



Project: Network of Competence on Internet of Things
[NEON]

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Work Package 5: Training and internship implementation

Title: D5.4 Report on student training modules on technical and entrepreneurial subjects.

Lead Organization: UNMDP(WP5 leader), UNC (WP2 D5.4 leader)

Participating Organization: UNI-KLU, UC3M, UNC, UNS, UNMDP, UdelaR, UCU, INCUTEX, ALASSIO, ALENET, TEAC, EYCON, ALLIANSYS SRL, Santex, TELECOM ARGENTINA S.A, CONTROLNET S. A., ABM ingeniería y sistemas S.R.L., UTE, CONAE.

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Deliverable data	Work Package and Outcome ref.nr	WP5 D5.4
	Title	Report on student training modules on technical and entrepreneurial subjects
	Type	<input type="checkbox"/> Teaching material <input type="checkbox"/> Event <input type="checkbox"/> Learning material <input checked="" type="checkbox"/> Report <input type="checkbox"/> Training material <input type="checkbox"/> Service / Product
	Description	This document contains a detailed description of the activities performed with students and the entrepreneurial tools acquired during the events.
	Date	09.2023
	Language	English
	Target groups	<input checked="" type="checkbox"/> Teaching staff <input checked="" type="checkbox"/> Students <input type="checkbox"/> Trainees <input type="checkbox"/> Administrative staff <input type="checkbox"/> Technical staff <input type="checkbox"/> Librarians <input checked="" type="checkbox"/> Industry partners
Dissemination level	<input type="checkbox"/> Department / Faculty <input type="checkbox"/> Local <input checked="" type="checkbox"/> National <input type="checkbox"/> Institution <input type="checkbox"/> Regional <input checked="" type="checkbox"/> International	
Lead Organization	UNMDP(WP5 leader), UNC (WP2 D5.4 leader)	
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Tasks	T5.3 Implement framework for student internships in companies. T5.4 Offer techno-economic, entrepreneurial and IPR related training modules.	

Revision History				
Version	Date	Author(s)	Organization(s)	Brief description of change
1	25/09/2023	Horacio Mendoza	UNC	Super draft
2	18/12/2023	Daniel Carrica	UNMDP	Addition of Uk column and of non structure training activities along
3				

Table of Contents

1. Introduction	5
2. Objectives	5
3. Conclusions	5
4. References	5

1. Introduction

This document reports the action taken to implement a framework for student internships in companies and techno-economic, entrepreneurial/IPR related training modules.

2. Objectives

Provide a detailed report about the student training modules on technical and entrepreneurial subjects.

3. Framework

WP5 is devoted to training and internship implementation. In this context, multiple training modules were carried out in relation to student mobilities. The mobility of students between HEIs offered an opportunity to implement training modules on technical aspects related to IoT. The main topics approached in each host HEI are listed in Table 1.

UC3M	UK	UCU	UdelaR	UNC	UNMDP	UNS
Solar Energy (EN), Instalaciones de Energías Renovables, Domótica y Luminotecnia	Signal Processing for Communications	Agro IoT	Antennas design	Software Defined Radio	IoT course	Cellular Technologies
Production & Manufacturing Systems (EN)				Micropython	LoRa Technology	Diseño RF
Internet de las Cosas - IoT, Tecnologías para sistemas autónomos y vehículos no tripulados Technologies for Autonomous and Unmanned Systems	Research Project in Embedded Systems and Signal Processing			LoRa Technology	Narrowband IoT technology	
Entrepreneurship (EN), Critical thinking (EN), Project Design & Planning (EN)	Communication Systems Engineering			Analista de soluciones IoT.	RFID Technology	
Deep Learning for the Analysis of Images (EN, ES)				Programming for IoT	Software Defined Radio	
Introduction to quantum communications and computing (EN, ES)						

Entrepreneurial and IoT/ICT technical topics were offered also in different NEON events.

Chronology:

July 13th 2021: The first Neon Event was a virtual event because of the pandemia, named MDP-Tandil Virtual Open Event. The modules were talks about IoT companies which were attended by 123 participants. The modules were:

- “Deitres”, by Bernardo Martinez Saenz

- “Isistan”, by Cristian Mateos
- “Q4Tech and Redimec”, by Leandro J. Aguierre
- “Tech Inside/Lambda Domotica”, by Guillermo Mandagaran
- “Lyrtron”, by Gustavo Uicich
- “Las Brusquitas Cluster”, by Rodrigo Espinoza
- “ICYTE (LIVRA)”, by Raúl Rivera
- “Delsat”, by Darío Baliña
- “INTIA+UFASTA”, by Elías Todorovich
- “Digimage Electrónica”, by Oscar Torrecilla
- “Making Sense”, by Ignacio Caldentey
- “ICYTE (LAC)”, by Jorge Castiñeira and Alejandro Uriz
- “Uniagro”, by Juan M Toloza
- “Innova Space”, by Alejandro Cordero
- “Grupo Margen”, by Lucas Monteiro
- “Globant”, by Juan Pablo Pizarro
- “Ponce Automations”, by Tomás Allegrini
- “INTIA”, by Jose Marone

