

Co-funded by the  
Erasmus+ Programme  
of the European Union



# Multidisciplinary Real Life Problem Solving

## Sesión Informativa para Estudiantes

Lugar: Edificio A3. Sala de Proyectos (A3-158)

Fecha y hora: Jueves 26 de abril, 16:00h

**UJa.**  
Universidad de Jaén



# DESCRIPCIÓN DEL PROYECTO



## *HEIBus - Smart HEI-Business collaboration for skills and competitiveness*

HEIBus project develops **smart and innovative** new methods including **virtual** implementations for HEI-company cooperation for mutual benefit.

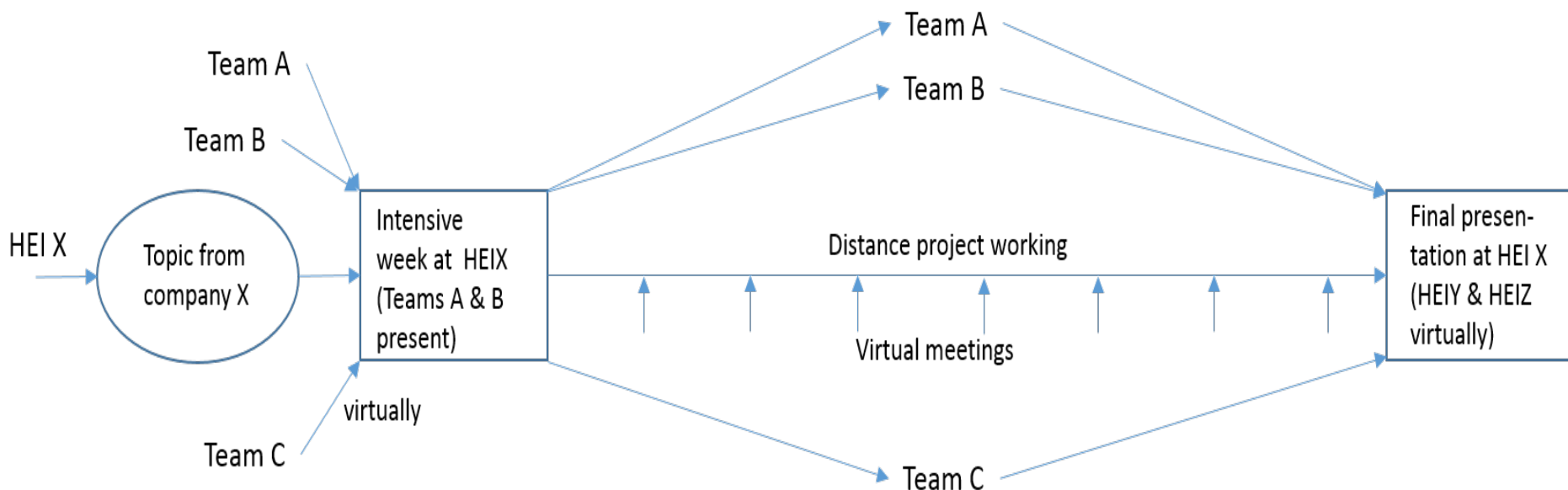
### **Multidisciplinary Real Life Problem Solving by students (RLPS)**

- Students from different study programs (e.g. Mechanical Engineering, Logistics, Technical Management, Industrial Business and Business) and nationalities form mixed groups
- Three groups were given the same real-life problem by a company
- Student groups find solutions for the problem and in the end the company selects a winning solution



# DESCRIPCIÓN DEL PROYECTO

## HEIBus - Smart HEI-Business collaboration for skills and competitiveness



Team A: 2 students from HEIX + 2 from HEIY and 2 from HEIZ

Team B: 2 students from HEIX + 2 from HEIY and 2 from HEIZ

Team C: 2 students from HEIX + 2 from HEIY and 2 from HEIZ



# PROJECT 4: FESTOOL



HEIBus WP3

## Real Life Problem Solving Project Nr. 4

Project Partners:

- Esslingen University, Germany
- Miskolc University, Hungary
- Jaen University, Spain
  
- FESTOOL GmbH, Germany

Project Task:

Create New Product Ideas for the  
FESTOOL Product Range by using a  
very agile Innovation Process.



