ICAMP

CONFERENCE 2024

LEARNING FACTORIES FOR ADVANCED MANUFACTURING IN EDUCATION

14-15 MAY

OSTERTAG event Centre

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COLLABORATIVE LEARNING FACTORY

BREAKOUT SESSION

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CLF'S OBJECTIVES

1. Allows the use of active hands-on learning methods in a semi-industrial learning environment
2. Allows integration of I4.0 technologies and infrastructures in education facilities
3. Enables to multiple disciplines co-work in the same LF
4. Enables to recreate real work-organizational situations with a systemic perspective
5. Enables the collaboration between geographically separated VET centres

Ready to create your own Collaborative Learning Factory (CLF)?

CLF DESING PROCESS

1. Choose your CLF user
2. Think of CLF Technological solutions
3. Define CLF Product
4. Design CLF Process & Operative
5. Consider CLF Collaboration
6. Results!

STEP 1: USER GROUP

WHO IS OUR USER

- **First step**
  - the **definition** of the **end-user**
  - Need to identify:
    - knowledge areas to be addressed
    - the purpose
    - barriers and strengths

STEP 1: USER GROUP

LCAMP

TIME: 7MIN

00:04

1

KNOWLEDGE DOMAIN:

Which study programmes?

Example in Basque Country: ARI, MKT, PM,...

Example other parts: Mechanical engineering, Production management, Process engineering, product design, electronics, robotics, manufacturing, automation

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Example other parts: **Mechanical engineering, Production management, Process engineering, product design, electronics, robotics, manufacturing, automation**

2

PURPOSE:

How will the job change?
What hard skills will they need?
What soft skills will they need?

User 1: User 2: User 3:

Examples:

Digital skills, problem solving, values, flexibility, adaptability, continuous learning, soft skills...

3

BARRIERS/STRENGTHS:

What are the implementation difficulties (Centre/teachers/students)?
What are the benefits for them?

Examples:

Uncertainty, fear of change, resistance, work anxiety, illusion of change, technophiles...

STEP 2: TECHNOLOGICAL SOLUTIONS

WHICH TECHNOLOGIES TO TEACH

- **Second step:**
  - the **definition** of **technological solutions** for the users and learning goals
  - which ones fit with the chosen users and purposes?

STEP 2: TECHNOLOGICAL SOLUTIONS

GENERAL SOLUTIONS	USERS	INDIVIDUAL SOLUTIONS
Sustainability Eco Design Lean Manufacturing Automation	**User 1:** Needs:	
IoT Infrastructure Data analytics	**User 2:** Needs:	
Digital assistance techonologies Other...	**User 3:** Needs:	

TIME: 7MIN

00:01

STEP 3: PRODUCT

WHICH PRODUCT USE

- **Third step**
  - Select the **product** that best fits
  - It has to enable:
    - Be motivating
    - If possible with a real end use
    - Integrate well with the technologies we want to use

STEP 3: PRODUCT

Sorry! Running out of time!

