



InnoSoc

Innovative ICT Solutions
for the Societal Challenges



Innovative ICT Solutions for the Societal Challenges (INNOSOC)

Presentation of the INNOSOC project

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Content

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ERASMUS+ programme

ERASMUS+

EU programme for Education, Training, Youth and Sport for 2014-2020

- aims to **boost skills and employability**, as well as **modernizing Education, Training**, and Youth work
- supports **transnational partnerships** among Education, Training, and Youth institutions and organizations to **foster cooperation and bridge the worlds of education and work** in order to tackle the skills gaps we are facing in Europe



ERASMUS+ Key Action 2

Cooperation for innovation and the exchange of good practices

- organisations from different participating countries to work together, to develop, share and transfer best practices and innovative approaches in the fields of education, training and youth
- priorities
 - improve achievement in relevant and high-level basic and **transversal competences**
 - open and **innovative education**, training and youth work, embedded in the digital era
- cooperation with businesses
 - companies and higher education institutions **work together** to share knowledge



ERASMUS+ Key Action 2 Strategic Partnerships in Higher Education

- supporting the development, transfer and implementation of **innovative practices** as well as the implementation of joint initiatives promoting **cooperation**, **peer learning** and **exchanges of experience** at European level
- **2011 EU Modernisation Agenda**
 - promoting **intercultural competences** of students and improving the quality and relevance of higher education, as well as strengthening quality through **mobility** and **cross-border cooperation**
- **2013 Communication on Opening up Education**
 - promoting the development of **new modes of delivery** and exploiting and responding to **new technologies in learning and teaching**



General info

- Project title
 - **Innovative ICT Solutions for the Societal Challenges**
- Project acronym
 - **INNOSOC**
- Duration
 - 2 years
 - 1/9/2015-30/8/2017
- Budget
 - 203,389.00 EUR



