

R.8.2. 2 training workshops

for the Project Education 4.0: Living Labs for the Students of the Future (LLSF)

Contract number 2021-1-RO01-KA220-HED-000032176

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Project:	Education 4.0: Living Labs for the Students of the Future (LLSF)
Action Type:	KA220-HED - Cooperation partnerships in higher education
Contract number:	2021-1-RO01-KA220-HED-000032176
Responsible:	National University of Science and Technology POLITEHNICA Bucharest



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



List of participants

Participant No *	Participant organisation name	Acronym	Country
1 (Coordinator)	National University of Science and Technology POLITEHNICA Bucharest	UNSTPB	RO
2	Universidade NOVA de Lisboa	NOVA	PT
3	Universita Politecnica delle Marche	UPM	IT
4	Universidad Nacional de Education a Distancia	UNED	ES
5	Tel Aviv University	TAU	IL

Revision history:

Rev	Date	Partner	Description	Name
1	22/Jan/2025	NOVA	Final draft	Joao Sarraipa

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LTTA C1 (18-22 September 2023): Train the Trainers Education Week

Day 1: Big Data and Data Visualization (September 18th)

- Trainers: Dorinel Filip, Bogdan Mocanu, Florin Pop, Radu Ciobanu, Catalin Negru, Ciprian Dobre
- Sessions included:
 - Challenges in Big Data analysis.
 - Research reproducibility and data visualization techniques.
 - Tools like Jupyter Notebooks for data cleaning and plotting.
 - Geographic data analysis and distributed learning platforms like EduGAIN.

Day 2: Remote Access and Data Acquisition Systems (September 19th)

- Trainers: José Ferreira, João Sarraipa, Ricardo J. Goncalves
- Sessions explored:
 - Fundamental components and deployment of data acquisition systems.
 - Working with microchips and distributed data systems.
 - Serial and parallel communication methods.

Day 3: E-Learning and IoT Cloud Management (September 20th)

- Launch of the **E-Learning Smart Digital Labs** platform.
- Trainer: Tal Soffer
 - Sessions on pedagogical models and practical tools for virtual labs.
- Transnational project meeting to address administrative and academic issues.

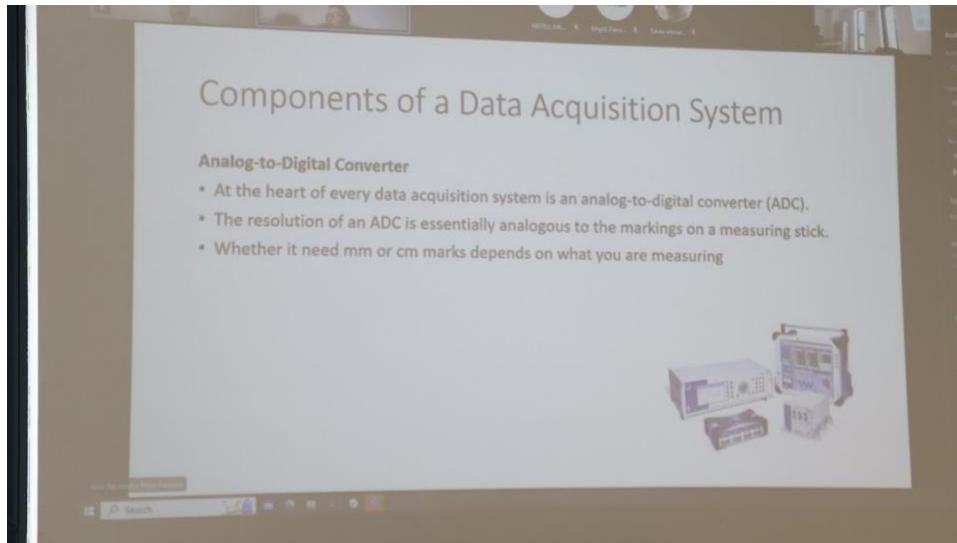
Day 4: Digital Signal Processing and Measurement Systems (September 21st)

- Trainers: Susanna Spinsante, Stefania Cecchi, Alessandro Terenzi
- Key topics included:
 - Introduction to sensors, measurements, and acoustic analysis in a semi-anechoic chamber.
 - Hands-on activities with remote measurement instruments.

Day 5: IoT Management and AI Integration (September 22nd)

- Trainers: Agustin C. Caminero, Rafael Pastor, Antonio Robles
- Sessions focused on:
 - Cloud management for IoT fleets.
 - Integration of AI methods with IoT datasets.

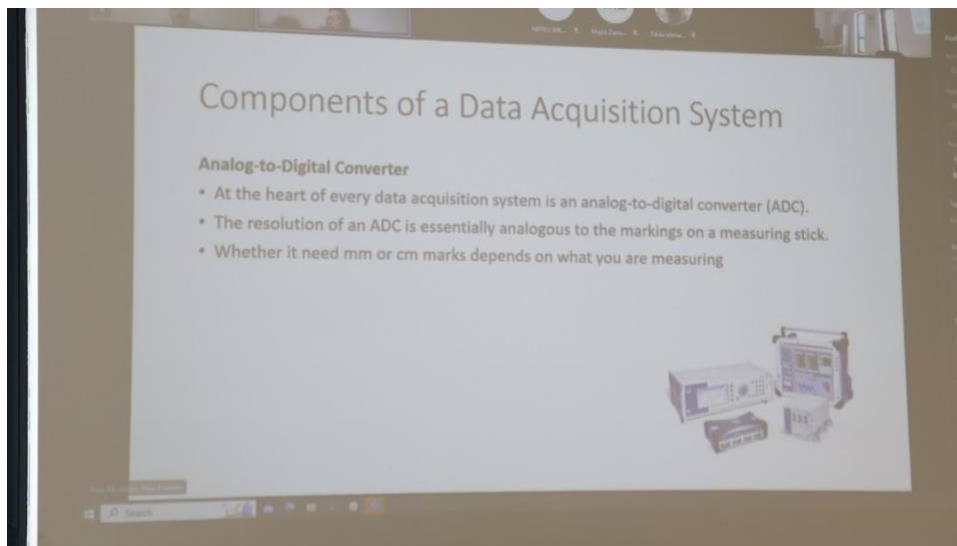














LTTA C2: Students Winter School and Living Labs for the Industry

Date: October 7-11, 2024

Location: NOVA Lisbon and Online

The second Learning, Teaching, and Training Activity (LTTA) of the Erasmus+ project *Living Labs for the Students of the Future (LLSF)* was a comprehensive five-day event hosted by NOVA Lisbon. The event combined the *Students Winter School* and *Living Labs for the Industry: Skills for the Fourth Industrial Revolution* to enhance participants' knowledge and skills in cutting-edge technological domains. This hybrid event featured diverse sessions, workshops, and project presentations, providing a platform for collaboration between academia and industry experts.