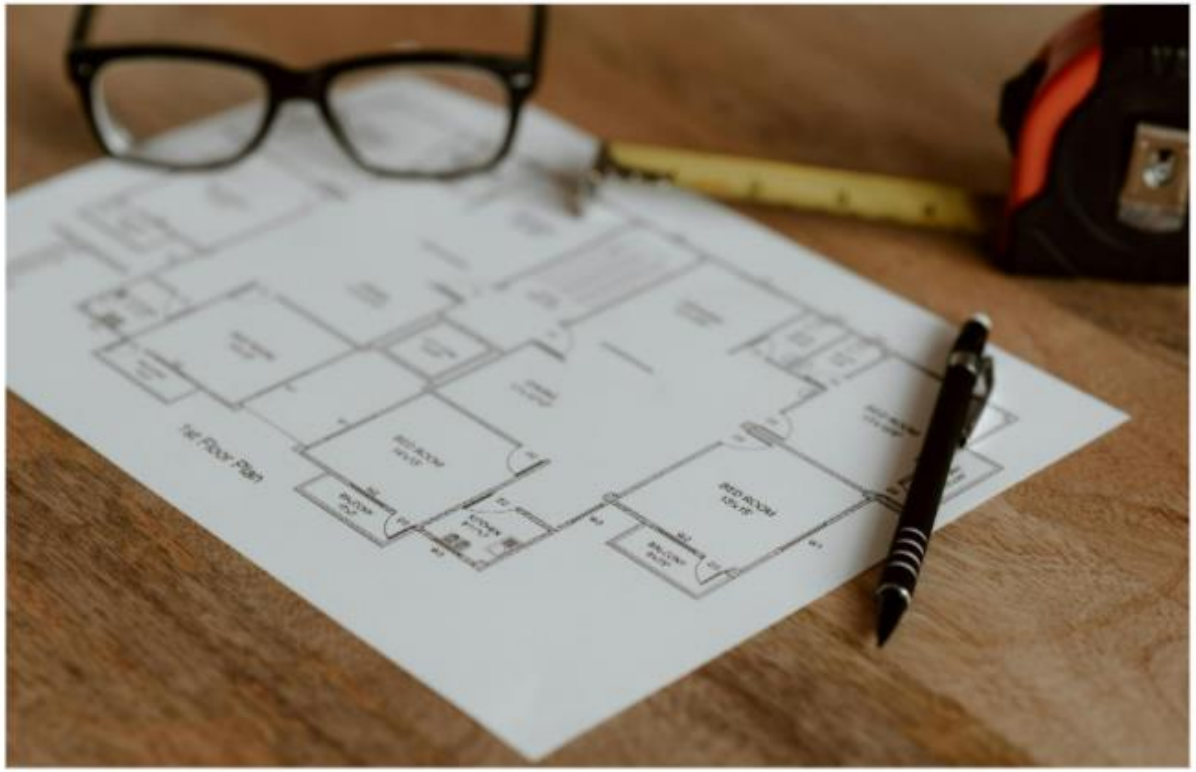
Alboka

The product is specified.

You have 3 mins to analyse it!

STEP 4: PROCESS & OPERATIVE

HOW ALL IS WORKING



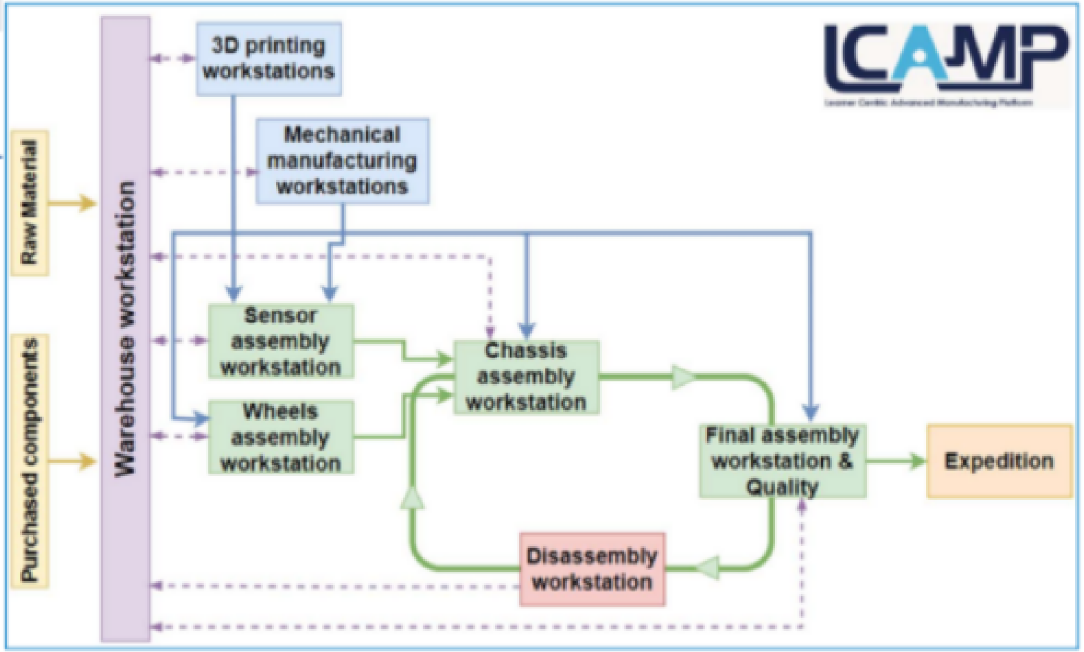
- **Fourth step**
  - design the operative
  - how it will work?
  - Think of:
    - Product design
    - Process engineering
    - Manufacturing
    - Supply chain

STEP 4: OPERATIVE

	PRODUCT DESIGN	PROCESS ENGINEERING	MANUFACTURING (COMPONENTS/ASSEMBLY)	SUPPLY CHAIN
USER INVOLVE				
TECH. SOLUTIONS				
ACTIONS				

TIME: 10'

00:01



STEP 5: COLLABORATION

HOW TO COLLABORATE

- **Fifth step**
  - Look for collaboration in:
    - The design phase
    - Running the CLF
    - Future

STEP 5: COLLABORATION

CLF DESIGN PHASE COLLABORATIONS	CLF RUNNING COLLABORATIONS	FUTURE COLLABORATIONS
Teacher collaboration	Internation students working together	Student exchange

