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Work Package 5:	Training and internship implementation
Title:	D5.2 Report on the framework for training and internships
Lead Organization:	UNMDP
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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Task	T5.2 Implement framework for student training in cooperation with EU partners and industry		

Revision History				
Version	Date	Author(s)	Organization(s)	Brief description of change
1	29.6.2022	P. Donato, A. Uriz	UNMDP	Draft with contents of all sections
2	6.7.2022	P. Donato, A. Uriz, D. Carrica	UNMDP	Major changes in all sections
3	8.7.2022	P. Donato, A. Uriz, D. Carrica	UNMDP	Section 2, 8 and 9
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1. Introduction

The Work Package 5 (WP5) **Training and internship implementation** is oriented to training and internship activities organized during the ERASMUS NEON project. Training activities will mainly target students, but specialized training targeting teaching staff will also be organized. Training for students will assume fully developed training modules (developed as described in WP3 and WP4) on technical and entrepreneurial subjects within IoT.

The work package will implement teacher training sessions about innovative teaching methods, such as, for example: remote lab tools, teaching practices, educational trainings, training in prototyping tools, etc.

The deliverables, and their associated tasks, related to WP5 are the following

- D5.1 Report on the training/internships website section (M6).
- T5.1 Creation of a section in the project website where training and internship opportunities are listed.

- D5.2 Report on the framework for training and internships (M11).
- T5.2 Implement framework for student training in cooperation with EU partners and industry.

- D5.3 Report on organized hackathons for students of the region (M19).
- T5.3 Implement framework for student internships in companies.

- D5.4 Report on student training modules on technical and entrepreneurial subjects (M30).
- T5.4 Offer techno-economic, entrepreneurial and IPR related training modules.

- D5.5 Report on teacher training modules (M35).
- T5.5 Implement teacher staff training on technology and modern prototyping tools for IoT.
- T5.6 Implementation of three workshops on IoT and ICT technologies.

The objective of the deliverable D5.2 is to report about the framework for training and internships. In particular, this document summarize the following issues:

i) A description of the stays and internships originally included in the project (Section 2)
ii) A list of agreements between host institutions and home universities under development (Section 3)
iii) The procedure that establishes the characteristics of each stay and internship (Section 4).
iv) The procedure that defines all the process of calling, inscription, selection and difusion of each stay/internship (Section 5).
v) Regulations for selecting candidates for stays and internships (Section 6).
vi) Evidence of framework execution (Section 7).
vii) Summary of the workshop in UNI-KLU (Section 8)

2. Stays and internships included in the project

The project originally agreed on a set of stays and internships, which did not specify any particular work topics or courses. This set has been used as a guideline for the current configuration of calls for stays and internships, which will be expanded in Section 7. In tables 1 and 2 are summarized the original stays and internships proposed both for students and teachers, respectively.

Table 1. Stays and internships for students (number of students x stay time)

		Home university				
		UNC	UNS	UNMDP	UdelaR	UCU
Destination	**UNI-KLU**	2x90 days	2x90 days	-	2x90 days	-
	UC3M	-	-	2x90 days	-	2x90 days
	UNS	2x30 days	-	2x30 days	-	-
	UNC	-	2x30 days	2x30 days	-	-
	UCU	-	-	-	4x25 days	-
	UdelaR	-	-	-	-	4x25 days
	Montevideo	-	1x30 days	1x30 days	-	-
	Buenos Aires	1x30 days	1x30 days	1x30 days	1x30 days	-

Table 2. Stays for teachers (number of teachers x stay time)

		Home university						
		UNC	UNS	UNMDP	UdelaR	UCU	UNI-KLU	UC3M
Destination	**Workshop Montevideo**	3x4 days	2x4 days	2x4 days	-	-	2x4 days	2x4 days
	Workshop Klagenfurt	2x4 days	3x4 days	2x4 days	2x4 days	2x4 days	-	2x3 days
	Workshop Madrid	2x4 days	3x4 days	2x4 days	2x4 days	2x4 days	2x3 days	-

3. Agreements between NEON host and home institutions

It is necessary to sign agreements between the different institutions that are part of the NEON project to be able to carry out stays in such institutions. These agreements are an essential requirement established by each institution in order to be able to receive a student or teacher in one of its facilities.

Some of these agreements already exist, such as those relating to Argentinean universities, which are part of a general agreement through the National Inter-University Council (CIN, Consejo Interuniversitario Nacional).

At the time of writing this report, three agreements are in progress and will be signed soon by both partners:

1) specific agreement for student exchange UC3M-UNMDP

2) specific agreement for student exchange UCU-UNMDP

3) specific agreement for internships UNMDP-INCUTEX

4. Procedure that establishes the characteristics of each stay and internship

A procedure was agreed to establish the characteristics of the stays and internships that will be carried out between the different partners of the project. The procedure is as follows:

- Home and host universities define what, who and when (what: what activity would they do, who: whether undergraduate or postgraduate students, when would the stay be).
- Once the universities have met and agreed, the information is uploaded to a table in Confluence and the resulting stay is disseminated through the Network of Competence website and the media of the home university.
- Once the registration period is over, the selection process starts through a selection commission and corresponding regulations.

5. Procedure that defines all the process of calling, inscription, selection and dissemination of each stay/internship

A procedure was developed to guide the evaluation commissions to ensure the timely and proper fulfilment of their tasks. The main aim of this procedure is to establish the steps and maximum duration of each stage of a call for registration, selection and control of applicants.

Procedure for carrying out a selection and monitoring process for a call for grants/stays within the framework of the NEON project.

The objective of these instructions is to guide the members of the home Universities about how to execute a call for scholarships/stays.

1 – The material to disseminate the call must be generated, clarifying the destination, proposed line of research, date of opening of the call, tentative start date of the stay and duration of the same. Likewise, an Internet address where the extended information of the call will be available must be clarified.

2- The Evaluation Committee of the applicants must be appointed. It must be made up of 2 or 3 professors/researchers from the university of origin and 1 professor/researcher member of the host university.

3- The call must be disseminated through the website of the NEON project, email lists of the university of origin and the social networks that the university of origin uses for this medium. Printouts or screenshots of the aforementioned broadcasts must be made to be used in the reports to be submitted during the course of the project, in order to demonstrate the correct dissemination of the activity.

4- The public call must be open for at least 7 consecutive days, suggesting 14 consecutive days where possible. The opening period is considered to be the interval between the publication of the call and its closing.

5- Once the call is closed, the Evaluation Commission will analyse the applications. It will be at the discretion of the same to request additional documentation if necessary.

6- Those who meet the criteria of the call will be considered as admitted applicants.

7- The commission will have a maximum of 15 calendar days to carry out the evaluation process. As a result of the evaluation, an order of merit will be drawn up based on the call. This will be published through the same channels that would have been used for the original call.

8- Each applicant who is selected for the scholarship/stay must be contacted with the office of each origin and destination University that is in charge of executing the activity.

9- During the duration of the scholarship/stay, members of the University of origin and destination must be available to the selected person to clear up doubts or other questions.

