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Erasmus + KA2 Cooperation for innovation and the exchange of good practices **Capacity Building in the field of Higher Education**

Proposals 2019 - EAC/A03/2018



Project Grant Agreement N. **586221**

Project acronym: **NePREv**

Full title: **Setting up a multidisciplinary joint master degree dedicated to the Next Production Revolution**

First mid-term meeting in Milan on September 18th, 2020

<p>WP/Task/Deliverable: WP9/D9.2</p> <p>Planned Date: 15/09/2020 Due Date: 28/09/2020</p> <p>Nr. pages: 13 Dissemination Level: Institution</p>	<p>Partner responsible: POLITO Person Responsible: Prof. Pierluigi Leone Author: Pierluigi Leone, Sonja Sechi, Laura Rietto</p> <p>Document version: 1 Reviewed/supervised by: POLITO, POLIMI, CS, OBREAL, ENIT, ISGIS, FSJEGJ, ENIGA</p>
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History of revisions

Rev N	Description	Author	Review	Date
0	Draft	POLIMI	Draft creation	21/09/2020
1	Draft	POLITO	Added administrative issues	28/09/2020



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Executive summary

This deliverable reports the minutes of a virtual meeting that was organized on September 18th, 2020 having the main goal to discuss the Project Management and Finance as well as the Training Program's modules and their contents. This meeting substitutes the meeting scheduled in presence in Milan.



The agenda

The meeting was scheduled on September 18th, 2020 from 12.-13.30 using the Teams platform. The agenda was the following:

- 12:00 – 12:40 P.M. – Project Management and Finance
- 12:40 – 13:30 P.M. – NePRev training program discussion (modules and contents)

Participants

Partner		People
P1 PoliTO	Politecnico di Torino	Prof. Pierluigi Leone, Eng. Laura Rietto, Eng. Sonja Sechi
P2 PoliMI	Politecnico di Milano	Eng. Elisa Negri Eng. Maira Callupe
P3 CS	<u>CentraleSupelec</u>	Prof. Maria Jankovic Mrs. Ekaterina Grekova
P4 OBREAL	Observatorio de las Relaciones Unión Europea - América Latina	Prof. Jaume Fortuny
P5 ENIT, UTM	National Engineering School of Tunis Tunis el Manar University	Prof. Chiheb Bouden Prof. Wyssal Abbassi Prof. Anis Allagui Prof. Essia Znouda
P6 USF, ISGIS	-University of Sfax -Institut Supérieur de Gestion Industrielle de Sfax	Prof. Hamdi Kessentini
P7 UJ, FSJEGJ	-University of Jendouba	Prof. Sami Gharbi Mrs. Hanen Rehbi

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	-Faculty of Juridical, Economic and Management Sciences of Jendouba	
P8 UGAF,ENIGA	-Gafsa University -National School of Engineers of Gafsa	Prof. Amira Hamdi
Associated Partners		People
T.I.M.E	Top Industrial Managers for Europe	-
UTICA	Union Tunisienne de l'Industrie, du Commerce et de l'Artisanat	-
STEG	Société Tunisienne de l'électricité et due Gaz	-

Minute

12:00 – 12:40 P.M. – Project Management and Finance.

Eng. Laura Rietto (PoliTO), Prof. Sami Gharbi (FSJEGJ), Prof. **Wyssal Abbassi (ENIT)**

Eng. Rietto (PoliTO) raised the following points:

- Budget transfer has been completed to all partners
- A tender draft is under preparation

Prof. Sami Gharbi (FSJEGJ) raised the point that its university need to have all money in cash to start the tender for the external quality expert: so far around 2,000 euro is missing. PoliTO replied that is common in European projects to anticipate some money from universities that will be recovered with future instalments of the project. The delay of activities (such as the delay in starting the work with the external quality expert) may bring the EACEA to delay or cancel part of the budget funding to the consortium and therefore it is kindly ask to Jendouba University to finalize the appointment of the external quality expert.



Prof. Wyssal Abbassi (ENIT) raised the fact they may have difficulties in preparing the tender for equipment because the fund is not physically available in ENIT. PoliTO replied that the Partnership Agreement foresees that PoliTO will keep the budget of Tunisian Partner and will pay in name and their behalf thus anticipating the amount of budget that is now not available for partners. Even in this case, it is therefore requested to go on with activities as agreed in the Partnership Agreement.