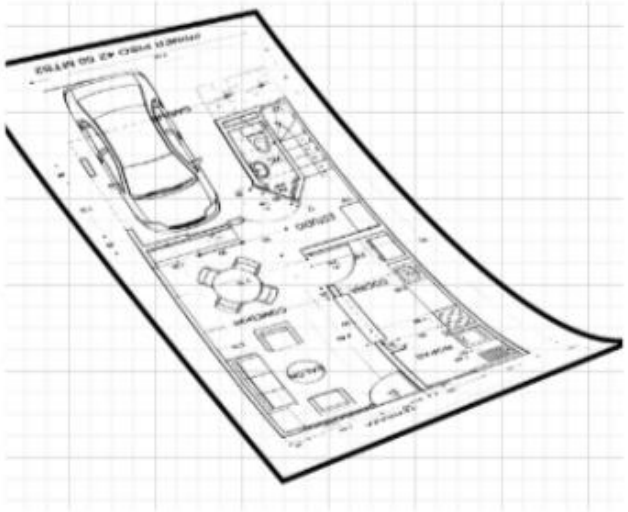
TIME: 7'

00:03

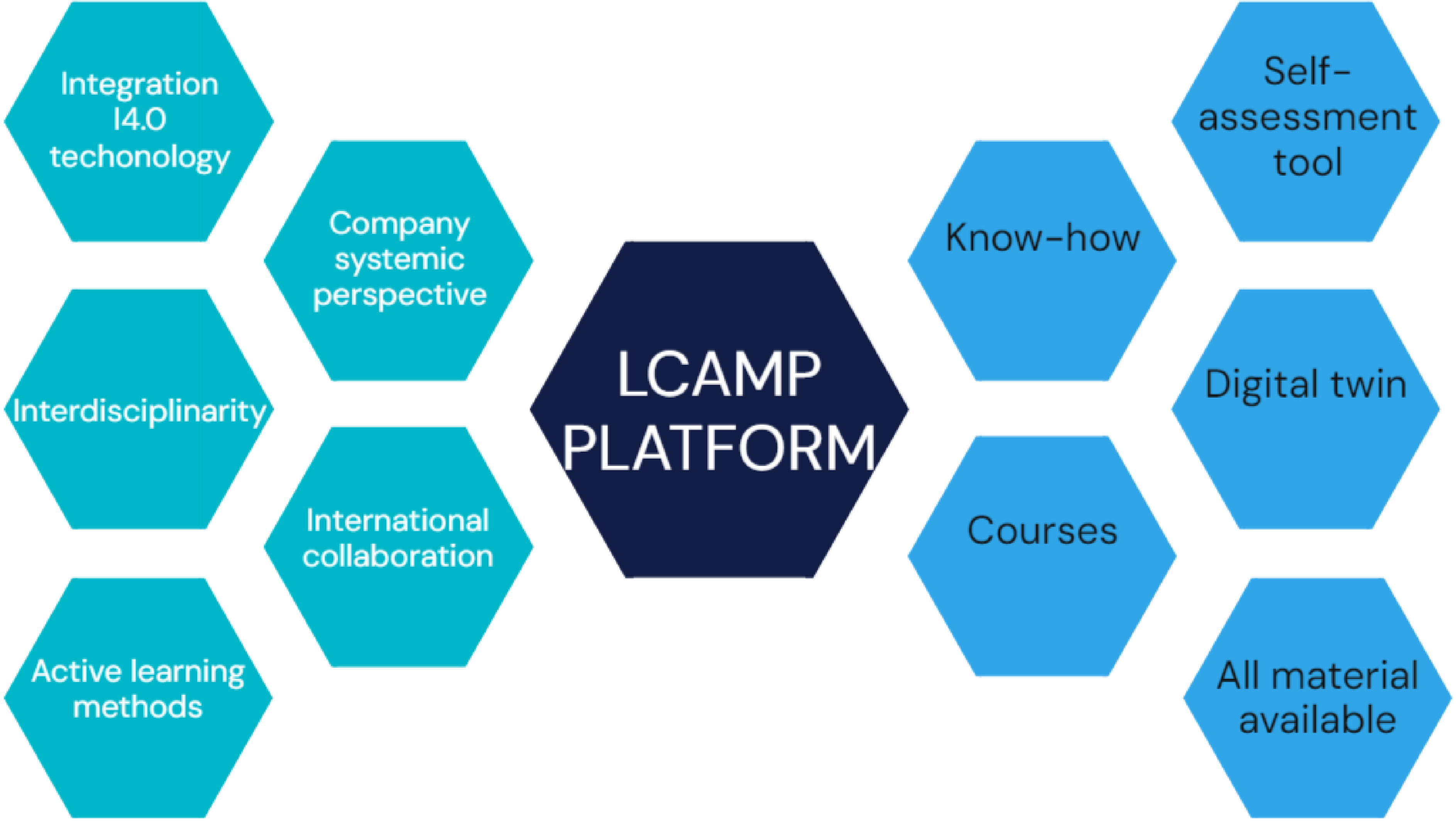
RESULTS / QUESTIONS

- ANYONE WANT TO PRESENT?

- ANY QUESTIONS?



CONCLUSIONS



THANK YOU!

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