



C2MI Presentation



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Introduction

Today we're gonna present you the C2MI Pole of ECAM Lyon. C2MI means "Conception, Manufacturing et Management Industriel" = "Design, Manufacturing and Industrial Management"

This presentation consists to present you the challenge of tomorrow in adequation with our project Training Center and lead to makes research about new industrial methods throught this workshop.

Explain you how this platform could be interested for accomplish you pedagogic goal.

The challenge of tomorrow's engineers

The Challenge of tomorrow's engineers consist to innovate technologies on the service of humans and the planet.

Strategy and evolution of the industry of the future

And in this way, engineers are thinking about new generations of industry. The most known is the industry 4.0 because it is the one which most companies are settling nowadays. It consists in implanting robots to work in collaboration with humans to increase productivity. The unique way to implanted the industry 4.0 is to install a technological overlay on an existing organisation.

But there are other forecasted industries like 5.0 or 6.0.

- 5.0 in which human will be back in the heart of the organization by created the organisation on the technology
- 6.0 is more theoretical and it is predicted that human and robots will work in harmony with each other to optimize the production at his maximum.

Upcoming issues of 4.0

In the future, engineers will have a lot of challenges. Indeed, with the increasing of new technologies, there will be a digital revolution that engineers will have to handle with the 4th industrial transformation. Due to the societal transformation, especially about ecology they will also have environmental responsibility.

That's why companies will have to be responsible, circular, integrated, competitive, agile and digital.

The engineer will need to have the ability to propose responsible technological innovations at the service of humans and the planet.

Platform 4.0 at the service of the engineer of tomorrow

A 4.0 plateform is an essential support for the engineer of tomorrow to learn, educate, and realize. To reach this goal, The 4.0 Plateform need to work on a global vision from design and manufacturing to distribution to finally grasp opportunities by building a circular economy. On the innovation side, it's necessary to install advanced technologies like robotics and lead to a total digitalisation by integrating information systems and traceability.

LaSalle Leadership

LaSalle as we tell you previously, try to share its different values. The leadership is one of them. And in this way, LaSalle has to improve everyday to evolve in matter of teaching methods, to provide the tools to students so that they can adapt to this 4.0 change

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Pedagogic goal

The new pedagogic goals consists to teach the students to be able to understand complex situations in the fields: in technical, organizational, human, economic and environmental dimensions.

The pedagogy follow the Benjamin Franklin's stemming :

You tell me, I forget,

You teach me, I remember,

You involve me, I learn.

The aim is to :

- Prepare students for the ongoing digital transformation
- Provide them with a global and integrated vision of the company (end-to-end process)
- Teach them the benefits and limitations of tools and systems, give them a critical look at "over-the-top" standardization to enable them to make informed decisions
- Bring them a teaching rooted in the concrete

Ways

To reach these goals, we organizes a lot of projects to teach industrial engineering to its students. One of them is the Serious Game, in which we had to implement a full production line to assemble a connected speaker, by team of 9. You will find this Serious game in the Training Center project that we will present you later and that you could also use finally in your different courses.

Plateform

To implement all these projects, we are lucky to have a lot of infrastructures at ECAM, such as a FabLab, which permits to make 3D impressions

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Workshop aspect and investments

To implement this 4.0 workshop, we made some investments to buy and install machines like a robot, a Desktop Mill (micro milling), or some ergonomics workbenches. You can see a 3D implantation on SketchUp to give you an idea of it would be implement.

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The Scalable Workshop: Support for our teachings

The scalable Workshop, Training center is a real support for our teachings on different domains such as :

- Industrial organization and planification. By working in the scalable workshop, you'll get a concrete input of industrial organization (costs and rates). Students will make a simulation of production planning in a real environment and will follow some concrete lessons about Lean, Kanban, 5S, and other important points.
- Supply chain management and logistic in which you will learn how to analyze the issues and stakes of each decision, with concrete tools and simulations. You'll also understand the challenges of reverse logistics and how to handle them.
- In the workshop you could simulate a production flow. In this way it implicated quality control, traceability, maintenance to experiment the knowledges in methods and industrialization.
- Before, to simulate the industrialization in the workshop, it's also important to pre-study the different application and define a choice or not to robotic the post. The aim is to study the productivity and to simulated the flux with supply component.
- The integration in the workshop obviously lead to an innovation behaviour and responsibilities.

Finally, we planned to teach you how to use the equipment we provide.