

**Mediterranean Workshop 2017**  
Congress Center Saints Marcellino and Festo



# HiT4Med

## Highway and traffic engineering: curricular reform for the Mediterranean area

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[www.hit4med.eu](http://www.hit4med.eu)



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# HiT4Med project outline

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- **Project Acronym:** HiT4Med
- **Project full title:** Highway and Traffic Engineering: Curricular Reform for Mediterranean Area
- **Project reference n°:** 544460-TEMPUS-1-2013-1-IT-TEMPUS-JPCR
- **Grant Agreement n°:** 2013-4542/001-001
- **Funding programme:** Tempus IV – 6<sup>th</sup> call, Joint Projects
- **Funding body:** Education, Audiovisual and Culture Executive Agency (EACEA)
- **Starting date:** December, 1 2013
- **Duration:** 3 years
- **Ending date:** November, 30 2016
- **Project website:** <http://www.hit4med.eu>



# Project partners

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- P1 University of Naples Federico II, UniNA, Italy
- P2 Fondazione FORMIT, FORMIT, Italy
- P3 Reseau Metiterranean des Ecoles d'Ingenieurs, RMEI, France
- P4 National Technical University of Athens, NTUA, Greece
- P5 University of Catania, UniCT, Italy
- P6 Universitat Politecnica de Valencia, UPV, Spain
- P7 Royal Institute of Technology, KTH, Sweden
- **P8 Cairo University, CU, Egypt**
- **P9 Zagazig University, ZU, Egypt**
- **P10 Ain Shams University, ASU, Egypt**
- **P11 Arab Academy for Science and Technology and Maritime Transport, AASTMT, Egypt**
- **P12 Holy Spirit University of Kaslik, USEK, Lebanon**
- **P13 Lebanese University, LU, Lebanon**
- **P14 Cadi Ayyad University, UCA, Morocco**
- **P15 Académie Internationale Mohammed VI de l'Aviation Civile, AIAC, Morocco**
- **P16 Institut Supérieur du Transport et de la Logistique de Sousse, ISTLS, Tunisia**
- **P17 Ecole Nationale d'Ingénieurs de Sousse, ENISo, Tunisia**



# Project goal

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- The goal of the HiT4Med project was to **develop a new curriculum and ten master programmes in Highway and Traffic Engineering** in the ten Partner Country Universities participating to the project
- EU Universities transferred EU best practices, experiences and methodologies according to the Bologna process to support the **development and diffusion of an innovative experience in technical higher education in Med institutions** supporting the capacity and knowledge building in highway design and management engineering



# Objectives of the master HiT4Med

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- The master programme in Highway and Traffic Engineering is aimed at **training new professionals** who will contribute to the modernisation and growth in the road network, improving mobility and reducing road fatalities
- The master provides **qualified professional resources** capable of sustaining and managing the huge effort of road infrastructure development, with advanced competence in traffic management, road safety, and road design optimization
- Skills for **application of the EU Directives for road infrastructure safety management and road construction** are developed



# Objectives of the master HiT4Med

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- The graduates of the master programme in Highway and Traffic Engineering are fully acquainted with **all contemporary issues of Highway and Traffic Engineering**, in which the world community of researchers and practitioners are currently involved and are practicing
- They are in position to best serve the MENA area in **developing a modern, safe and efficient road network** in the years to come for the benefit and profit of the Mediterranean people
- The master programme benefits from the **financial support of the European Commission** and the **transfer of best practices from EU Universities**
- The international focus of the programme gives to the graduates **opportunities to work at international level and to attend Ph.D. courses in EU and overseas**