10- At the end of the stay, the Commission that carried out the selection process must receive the scholarship report and submit it for evaluation. Likewise, you must receive the fund accountability report of the activity.

11- The activity will be considered completed once the report has been approved and the fund accountability report approved.

SITUATIONS NOT CONSIDERED IN THIS PROCEDURE
In the event that situations not contemplated in this text, the Commission will be empowered to resolve them according to its criteria.

6. The regulations for selecting candidates for stays and internships

Two set of regulations were developed with the aim of standardising the evaluation of training/internship applications in each partner university. The first regulation was developed to establish the conditions for the evaluation of teachers/researchers. The second regulation was developed for the evaluation of students. Both regulations are reproduced hereinafter.

Regulations for teachers/researchers

The NEON Project offers to teachers/researchers -from its member universities- who wish to upgrade their training, to apply for the present call for grants. Its purpose is to initiate research on topics related to Communications Technologies and the Internet of Things (IoT). Applicants must fulfil the requirements defined in these regulations and submit the information requested in the corresponding forms together with their work plan, accompanied by supporting documentation, and with the endorsements of the competent authority, as indicated in the Instructions for Applicants. The management of the call will be conducted by the institutions that are part of the Project.

1- GRANT FEATURES
   The grants are intended for teachers and researchers who wish to do a stay in an academic

partner of the project. The duration and start of the stay will be established before the start of the call for applications. The application for this scholarship category has no age limit requirement, however, it is important to remember that the use of a scholarship does not imply a current or future employment relationship with the participating Universities, and does not include pension contributions for the beneficiaries.

2- APPLICATION CONDITIONS

- Applicants will be admitted if they work as teachers and/or researchers in some of the participating universities.
- In the case of applicants for grants which include courses in English, it is necessary to present some form of English language proficiency certificate equivalent to B1, typically offered at participating institutions, or to demonstrate fluency in English.

3- REQUIREMENTS FOR PROPOSED ADVISORS

The applicant will have a mentor or supervisor at the host institution, in the form of an advisor or director, who may in turn be accompanied by a co-advisor or co-director. At least one of them must be a teacher/researcher at the institution concerned and at least one must have a Master's or PhD degree. Those who are related to the applicant up to the third degree of family relationship are not eligible to act as tutors/co-tutors.

If the proposed mentor is a retired researcher, it will be mandatory to include an active co-tutor in the grant application in order to contribute to the training of the fellow and to collaborate with the fulfilment of the work plan.

4- APPLICATION SUBMISSION

Candidates must submit their grant application only electronically via the NEON Project website. A paper version of the application is not required. The relevant endorsements will be digitally embedded as an attachment to the electronic submission.

By submitting the grant application, the candidate declares as a SWORN DECLARATION that the information contained therein, as well as the attached documentation and the signatures corresponding to the endorsements included, are reliable. In the event that the information provided is found to be untrue, the application will be withdrawn at any stage of the application evaluation procedure.

Incomplete or late applications will not be accepted. Any documentation attached beyond what is requested or outside the deadlines established in the call for applications will not be considered.

5- APPLICATION EVALUATION

Each university will create a Grant Committee for the evaluation of the applications. This committee will be composed by professors from the applicant's home university and at least one professor/researcher from the host institution. The Grants Committee will check the material submitted in the application in order to discard those cases that do not comply with the conditions set out in these rules. The aforementioned cases will not be included in the evaluation process.

Once the evaluation has been completed, the Evaluation Commission of each Institution will draw up the corresponding order of merit in accordance with the evaluations carried out and will send them to the persons responsible for the Project. In the application evaluation, only the information entered in the registration platform during the period established for this purpose will be considered, in accordance with the schedule. Grants will be assigned taking into account the order of merit and the availability of resources at the beginning of the project.

Each Commission will define the evaluation criteria according to the nature of each call. The following basic evaluation criteria are suggested:

- **Applicant's academic records.**

o **Relevance of his/her line of research and the grant to which he/she is applying.**

o **Interview with the applicant.**

6- GRANTS AWARD

Institutions will have access to the lists of approved and non-approved applications. The order of merit will be published on the website of the NEON Project's grants and internship system on the date established by the calendar.

7- GRANTS POSSESSION

Once the final Resolution has been published on the Project NEON Grants and Internships web page, the beneficiaries must submit the required documentation to receive the grant, respecting the deadline specified in the calendar.

In the event of failure to accept the grant within the specified time, or in the case of resignations during the first month of the grant period, vacancies will be covered in accordance with the criteria adopted by the Institution on the basis of the list of substitutes.

8- GRANT IMPLEMENTATION

8.1- Grant holders' responsibilities

The obligations of the grant holder are>

a. To perform the tasks indicated in the Work Plan submitted.

b. To keep their personal, employment and contact details up to date with the NEON Project Organisation, communicating any changes to these data immediately.

c. Present the Final Report on the established date, with the approval of the advisor(s).

d. Make available to the grant tutors and the Institution all information relating to the development of their work as a grant holder, whenever requested to do so.

e. Disseminate the results of their research through the usual channels of each discipline (publications, presentations at scientific meetings, etc.) making express reference to the fact that the work was carried out within the framework of a NEON ERASMUS PLUS Project Grant.

f. To attend interviews to which they are requested and to provide the elements that are required for better information of the competent bodies of the Institution regarding the development of their work and all procedures inherent to the grant.

g. To participate in the activities that the Institution implements in order to complement their training.

8.2- Final report

The grant holders must submit a Final Report within 30 (thirty) days of the end of the Grant or within the deadline established by the corresponding Institution. The report must have the academic evaluation of the advisers. The report shall contain a summary of the work done, including the degree of compliance with the work plan, the objectives achieved, the results obtained and any other information relevant to the project.

The Commission designated to carry out the selection of grant applicants will also carry out the evaluation process of the final report.

8.3- Advisors' responsibilities

a. To be familiar with, comply with and enforce compliance with all the provisions of these Regulations and to inform the NEON Project Organisation of any transgression thereof.

b. To supervise and assist in the fulfilment of the grantee's Work Plan, its deadlines, corresponding schedule, budget and sources of funding, coordinating it with the project in which he/she is involved.

c. To supervise the grant holder according to the terms contained in the Work Plan, taking responsibility for his or her education, training in research methodology and the dissemination of the results obtained.

d. To certify to the Commission the fulfilment of the fellow's obligations and schedule, in order to be able to pay the corresponding grants. In the event of non-compliance, he/she must notify to the Commission by letter.

8.4- Cancellation, permissions and resignations

a. Cancellation: In the event that the grantee fails to comply with any of the obligations contained in these Regulations, the NEON Project Organisation may cancel the grant at the request of the Institution concerned, whereupon the grantee will no longer receive the grant stipend.

b. Permissions and resignations: The NEON Project organisation, through the respective evaluation commissions of each institution, will authorise permissions at the request of the grantee, endorsed by his or her adviser, with the respective certificates. Similarly, the evaluation committees will determine the actions to be taken in the event of the grantee's resignation or the tutor's resignation.