12:40 – 13:30 P.M. – Neprev training program discussion

Prof. Pierluigi Leone (PoliTO), Prof. Elisa Negri (PoliMI), Prof. Sami Gharbi (FSJEGJ), Prof. Wyssal Abbassi (ENIT), Prof. **Jaume Fortuny (OBREAL)**

a) Training Format

Prof. Elisa Negri (PoliTO) summarized the changes made to the training format following the onset of the COVID-19 outbreak. The defined format are webinars and online workshops to be carried during October and November

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between 5pm-7pm (CET), while the next year training format will be defined according to circumstances. The Tunisian partners agreed to share their local holidays to avoid overlap with training sessions.

Regarding the training platform, Microsoft Teams was proposed as the chosen platform to deliver the trainings as well as the creation of one specific room to be set permanently as the virtual place to hold all training sessions.

b) Trainees

Prof. Elisa Negri remarked that an opportunity arising from the remote modality is the possibility to open the training sessions to a wider audience with no limit on the number of participants. Since there is not budget limitation as in the case of travels, there will be no real “selection” of participants: each interested member of the Tunisian institutions may participate in the training. Additionally, as per the description of the project documentation, the Tunisian institutions should ensure at least 5 participants each to the training modules.

The next action to be taken is gauging potential trainees’ interest in the proposed training modules through the use of a survey. The survey was prepared by PoliMI using Google Forms and can be found here: [Link to Google Form](#). Tunisian partners are invited to provide feedback on the proposed training modules (types, number, contents, duration, etc.) through the survey or other means before the next meeting.

Prof. Jaume Fortuny (OBREAL) highlighted the importance of tracking participants’ gender to ensure good gender representation among those benefitting from the training sessions.

c) Training modules

Tunisian partners agreed to record the training modules and make them available to the members of the NePREv consortium, depending on the willingness of the trainers to be recorded while giving their presentations. These materials used during the training modules as well as their digital recordings are not to be divulged to third parties, and all members of the NePREv consortium agree not to spread them to others.

Tunisian partners are invited to check the open knowledge courses listed on the presentation. They will be required to create a POK account before enrolling courses. The link for registration is here: <https://www.pok.polimi.it/register>



Prof. Sami Gharbi (FSJEGJ) requested to have a training module dedicated to the topics of Data Analytics, Data Clustering and Machine Learning, as they are considered core topics.

Modules to be confirmed are the following:

- Business Intelligence (OBREAL)
- Data Science (OBREAL)

Prof. Pierluigi Leone (PoliTO), Prof. Elisa Negri (PoliMI), and Prof. Jaume Fortuny (OBREAL) presented the second proposal of the training sessions, including open knowledge courses, to address the Master Program syllabus and individual courses proposed by ENIT, FSJEGJ, ENIGA, and ISGIS. These trainings are classified into 3 types:

1. General Contents. Fundamental and basic content including detailed descriptions of laboratories, master programs, etc.
2. Ecosystem Building. Experiences from the initiatives of European Partners to build innovation ecosystem including partnerships, alliances, and more.

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3. Curriculum Development. Support the creation of learning materials with basic definitions and approaches, examples of modules, reference materials and where to find them.

The main contents are reported in the tables below.



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Type of module	Title of Module	Contents	Duration (hours)	Trainer Name (Provisional)	Connection to Master program at ENIT	Connection to single courses	Additional references and notes
Ecosystem Building	Energy Center at POLITO	Organizational model, activities, experimental equipment, corporate partnerships	1.5	Romano Borchellini/ Andrea Lanzini	Energy systems optimization Energy Efficiency/Renewable Energy	Renewable Energy (ISGIS) Industrial Energy (ISGIS)	http://www.energycenter.polito.it/
Ecosystem Building	IAM@POLITO: Center for Integrated Additive Manufacturing	Experimental equipment, relations with corporate partners from sectors interested in additive manufacturing	1.5	Luca Luliano	Additive Manufacturing	-	http://iam.polito.it/
General Contents	Master Program in Energy Efficiency and Sustainability in the Industry at POLITO	Presentation of the program: study plan, courses description	1	Vittorio Verda	Energy Efficiency/Renewable Energy	Renewable Energy (ISGIS) Industrial Energy (ISGIS) Smart Grid (ENIGA)	https://didattica.polito.it/master/efficienza_energetica/2018/programma
General Contents	Master Program in Industry 4.0 at POLITO	Presentation of the program: study plan, courses description	1	Eleonora Atzeni	Introduction to Industry 4.0	Smart Production (ENIGA)	https://didattica.polito.it/master/manufacturing_4_0/2018/at_a_glance
Ecosystem Building	Corporate Relations	Experiences with internships and relations with corporate partners in the energy sector	1	Pierluigi Leone	-	-	-
Curriculum Development	Research trends in additive manufacturing	Trends in additive manufacturing including application areas for Tunisia	1.5	Alessandro Salmi	Prototyping (CAO, 3D, Additive Manufacturing)	-	-
Curriculum Development	Energy Efficiency/Renewable Energy	TBD	TBD	Pieruigi Leone	Lifecycle assessment, Energy Efficiency/Renewable Energy	Renewable Energy (ISGIS) Industrial Energy (ISGIS)	-