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# WP1 Management

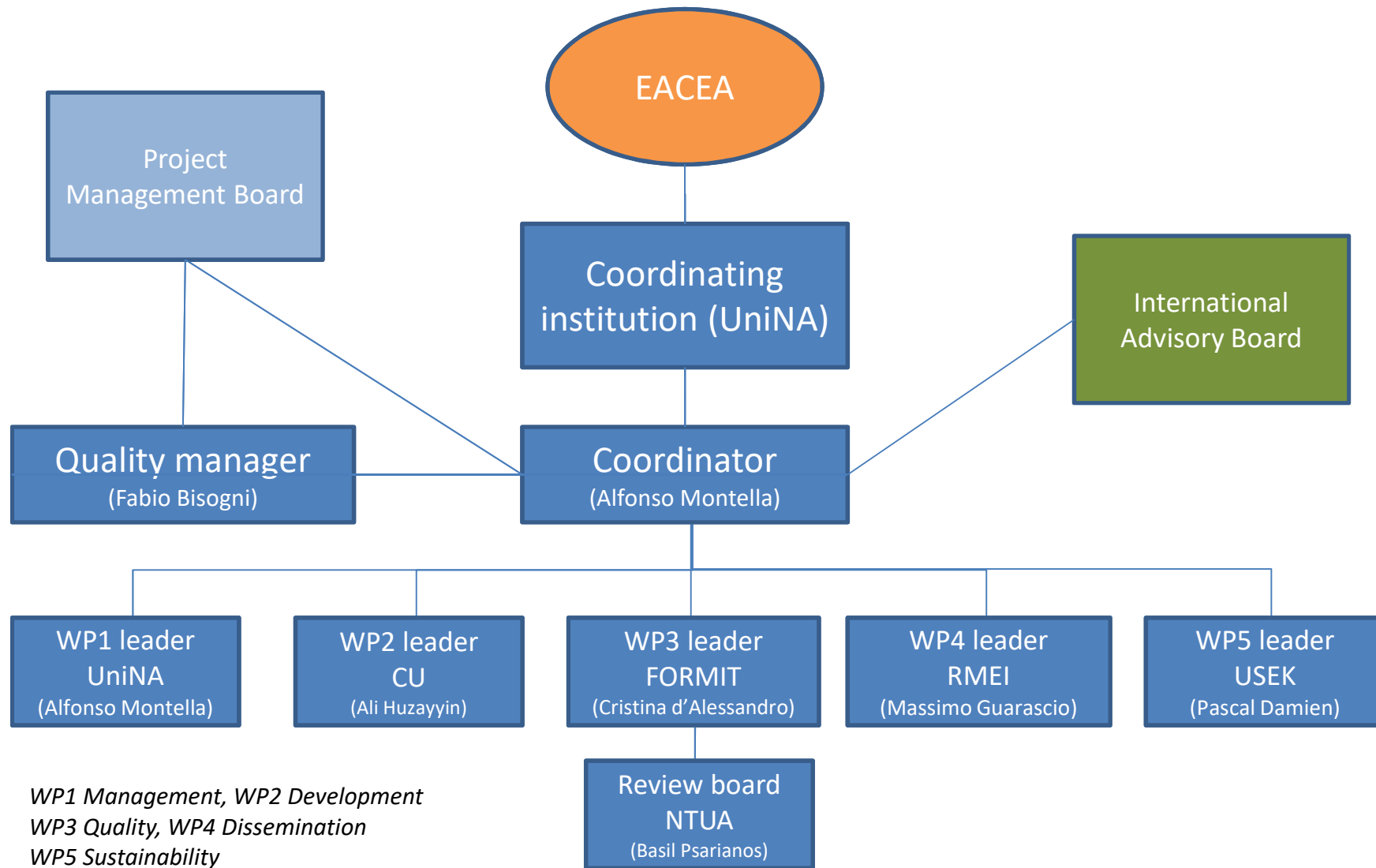


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# Project Management Organisation