9 – SITUATIONS NOT INCLUDED IN THESE RULES
In the event of situations not included in these rules, the Commission shall have the authority to resolve them at its discretion.

Regulations for students

The NEON Project offers undergraduate and postgraduate students -from its member universities- who wish to improve their training, to apply for this call for grants. The purpose of the calls is to introduce students to the technologies associated with the Internet of Things (Internet of Things, IoT). Grantees are expected to undertake a stay at another institution within the consortium and to comply with a work plan or programme of activities under the guidance of mentors from the home and host institutions. Travel tickets and per diems will be paid for the stay. Applicants must complete the requirements defined in these regulations and attach the information requested in the corresponding forms, accompanied by supporting documentation, and with the endorsements of the competent authority, as indicated in these regulations. The administration of the call will be conducted by the NEON Project's partner Institutions.

REGULATIONS FOR THE CALL FOR APPLICATIONS

Article 1: Scope
Under the NEON Project, grants will be funded for undergraduate and postgraduate students who wish to increase their training in the areas of Information and Communication Technologies (ICTs) and the Internet of Things (IoT).
Only those who are regular students at the beginning date of the grants will be eligible for these ones.

Article 2: Administration
The home and host institutions of each student shall be responsible for the

management of the reception, evaluation of applications and subsequent administration and monitoring of the Project grants. They shall also define the composition of an Evaluation Commission in charge of the evaluation of the applications, which may apply local criteria per Institution to adapt the grant process to the existing local regulations.

CONDITIONS AND GRANTING

Article 3: Call for applications

Each sending institution will define the most appropriate selection criteria, establishing a reasonable order of merit in terms of academic or thematic relevance. The deadlines for each call will be adjusted according to the dates proposed by the receiving institution.

Article 4: Applicant requirements

The Evaluation Commission will define the particular requirements to be fulfilled by students from an Institution. In the case of applicants for grants which include courses in English, it is necessary to present some form of English language proficiency certificate equivalent to B1, typically offered at participating institutions, or to demonstrate fluency in English.

Article 5: Work plan or activities to be developed

The applicant will apply for a proposed stay and the grantee's work plan, or the description of activities to be developed; will be proposed by the host university. The applicant will be assigned a director at his/her home institution and another at the host institution, who will coordinate the joint monitoring of the grantee.

Article 6: Mentor requirements

The management will preferably be conducted by teachers/researchers from the corresponding institutions (home and host). At least one of them must hold a Master's or PhD degree, or equivalent status. Those who are related up to the third degree of kinship to the grantee may not act as directors.

Article 7: Call administration.

The call for applications will be made through the public channels of each institution, with the corresponding deadlines for registration and resolution.

Registration

Applicants must submit their application electronically via the web application on the NEON Project's grant page. Applicants must complete and submit the corresponding forms, together with the endorsement of the directors of both institutions (home and host). On the deadline for registration, the Institution, through the designated Evaluation Committee, will draw up a record of all those who have registered for the call for applications.

Admissibility

Once the application period has closed, admissibility will be analysed in accordance with the requirements set out in the present regulations. Each Institution shall publish, through the corresponding NEON Project Grants and Internships web page, the list of accepted and rejected applications.

Evaluation

Each university will form a Grant Committee for the evaluation of applications. This committee will be composed of professors from the applicant's home university and at least one professor/researcher from the host institution. The Grants Commission will supervise the process of checking the material submitted in the application in order to discard those cases that do not satisfy the conditions set out in this document. The aforementioned cases will not be included in the evaluation process.

Once the evaluation has been completed, the Evaluation Commission of each Institution will draw up the corresponding order of merit in accordance with the evaluations carried out and will send them to the persons responsible for the Project. In the evaluation of the applications, only the information entered in the registration platform during the period established for this purpose will be considered, in accordance with the established calendar.

Article 8: Evaluation criteria

Each Commission will define the evaluation criteria according to the nature of each call. The following basic criteria are suggested for evaluation:

- Applicant's academic record and degree of progress in his/her career.
- Relationship between the subject of the stay and the student's current degree course.
- Interview with the applicant.

Article 9: Granting

Institutions will have access to the lists of accepted and rejected applications. The order of merit will be published on the website of the NEON Project Grants and Internships system on the date established by the calendar.

Article 10: Grant acceptance

Once the final Resolution has been issued and published on the NEON Project's Grants and Internships web page, the beneficiaries must submit the required documentation for the registration of the Grant, respecting the deadline specified in the calendar.

In the case of non-assumption of the grant within the specified time, or of resignations, the vacancies will be filled according to the order of merit. If there are no more applicants in the order of merit, the call for applications will be reopened to fill the vacancies.

GRANT DEVELOPMENT

Article 11: Grantee obligations

a. Complete the tasks indicated in the work plan or activity program to be carried out.
b. Keep their personal, employment and contact details up to date with the NEON Project organisation, communicating any changes to them immediately, through the authorities of the Institution to which they are linked.
c. Present, on the established date, the Final Report with the endorsement of the directors.
d. To make available to the directors and the Institution all information relating to the development of his/her work as a grant holder, whenever requested to do so.
e. Disseminate the results of their research through the usual channels of each discipline

(publications, scientific meeting presentations, media dissemination, etc.) making express reference to the fact that the work was carried out within the framework of a NEON ERASMUS PLUS Project Grant.

f. To attend interviews to which they are requested and to provide the elements required to inform the competent bodies of the Institution regarding the development of their work and all procedures inherent to the grant.

g. To participate in the activities that the host institution implements in order to complete their training.

Article 12: Final report

Grant holders must submit a Final Report within 30 (thirty) days of the end of the Grant or within the deadline established by the corresponding Institution. The report must have the academic evaluation of the directors. The report shall contain a summary of the work carried out, including the degree of compliance with the work plan, the objectives achieved, the results obtained and any other information relevant to the project.

The Commission designated to evaluate the applicants for the grants will also carry out the evaluation process of the final report.

Article 13: Director's responsibilities

a. To supervise and support the fulfilment of the work plan or activity plan of the grant holder, its execution period, its corresponding schedule, budget and sources of funding, articulating it with the project in which he/she is incorporated.

b. To direct the grant holder according to the terms contained in the work plan or plan of activities to be developed, taking responsibility for his/her education, training in research methodology and for the dissemination of the results obtained.

c. To certify to the institution the fulfilment of the obligations and timetable of the grant holder, in order to be able to make the payment of the corresponding grant amount. In case of non-compliance, the NEON Project organisation must be informed in writing.

Article 14: Cancellation, permissions and exemptions
Cancellation:

In the event that the grantee fails to comply with any of the obligations contained in these Regulations, the NEON Project organisation may cancel the grant at the request of the Institution concerned, whereupon the grantee will no longer receive the payment of the grant.

Permissions and resignations:

The NEON Project organization, through the respective evaluation commissions of each institution, will authorise absences upon request by the grantee and endorsed by his or her directors, with the respective certificates. Similarly, the evaluation committees will determine the actions to be taken both in the event of the grantee's resignation and in the event of the resignation of one of the directors.