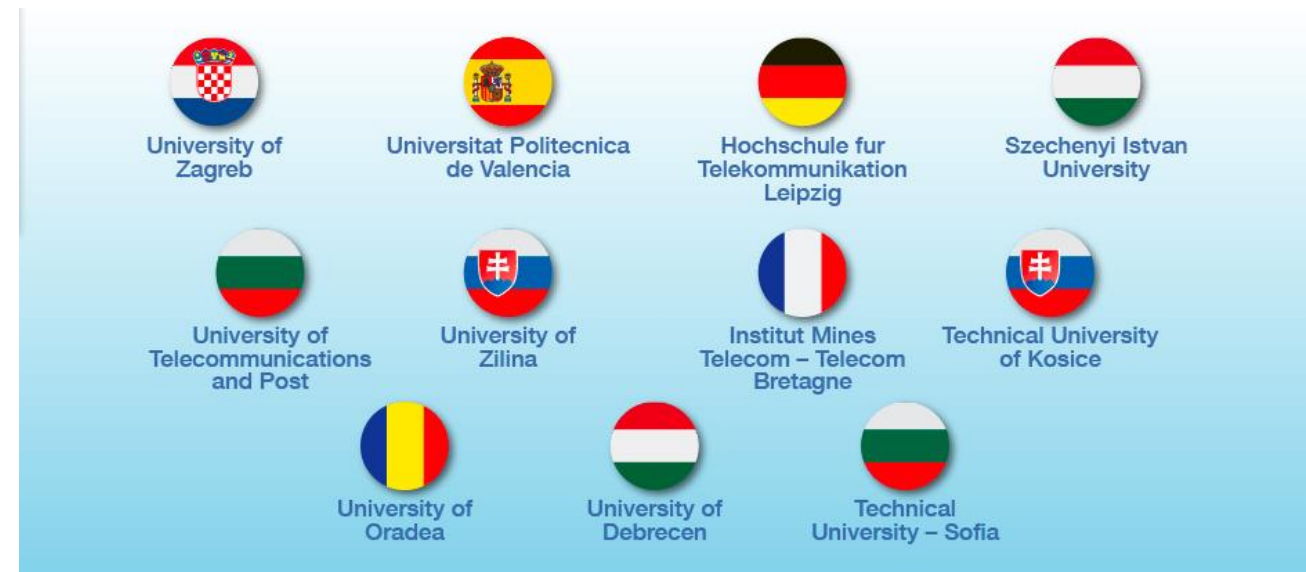
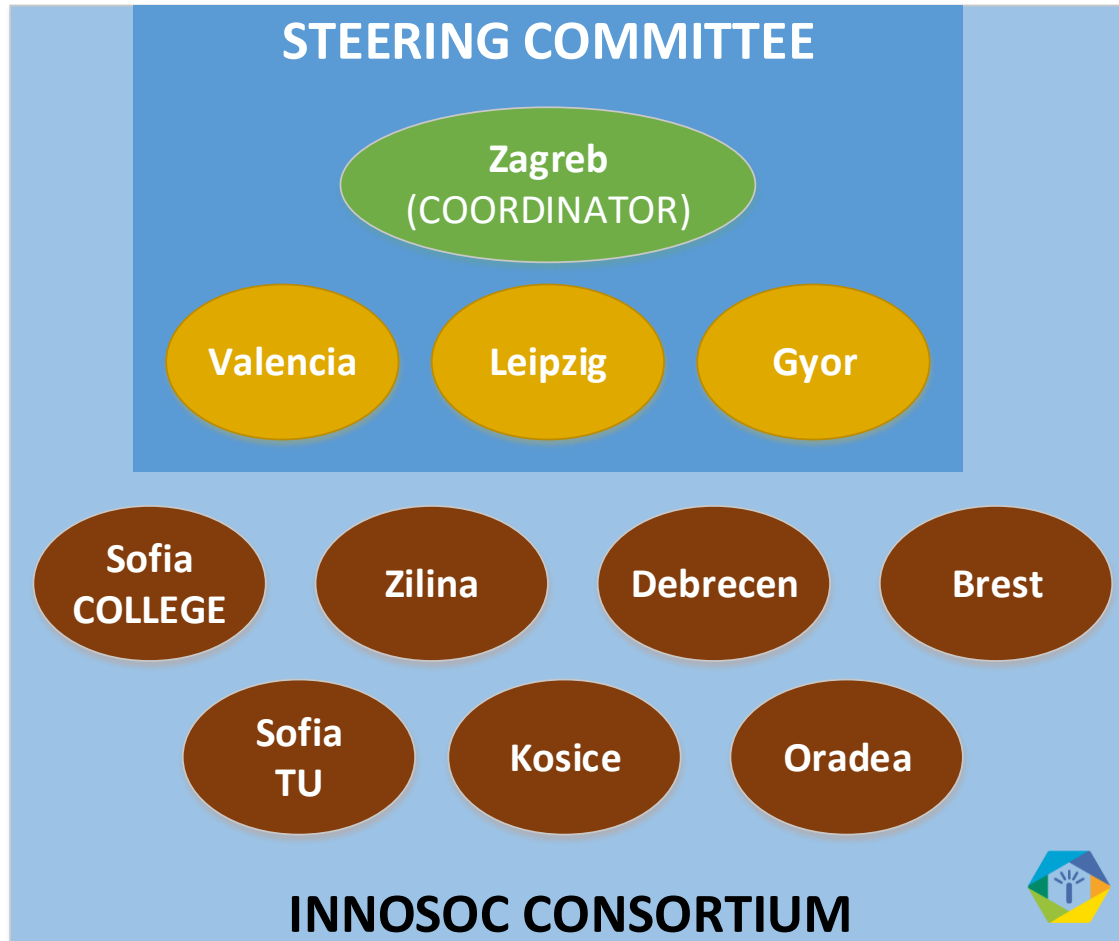
INNOSOC consortium

Consortium

- 11 universities from 8 EU countries
 - **Bulgaria** (Sofia COLLEGE, Sofia TU)
 - **Croatia** (Zagreb)
 - **France** (Brest)
 - **Germany** (Leipzig)
 - **Hungary** (Gyor, Debrecen)
 - **Romania** (Oradea)
 - **Slovakia** (Kosice, Zilina)
 - **Spain** (Valencia)