# Management events

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- **Inception meeting**, January 29-30 2014, Sousse Tunisia
- **Tempus Project Representatives meeting**, February 10-11 2014, Brussels, Belgium
- **Project Management Board Meetings**
  - 1<sup>st</sup> PMB Meeting, June, 18 – 19, 2014, Marrakech, Morocco
  - 2<sup>nd</sup> PMB Meeting, June, 10 – 11, 2015, Jounieh, Lebanon
  - 3<sup>rd</sup> PMB Meeting, September, 27 – 28, 2016, Cairo, Egypt
- **Internal field monitoring visits**
  - 1<sup>st</sup> December 2014 at P11 Arab Academy for Science and Technology and Maritime Transport, (AASTMT), Alexandria, Egypt
  - 3<sup>rd</sup> February 2016 at P13 Lebanese University (LU), Beirut, Lebanon
  - 4<sup>th</sup> February 2016 at P12 Holy Spirit University of Kaslik (USEK), Jounieh, Lebanon
  - 16<sup>th</sup> February 2016 at P9 Zagazig University (ZU), Zagazig, Egypt
  - 17<sup>th</sup> February 2016 at P8 Cairo University (CU), Cairo, Egypt
  - 18<sup>th</sup> February 2016 at P10 Ain Shams University (ASU)
  - 6<sup>th</sup> April 2016 at P16 Institut Supérieur du Transport et de la Logistique de Sousse (ISTLS), Sousse, Tunisia
  - 7<sup>th</sup> April 2016 at Ecole Nationale d'Ingénieurs de Sousse (ENISo), Sousse, Tunisia



# Inception meeting, Sousse – Tunisia



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# WP2 Development



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# Training activities

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- A **syllabus of the master programme** was developed in a joint effort among all the partners
  - The syllabus defines objectives, programme framework, procedures for internship and thesis, programme learning outcomes, career opportunities, and syllabus of each course (defining ECTS credits, objectives, learning outcomes, contents, teaching method, assessment method, textbooks, software, and lab equipments)
- EU professors developed **teaching material** consisting of slides, supplementary notes, and supporting material (videos, standards, guidelines, papers, and technical documents)
- The slides were developed according a common framework and contain knowledge information, case studies, exercises, and detailed references
- Training of the PC staff was carried out by **5 workshops** (77 trainees) and **16 webinars** (141 trainees)



# Workshop 1

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- 26-30 May 2014, NTUA, Athens, Greece
  - Topic: advanced highway design methods
  - Aim: provide an insight of contemporary issues of road design that the world community of researchers and practitioners are involved in
  - 8 trainees
  - 5 trainers (NTUA, UniCT, UniNA, UPV)



# Workshop 2

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- 1-5 September 2014, KTH, Stockholm, Sweden
  - Topic:
    - introduction to transportation systems and traffic analysis
    - advanced traffic management systems
  - Aim:
    - provide fundamental knowledge of traffic flow theory and its application methods
    - provide knowledge about advanced traffic management systems and different types of Intelligent Transport Systems
  - 14 trainees
  - 6 trainers (KTH, NTUA)



# Workshop 3

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- 24-28 November 2014, UniCT, Catania, Italy
  - Topic: pavement analysis, design, and maintenance
  - Aim: provide knowledge and skills relevant to asphalt materials and pavement design and maintenance
  - 12 trainees
  - 3 trainers (UniCT)



# Workshop 4

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- 4-8 May 2015, UniNA, Naples, Italy
  - Topic: highway safety management
  - Aim: train road safety experts, with the skills to manage the safety management process, to determine countermeasure options from thorough analysis of information, and to prioritise and evaluate countermeasure implementation programs
  - 22 trainees
  - 11 trainers (UniNA, NTUA, RMEI, UniCT, University of British Columbia)
  - Some comments
    - *It was pleasure for me personally and for my career to be a part of this very valuable workshop*
    - *Great job!*
    - *It has been very fortunate to have a large group of well-known experts in their respective fields participate in this workshop; their involvement resulted in a very successful workshop... I believe all here will agree that we have achieved many results and can all agree that this workshop has been a great success*





# Workshop 4



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# Workshop 5

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- 25-29 May 2015, UPV, Valencia, Spain
  - Topic: research methodology in highway and traffic engineering
  - Aim: understand material and issues associated with but not limited to the logic of the scientific method
  - 21 trainees
  - 4 trainers (UPV)



# Masters implementation

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- 7 new masters
  - P8 CU: Transportation safety
  - P12 USEK: Civil Engineering – Specialization: Transportation Engineering
  - P13 LU: Highway, Transportation and Traffic Engineering
  - P14 UCA: Ingénierie de Trafic & Sécurité Routière
  - P15 AIAC: Ingénierie du Trafic Routier
  - P16 ISTLS: Highway and Traffic Engineering
  - P17 ENISo: Highway and Traffic Engineering
- 3 improvements of existing programmes
  - P9 ZU: Highway, Transportation and Traffic Engineering
  - P10 ASU: Highway Engineering and Traffic Engineering
  - P11 AASTMT: Construction and Building Engineering - Transportation Engineering



