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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 D5.3			
	Title	Report on organized hackathons for students of the region			
	Туре	 □ Teaching material □ Event □ Learning material □ Training material □ Service / Product 			
	Description	This report highlights the main activitie performed in the hackathon. The topics covered, the number of participants, and the main results.			
	Date	5.2023			
	Language	English			
Target groups	 ☑ Teaching staff ☑ Students □ Trainees □ Administrative staff □ Technical staff □ Librarians ☑ Industry partners 				
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Task	M5.9 Hackathon for stud	dents. Organized at UCU.			

Revision History						
Version	Date	Author(s)	Organization(s)	Brief description of change		
1	10/11/2022	Nicole Imbert	UCU	Super draft		
2	17/11/2022	Alejandro Uriz	UNMDP	Sections "RESULTS" and "CONCLUSIONS" were expanded.		
3	24/11/2022	Daniel Carrica	UNMDP	New section: "CHARACTERISTICS OF THE EVENT", lead organization, reduce flyer images, to enrich section "RESULTS".		
4	13/3/2023	Nicole Imbert	UCU	Section "RESULTS" was completed with indicators of the event, photos and other relevant information.		
5	15/4/2023	Nicole Imbert	UCU	Final revision.		

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1. INTRODUCTION

In deliverable D5.3 "Report on organized hackathons for students of the region", will be reported the management and outcomes produced related to the hackathon for students developed within WP5 which is led by UNMdP specifically in the milestone: M5.9 "Hackathon for students, organized at UCU" which was carried out by UCU.

2. OBJECTIVES

The aim of this deliverable is to report about the organization and the main outcomes produced in the hackathon for students in the region carried out in UCU. It contains a brief summary of the activities carried out, the agenda of the event, the topics covered, the number of participants, the main results and other relevant information and indicators.

3. CHARACTERISTICS OF THE EVENT

The event consisted of a 36-hour hackathon in face-to-face mode, which took place at the facilities of the Universidad Católica del Uruguay, from October 5, 2022 at 8:00 a.m. to October 6, 2022 at 8:00 p.m. It was organized by UCU members who participate in the NEON project and aimed at university students from any university.

The objective of the event was for students to work in groups to solve some problems in the agribusiness sector in Uruguay by applying the Internet of Things. These problems were introduced by professionals who are dedicated to the agribusiness area.

Participants could participate in the hackathon in one of the following categories, which they had to select when registering, without the possibility of being able to change after the event began.

- Technical category: the participating teams developed an audiovisual material of a maximum of 180 seconds, a canvas and a prototype or minimum viable product as an innovative and creative solution to respond to any of the challenges defined for the hackathon.
- Non-technical category: the participating teams developed an audiovisual material of a maximum of 180 seconds and a canvas as an innovative and creative solution to respond to some of the challenges defined for the hackathon. This category also had the possibility to deliver a prototype or minimum viable product, if the team wanted it, but it was not mandatory.

The prize for the winners consisted of a trip and registration fees to attend the WAFE conference "Workshop in AgriFood Electronics" in Quito, Ecuador, on March 4th, 2023 (held after Lascas 2023).

4. PROMOTION AND DISSEMINATION OF THE EVENT

All of the information related to the hackathon was published in the following section of the NoC website: <u>neon-iot.org/index.php/2022/07/06/makeathon-iot-for-agribusiness/</u>. Also, the event was promoted on the project media channels and on each university communication channels.