Day 1: Introduction to Advanced Audio Topics and Robotic Labs

- **UnivPM (Online):** Advanced audio processing by Prof. Stefania Cecchi and Dr. Alessandro Terenzi.
- **NOVA:** Hands-on activities in the Remote Robotic Cell Lab with Prof. André Rocha.

Day 2: Project Presentations and IoT Applications

- **NOVA:** Presentation of groundbreaking projects, including:
 - **COMMUNITAS** (Joao Martins)
 - **Smartbear** (Carlos Agostinho)
 - **XpanDH** and **xShare** (Maria Marques)
 - **DS4HEALTH** (Ricardo ?)
 - **FITTER-EU** (Fernando Ferreira)
- **UNED:** Cloud management of IoT fleets by Prof. Agustin Caminero.

Day 3: AI and Data Acquisition Solutions

- **NOVA:** Advanced data acquisition and AI solutions, including:
 - **AIDEAS** (José Ferreira)
 - **AgileHand** (Jorge Calado)
 - **AI-DAPT** (Paulo Figueiras)

- **CYBERSECPRO** (Ruben Costa)
- **YachaY** (Joao Sarraipa)
- **EPAI** (Emmanuelle Restrepo)
- **UNED**: Integration of AI methods for IoT applications by Prof. Llanos Tobarra.

Day 4: Reproducible Research and Virtual Labs

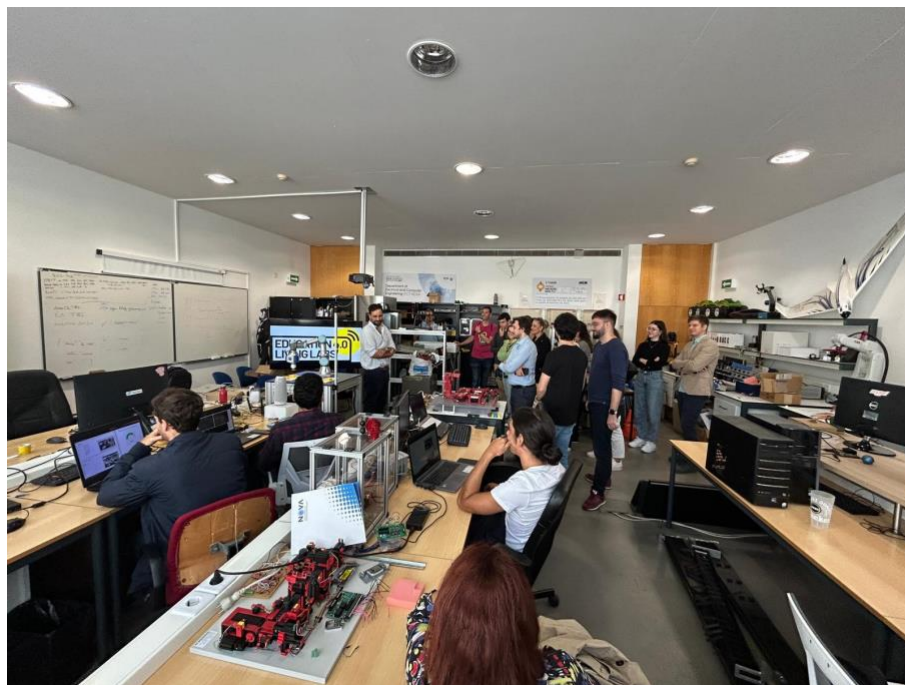
- **UPB (Online)**: Reproducible research insights by Prof. Radu-loan Ciobanu.
- **LLSF Virtual Lab**: Toolkit demonstrations led by Joao Sarraipa.
- **UnivPM (Online)**: Demonstrations on liquid instruments for sensors by Susanna Spinsante.

Day 5: Synergies Between Projects

- Dedicated sessions on collaborative synergies across multiple projects, chaired by key representatives from:
 - **SmartBear, XPandH, AIDEAS, AgileHand, SI-DAPT, FITTER-EU, xShare, COMMUNITAS, Herit4Ages.**









Types of Robots - Mobile Robots

Property: Bastian Solutions

(From: <https://www.youtube.com/watch?v=6L-V4stUcmM>)