## Project 6

P5 University of Jaén (UJA) Host UNI

Mrs. Silvia Satorres Martínez

P1 University of Applied Sciences, Finland (JAMK)

. Mr. Jorma Matilainen & Mrs. Anneli Kakko

P2 Technical University of Cluj Napoca (TUCLUJ)

. Mr. Ciprian Lapusan

4 students & 1 supervisor from P1 & P2 travel to P5/Jaen, Spain



## ISR (Sensor Integration & Robotics)

<http://www.isr.es>

The Start-up Sensor Integration and Robotics, also known as ISR, was born in 2016 as a spin-off of the University of Jaén, Spain. Located within the context of the Research Group of Robotic, Automation and Computer Vision, the company has an extensive experience in the development of new technological solutions and products based on sensor integration and advanced automation.

## PROJECT 6: ISR



### Products and Services

The main focus of the company is the industrialization and commercial exploitation of advanced solutions in the field of automation and process control applied to all economic sectors



AGRO SECTOR

One of ISR's business lines is to develop new advanced modeling and automatic control techniques, in conjunction with new sensory systems, in order to offer products and services of high quality in terms of health and human or consumer perception, as is the EVOO



QUALITY CONTROL

ISR is specialized in the development of new automatic inspection setups for controlling different kind of parts or elements in the industry



## PROJECT 6: ISR



### Products and Services

The main focus of the company is the industrialization and commercial exploitation of advanced solutions in the field of automation and process control applied to all economic sectors



It is the market for which ISR is mainly oriented; developing advanced automation setups

AUTOMOTIVE SECTOR



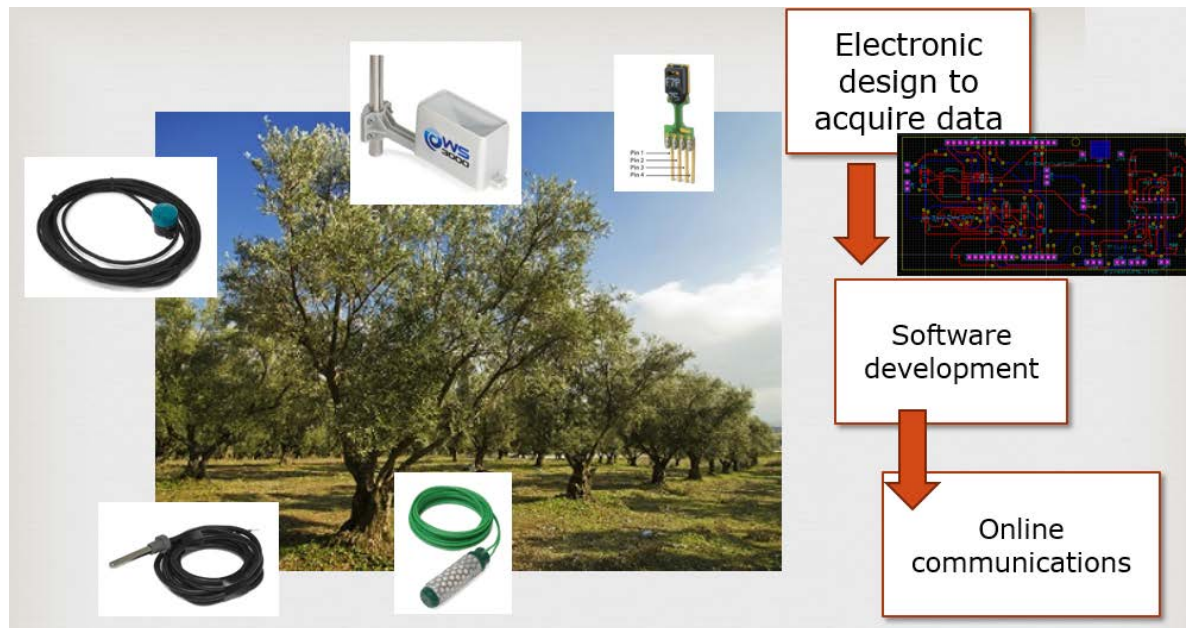
We are currently developing systems to automatize hand operations such as inventory, handling or trazability process