Two flyers (English and Spanish versions) were made for the dissemination of the event:



4.1 Flyer in Spanish



4.2 Flyer in English

5. AGENDA

The agenda of the event was the following:

Wednesday 5/10

Mullin Building - Universidad Católica del Uruguay 8:00 - 8:30 - Reception and Inscription - Room M103 8:30 - 8:40 - Welcome (PhD. Matías Miguez - UCU) - Room M103 8:40 - 9:20 - Problem 1: Water Quality - Eng. Joaquín Lapetina - INIA - Room M103 9:20 - 10:00 - Problem 2: Forest Industry - MSc. Carlos Trambauer - UPM - Room M103 10:00 - 10:20 - Coffee Break 10:20 - 11:00 - Problem 3: Livestock Industry - PhD. Gloria V. Arnaud - MGAP - Room M103 11:00 - 11:40 - Problem 4: Rice Industry - PhD. Gustavo Dominguez - Latitud - Room M103 12:30 - 13:30 - Lunch 17:30 - Coffee break 20:30 - Dinner

Thuersday 6/10 *Mullin Building- Universidad Católica del Uruguay* 8:00 - 8:30 - Breakfast 12:30 - 13:30 - Lunch 17:30 - Coffee break 20:00 End

Friday 7/10 Awards during the 2nd NEON Open Event.

6. RESULTS

A total of 36 participants attended the event (between students and professors from universities participating in the NEON project). 24 students participated in the hackathon making 7 groups. The registration of those registered with the universities and the careers they study, as well as all the proposed projects are indicated in the links listed below.

In the following link, it is available the survey made in order to have feedback by the students about the organization and the activities of the hackathon: <u>https://docs.google.com/forms/d/1fmIFLReUK106Bm6JE65Rxc0CiC2VCKMoK_OWKsqkwNk/edit</u>

At the beginning of the event, the participants listened to talks by businesspersons, who presented their lines of work and raised problems within which the students could work. Then, the students worked in groups, where they had to obtain a technical-economic solution to the problem. The final product were videos containing technical and economic descriptions of the proposed solutions and business canvas, which were uploaded to a server. Also, it was optative to create a prototype of the solution proposed.

The problems presented at the beginning of the event were related to the following fields within agribusiness:

- Problem 1: Water Quality Eng. Joaquín Lapetina INIA
- Problem 2: Forest Industry MSc. Carlos Trambauer UPM
- Problem 3: Livestock Industry PhD. Gloria V. Arnaud MGAP
- Problem 4: Rice Industry PhD. Gustavo Dominguez Latitud

Some of the solution (to these problems) proposed by the groups were:

- Control and maintenance of drinkers remotely and with low supervision.
- Detection system for possible sources of fire, with historical data dashboards and immediate notification by email.
- Implement a strategy to mitigate the pollution problem and validate it through a study by affected sectors.
- Livestock control by GPS.
- Monitoring of watercourses in real time.
- Intelligent dosing system for herbicide spraying machines through the use of Artificial Intelligence technology, applied in the forestry industry in the pre-sowing stage.

The projects were evaluated by a panel composed of:

- Pablo Manzano, Public Accountant, Master in Business Administration, Specialist in Finance and Capital Markets. For more than 20 years, he has helped create value in organizations, especially in the financial field, and legal and tax structuring of companies and start-ups. He contributes to developing healthy and scalable business models, seeking to increase revenue lines and controlling the cost structure. Currently working at INCUTEX, a NEON participating company.
- Enrique Ferreira, Electrical Engineer from UdelaR with postgraduate degrees in systems and control from Carnegie Mellon University. He currently works as a full-time research professor in the Engineering Department of UCU, and is a member of the SNI (level II) and in charge of the postgraduate courses in Engineering at UCU.
- Juan Gutierrez, Telecommunications Engineer graduated from UCU and Chair of Young Professionals Uruguay of the IEEE. Currently working at Tryolabs.

On Friday, October 7th, the winning group of the hackathon was announced at the 2nd NEON Open Event, carried out in UCU as well.

More information about the problems and solutions mentioned before and the documents provided to the students during the event are available in the following link:

https://drive.google.com/drive/folders/1TeM7ILQ_l_aqjbVe_Kmbo19FytyTEFIb?usp=sharing



Bellow, there are some photos of the event:

6.1 Event photos

7. CONCLUSIONS

The results were outstanding. The level of student participation and the motivating effect of the activity are highlighted. Based on the results obtained, it is worth noting that other partners have expressed their interest in holding another hackathon in the future.

8. REFERENCES

[1] NEON project proposal, 2020.