# Masters implementation

P	Name of the master	Number of editions	Number of trained students	Number of graduated students
CU	Transport safety	2	19	6
ZU	Highway, Transportation and Traffic Engineering	1	40	0
ASU	Highway Engineering and Traffic Engineering	1	5	0
AASTMT	Construction Engineering - Transportation Engineering	1	2	0
USEK	Civil Engineering - Transportation Engineering	1	334	0
LU	Highway, transportation and traffic engineering	3	49	30
UCA	Ingénierie de Trafic et Sécurité Routière	1	0	0
AIAC	Highway, Transportation and traffic engineering	2	13	0
ISTLS	Highway and traffic engineering	2	28	5
ENISo	Technology, highway and traffic engineering	3	68	0
<b>Total</b>			<b>558</b>	<b>41</b>



# Involvement of EU professors

- Master in Transportation safety at P8 CU
  - Alfonso Montella (UniNA) taught the course Road Transport Safety Management Process
- Master in Civil Engineering – Transportation Engineering at P12 USEK
  - Alfonso Montella (UniNA) taught the course Highway Safety Management
- Master in Highway, Transportation and Traffic Engineering at P13 LU
  - Constantinos Antoniou taught some modules of the course Advanced Transportation Management Systems



# Internships at EU labs




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- 24 students were selected to perform an internship aimed at performing a work project is part of the master thesis preparation in the EU labs
  - P1 UniNA
    - Highway safety laboratory, 11 students
  - P4 NTUA
    - Transportation Engineering Laboratory , 2 students
  - P5 UniCT
    - Road Materials Laboratory, 4 students
  - P6 UPV
    - Highway Engineering Laboratory, 4 students
  - P7 KTH
    - Transportation and Logistics Laboratory, 3 students



# Internships at P1 UniNA, Italy





**LEBANESE UNIVERSITY**

**Highway Transportation and Traffic Engineering**  
Specialized Master's Degree

**Master Thesis**

**Innovative Methods to Identify High-Risk Intersections Based On Road Safety Inspections**

Presented by  
**Olivia Hashem Kalakesh**

Defended on the 23<sup>rd</sup> of September in the presence of the Jury :

**Mr. Zaher Massaad** Supervisor  
**Dr. Clovis Francis** Member  
**Dr. Nabil Neemeh** Member

Achieved during an internship at the laboratory of Transport Engineering department of the University of Federico II of Naples, Under the supervision of :