© André Dionisio Rocha 2024

NVA NONA SCHOOL OF SCIENCE & TECHNOLOGY

27

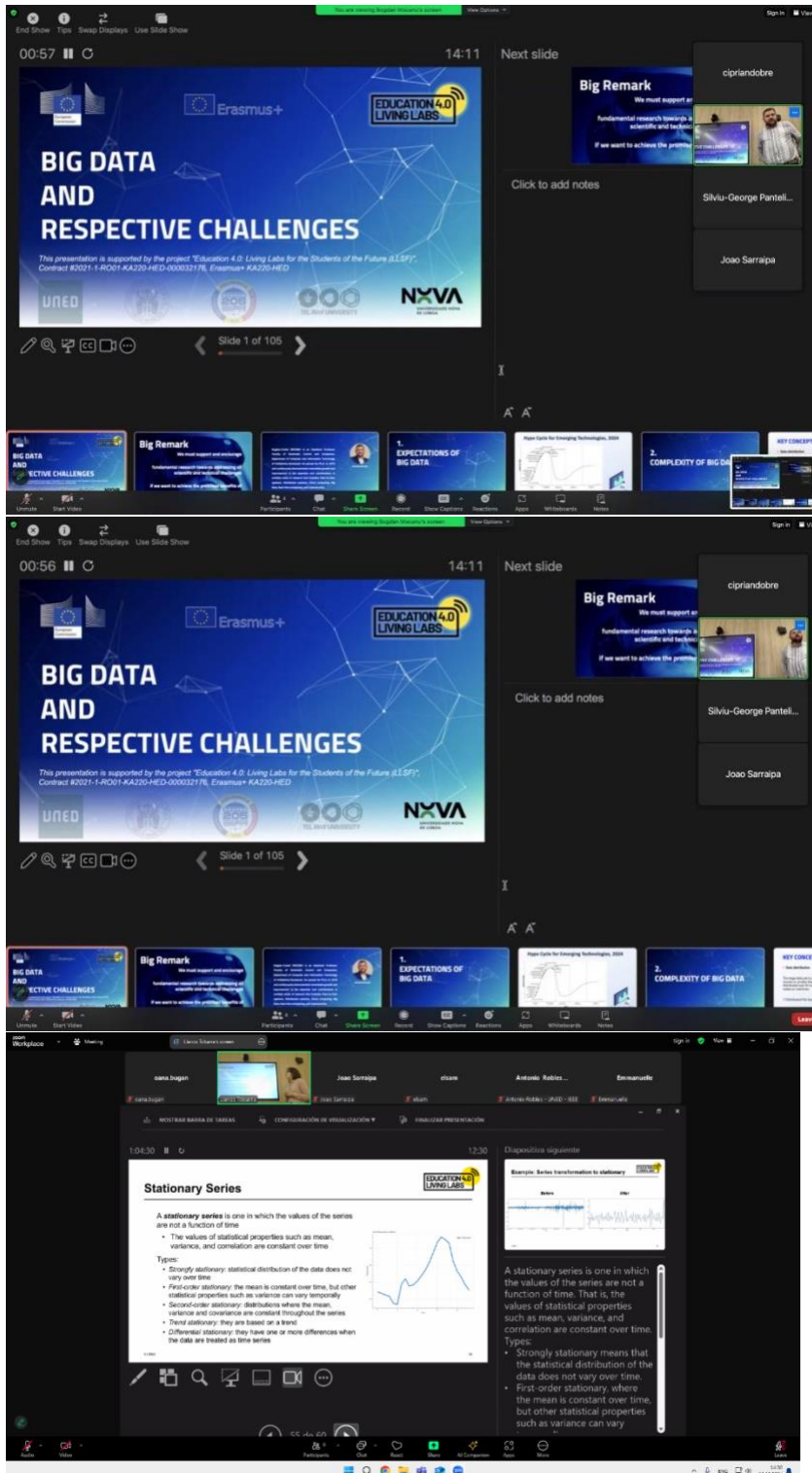
Types of Robots – Mobile Manipulator

Waypoint VECTOR

Workforce First

Participants: 4

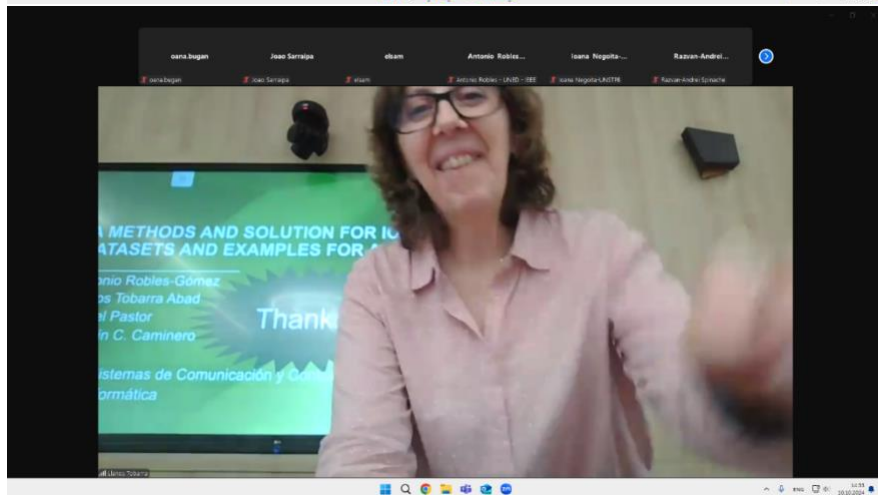
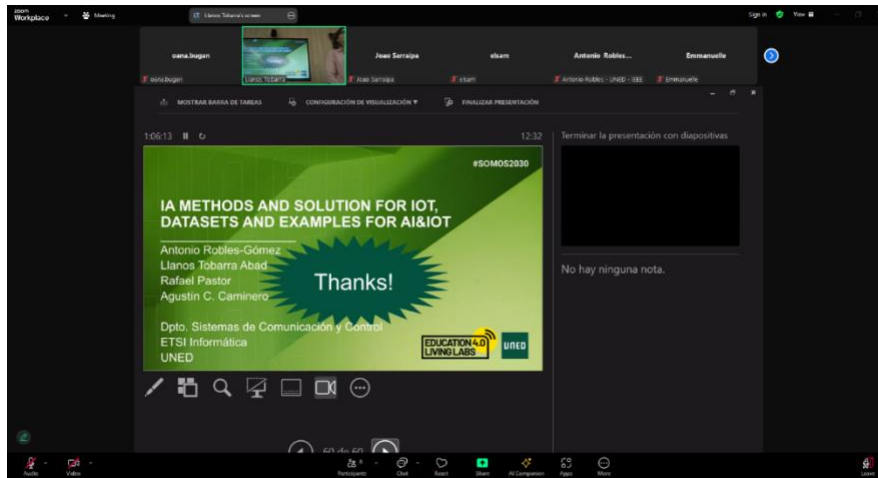
Chat, React, Share, Apps, More



The top two screenshots show a presentation slide titled "BIG DATA AND RESPECTIVE CHALLENGES". The slide includes logos for Erasmus+, UNED, and NAVA. A sidebar on the right contains a "Big Remark" section with a video thumbnail and the text: "We must support fundamental research through scientific and technical... if we want to achieve the previous...". Below the slide is a navigation bar with thumbnails for "BIG DATA AND RESPECTIVE CHALLENGES", "Big Remark", "1. EXPECTATIONS OF BIG DATA", "2. COMPLEXITY OF BIG DATA", and "KEY CONCEPTS".

The bottom screenshot shows a slide titled "Stationary Series". The slide text states: "A stationary series is one in which the values of the series are not a function of time. The values of statistical properties such as mean, variance, and correlation are constant over time." It lists types: "Strongly stationary: statistical distribution of the data does not vary over time.", "First-order stationary: the mean is constant over time, but other statistical properties such as variance can vary temporarily.", "Second-order stationary: distributions share the mean, variance and covariance are constant throughout the series.", and "Trend stationary: they are based on a trend." A graph shows a fluctuating line. The sidebar on the right contains a graph and text: "A stationary series is one in which the values of the series are not a function of time. That is, the values of statistical properties such as mean, variance, and correlation are constant over time. Types: Strongly stationary means that the statistical distribution of the data does not vary over time. First-order stationary where the mean is constant over time, but other statistical properties such as variance can vary." The sidebar also includes the text "Disponibles siguientes" and "Ejemplo: Series transformada a estacionaria".

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LTTA C3: Student Training Week

Date: January 13–17, 2025

Location: National University of Science and Technology POLITEHNICA Bucharest, Library, Room 3.1

Day 1: Teaching in Virtual Labs (January 13, 2025)

Trainers: Tal Soffer, Ricardo Gonçalves, André Rocha, Nuno Vilhena, Manuel Vinhas

- **10:30–11:00:** Overview of **Teaching in Virtual Labs**, emphasizing innovative pedagogical approaches for virtual environments.
- **11:30–12:30:** Discussion on **Pedagogical Models and Practical Tools**, focusing on strategies to enhance learning outcomes using virtual labs.
- **13:30–16:00:** Presentations and practical applications by NOVA, showcasing tools and methodologies for integrating virtual labs into academic programs.

