



This project has received funding from the European Union's Horizon Europe research and innovation programme under grant number No. 101104022.

BATwin

Flexible and scalable digital-twin platform for enhanced production efficiency and yield in battery cell production lines

Presenter:

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**BATTERY
2030+**

BATTwin aims at designing, developing and demonstrating a novel Digital Twin Platform supporting a digitally-enhanced zero-defect manufacturing approach for the European battery manufacturing industry

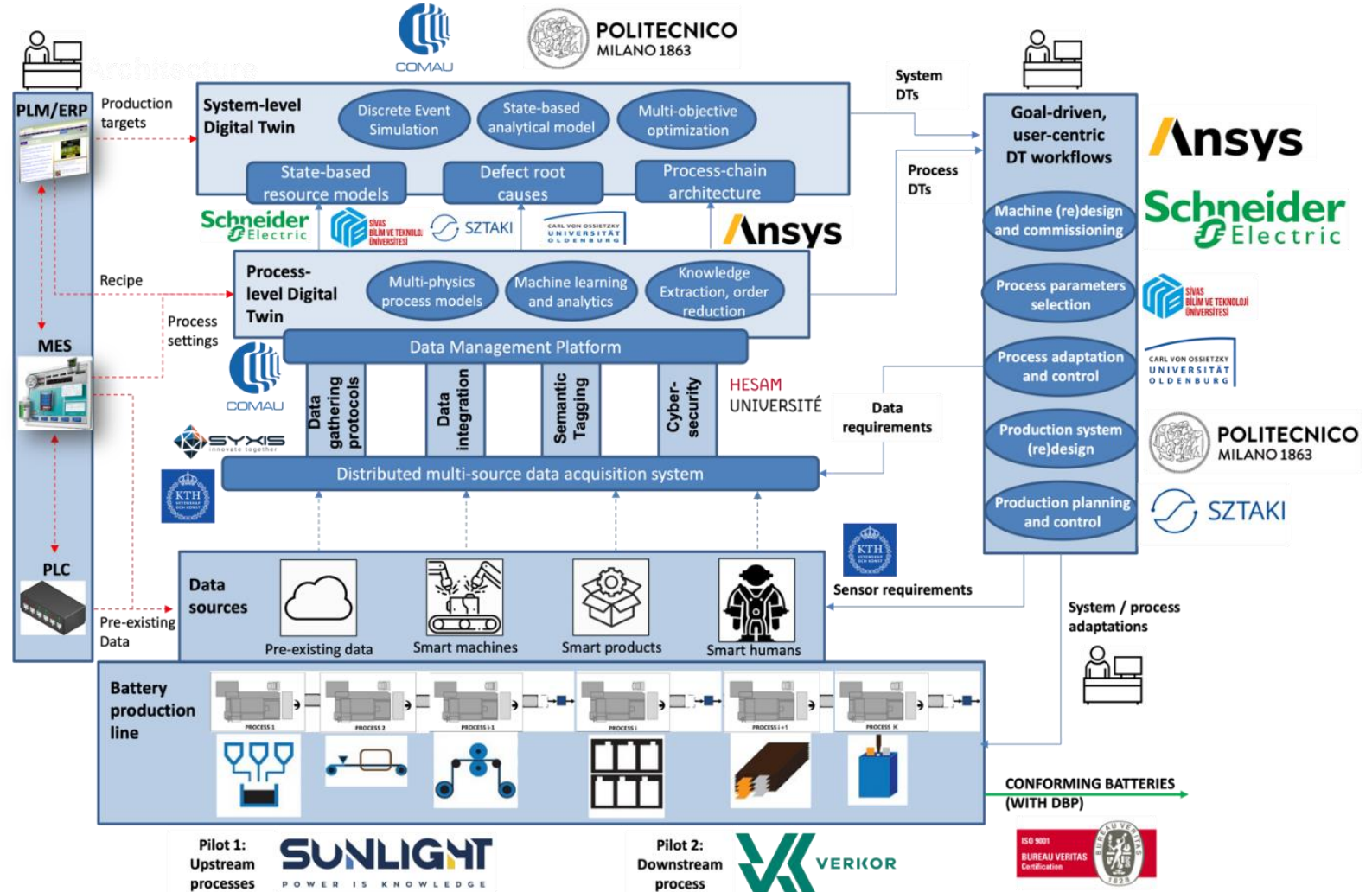
Who is in your Consortium?