SITUATIONS NOT INCLUDED IN THESE RULES
In the event of situations not included in these rules, the Commission shall have the authority to resolve them at its discretion.

7. Evidence of framework execution

A table is currently available on the platform where partners upload information about stay/internship offer. The current offer of activities at the time of preparing this deliverable is transcribed in table 3. The courses and stays available in this table are then used as a guide to prepare the calls for applications and to make the final selection of the beneficiaries.

Table 3. Offer proposed by the NEON partners

Host Partner	Responsible	Type of activity	Oriented to: GS: Grade Students PS: Postgraduate Students T: Teachers/ Researchers	Brief description of the activity	Duration	Approximate start date (Month/Year)
UNC	Graciela Corral Briones	Course	GS, PS	Regular course on Digital Communications.	15 days	03/2022, 03/2023
UNC	Graciela Corral Briones	Course	GS, PS	Regular course on Cognitive Software Defined Radio	15 days	08/2022 08/2022
UNC	Graciela Corral Briones	Teaching training	T	Seminar on Remote SDR Lab	2 days	08/2022
UNC	Graciela Corral Briones	Student training	GS, PS	SDR Lab for IoT applications. The students should take some modules (developed for the NEON project) at their own peace and work on an IoT project	30 days	08/2022 - 10/22 02/2023
UNS	Juan Cousseau	Student training	*GS,PS*	This activity is scheduled with the UNMDP. Undergraduate or postgraduate students are expected to spend a period in the Group of the Dr. Cousseau. It is intended to be carried out by undergraduate or postgraduate students who carry out research tasks in the field. Likewise, it can be articulated with the dictation of a UNS course. In this case, it is expected that the student will be able to complete the final project for the course during the stay.	30 days	11/10/2022
UC3	Ana García Armada	Course / Student training	GS,PS	This activity is scheduled with the UNMDP. It is expected that undergraduate or postgraduate students can attend a stay in the Group of Ing. Garcia Armada. It is intended to be carried out by undergraduate or postgraduate students who carry out research tasks in the field. The stay will be articulated with the teaching of courses offered by the UC3. It is aimed that the student can carry out part of his final degree project or his doctoral thesis during the stay.	90 days	01/02/2023
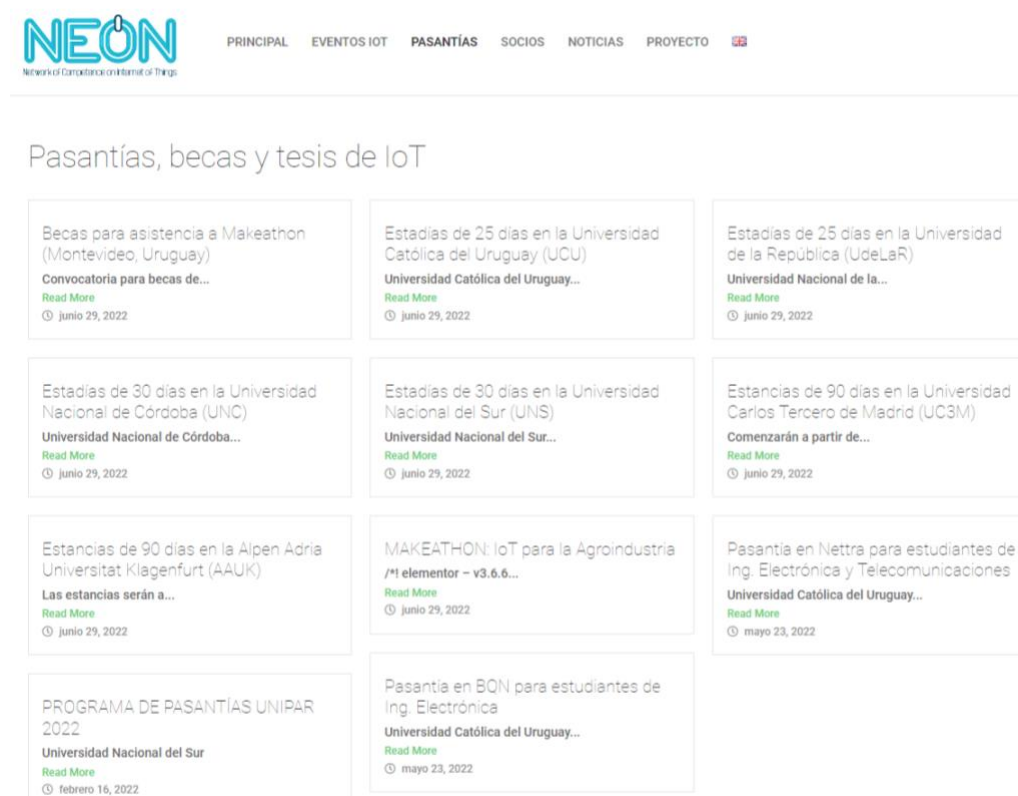
Host Partner	Responsible	Type of activity	Oriented to: GS: Grade Students PS: Postgraduate Students T: Teachers/ Researchers	Brief description of the activity	Duration	Approximate start date (Month/Year)
UCU	Matías Miguez	Course / Student training	GS,PS	Scheduled activity with the UNMDP. A stay is carried out in which the student will attend the IoT in Agribusiness course. Likewise, it is aimed that the students carry out activities in the participating laboratories.	30 days	01-02-2023
UdelaR	Julián Oreggioni (juliano@fing.edu.uy)	Research stay	GS,PS (from UNS or UNMDP)	Internship in project "System to characterize sheep activity". The system under development is based on a collar-type device that, through acceleration and geographical location data, is capable of identifying the sheep's activity (whether it is walking, running, lying down, etc.). The device uses the Icarus board from Actinius v1. Depending on the student's profile, the specific date and the duration of the stay, the activities to be carried out could include: 1. Embedded software development for Nordic platform with Zephyr. 2. Development of new features to the collar (for example, adding SD memory and modifying the current data storage system) 3. Development of an alternative data recording system in sheep based on a cell phone and an App. 4. Test of acceleration signal processing algorithms and geographic location to identify sheep activity, and may include participation in experiments with animals to record activity. 5. Commissioning of the system in a productive site. The internship may open up opportunities for postgraduate thesis. Capacity: 1 or 2 students Student profile: undergraduate or graduate student in electronic engineering or similar, with knowledge of embedded software programming using the C language and experience in hardware development for embedded systems. Experience with Nordic devices (particularly nRF9160), real-time operating systems (particularly with Zephyr) and signal processing will be valued, but not exclusive.	3 months: 2 months virtual with weekly meetings via zoom and 1 month in person in Uruguay.	Starting from 01-Aug-2022 and ending by 30-Jun-2023