Consortium structure



Project goals

Main project goal

Set up a **transnational multidisciplinary intensive study program** in the field of innovations based on ICT targeting societal challenges defined by **Europe 2020** and **Horizon 2020** programs



Specific Croatian higher education objectives

- **internationalization** of higher education
- enhance **mobility** rates
- better **link of education with the labour market**



INNOSOC curriculum



- **multilingual open educational resource (OER)** consisting of four main topic groups:
 - **“innovation”** as a core topic
 - **intercultural** topics, with focus on “Multicultural teams”
 - **ICT** topics, with focus on “Innovative engineering based on ICT”
 - **student projects**, with focus on “Case studies on how ICT can contribute to innovative societal development”

“Innovation” as a core topic

multidisciplinary
approach that includes:

- innovation processes
 - sustainability
 - responsibility
- intellectual property
 - technology policy issues



Intercultural topics, with focus on “Multicultural teams”



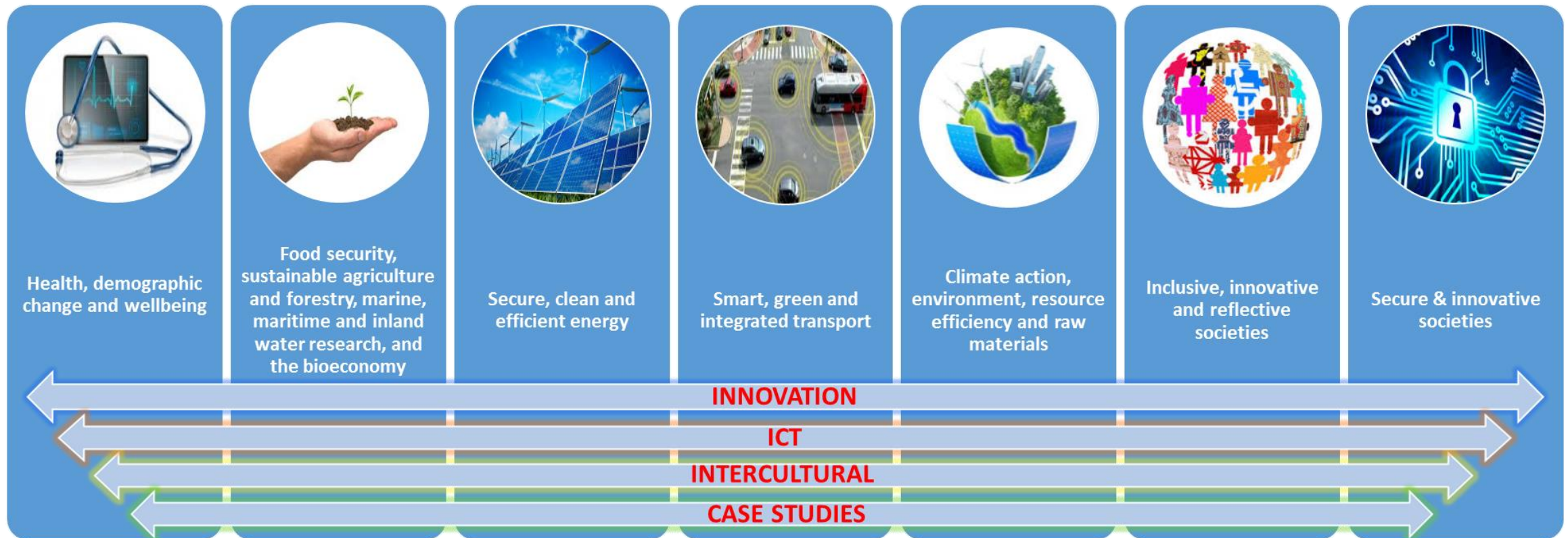
interactive approach
with focus on
multicultural
teambuilding through
exchange of practices
from different cultures
and by analyzing
societal challenges from
local, regional and
global perspectives

ICT topics, with focus on “Innovative engineering based on ICT”

- explains why ICT is one of **Key Enabling Technologies** and therefore horizontal technology enabling innovative solutions for societal challenges
- includes practical examples tailored specifically for INNOSOC providing knowledge/insights into hot ICT topics
 - “innovation in ICT”
 - “innovation with ICT”
 - “green”, “smart”, “inclusive” and “disruptive” ICT