**Prof. Alfonso Montella**



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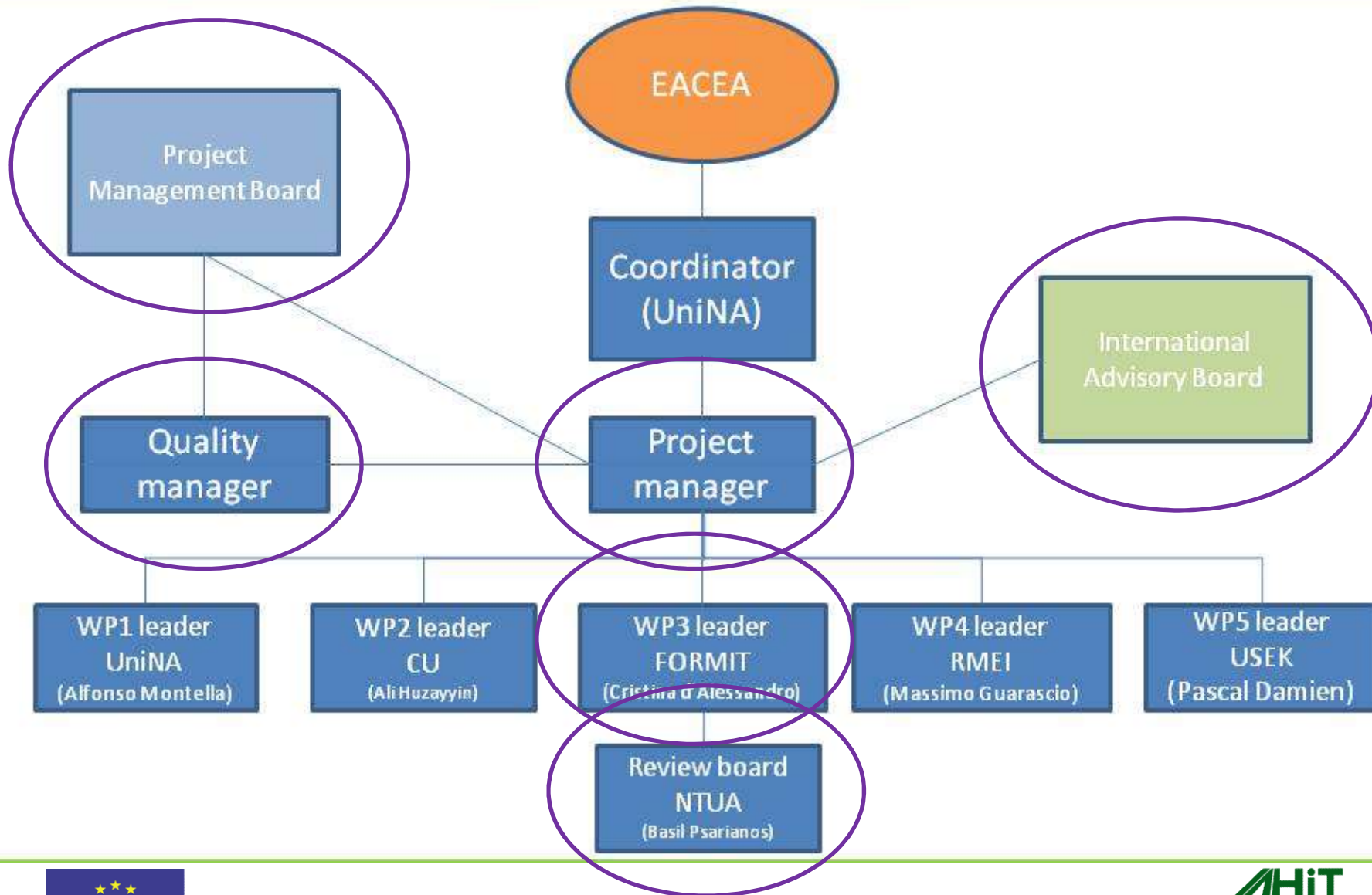
# WP3 Quality assurance process



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# Quality Governance



# Deliverables

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Quality control and monitoring was an integral part of all project activities and results

Quality assurance achieved at **internal** and **external** level. All partners are involved in the quality assurance process, both from EU and Mediterranean countries

- Four deliverables

**Quality Manual (D7)**

**Quality Plan (D8)**

**Quality Assurance Reports**

- (QPLN) 9.1 Internal feedback report
- (QPLN) 9.2 External feedback report
- (QPLN) 9.3 Teaching material review process

**Report on Workshops and Webinars (D9.1)**



# D9.1 Internal feedback - example

Internal survey for workshops: this phase will involve Mediterranean Countries' university staff involved in European workshops.

1)	Are workshop objectives clear?	1	2	3	4	5
2)	Are courses in line with workshop objectives?	1	2	3	4	5
3)	Are courses contents adequate for the future Master implementation?	1	2	3	4	5
4)	Is courses duration adequate for the future Master implementation?	1	2	3	4	5
5)	Is training material, provided along the courses, adequate for the future Master implementation?	1	2	3	4	5
6)	Is teaching method easily transferable to your country?	1	2	3	4	5