Host Partner	Responsible	Type of activity	Oriented to: GS: Grade Students PS: Postgraduate Students T: Teachers/ Researchers	Brief description of the activity	Duration	Approximate start date (Month/Year)
Udelar	Leonardo Steinfeld	Course	GS, PS (from UNS or UNMDP)	Undergraduate/postgraduate course with a duration of 15 weeks and an average dedication of 8 to 10 hours per week. (Undergraduate Program: https://www.fing.edu.uy/es/node/46961, Postgraduate Program: https://www.fing.edu.uy/en/node/46682) It is proposed to attend one part remotely and another part in person. Almost all of the theoretical talks and laboratories, or part of the laboratories and the final project, can be attended in person. Hardware is required but a loan can be arranged for a limited time for use at the home university. It must be combined with attendance at another course or other proposed activities that have a compatible workload.	30 days	01/08/2022 to 08/10/2022
Udelar	Leonardo Steinfeld	Course	GS, PS (from UNS or UNMDP)	Implementation of an IoT application involving device programming (ARM-Cortex microcontroller, based on Arduino and/or FreeRTOS), LoRaWAN and NB-IoT technologies with MQTT communication to an IoT platform for data visualization, etc. (ThingsBoard, Ubitdots or similar). To become familiar with the subject, the laboratories of the postgraduate and permanent education course "Technologies for IoT" will be held during the first semester of 2022. There is the possibility of accrediting the activity by passing the aforementioned course. Depending on the student's profile, the activity may include working with the course faculty in the discussion and implementation of modifications to the course laboratories.	30 days	01/08/2022 to 01/11/2022
Udelar	Leonardo Steinfeld	Research Stay	GS ,PS (from UNS or UNMDP)	Power measurement of low-power devices, such as wireless sensor network nodes or Internet of things appliances, is crucial to estimate their lifetime when batteries power them or to design their energy harvesting system. Typically these devices have very low current consumption when they are idle (using sleep modes of a few microamps) and relatively high peak current consumption when transmitting or receiving data (tens	30 days	01/08/2022 to 01/11/2022

Host Partner	Responsible	Type of activity	Oriented to: GS: Grade Students PS: Postgraduate Students T: Teachers/ Researchers	Brief description of the activity	Duration	Approximate start date (Month/Year)
				of milliamps) for short periods (a few milliseconds). The high dynamic current range and high bandwidth make measurement a non-trivial task. Besides, the EEMBC consortium, which develops performance benchmarks for hardware and software, provides multiple test profiles (typical application software) and a methodology for measuring energy consumption and evaluating the hardware platform according to its energy efficiency. Previous works in the research group have evaluated the use of relatively low-cost equipment. The objective of the internship is to become familiar with the R&S®NGU201 source measure unit, acquired recently with funding from NEON, and characterize the power consumption of IoT devices. The EEMBC test profiles could be used as examples of applications.		
UdelaR	Benigno Rodríguez	Course / Research Stay	PS	It is a course aimed at postgraduate students who have already taken a basic course on Antennas and Propagation. In this course the student will become familiar with antenna design techniques, using the professional tool "Computer Simulation Technology" (CST). The course is taught in mixed modality (the student chooses whether the classes are taken face-to-face or virtual, and can even alternate the modality). The course consists of 4 hours. weekly theory sessions for a month and a half (from 12/9/22 to 31/10/22), during which the student becomes familiar with the CST tool and then passes the course through the guided development of a design project of antenna and oral defense of this. In case of not taking another complementary activity to this course during the internship, the scope of the course may be extended by carrying out a deeper research and design instance on an antenna of	30 days	12/09/2022 to 31/10/2022

Host Partner	Responsible	Type of activity	Oriented to: GS: Grade Students PS: Postgraduate Students T: Teachers/ Researchers	Brief description of the activity	Duration	Approximate start date (Month/Year)
				your choice.		
UNS	Juan Cousseau	Course / Student training / research stay	GS or PS (from UNC)	This activity is coordinated with UNC. Undergraduate or postgraduate students are expected to spend a period at UNS laboratories on IoT. It is intended to be carried out by undergraduate or postgraduate students who carry out research tasks in the field.	30 days	Beginning 09/2022

This scholarships and stays offer was published at the website of the project http://neon-iot.org/index.php/es/pasantias-becas-y-tesis/ (figures 1 and 2, in Spanish and English, respectively).

Figure 1. Scholarships and stays offers at the NEON website (in Spanish)
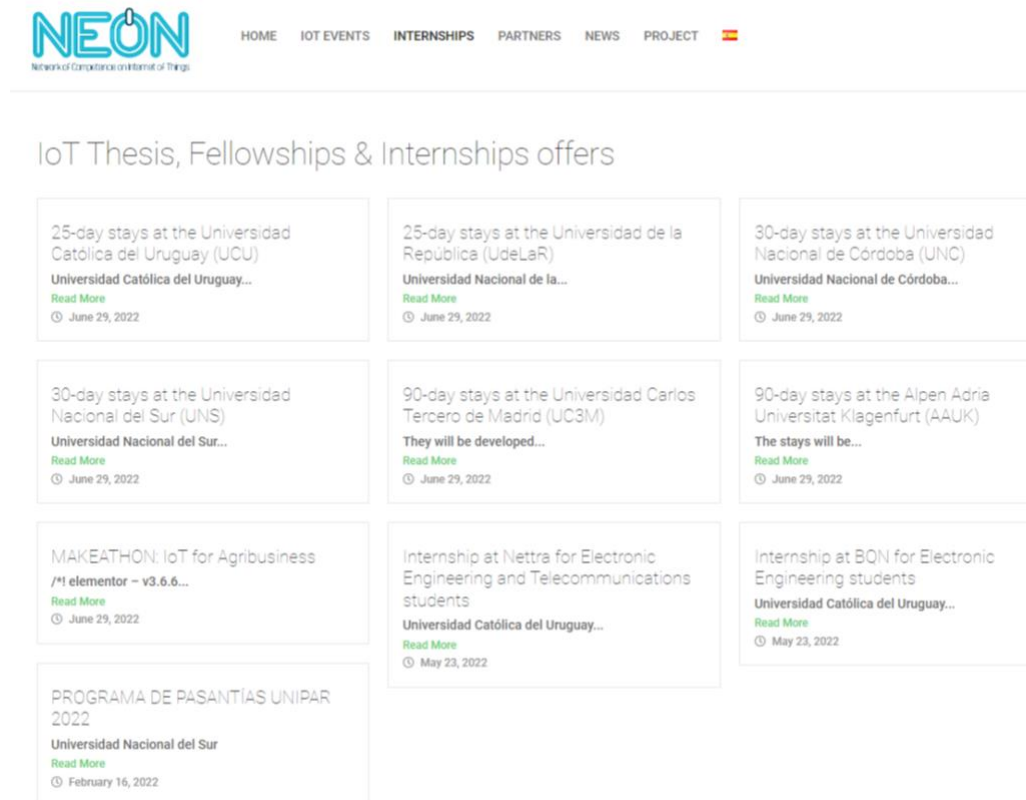
Figure 2. Scholarships and stays offers at the NEON website (in English)

In order to disseminate events and grant opportunities, promotional material was created and used on social media, websites and mailing lists. One of the events programmed that will be held in the secod half of 2022 is the Makeathon in Montevideo. This event is aimed for grade students and the topic of work is the application of IoT to solve agroindustry challenges and problems. In figures 3 to 10 are reproduced some of the promotional materials used. As the event is intended for a Spanish-speaking audience, al the promotional material is written in that language.

