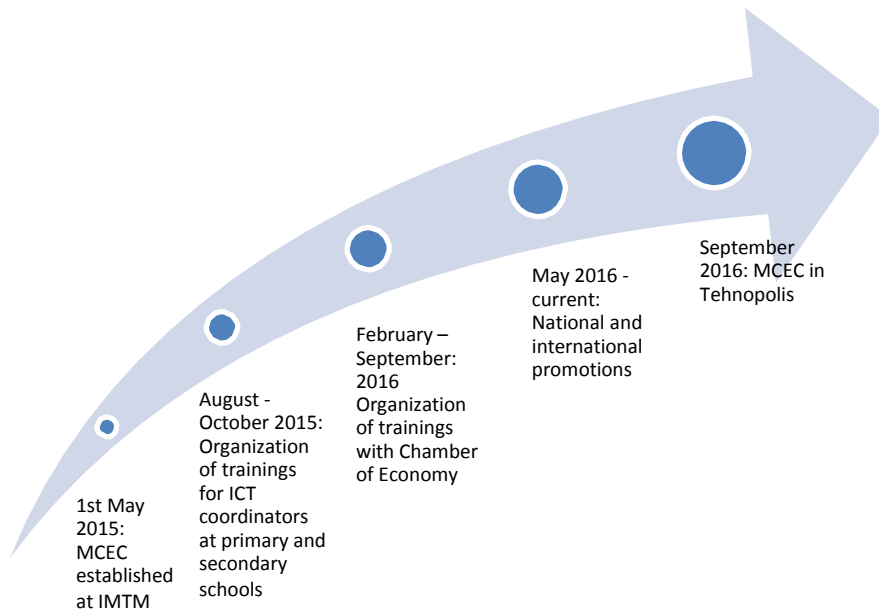
Tehnopolis provides support for development of micro, small and medium enterprises in Montenegro, as well as supporting establishment new enterprises and providing help to existing enterprises. In Tehnopolis' focus is providing support to enterprises in scientific research area, innovative technologies and the other areas with high level of growth potential.



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3. MCEC: Towards ensuring sustainability at national level

After adoption of the MED document Framework for raising level of teachers' computer literacy and increasing ICT use in teaching process, MCEC will provide support to the Ministry of education in continually education of ICT teachers in the field of cyber security. All ICT teachers from primary and secondary school will have an opened account at Moodle platform and use posted materials.

This project strengthen the previous very good cooperation with Chamber of Economy of Montenegro, and MCEC and CEM made an agreement that they will be together the hub of education and raising awareness among Montenegrin business sector.

MCEC officially location in Innovative entrepreneurial centre Tehnopolis, that is the Governmental project of building National Technical Park, is a guarantee of good cooperation and connection with the Ministry of Science and the other public bodies.



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4. Plan for future work

In strategic plan for development of MCEC, one of most important goals is to become an official examination centre, licensed by Ministry of education. This license will position the MCEC as unique, official, national centre of lifelong and adult education in the field of cyber security, thus will contribute to better education of MNE citizens in this area.



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5. Conclusion

This document contains information about MCEC activities in the project period, as well as planned activities. Also, this document gave information about sustainability of MCEC work, as well as financial model for next year.