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Type of module	Title of Module	Contents	Duration (hours)	Trainer Name (Provisional)	Connection to Master program at ENIT	Connection to single courses	Additional references and notes
Curriculum Development	Research trends in energy in the Euro-Mediterranean Area	Trends in energy in Euro-Mediterranean area	1.5	Pierluigi Leone/Daniele Grosso	Energy Efficiency/Renewable Energy	Renewable Energy (ISGIS) Industrial Energy (ISGIS) Management of Energy Systems (ISGIS, ENIGA)	-
Curriculum Development	Demand side management	Methods to modify consumer demand behavior	TBD	Pierluigi Leone/Lorenzo Bottaccioli	Demand side management	Industrial Energy (ISGIS) Management of Energy Systems (ISGIS, ENIGA)	-
Curriculum Development	Energy systems optimization	Modelling, analysis and optimization of numerous types of energy systems in various applications	TBD	Pierluigi Leone/Vittorio Verda	Energy systems optimization	Industrial Energy (ISGIS) Management of Energy Systems (ISGIS, ENIGA)	-
General Contents	Industry 4.0 Lab at POLIMI	Organizational model, activities, experimental equipment, ongoing projects, corporate partnerships	1.5	Elisa Negri	Introduction to Industry 4.0	Smart Production (ENIGA)	https://www.industry40lab.org/
Ecosystem Building	MADE Competence Center presentation	Presentation of the competence center and its activities in the innovation ecosystem	TBD	Augusto De Castro	-	Innovation and Sustainable Development (ISGIS) Sustainable Development (ENIGA)	https://www.made-cc.eu/
Curriculum Development	Design Thinking	Introduction of design thinking, steps, tools, and use cases	2	Monica Rossi and Brendan Sullivan	Strategic Innovation, Innovation Management	Innovation and Sustainable Development (ISGIS) Design Thinking (FSJEGJ) Management of Innovation (FSJEGJ)	-



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Type of module	Title of Module	Contents	Duration (hours)	Trainer Name (Provisional)	Connection to Master program at ENIT	Connection to single courses	Additional references and notes
Ecosystem Building	Inspiring innovation for professionals	The experience of the MIP Business School about the Industry 4.0 training for professionals, students and industrial practitioners (at national and international level)	1.5	Sergio Terzi	Introduction to Industry 4.0	Innovation and Sustainable Development (ISGIS) Sustainable Development (ENIGA)	https://www.som.polimi.it/en/the-school/about-us/mip/
Ecosystem Building	POLIHUB – the incubator of the Politecnico di Milano	Experiences from the excellence incubator	1	Andrea Sianesi	-	-	https://www.polihub.it/en/
Ecosystem Building	Politecnico di Milano and African partnerships	Projects and initiatives of Politecnico di Milano and African partners	1	Emanuela Colombo	-	-	-
Curriculum Development	Simulation	Definitions, Applications, Techniques, main references, Course examples	1.5	Elisa Negri	Simulation	-	-
Curriculum Development	Simulation & Optimization of advanced manufacturing systems	Definitions, Applications, Techniques, main references, Course examples	1.5	Elisa Negri	Simulation & Optimization of advanced manufacturing systems	Manufacturing Systems (ISGIS) Advanced Manufacturing Technologies (ENIGA)	-
Curriculum Development	Circular Economy	Definitions, Applications, Techniques, main references, Course examples	1.5	Roberto Rocca (TBD)	Circular economy	-	-