Figure 3. Promotional flyer used for the Makeathon IoT for Agroindustry, to be held at Montevideo in october of 2022.
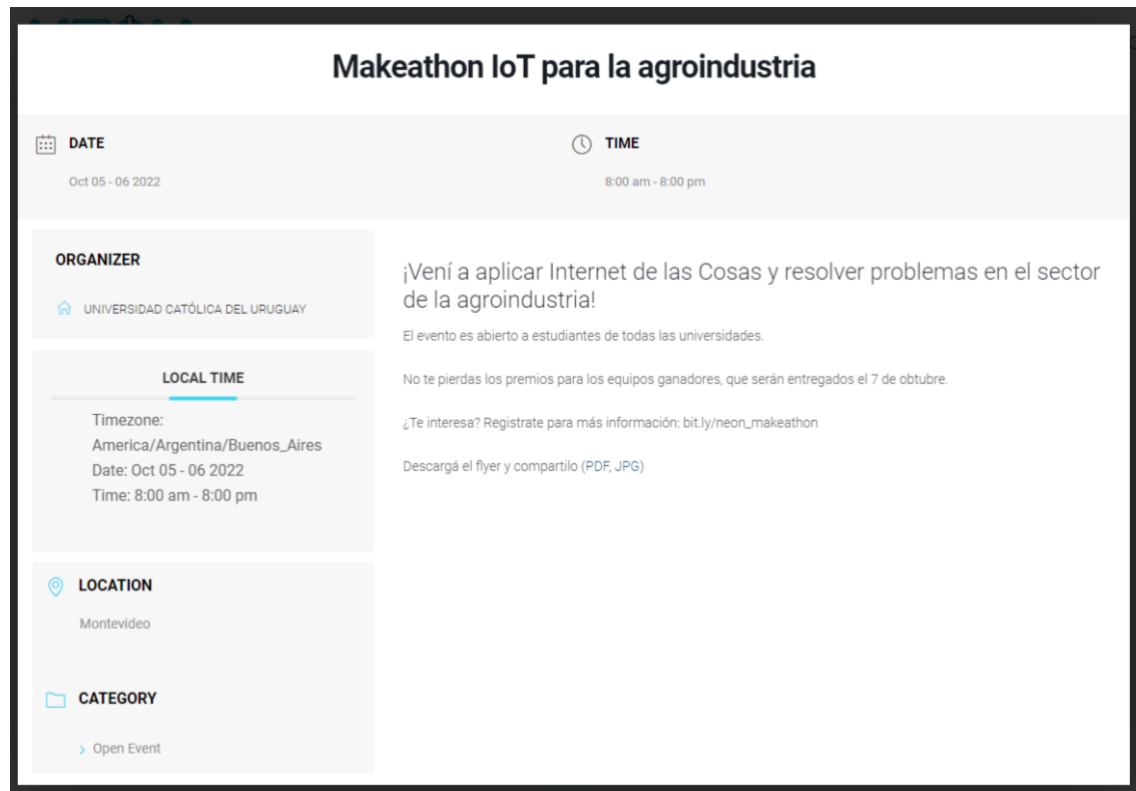
Figure 4. Promotion of the Makeathon IoT for Agroindustry, to be held at Montevideo in october of 2022, in the NEON website.
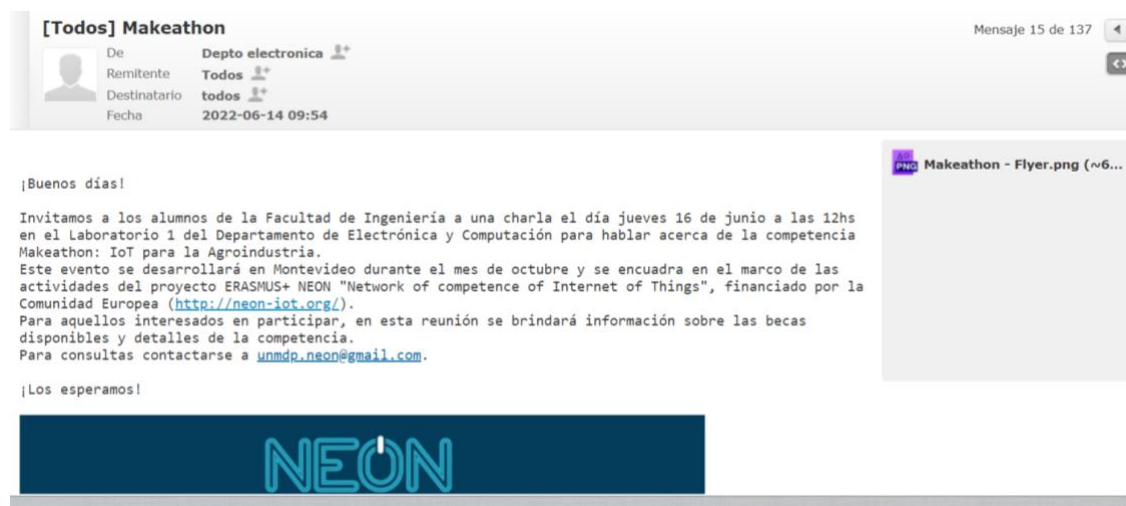
Figure 5. The event was broadcasted using the official mailing list of the Engineering Faculty of UNMDP.