Day 2: Big Data and Research Practices (January 14, 2025)

Trainers: Ciprian Dobre, Radu Ciobanu, Bogdan Mocanu

- **09:30–10:30:** Session on **Big Data Challenges**, exploring the complexities of managing and analyzing large datasets.
- **11:00–12:00:** Presentation on **Research Reproducibility**, highlighting the importance of transparent and repeatable methodologies.
- **13:00–16:00:** Focused discussions on **Data Visualization and Preparation**, and identifying training needs for MSc and PhD students.

Day 3: Case Studies and Practical Training (January 15, 2025)

Trainers: Ciprian Dobre, Radu Ciobanu, Bogdan Mocanu

- **09:30–13:00:** Students presented case studies using their research data, with discussions on findings and methodologies.
- **14:00–16:00:** **Practical Training Sessions** to consolidate learning outcomes, followed by an assessment of the training's effectiveness.

Day 4: IoT and Measurement Techniques (January 16, 2025)

Trainers: Agustin Caminero, Antonio Robles, Susanna Spinsante, Stefania Cecchi

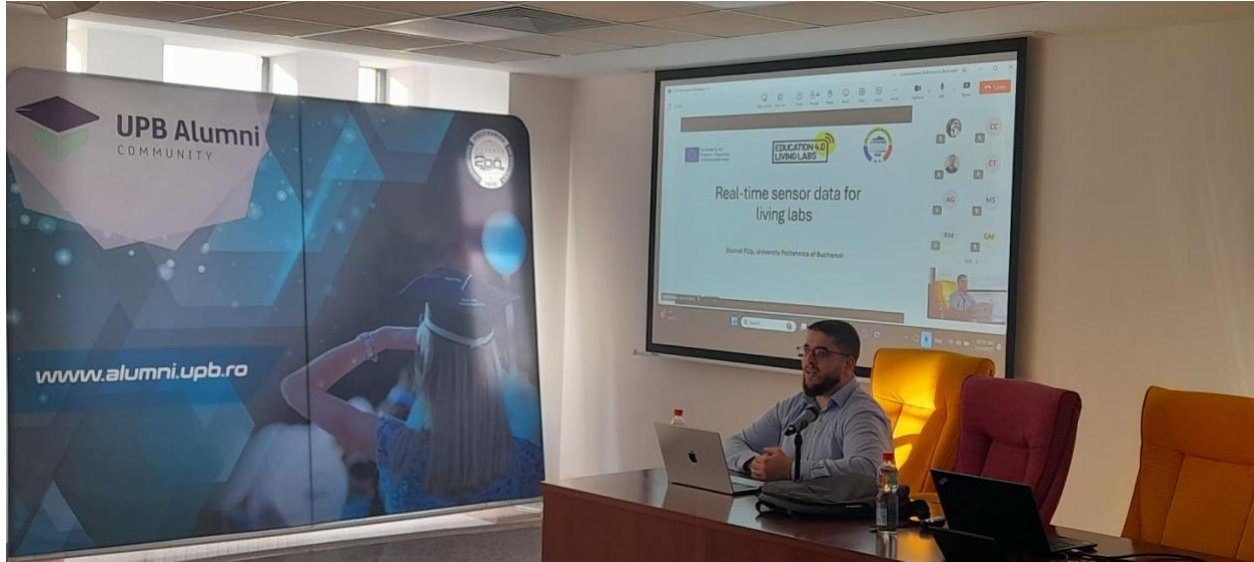
- **09:30–10:30:** Session on **Cloud Management of IoT Fleets**, exploring effective IoT data handling methods.
- **11:00–12:30:** Presentation on **AI Solutions for IoT** with practical examples and dataset management strategies.
- **13:30–16:00:** Training on **Sensor Measurements**, including liquid instruments and handling uncertainty in lab experiments.

Day 5: Drafting Future Training Modules (January 17, 2025)

Trainers: Ciprian Dobre, Radu Ciobanu, Bogdan Mocanu

- **09:30–11:00:** Discussions on a draft template for a future training module, based on the identified learning needs.
- **11:30–12:30:** Training on **Jupyter Notebooks**, focusing on data cleaning and plotting.
- **13:30–16:00:** **Practical Training Sessions** to reinforce learned skills and discuss the implementation of new modules.











Get the NO2 band for a specific bbox as time series

```

    evalscript_mean_mosaic = """
    //VERSION=3
    function setup() {
      return {
        input: ["NO2", "dataMask"],
        output: {
          bands: 1,
          sampleType: "FLOAT32",
        },
        mosaicking: "ORBIT"
      };
    }

    function isClear(sample) {
      return sample.dataMask == 1;
    }

    function sum(array) {
      let sum = 0;
      for (let i = 0; i < array.length; i++) {
        sum += array[i].NO2;
      }
      return sum;
    }

    function evaluatePixel(samples) {
      const clearTs = samples.filter(isClear);
      const mean = sum(clearTs) / clearTs.length;
      return [mean];
    }
    """
  
```

Add dataMask band. This will tell us, if the NO2 band has data or not.

Change from SIMPLE to ORBIT. This gives us all acquisitions for a time series to calculate values from.

Get a satellite image within a bbox different bands

True Color : bands: ["B02", "B03", "B04"]

SWIR: bands: ["B12", "B8A", "B04"]

False color: bands: ["B08", "B04", "B03"]

FALSE COLOR: evaluate vegetation biomass and health

- Vegetation is from dark red to light red,
- Urban areas are cyan or tan,
- Bare soils are from dark brown to light brown,
- Water is black or dark blue,