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Type of module	Title of Module	Contents	Duration (hours)	Trainer Name (Provisional)	Connection to Master program at ENIT	Connection to single courses	Additional references and notes
Curriculum Development	Industry 4.0 Technologies	Automation in production systems using industry 4.0 technologies	1.5	Simone Galparoli (TBD)	Industry 4.0 Introduction Seminar II Seminar III	Automation and Robotisation of Production (ISGIS) Smart Production (ENIGA) Industrial Robotics (ENIGA)	-
Curriculum Development	Lean 6 Sigma and Industry 4.0	Introduction of lean six sigma and Industry 4.0, steps, tools, use cases	2	Monica Rossi and Brendan Sullivan	Lean 6 Sigma 4.0	Lean Management: Simulation Games (ISGIS)	-
TBD (General Contents)	Quality Assurance in Higher Education	TBD	TBD	Youhansen Y. Eid	-	-	-
Curriculum Development	Business Intelligence	TBD	TBD	TBD	E-business	Business Intelligence (FSJEGJ)	-
Curriculum Development	Data Science	TBD	TBD	TBD	Data Mining	Data Analytics (FSJEGJ) Data Clustering (ENIGA)	-

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Title of Module	Contents	Duration (weeks)	Connection to Master Program at ENIT	Connection to single courses	Link
New Business Models and Creative Entrepreneurship in the digital era	Analysis of the main evolutions experienced by different players in the fashion industry due to a series of key technologies as well as strategies and best practices to adapt to this new context.	5	E-business	Entrepreneurship (FSJEGJ)	https://www.pok.polimi.it/courses/course-v1:Polimi+DIGIM01+2020_M3/about
Fundamentals of Operations	Key theories, concepts, models, and approaches related to Production and Logistics Systems	5	Operations Management	-	https://www.pok.polimi.it/courses/course-v1:Polimi+OPE101+2020_M5/about
Digital Supply Chain Ecosystems for Creative Industries	Most important concepts related to Supply Chain in the fashion industry and illustrate strategies and techniques for effective Supply Chain Management.	4	Supply Chain 4.0	Integrated Logistics & Supply Chain Management (ISGIS)	https://www.pok.polimi.it/courses/course-v1:Polimi+DIGIM02+2020_M3/about
Business for WISEs	Key theories of innovation, models and approaches related to continuous competitive advantage through products, processes, utilizing technologies and through market practices.	3	Digital Marketing	Digital Marketing (FSJEGJ)	https://www.pok.polimi.it/courses/course-v1:Polimi+B4W101+2020_M4/about
Data science, visualization, and interactive narratives for CCIs	Contents: Cultural and Creative Industries. Data driven methods for informed decision-making, exploiting big data, data science, and machine learning.	4	Data Mining, Machine Learning Seminar II, III	Data Analytics (FSJEGJ) Data Clustering (ENIGA)	https://www.pok.polimi.it/courses/course-v1:Polimi+DIGIM06+2020_M3/about
Enabling Infrastructure in Africa for the Next Production Revolution	Smart and integrated infrastructures (concepts and taxonomy), digitalization (Big Data, IoT, machine learning), decarbonization and green infrastructures, smart mobility	2	AI & Machine Learning in Industry, IoT Seminar II, III	AI & Machine Learning (FSJEGJ) AI (ENIGA)	https://www.pok.polimi.it/courses/course-v1:Polimi+NPR103+2019_M9/about
Technology clusters for the Next Production Revolution in Africa	Additive manufacturing: key features, technologies, and applications. Agricultural production: smart agriculture, remote sensing, data analysis	4	Seminar II Seminar III	Advanced Manuf. Tech. (ENIGA)	https://www.pok.polimi.it/courses/course-v1:Polimi+NPR102+2019_M9/about

TO BE FOUND

Discrete optimization



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Actions to do:

- **WP1 Preparation**
Complete the missing deliverables.
- **WP3 Development**
Finalise the design of the master according to WP1, WP2 results and according to the existing expertise of Tunisian professors who will be involved in teaching.
- **WP4 Development**
Define the definitive list of the equipment. It is not necessary to order all the equipment at the same moment.
- **WP5 Training Session**
Define the final program.
- **WP8 Dissemination**
Provide some additional information asked by CS.
Provide news and contents linked to the project to CS by mail to implement them into the website and the social media.