Figure 6. Flyer published in the Facebook page of the students of the Department of Electronics and Computing of UNMDP.
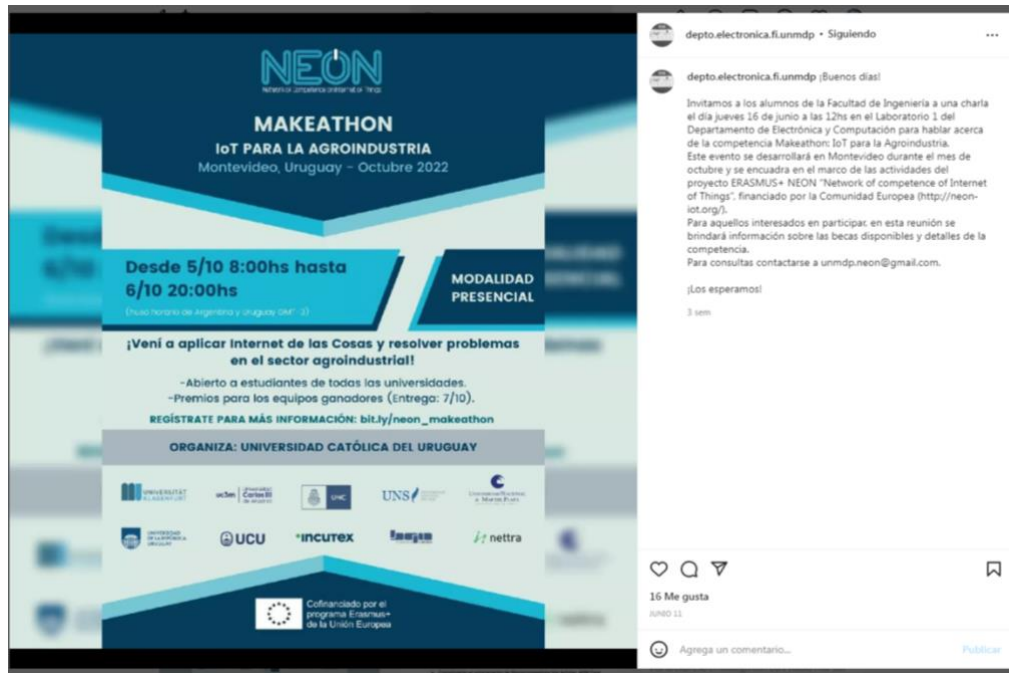
Figure 7. Melisa Kuzman, a staff member of the UNMDP and project NEON, gave an informative talk for those interested in the event. The activity was promoted through social networks and mailing lists from the faculty and university.
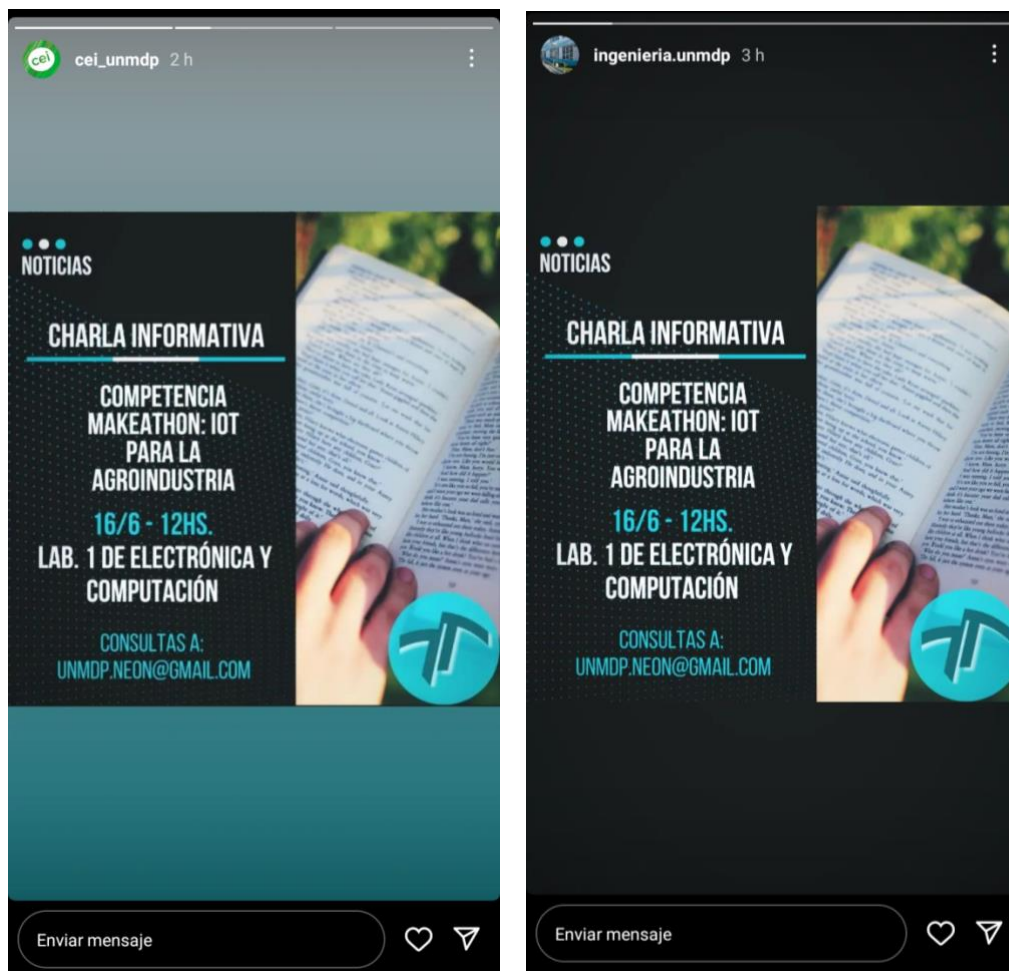

Figure 8. Instagram stories of the agrupation of students of the engineering faculty of the UNMDP (left) and the engineering faculty of the UNMDP (right).
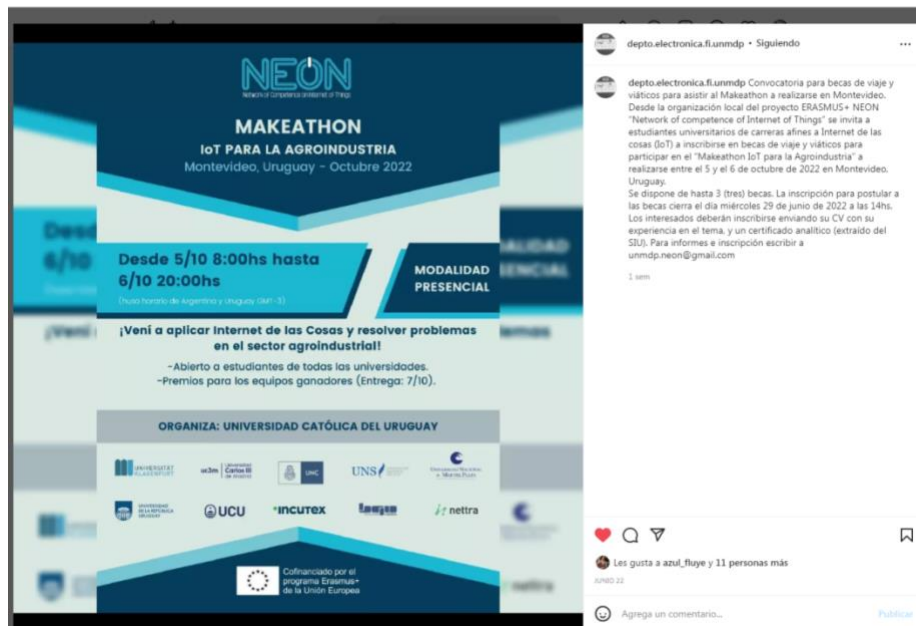
Figure 9. Instagram post of the Department of Electronics and Computing of UNMDP.

Figure 10. Informative event held on June 16, 2022 at the engineering faculty of UNMDP.

Besides the event in Uruguay, a second call is in process, in this case focused on the selection of two candidates for 30 days stays in the UNS (Bahia Blanca). An informative talk was held on June 30, 2022 in the engineering faculty of the UNMDP. These stays include a course on Narrowband IoT and practical work in onoe of the laboratories of the UNS. Figures 11 to 14 show some of the promotional materials used for this call.