Get the NO2 band for a specific bbox as a time series

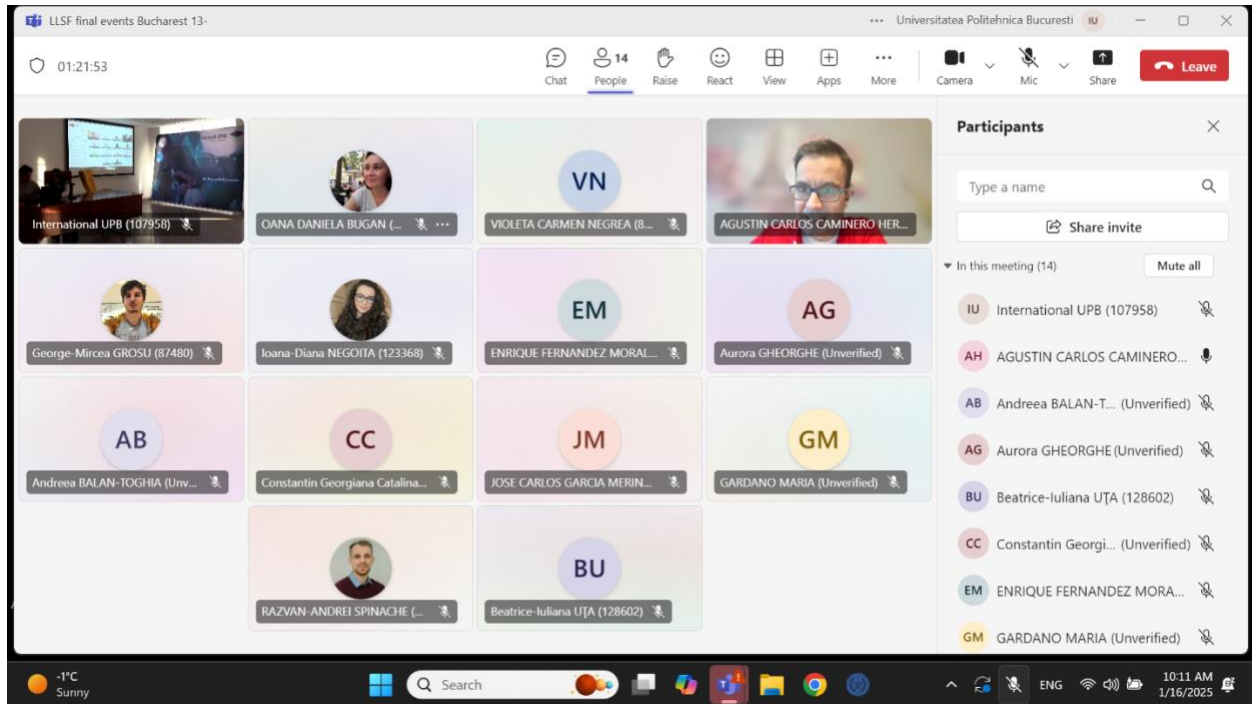
We can clearly see NO2 hot spots around developed areas:
Bucharest,
Cluj-Napoca,
Craiova

Introduction

**Big Data:
The 4 Vs**

Volume Velocity

Variety Value



Practical exercise with AWS IoT Core

Steps:

2. Development of basic computing skills in EC2, creation of instances and their configuration as development environments.

AGUSTIN CARLOS CAMINERO HERRAEZ (Unverified)

Practical exercise with AWS IoT Core

This exercise aims to emulate the behavior of a temperature sensor using a simulator developed in Java. For this, we will create the code necessary to create the class that represents the sensor and executes periodic measurements. These measurements will be sent to the AWS IoT platform for supervision. In a realistic production environment with fleets of sensors/actuators, additionally, data visualization techniques (Dashboards) and calculation of data are applied. Sensors/actuators generally do not have storage capabilities, so these platforms allow storage and processing this information in a massive way.

To demonstrate the operation of this type of solutions, a small prototype will be implemented that demonstrates the use of these architectures, which combine sensors in real time and cloud computing. All the necessary files are available in the trabajo-aws-iot.zip file.

Steps:

1. Knowledge of the AWS and AWS IoT environment.
2. Development of basic computing skills in EC2, creation of instances and their configuration as development environments.
3. Development of a client in an EC2 instance, which represents the sensor and sends the data to the AWS IoT platform.
4. Data capture (e.g. for AI purposes) and visualization

AGUSTIN CARLOS CAMINERO HERRAEZ (Unverified)

How AWS IoT works

Cloud services are distributed, large-scale data storage and processing services that are connected to the internet. Examples include:

- AWS IoT
- Amazon Elastic Compute Cloud and AWS Lambda
- Database services, such as Amazon DynamoDB

The slide includes a diagram showing IoT devices at home, at work, and in the community, all connected to cloud services and an app. The Zoom interface shows a meeting with 21 participants and a 'Leave' button.

Key components of IoT

LoRaWAN

Nodes can be:

- **Class A (default):** Initiate communication asynchronously. They send receive-only windows (RX windows) after transmitting data, allowing bidirectional communication, and lets devices switch to sleep mode.
- **Class B:** They synchronize with the network using periodic beacons (packets generated by the gateway that indicate when the transmission windows will be available). Nodes can create receive windows without having transmitted beforehand, which increases the device's ability to receive information at the cost of higher battery consumption.
- **Class C:** In this class, nodes are in receive-only mode most of the time and switch to transmit mode only when necessary. By continuously listening on the network, these devices consume the most energy.

The slide also features a diagram of a LoRaWAN network architecture with a 'Servidor de Red' and a 'Servidor de Aplicación', and logos for 'EDUCATION 4.0 LIVING LABS' and 'UNED'. The Zoom interface shows a meeting with 20 participants and a 'Leave' button.

LLSF final events Bucharest 13- | Universitatea Politehnica Bucuresti | 01:32:01

Key components of IoT

LoRaWAN

Elements of a LoRaWAN network

Node or end point: These are the devices that send or receive information using the LoRaWAN network. These elements are usually sensors, actuators, or trackers (geolocators). These nodes communicate with the gateways using LoRa RF modulation to enable long-range communication.

Diagram components: Nodos finales (Clases A, B, C), Pasarela/Gateway, Servidor de Red, Servidor de Aplicación.

Protocols: LoRa RF LoRaWAN, 3G/Ethernet Backhaul, TCP/IP SSL LoRaWAN, TCP/IP SSL Payload Seguro.

Security: Payload cifrado con AES.

AGUSTIN CARLOS CAMINERO HERRAEZ (Unverified)

LLSF final events Bucharest 13- | Universitatea Politehnica Bucuresti | 01:28:18

Key components of IoT

ZigBee:

It is a short-range wireless communication protocol specifically designed for IoT and home automation applications.

- It has low power requirements, making it suitable for battery-powered devices and low-power applications

It uses a mesh network topology, which means that devices can communicate with each other directly or through other devices in the network, increasing the network's coverage and robustness.

Stack layers: Applications, Application Profiles, Application Framework, Network and Security Layers, MAC Layer, PHY Layer (2.4GHz and 868/915 MHz).

Standards: IEEE 802.15.4, Zigbee Compliant Platform.

Components: Silicon, Zigbee Stack, Application.

AGUSTIN CARLOS CAMINERO HERRAEZ (Unverified)

Introduction

The Internet of Things (IoT) refers to the network of physical objects—"things"—embedded with sensors, software, and other technologies for the purpose of connecting and exchanging data with other devices and systems over the internet.

Key components and characteristics of IoT:

- Sensors and Devices.
- Connectivity.
- Data Processing.
- User Interface.

EDUCATION 4.0 LIVING LABS UNED

AGUSTIN CARLOS CAMINERO HERRAEZ (Unverified)

Participants

Type a name

Share invite

In this meeting (16)

- IU International UPB (107958)
- AH AGUSTIN CARLOS CAMINER...
- AB Andreea BALAN-T... (Unverified)
- AG Aurora GHEORGHE (Unverified)
- BU Beatrice-Iuliana UȚA (128602)
- CC Constantin Georgi... (Unverified)
- Elena Cristina FAINA (54679)
- EM ENRIQUE FERNANDEZ MORA...