Student projects: “Case studies on how ICT can contribute to innovative societal development”



ERASMUS+ „blended mobility”

- student projects will be based on **“blended” mobility approach** and organized in two phases
 - preparatory (*virtual mobility*)
 - 2 months of e-collaboration
 - execution phase (*physical mobility*)
 - 2-week workshops hosted by partner universities
 - 2016: Zagreb
 - 2017: Valencia



Blended mobility phase 1: virtual mobility

- 3 parallel activities
 - **Case Study** development
 - 1-2 lecturers + 4-5 students
 - **communication** skills
 - **multicultural** teamwork
- INNOSOC 2016 virtual mobility
 - **starts today** and last until 17 April



Blended mobility phase 2: physical mobility



- 4 parallel activities
 - lectures
 - teamwork
 - visit to companies
 - exchange of multicultural experiences
 - evenings and weekends
- INNOSOC 2016 physical mobility
 - 18-28 April
 - Zagreb, Croatia



Project outputs

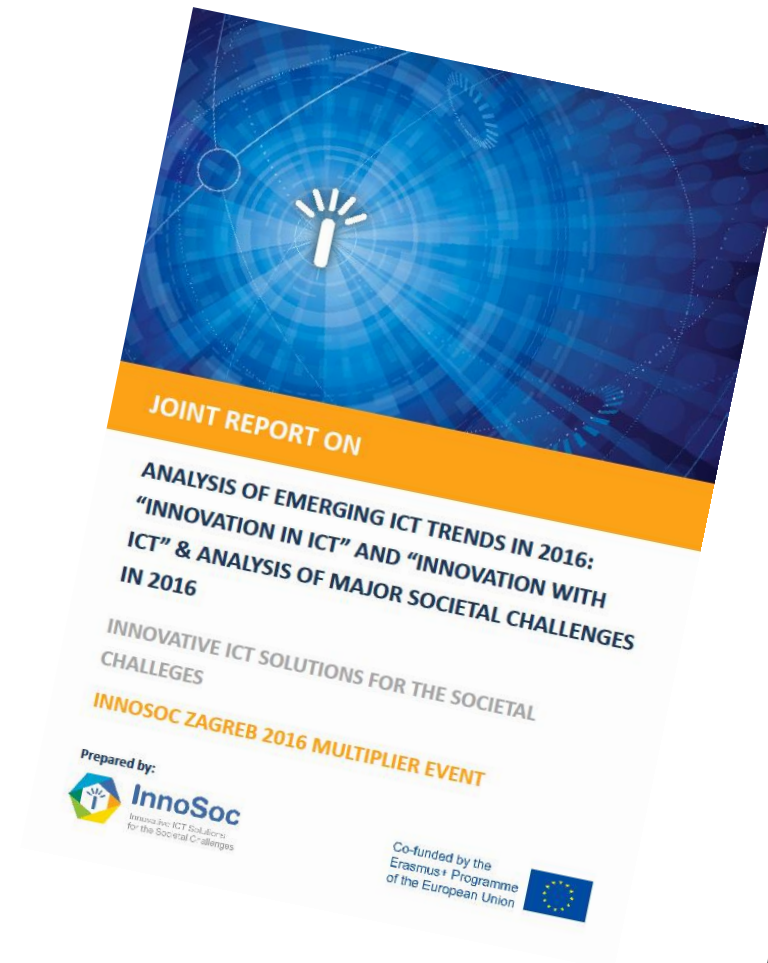
Project Outputs (1): Intellectual Outputs

- Consortium partners + their **business collaborators**
 - (O1) Analyses of emerging ICT trends: "innovation in ICT" and "innovation with ICT"
 - (O2) Analyses of major societal challenges
 - (O3) INNOSOC lectures
- Consortium partners
 - (O4) Open educational resources - Multilingual lectures
 - (O5) Open educational resources - Multilingual case studies
- All intellectual outputs (O1)-(O5) have 2 editions
 - (Ox).2015-2016
 - (Ox).2016-2017

INNOSOC 2016 Report

joint report on:

- Analyses of emerging ICT trends in 2016: "innovation in ICT" and "innovation with ICT"
- Analyses of major societal challenges in 2016



<http://goo.gl/IM6Gcs>

Zagreb 2016 Case Studies

1-2 professors and 4-5 students develop case studies

- Innovative Application of Electric Vehicles in Sustainable Energy Systems of the Future
- Promoting STEM studies among young students
- Issues and Challenges of Corporate Social Responsibility and Sustainability in the ICT Sector
- Intelligent Transport Systems and Vehicular Ad hoc Networks
- Seamless Connectivity for a Digital Life
- Innovative solutions for assistance of active daily life at home
- Microwave sintering
- Recognition of patterns of maleficent objects on medical images

Zagreb 2016 Case Studies

Descriptions on website and in INNOSOC 2016 report

Innovative Application of Electric Vehicles in Sustainable Energy Systems of the Future

Case Study URL: <http://aoo.q/7Bl4em>



Authors: Jurica Babic, Vedran Podobnik and Ignac Lovrek (*University of Zagreb, Croatia*)

Keywords: *Electric Vehicles; Sustainability; Innovation; Energy systems*

H2020 challenge addressed by the Case Study: *Secure, clean and efficient energy*



Electric vehicle "Concept One" produced by a Croatian company "Rimac Automobile"

Description

Keywords: Electric Vehicles; Sustainability; Innovation; Energy systems

H2020 challenge: *Secure, clean and efficient energy*

Knowledge and skills (P: prerequisite; D: desirable, but not necessary): to be familiar with newest trends in ICT (P); to have interest in Electric Vehicles (D); to care about sustainability (D); to be curious and prolific Internet researcher (D); to be familiar with Energy Systems (D)

Introduction

Relationship with H2020 challenge

Relationship with INNOSOC

Sources

Nowadays, a term *sustainable development* is most often associated with a term *environmental sustainability*, whose goal is to conserve natural resources and to develop alternate sources of electricity while reducing pollution and harm to the environment [1]. In that respect, the undisputed truth is that *changes* are needed in the way people *produce* and *consume* energy. The lucrative amount of money EU offers through the HORIZON 2020 framework [3], as well as the latest Paris agreement on a climate change [2], communicates a clear strategic vision on **what to accomplish** but it provides **no clues on how to do so**.

An *electric vehicle* (EV) is a prime example of energy efficient and low carbon technology [4, 5, 6, 7]. Not only does an EV drive more *smoothly* and more *economically* than its internal combustion engine counterpart, but it also has a dedicated battery which can **store electricity**. In theory, this can be really exciting because the EV battery provides means to use EVs not only for traveling but also for **storing the excess electricity**, which typically happens when the wind turbine produces more electricity than users (e.g., industry and residential) currently need.

It seems an EV is a **clear winner** in all areas. In current practice, however, this may **not be the case**. Without serious incentives, **economical benefits** of EVs are still **doubtful**. Even though EVs have so-called **zero tailpipe emissions**, the electricity still largely comes from **fossil fuels**. Potential applications of EVs as energy storage are yet to be explored due to its **costly battery** and the overall **lack of charging infrastructure**. Thus, energy systems of the future need a lot of ICT-based innovation to tackle challenges imposed by EVs.

Five INNOSOC students, supervised by two INNOSOC lecturers, will collaborate on answering how innovative coupling of ICT and EVs can contribute to building sustainable energy systems of the future. These activities will be conducted as a part of the ERASMUS+ blended mobility and will be finalized during INNOSOC Zagreb 2016 workshop in late April 2016.