October 21th, 2021: Another event named MDP NEON Open Event, also virtual because of the pandemia, approx 90 attendees and the modules were:

- “How should training be to enter the IoT revolution?” by B. Martínez Sáez (Deitres), M. Pascualín (EYCON), P. Manzano (INCUTEX), F. Estévez (ALASSIO), A. Derregibus (ALENET), A. Arnaud (UCU), R. Rivera/J. Castiñeira/A. Uriz (UNMDP), J. Finochietto (UNC), J. Cousseau (UNS), L. Steinfeld Volpe (UdelaR)
- “Cyberphysical and Internet-of-Things Systems: Educational and skill requirements” by Dimitrios Serpanos (University of Patras, Greece)

October 7th, 2022: 2022 Montevideo Open Event, organised by UCU. The modules offered were:

- “Opportunities for IoT in Uruguay” by Matias Miguez.
- “Robots for Agribusiness using IoT” by Nicolás Jodal (Genexus)

April 28, 2023: This event named 2023 NEON Open Event Mar del Plata was organised by UNMDP and carried out in ATICMA which is the MDP Chamber of ICTs companies. The number of attendees was approximately 30 and the following modules were exposed:

- “UNMDP Incubator”, by Eugenia de la Libera
- “CONICET tools for Technological development”, by AdrianCarricart
- “Entrepreneurships: power of students and graduates from TICs and IoT courses”, by Juan Pablo Fratuzzo.
- “Successful middle time companies: Lyrtron and Deitres” by Fernando Rodriguez Betelu and Bernardo Martinez Saez
- “Successful new companies: Ponce Automation, Lambda and Maker Electronica” by Tomás Allegrini and Guillermo Mandagaran.

September 29, 2023: 3rd Open Event UNS carried on at Bahia Blanca. The modules offered were:

- “Neural accelerators for low consumption portable systems” by P. Julián (ALLEGRO MICROSYSTEMS)
- “Connecting People and Devices Through Mixed Reality” by J. Nieto (MICROSOFT, Swiss)
- “Challenges in Circuits and Systems for IoT” by R. Reis (Univ. Federal do Rio Grande do Sul, Brazil)
- “Application of antenna technologies in the context of IoT” by N. Pieri (VENG)
- “Experiences and learnings from the design and deployment of Atheling IoT system” by G. Guichal (EMTECH)
- “Smart energy meters” by G. Isla Vieyra (Desa Group)

- “A clean future: how IoT technology revolutionizes waste management” by E. Córdoba (ALLIANSYS)
- “Meteorological station network: example of a successful public-private agreement” by M. E. Antonelli (Bolsa de Cereales y Productos)
- “IoT as support for electronic payment in transportation and parking” by M. Pascualin (EYCON)

October 26th, 2023: Entrepreneurial topics were offered also at the 3rd Webinar organised by UNMDP. The number of attendees was 25 and the module was:

- Atributos de las Organizaciones Exponenciales, by Jimena Caro (INCUTEX).

The main topic approached was tools for “design thinking” as a way to develop validated ideas for constructing useful solutions based on IoT technology.

4. Conclusions

Throughout the project, various student mobility stays have been carried out at different universities. These experiences have allowed participating students to enroll in a variety of technical courses detailed in Table 1. These courses not only cover specific topics related to the Internet of Things but also include training paths in entrepreneurship and critical thinking.

During these stays, students have not only acquired theoretical knowledge but also had the opportunity to apply and implement what they have learned in academic and professional settings. Additionally, these mobility experiences have fostered the exchange of ideas and collaboration among students from different universities, enriching their academic education and promoting a diversified learning environment.

In parallel, various activities have been organized throughout the project, such as open events, with the purpose of disseminating information about the different courses offered and highlighting the benefits associated with the Internet of Things. These initiatives have not only contributed to the visibility of the project but have also generated significant interest, resulting in the active participation in more than 25 mobility activities.

Finally, the mobility stays and additional activities developed within the framework of this project have provided students with a comprehensive experience, combining theory with practice, fostering interuniversity collaboration, and promoting knowledge and the application of emerging technologies.

5. References

[1] NEON project proposal, 2020.