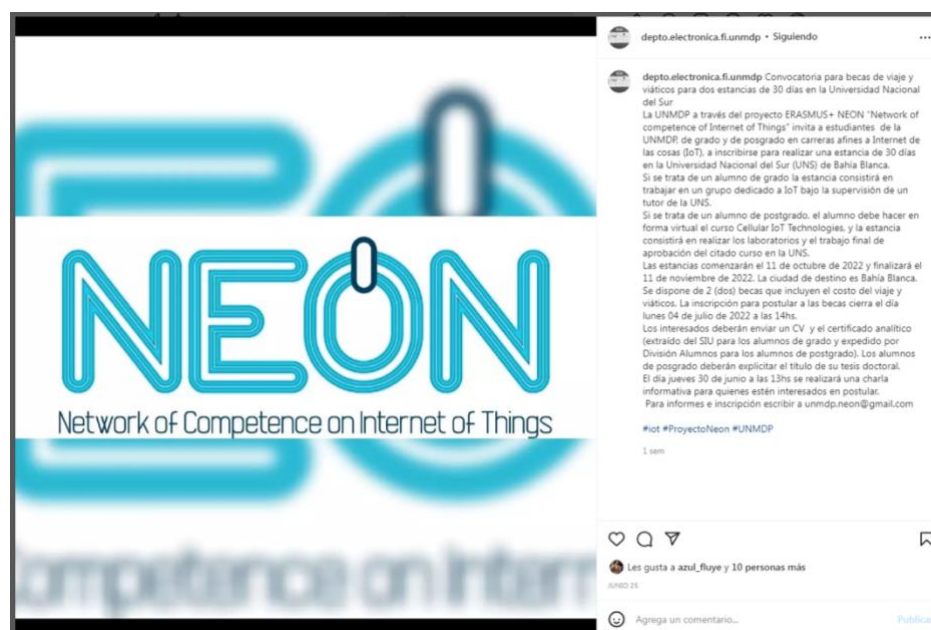Figure 11. In this case the scolarships were also promoted using the Facebook and Instagram of the students .
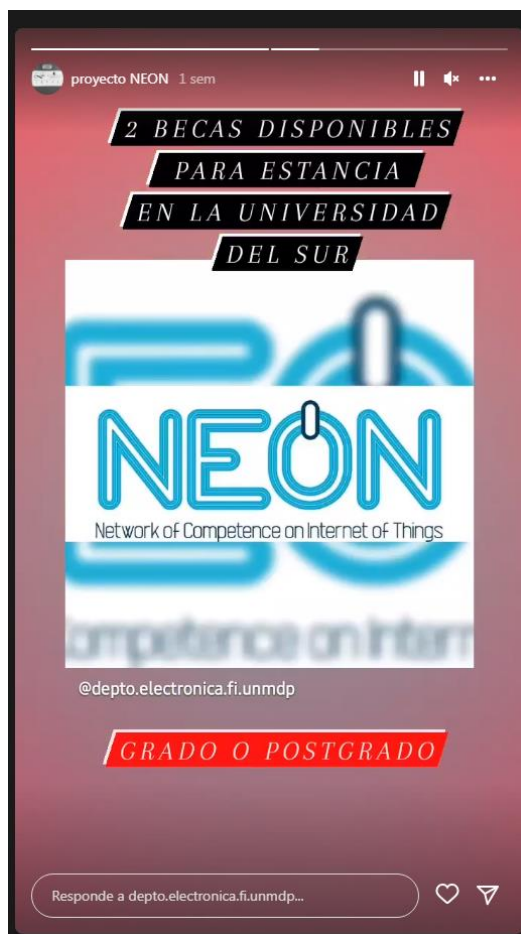

Figure 12. Instagram post promoting the stay at UNS.

Figure 13. Instagram story promoting the stay at UNS.

8. Workshop on teaching methodologies for IoT (UNI-KLU)

The task T5.6 of WP5 established the implementation of three workshops on IoT and ICT technologies. One of them was organized by UNI-KLU, and it was devoted teaching methodologies for IoT. The original objectives included an exchange about pilot courses and pilot labs, a discussion about pilot courses and pilot lab structures, pedagogical and methodological contributions and the sharing of survey results.

Due to the contingencies caused by the covid19 pandemic during year 2021, it was impossible to host the kick-off meeting of the NEON project at UNI-KLU. For this reason, both this delayed meeting and the workshop that was committed to in WP5 were held in May 2022. The entire event extended over four days, which are summarised as follows

Day 1 (02.05.2022 - Project Meeting)
Welcome message to attendees, followed by a short Introductory presentation by each partner in attendance. Next was the Project Status presentation by Prof. A Tonello followed by a short discussion. The second half of the day was dedicated to status updates of the Work Packages WP2 (Development of a network of competence on IoT), WP6 (Quality Control and Monitoring) and WP7 (Dissemination and exploitation of project outcomes).

Day 2 (03.05.2022 - Workshop on Teaching Methodologies for IoT) The workshop commenced with Invited Talks from Academics & Industry Experts in the field of IOT. The invited speakers were: 1) Lorenzo Vangelista (University of Padova, Italy) - Teaching IoT and Smart Cities at Univ. of Padova: my experience from last 7 years; 2) Stefan Pasterk (University of Klagenfurt, Austria) - Didactical Aspects for Teaching IoT; 3) Gleb Radchenko (Silicon Austria Labs, Austria) - Industrial IoT and Fog Computing Support of Digital Twins The second part of the day was dedicated to sharing teaching experiences by representatives of the partner universities.
Day 3 (04.05.2022 - Workshop on Teaching Methodologies for IoT) Visit to Infineon in Villach. In the company, the participants had opportunities to get familiar about: • General information about by the IoT recent technologies and market (by Davide Chiola); • RADAR, Time-of-Flight (ToF), CO_2 sensors used in IoT applications (by Mathias Wolfmueller). The second half of the day had all participants forming NEON Working Groups to discuss their Ideas, Proposals, Issues faced & Solutions arising in the areas of Teaching, Student Engagement, Internships and Labs & Continuous Education.
Day 4 (05.05.2022 - Project Meeting) · List of actions agreed upon by the partners and discussion on the upcoming mid-term report as well as planning the next Project Meeting & Workshop under Project NEON. - Status updates of the Work Packages WP3 (Teaching methodologies, material and modernization of study programmes on IoT), WP4 (Development and implementation of laboratories), WP5 (Training and internship implementation) and WP8 (Project coordination and management).

9. Conclusions

In this document was described the framework for the implementation of training and internships. A brief summary has been provided, including a short description of proposed training activities and workshops that are part of project NEON. Training topics were focused to different fields that are important for future IoT engineering development, and therefore necessary for the training of future engineering graduates. At the moment of preparing this report are programmed at least 13 different offers for stays and internships (see Section 7). The Covid 19 pandemic delayed the organisation of the student training events, causing that most of the training activities will start in the second half of 2022 or the first half of 2023.