# D9.9 External feedback - example

<b>Part F. The teacher</b>					
For each teacher, please answer to the following questions:					
Teacher reference code		<input type="text"/>	<input type="text"/>	<input type="text"/>	
F.1	Was the teacher clear in explaining the module/sub-module contents?	1	2	3	4 5
F.2	Did the teacher motivate interest toward the module/sub-module contents?	1	2	3	4 5
F.3	Did the teacher respect the planned timetable for the deployment of her/his didactics (lessons, consulting hours, etc.)?	1	2	3	4 5
F.4	Was the teacher really available for explanation and clarifications?	1	2	3	4 5
F.5	Was the teaching material, given or suggested by the teacher, adequate for the study of the module/sub-module contents?	1	2	3	4 5
F.6	Did the teacher pay attention to arising problems?	1	2	3	4 5
F.7	Did the teacher explain carefully the didactics' evaluation process, showing adequately this survey?	1	2	3	4 5



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# WP4 Dissemination



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# D10 Web site – home page

[www.hit4med.eu](http://www.hit4med.eu)



**HiT  
IMed**

**Highway and Traffic Engineering:  
Curricular Reform for Mediterranean Area**



Tempus

**Main Menu**

- Home
- Project Facts
- Project activities
- Partners
- Management Board
- Project Events
- Training workshops
- Dissemination
- Contact us

**Summary of the projects**

The project objective is to design, develop and implement a new curriculum programme for master courses in Highway and Traffic Engineering in a joint effort between EU and Mediterranean Universities in line with Bologna requirements. The former will transfer EU best practices, experiences and methodologies according to the Bologna process to support the development and diffusion of an innovative experience in technical higher education in Mediterranean institutions supporting the capacity and knowledge building in highway and traffic engineering. At the completion of the master, students will learn new and advanced tools for road safety management, traffic management, and highway design. Moreover, students will increase their mathematical background, English skills and will be trained in research methodology in highway and traffic engineering. These advanced skills will contribute towards the improvement of the transportation system in the Mediterranean Area.

Welcome to the website of Hit4Med project *"Highway and Traffic Engineering: Curricular Reform for Mediterranean Area"* funded by the TEMPUS IV programme, VI call.

You are here: Home



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# D10 Web site – project facts

**HiT4Med** Highway and Traffic Engineering: Curricular Reform for Mediterranean Area 

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**Project Facts**

Full project title: Highway and Traffic Engineering: Curricular Reform for Mediterranean Area  
Project Acronym: HiT4Med  
Project number: 54460-TEMPUS-1-2013-1-IT-TEMPUS-JPCR  
Project duration: 1.12.2013 – 30.11.2016  
Total Budget: € 1.438.513,52, The project is funded by the European Commission through the Tempus IV programme (VI call EACEA N° 35/2012)  
Project website: [www.hit4med.eu](http://www.hit4med.eu)  
Contact: Alfonso Montella

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You are here: [Home](#) ▶ [Project Facts](#)



# D10 Web site - activities



The screenshot displays the website for the HiT IMed project. At the top left is the HiT IMed logo, and at the top right is the Tempus logo with the European Union flag. The main navigation menu on the left includes: Home, Project Facts, Project activities, Partners, Management Board, Project Events, Training workshops, Dissemination, and Contact us. The central section is titled 'Project activities' and lists 15 specific activities under the heading 'The activities to be done during the project, related to the deliverables are:'. The background of the website is a construction site with a large concrete structure under development.

## HiT IMed Highway and Traffic Engineering: Curricular Reform for Mediterranean Area

### Tempus

#### Main Menu

- Home
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- Project activities
- Partners
- Management Board
- Project Events
- Training workshops
- Dissemination
- Contact us

#### Project activities

The activities to be done during the project, related to the deliverables are:

- (MNGT) 1.1 Day by day monitoring
- (MNGT) 1.2 Monthly all partners conference call
- (MNGT) 2.1 Inception meeting
- (MNGT) 2.2 Project Management Board meetings
- (MNGT) 2.3 Tempus Project Representatives' Meetings
- (MNGT) 2.4 Field monitoring visits
- (DEV) 3.1 Training requirements and needs assessment
- (DEV) 3.2 Med universities CV assessment
- (DEV) 3.3 Scientific and professional career path assessment
- (DEV) 4.1 Design of the Master programme from inputs of the assessment study
- (DEV) 4.2 Accreditation procedures
- (DEV) 4.3 Credit transfer and recognition procedures
- (DEV) 5.1 Design and implementation of teaching materials
- (DEV) 5.2 Training of the PC teaching staff by workshops and webinars
- (DEV) 5.3 Equipments update
- (DEV) 6.1 Selections of students
- (DEV) 6.2 Courses implementation
- (DEV) 6.3 Students internship in EU labs
- (DEV) 6.4 Students internship in PC Universities and companies
- (DEV) 6.5 Master thesis