The image displays two screenshots of a Zoom meeting interface. The top screenshot shows a slide titled "Part I: IoT fundamentals" with a bulleted list of topics: Introduction, Key components of IoT, M2M, Zigbee, and LoRaWAN. The bottom screenshot shows a slide titled "Summary" for "Part II: AWS IoT" with a bulleted list of topics: What is AWS IoT?, Which technologies does AWS IoT support?, How your devices and apps access AWS IoT?, What AWS IoT can do, How AWS IoT Works, AWS IoT services overview, and Practical exercises with AWS IoT Core. Both screenshots show a meeting interface with 16 participants and a "Participants" list on the right.

LLSF final events Bucharest 13- | Universitatea Politehnica Bucuresti | IU

01:22:08 | Take control | Pop out | Chat | People (14) | Raise | React | View | Apps | More | Camera | Mic | Share | Leave

Participants: JM, CC, GM, EM, AG

CLOUD MANAGEMENT OF IOT FLEETS
#SOMOS2030

Agustin C. Caminero, Rafael Pastor, Llanos Tobarra, Antonio Robles

Depto. Sistemas de Comunicación y Control
ETSI Informática
UNED

AGUSTIN CARLOS CAMINERO HERRAEZ (Unverified)

Participants list: IU International UPB (107958), AH AGUSTIN CARLOS CAMINERO..., AB Andreea BALAN-T... (Unverified), AG Aurora GHEORGHE (Unverified), BU Beatrice-Iuliana UȚA (128602), CC Constantin Georgi... (Unverified), EM ENRIQUE FERNANDEZ MORA..., GM GARDANO MARIA (Unverified)

-1°C Sunny | Search | 10:12 AM 1/16/2025

LLSF final events Bucharest 13- | Universitatea Politehnica Bucuresti

04:47:01 | Take control | Pop out | Chat | People (22) | Raise | React | View | Rooms | Apps | More | Camera | Mic | Share | Leave

Measurement and uncertainty

Measurement: **experimental** process that produces a value that can **reasonably** be attributed to a **quantitative property (measurand)** of a phenomenon, body, or substance.

Process of measurement involves *direct* or *indirect* **comparison** with a *standard* (for example, a certified 32768 Hz quartz crystal resonator).

This comparison typically is accomplished by making the phenomenon, body, or substance of interest **interact** with a **measuring instrument** capable of producing an *indication* that is responsive to the property of interest.

If the instrument has been **calibrated**, then the indications that it produces are meaningful in relation with a **relevant standard**.

Erasmus+ | 2021-1-RO01-KA220-HED-000032176 | EDUCATION 4.0 LIVING LABS

SUSANNA DRINSANTE (Unverified)

Participants list: DI, GM, AG, CC, MS, AB, VN, On hold, RM, EM

1:38 16.01.2025

LLSF final events Bucharest 13- 05:00:29

Universitatea Politehnica Bucuresti

Measurement and uncertainty

In these circumstances, the **standard deviation** is an attribute of this probability distribution that represents its scatter over the range of possible values.

The **VIM** defines standard deviation as a "non-negative parameter characterizing the **dispersion of the quantity values being attributed to a measurand**, based on the information used".

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SUSANNA SPRINSANTE (Univerfied)

EDUCATION 4.0 LIVING LABS

13:50 16.01.2025

LLSF final events Bucharest 13- 05:09:52

Universitatea Politehnica Bucuresti

Measurement and uncertainty

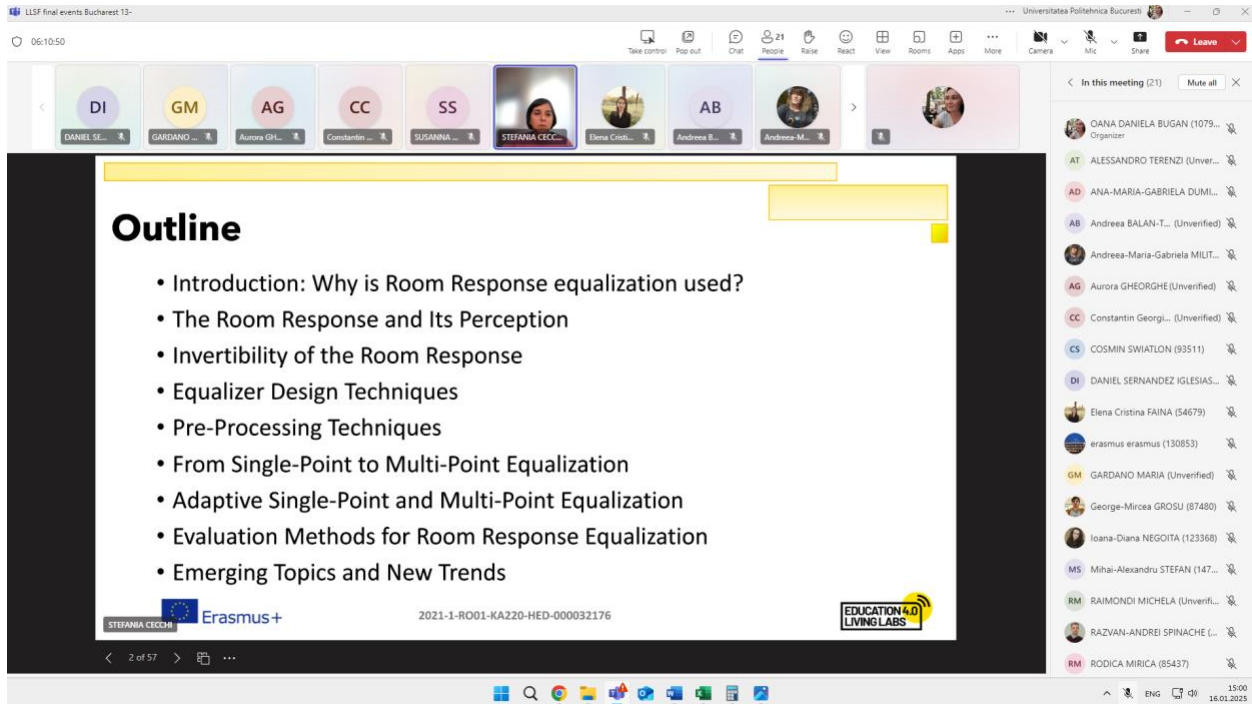
- What's the value of the voltage signal?
- Random noise?
- Bias (offset)?

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SUSANNA SPRINSANTE (Univerfied)

EDUCATION 4.0 LIVING LABS

13:59 16.01.2025



LLSF final events Bucharest 13- 06:10:50

Take control Pop out Chat People 21 Raise React View Rooms Apps More Camera Mic Share Leave

DI GM AG CC SS STEFANIA CECCHI Elena Crista... AB Andrea B... Andrea-M...