LOGISTICS SECTOR



## PROJECT 6: ISR

- **Title:** Remote environmental monitoring of agricultural features
- **Objectives:** Design, construct and program a multisensor device to acquire agroclimatic information of olive trees or other type of crops
- **Student profile:** Mechanical degree, electronics degree and computer science



- **Detailed description:**

The aim of this project is to develop a local monitoring system with remote storage of agroclimatic information of a particular crop (to be defined by every project team). The system will be based on Raspberry Pi and the following issues have to be solved: electronic circuit design to adapt data obtained from sensors, mechanical design to isolate and protect the electronic devices and software applications development (local monitoring and remote storage). Electronic and mechanical designs will be implemented using PCB and 3D printers, respectively.

The monitoring system should include, at least, the following sensors: humidity and ambient temperature sensor, humidity and soil temperature sensor, solar radiation sensor and computer vision sensor (2D camera working in the visible spectra). Basic computer vision algorithms will be implemented to detect the state of the fruit or other useful information.

The connectivity for the remote storage will be Wi-Fi and the power supply will be cable connected. Additional modifications to include power supply and batteries will be positively considered.

- **Expected results:**

Every project team has to design, develop, program and install a monitoring system in a particular crop. It is also expected that the acquired information by the sensors has to be remotely available.

# PROJECT 6: ISR



## TIMING

April 2018							
No.	Mo	Tu	We	Th	Fr	Sa	Su
13							1
14	<u>2</u>	3	4	5	6	7	8
15	9	10	11	12	13	14	15
16	16	17	18	19	20	21	22
17	23	24	25	<u>26</u>	27	28	29
18	30						

May 2018							
No.	Mo	Tu	We	Th	Fr	Sa	Su
18		1	2	3	4	5	6
19	<u>7</u>	8	9	10	11	12	13
20	14	15	16	17	<u>18</u>	19	20
21	<u>21</u>	<u>22</u>	<u>23</u>	<u>24</u>	25	26	27
22	<u>28</u>	29	30	31			

September 2018							
No.	Su	Mo	Tu	We	Th	Fr	Sa
35							1
36	2	<u>3</u>	4	5	6	<u>7</u>	8
37	9	10	11	12	13	14	15
38	16	17	18	19	20	21	22
39	23	24	25	26	27	28	29
40	30						

October 2018							
No.	Su	Mo	Tu	We	Th	Fr	Sa
40		<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	6
41	7	<u>8</u>	9	10	11	12	13
42	14	15	16	17	18	19	20
43	21	22	23	24	25	26	27
44	28	29	30	31			

- 26/04: Opening time for student application
- 18/05: Deadline for students application
- 21/05-24/05: Student selection time
- 07/09: Complete Schedule available
- 01/10-05/10: Intensive week



# PROCESO DE SELECCIÓN



## REQUISITOS

### Ficha de participación

(Mandar rellena a la siguiente dirección: [aguesada@ujaen.es](mailto:aguesada@ujaen.es), indicando en el asunto: Alumno/a interesado/a en HEIBUS)