<http://sociallab.fer.hr/innosoc/case-studies/zagreb-2016>

How INNOSOC 2016 covered H2020 societal challenges? (1)

- SC1 “Health & Ageing”
 - CS: Innovative Solutions for Assistance of Active Daily Life at Home
 - CS: Recognition of Patterns of Maleficent Objects on Medical Images
- SC2 “Food”
 - Innovations in the food industry (Industrial perspective – Visit to the company 1: Kraš, Zagreb – the largest manufacturer of confectionery products in the South-Eastern Europe)
- SC3 “Energy”
 - CS: Innovative Application of Electric Vehicles in Sustainable Energy Systems of the Future
- SC4 “Transport”
 - CS: Intelligent Transport Systems and Vehicular Ad hoc Networks

How INNOSOC 2016 covered H2020 societal challenges? (2)

- SC5 “Environment”
 - CS: Microwave Sintering
- SC6 “Society”
 - CS: Issues and Challenges of Corporate Social Responsibility and Sustainability in the ICT Sector
 - CS: Seamless Connectivity for a Digital Life
 - Technology way towards networked society (Industrial perspective – Visit to the company 2: Ericsson Nikola Tesla, Zagreb)
- Horizontal issues
 - Development of face-to-face and distance communication skills, as well as promoting multicultural awareness
 - CS: Promoting STEM (Science, Technology, Engineering and Mathematics) Studies among Young Students

Project Outputs (2): Multiplier Events

- (E1) Pre-INNOSOC 2016 conference
 - **19/2/2016 in Zagreb**
- (E2) Pre-INNOSOC 2017 conference
 - 2/2017 in Valencia

Project Outputs (3): Learning/Teaching/Training Activities

Activity type	Number of participants	Duration (days)
Blended mobility of higher education students	30 (+ 5 domestic)	12
Intensive programmes for teaching staff	15 (+ 5 domestic)	5

- Students
 - 10 partners x 3 students + 5 domestic students
- Teaching staff
 - 1-2 lecturers per INNOSOC partner
 - **Industry experts** from workshop-hosting country
- **INNOSOC 2016 Intensive Programme workshop: 19-28/4/2016 in Zagreb, Croatia**
- INNOSOC 2017 Intensive Programme workshop: 4/2017 in Valencia, Spain

Activity plan

Activity plan (project year 1)

PROJECT TIMETABLE													
	9-15	10-15	11-15	12-15	1-16	2-16	3-16	4-16	5-16	6-16	7-16	8-16	9-16
MONTHS	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13
Project activity*													
<i>INNOSOC 2016 preparation</i>													
O1/A1: Analysis of emerging ICT trends in 2015													
O2/A1: Analysis of societal challenges in 2015													
M1: Steering Committee kick-off meeting (Zagreb)													
M2: INNOSOC 2015 Steering Committee preparation meeting (Zagreb)													
E1: Pre-INNOSOC 2016 conference (Zagreb)													
<i>INNOSOC 2016 implementation</i>													
O3/A1: Creation of INNOSOC 2016 lectures													
C1: INNOSOC 2016 blended mobility													
C2: INNOSOC 2016 Intensive Programme Workshop (Zagreb)													
<i>INNOSOC 2015 follow-up</i>													
O4/A1: Open educational resources - Multilingual lectures 2016													
O5/A1: Open educational resources - Multilingual case studies 2016													
M3: INNOSOC 2016 follow up Steering Committee meeting (Leipzig)													

Activity plan (project year 2)

PROJECT TIMETABLE												
	9-16	10-16	11-16	12-16	1-17	2-17	3-17	4-17	5-17	6-17	7-17	8-17
	M13	M14	M15	M16	M17	M18	M19	M20	M21	M22	M23	M24
Project activity*												
<i>INNOSOC 2017 preparation</i>												
O1/A2: Analysis of emerging ICT trends in 2016												
O2/A2: Analysis of societal challenges in 2016												
M4: INNOSOC 2017 Steering Committee preparation meeting (Valencia)												
E2: Pre-INNOSOC 2017 conference (Valencia)												
<i>INNOSOC 2017 implementation</i>												
O3/A2: Creation of INNOSOC 2017 lectures												
C3: INNOSOC 2017 blended mobility												
C4: INNOSOC 2017 Intensive Programme Workshop (Valencia)												
<i>INNOSOC 2017 follow-up</i>												
O4/A2: Open educational resources - Multilingual lectures 2017												
O5/A2: Open educational resources - Multilingual case studies 2017												
M5: INNOSOC closing Steering Committee meeting (Gyor)												

Activity plan (visibility & management)