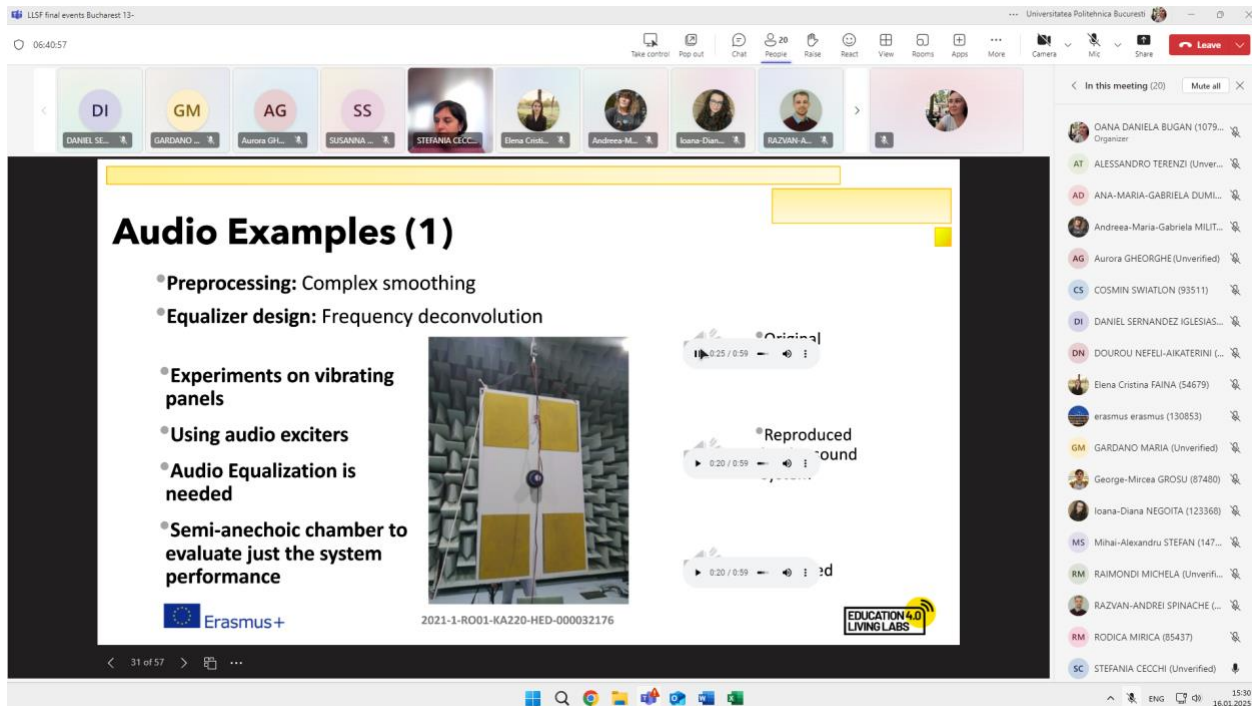
Outline

- Introduction: Why is Room Response equalization used?
- The Room Response and Its Perception
- Invertibility of the Room Response
- Equalizer Design Techniques
- Pre-Processing Techniques
- From Single-Point to Multi-Point Equalization
- Adaptive Single-Point and Multi-Point Equalization
- Evaluation Methods for Room Response Equalization
- Emerging Topics and New Trends

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2 of 57

ENG 15:00 16.01.2025



LLSF final events Bucharest 13- 06:40:57

Take control Pop out Chat People 20 Raise React View Rooms Apps More Camera Mic Share Leave

DI GM AG SS STEFANIA CECCHI Elena Crista... Andrea-M... Ioana-Dian... RAZVAN-A...

Audio Examples (1)

- **Preprocessing:** Complex smoothing
- **Equalizer design:** Frequency deconvolution
- **Experiments on vibrating panels**
- **Using audio exciters**
- **Audio Equalization is needed**
- **Semi-anechoic chamber to evaluate just the system performance**

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31 of 57

ENG 15:30 16.01.2025

LLSP final events Bucharest 13- 06:55:42

Tele control Pop out Chat People Raise React View Rooms Apps More Camera Mic Share Leave

DI GM AG SS STEFANIA CECCHI Elena Cristina Andreia-Mircea Ioana-Diana RAZVAN-ANDREI

In this meeting (20) Mute all

DANA DANIELA BUGAN (1079... Organizer

AT ALESSANDRO TEREZI (Unverif...

AD ANA-MARIA-GABRIELA DUMI...

Andreea-Maria-Gabriela MILIT...

AG Aurora GHEORGHE (Unverified)

CS COSMIN SWIATLON (93511)

DI DANIEL SERBANDEZ IGLESIAS...

DN DOUROU NEFELI-AIKATERINI (...)

Elena Cristina FAINA (54679)

erasmus erasmus (130853)

GM GARDANO MARIA (Unverified)

George-Mircea GROSU (87480)

Ioana-Diana NEGOITA (123368)

MS Mihai-Alexandru STEFAN (147...

RM RAIMONDI MICHELA (Unverifi...

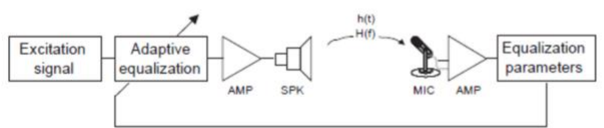
RAZVAN-ANDREI SPINACHE (...)

RM RODICA MIRICA (85437)

SC STEFANIA CECCHI (Unverified)

Adaptive single-point and multi-point equalization

- One or more microphones positioned around the equalization zone
- The system is capable to track the room response and generate the equalizer in real time



Pros: capable to track and adapt to the room variations, providing better performance on the long term

Cons: for MISO/MIMO, on-line identification of each impulse response is a difficult task

Erasmus+ 2021-1-RO01-KA220-HED-000032176 EDUCATION 4.0 LIVING LABS

43 of 57 15:45 16.03.2025

The image displays two screenshots of a Microsoft Teams meeting. The top screenshot shows a presentation slide titled "Living Labs - Areas of implementation" with a grid of categories: Smart Cities & Urban development, Manufacturing & Industry 4.0, Healthcare and Well-being, Mobility and Transportation, Energy and Sustainability, Education and Learning, Agriculture and Food, Retail and Behavior, Entertainment and Media, and Security and Public Safety. The bottom screenshot shows a slide titled "Techno-Pedagogical Tools" with six categories: Active Instruction in the Labs, Collaborative & Communication, Hands-on & Interactive, Assessment, Management, and Content Elements. Each category lists specific tools and activities.