# D10 Web site - partners

**HiT4Med** Highway and Traffic Engineering: Curricular Reform for Mediterranean Area Tempus

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P1) UniNA  
P2) FORMIT  
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P5) UniCT  
P6) UPV  
P7) KTH  
P8) CU  
P9) ZU  
P10) ASU  
P11) AASTMT  
P12) USEK  
P13) LU  
P14) UCA  
P15) AIAC  
P16) ISTLS  
P17) ENISo

**Management Board**

Map showing partner locations across Europe and the Mediterranean region. Countries labeled include: Island Iceland, Sverige Sweden, Suomi Finland, Norge Norway, Danmark Denmark, United Kingdom, Ireland Eire, Deutschland Germany, Österreich Austria, Polska Poland, Беларусь Belarus, Україна Ukraine, România Romania, Kazakistan Kazakhstan, O'zbekiston Uzbekistan, Kırgızistan Kyrgyzstan, Türkiye Turkey, Türkmenistan Turkmenistan, Esp. Spain, Italia Italy, Greece, Portugal, Morocco, Tunisia, Algeria, Libya, Egypt, Saudi Arabia, Iran, Afghanistan, Pakistan, Nepal, India, Mali, Niger, Mauritania, Western Sahara, Oman.



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# D12 Dissemination events

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9 info day and 7 final road show events have been organised. Supporting materials have been used, such as:

- Agenda of the day
- Invitations to stakeholders
- Participation form, also for collecting pre-registration interest
- Participants' list
- Project leaflet with the Master programme
- Presentation of the Master programme:
  - Syllabus
  - Objectives
  - Programme framework
  - Career opportunities
  - Access conditions
  - Programme website (to be hosted in each university's website)
- Presentation of the TEMPUS programme and TEMPUS project
- Presentation of quality assurance process and of dissemination activities



# D12.2 Casablanca's infoday, 16th June 2014



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# D12.2 Casablanca's infoday, 16th June 2014



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# D12.2 Marrakech's infoday, 17th June 2014



# D12.2 Marrakech's infoday, 17th June 2014

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# D12.2 LU infoday, 16th October 2014



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# D12.2 LU infoday, 16th October 2014





# D12.2 ZU infoday, 2nd December 2014



# D12.1 ZU infoday, 2nd December 2014



# D12.2 CU infoday, 3rd December 2014



# D12.1 ASU infoday, 4th December 2014



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# D12.2 ISTLS infoday, 29th January 2015



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# D12.2 ENISo infoday, 29th January 2015



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# D12.2 USEK infoday, 9th June 2015



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# D12.2 USEK infoday, 9th June 2015





# D12.3 Final at LU, 13th October 2016



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# D12.3 Final at UCA, 21st November 2016



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# D12.3 Final at AASTMT, 27th November 2016



# D12.3 Final at ZU, 28th November 2016



## D12.3 Final at Egyptian Ministry, 28th November 2016

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# D12.3 Final at ASU, 29th November 2016



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# D12.3 Final at CU, 29th November 2016

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# WP5 Exploitation



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# Partnerships

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- Official agreements between partner universities contribute to the sustainability of the Master programs
  - exchange of experience and knowledge
  - internships
  - teaching materials
  - conferences
  - Explore research and sponsored funding opportunities
- Official agreements between partner universities and local authorities
- Follow-up of the master programmes
- Joint research projects
- Participation to the Erasmus+ program (15 students from Egypt and Tunisia carried out a 3 months internship at University of Naples)



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# Thank you for your kind attention!

Alfonso Montella

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[www.hit4med.eu](http://www.hit4med.eu)



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