PROJECT TIMETABLE																										
		9-15	10-15	11-15	12-15	1-16	2-16	3-16	4-16	5-16	6-16	7-16	8-16	9-16	10-16	11-16	12-16	1-17	2-17	3-17	4-17	5-17	6-17	7-17	8-17	
		MONTHS	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16	M17	M18	M19	M20	M21	M22	M23	M24
Project activity*																										
O6/A1: Project visibility infrastructure: web page set-up and maintenance																										
O6/A2: Project visibility infrastructure: administering social media sites																										
A: Project management																										

Project visibility: Internet presence

Website

sociallab.education/innosoc



Project visibility: Social media



Facebook (name: innosoc)
facebook.com/innosoc

Twitter (name: innosoc)
twitter.com/innosoc



INNOSOC team

It's all about people


<http://sociallab.education/innosoc/team>


Steering Committee


 **Vedran Podobnik**
Project Coordinator, Steering Committee Member,
UNIZG-FER Team Leader, INNOSOC Lecturer
f e

 **Ignac Lovrek**
Steering Committee Member
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 **Felipe Penaraj**
Steering Committee Member, INNOSOC Lecturer
f e

 **Birgit Graf**
Steering Committee Member
f e


 **Lutz Buechner**
Steering Committee Member
f e

 **Marta Meszaros**
SZE Team Leader, Steering Committee Member
f e


Administrators


 **Marina Ivić**
Project Administrator
f e

 **Jurica Babic**
Web & Social Media Administrator
f e

 **Miklos Kovacs**
Open Educational Resources
f e

Lecturers


 **Vedran Podobnik**
Project Coordinator, Steering Committee Member, UNIZG-FER Team
Leader, INNOSOC Lecturer
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 **Ignac Lovrek**
Steering Committee Member, INNOSOC Lecturer
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 **Peter Marton**
UNIZA Team Leader, INNOSOC Lecturer
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 **Pavel Segec**
INNOSOC Lecturer
f e

 **Catherine Szabo**
IMT-TB Team
f e


 **Vasile Grama**
INNOSOC Lecturer
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 **Marianna Zichar**
UNIDES Team Leader, INNOSOC Lecturer
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 **Alison**
INNOSOC Lecturer
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 **Svetla**
UTP Team
f e

 **Maja**
INNOSOC Lecturer
f e

 **Georgi Iliev**
TUS Team Leader, INNOSOC Lecturer
f e

 **Lubomir Dobos**
TUKE Team Leader, INNOSOC Lecturer
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 **Istvan Polgar**
UO Team Leader, INNOSOC Lecturer
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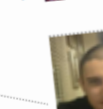
Students


 **Andras Erdos**
INNOSOC 2016 Student
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 **Maria José Pardilla**
INNOSOC 2016 Student
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 **Peter Straub**
INNOSOC 2016 Student
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 **Georgi Nikolov**
INNOSOC 2016 Student
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 **Tsvetan**
INNOSOC 2016 Student
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 **Klara**
INNOSOC 2016 Student
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 **Maja**
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 **E.**
INNOSOC 2016 Student
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 **Tomas**
INNOSOC 2016 Student
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 **Tamas**
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 **Martin**
INNOSOC 2016 Student
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 **Bozidar**
INNOSOC 2016 Student
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 **Miroslav**
INNOSOC 2016 Student
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 **Tomas**
INNOSOC 2016 Student
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 **Robert Bolyi**
INNOSOC 2016 Student
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 **Mercedes Garcia Riego**
INNOSOC 2016 Student
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 **Irena Oršolić**
INNOSOC 2016 Student
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 **Dario Pevac**
INNOSOC 2016 Student
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 **Mate Modos**
INNOSOC 2016 Student
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 **Mate Varga**
INNOSOC 2016 Student
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 **Jozsef Zak**
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 **Santia**
INNOSOC 2016 Student
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 **Mina HE**
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INNOSOC 2016 Student
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 **Sandra Yuste Muñoz**
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 **Rumen Dimitrov**
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 **Plamen Semov**
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 **Catalin Blaga**
INNOSOC 2016 Student
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 **Martin Matis**
INNOSOC 2016 Student
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 **David Conka**
INNOSOC 2016 Student
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 **Alex Gascon**
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