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Erasmus+

The image displays two screenshots of a Zoom meeting interface. The top screenshot shows a slide titled "Various Pedagogical Models & Approaches" with a diagram illustrating different learning models: Based on (OBE), Living Labs, Fully online classes, Blended Learning, Hybrid Learning, HyFlex Learning, and Gamification. The bottom screenshot shows a slide titled "Responsible Research and Innovation (RRI)" with a funnel diagram and associated values: Ethics, Governance, Participation, Gender Equality, Scientific Education, and Open Access. The next slide in the bottom screenshot is titled "The OECD Learning Compass 2030" and discusses the RRI approach.

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Impact of Industry 4.0

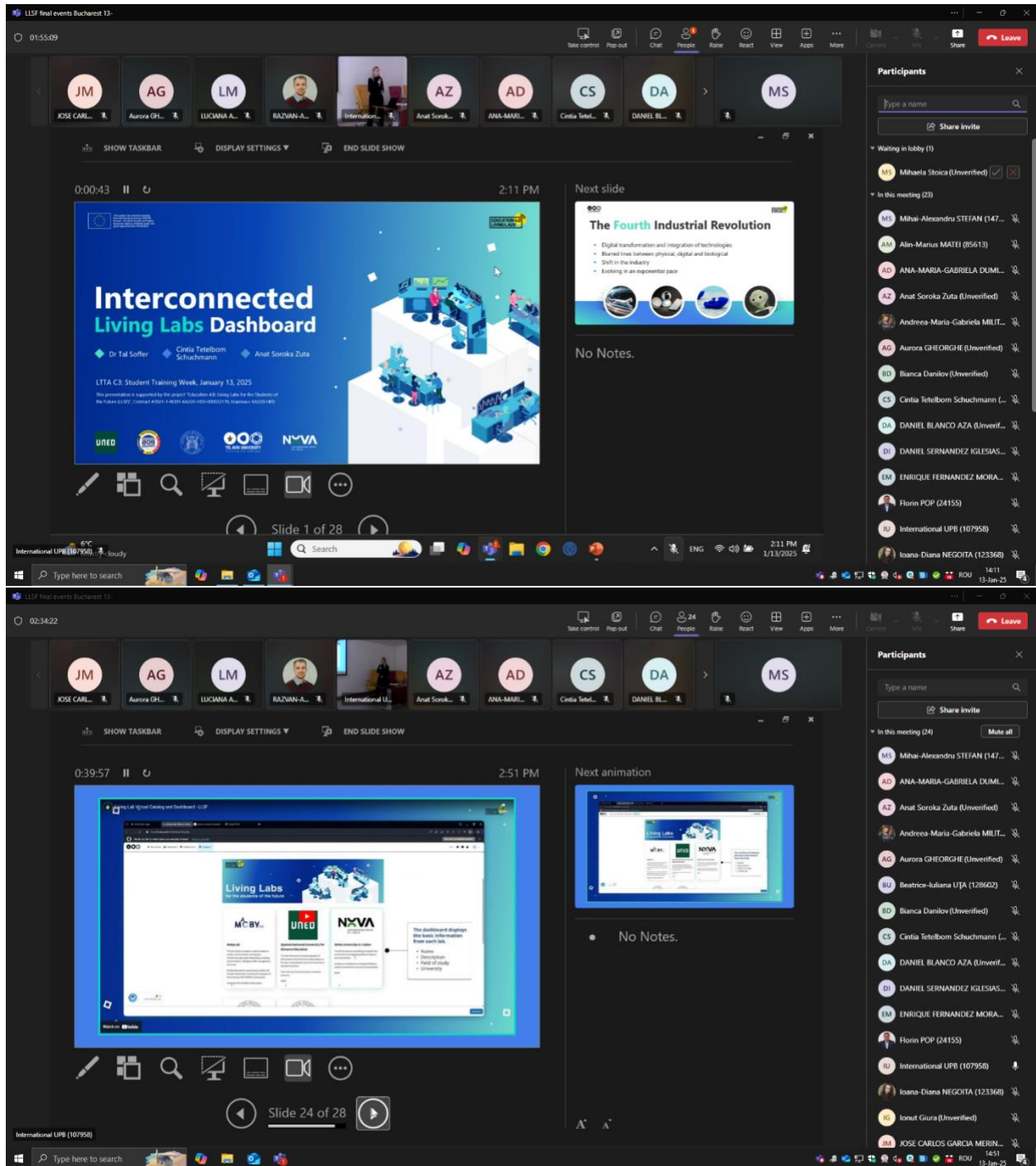
Benefits	Challenges
Increased Efficiency	Job Displacement
Customization	Skills Gap
Data-Driven Decision-Making	Security Concerns
Supply Chain Transformation	Economic Inequalities
Environmental Sustainability	Loss of Traditional Industries

The Fourth Industrial Revolution

- Digital transformation and integration of technologies
- Blurred lines between physical, digital and biological
- Shift in the industry
- Evolving in an exponential pace

The fourth industrial revolution, also known as Industry 4.0, refers to the ongoing digital transformation and integration of advanced technologies into various industries. It represents a significant shift in the way businesses and factories operate, with a focus on leveraging digital tools and data to improve efficiency.





The image displays two screenshots of a Microsoft Teams meeting. The top screenshot shows a presentation slide titled "Interconnected Living Labs Dashboard" at 01:55:09. The slide content includes:

- Presenters: Dr. Tal Soffer, Cintia Tietelbom Schuchmann, Anat Soroka Zuta
- Event: LITA C3 Student Training Week, January 13, 2025
- Logos: UNED, MCBY, NOVA

 The bottom screenshot shows a presentation slide titled "Living Labs Digital Catalog and Dashboard - LLP" at 02:34:22. The slide content includes:

- Logos: MCBY, UNED, NOVA
- Text: "The dashboard displays the basic information about each lab."
 - Name
 - Description
 - Field of study
 - University

 Both screenshots show a meeting interface with a top bar containing participant avatars (JM, AG, LM, RAZVAN-A., International U..., Anat Sorok..., ANA-MARI..., Cintia Tietel..., DANIEL BL..., MS) and a right-hand sidebar with a "Participants" list. The bottom screenshot also shows a "Next animation" preview of the next slide.

The image displays two screenshots of a Microsoft Teams meeting. The top screenshot shows a presentation slide titled "Planning - Dashboard Wireframe" at 0:38:23. The slide features a wireframe of a "Find Your Lab" search interface with various filters and a table of results. The bottom screenshot shows a presentation slide titled "Research and Information Collection" at 0:35:47. This slide lists several key areas: Existing technological infrastructure, Available contents for teaching and learning, Pedagogical model of learning and teaching, Learning process & Assessment, Expected outcomes, and Potential collaboration with other labs. A "Next slide" preview is visible on the right side of both screenshots, showing a diagram of the Moodle platform.