<b>Datos de Contacto</b>			
Nombre y Apellidos			
D.N.I.	E-mail		
Titulación y curso		Teléfono	
Fecha Estimada de finalización de los estudios			
Preferencia de proyecto		Andaltec (Jaén)	ITAB-PIKVAL (Finlandia)
<b>Motivación</b> (Escribe en 200 palabras máximo por qué quieres participar en este proyecto)			
<b>Aportación</b> (Escribe en 200 palabras máximo qué piensas que tú puedes aportar a este proyecto)			
<b>A destacar</b> (Escribe en 100 palabras máximo otros aspectos que te gustaría trasladar a los que realizan la selección del equipo que desarrollará este proyecto. Aspectos relacionados con tus capacidades, tu formación en otros aspectos que consideres que deberían tenerse en cuenta así como tu capacidad de esfuerzo y compromiso)			
<b>Fecha y Firma</b>			

(No escribir más de dos folios)

Adjuntar: CV, nota informativa de tu expediente académico y certificado del nivel de inglés

- NO finalizar los estudios antes de Diciembre de 2018 ni tener prevista ninguna ausencia hasta esa fecha (Erasmus o similar)
- Alto nivel de inglés (recomendable B2 o más)
- Capacidad de trabajo en equipo
- Conocimientos básicos sobre alguno de los temas propuestos

## PROCEDIMIENTO

**Rellenar** la ficha de participación

(se descarga aquí <http://goo.gl/yGbZ2i>)

**Enviar** : [satorres@ujaen.es](mailto:satorres@ujaen.es) antes del **18 de mayo de 2018**

**Adjuntar:**

- CV
- Nota informativa del expediente académico
- Certificado Oficial acreditativo de nivel de inglés



## RECONOCIMIENTO DE CRÉDITOS

### → **Estudiantes de Máster:**

Certificación de la actividad

### → **Estudiantes de Grado:**

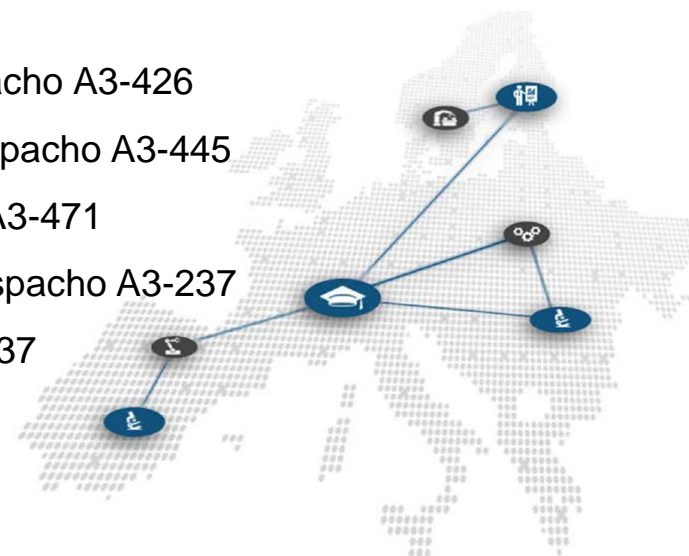
- ❑ Certificación de la actividad
- ❑ Si aún no han cursado las prácticas curriculares ([150 horas asignatura de 6 créditos ECTS](#))
  - Como prácticas curriculares en la dirección de la EPSJ.
  - Como prácticas curriculares en ISR.
- ❑ Si han cursado las prácticas curriculares ([25 horas 1 Créditos ECTS](#))
  - *Hasta 6 créditos optativos que el estudiante puede reconocer por otras actividades.*



# ¡Gracias!

## Personas de Contacto:

- Silvia Satorres Martínez, [satorres@ujaen.es](mailto:satorres@ujaen.es); 953213381; Despacho A3-426
- Elisabet Estévez Estévez, [eestevez@ujaen.es](mailto:eestevez@ujaen.es); 953212167. Despacho A3-445
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- Ángela Medina Quesada, [aquesada@ujaen.es](mailto:aquesada@ujaen.es), 953212335. Despacho A3-237
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[www.heibus.eu](http://www.heibus.eu)



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