- Coordinating partner: Politecnico di Milano
- Funding: 6.9M euro
- Starting date: Dec 1st 2023
- 16 partners
- 10 companies, 4 SMEs
- 10 EU member states, UK



Project content

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Concept of Multi-level Digital Twin platform within a data-enhanced Zero-Defect Manufacturing

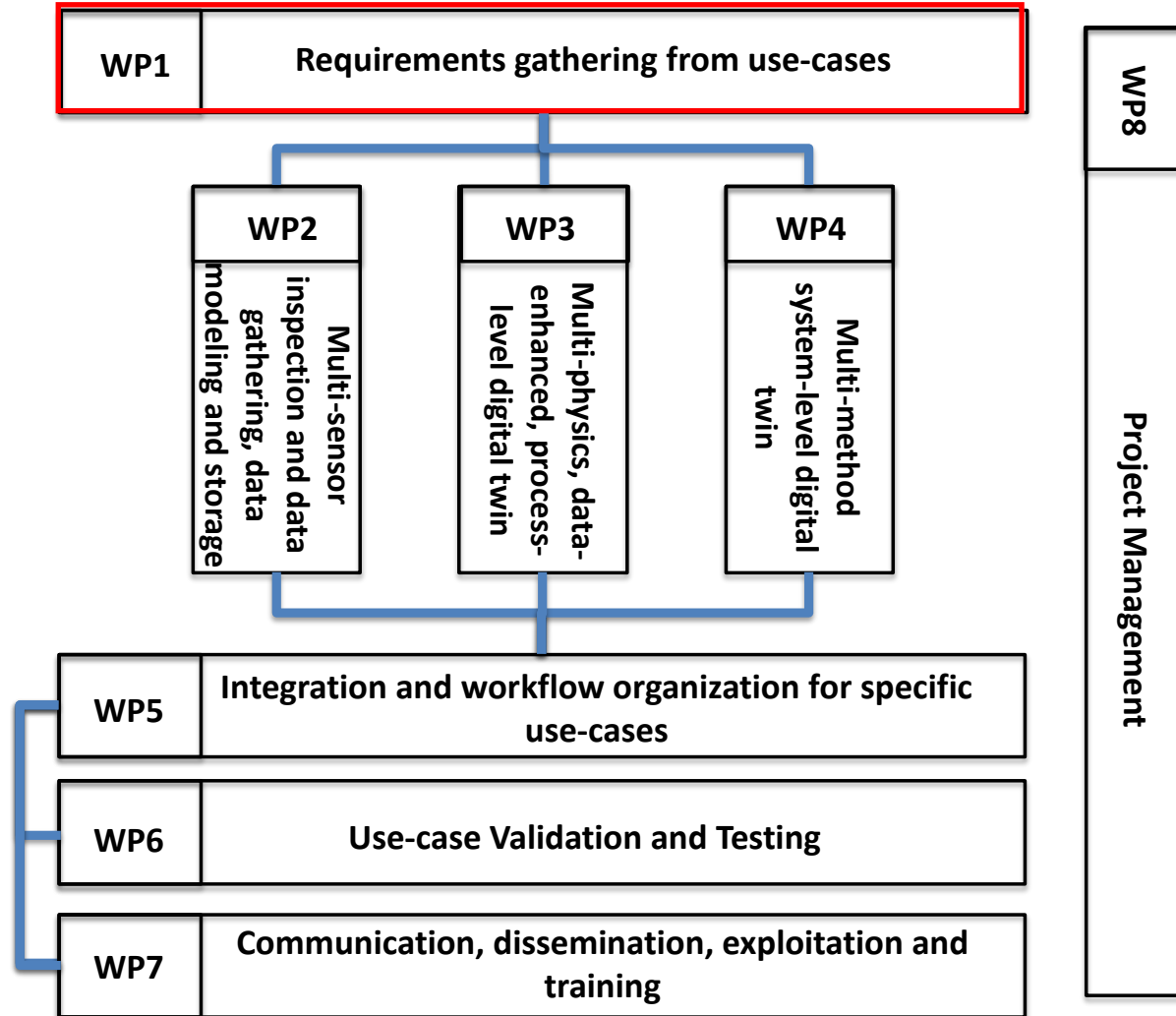
Project content

- **Verkor:** Digital twin for supporting pilot production validation and future scale-up at high-throughput. Focus on downstream processes and process-chain level.
- **Sunlight:** Digital twin for supporting pilot production validation and future scale-up at high-throughput. Focus on upstream processes and process-chain level.

Use case	Scale/volume	Cell geometry	Cell chemistry	Critical process stages	Notes
Verkor	Target: 150 Mwh/year	Pouch	NMC	Knotching, stacking	Automotive
Sunlight	Target: 100 Mwh/year	Prismatic	LFP	Mixing, coating, calendaring, slitting.	Stationary application



Short first results



Preliminary results:

- Formal representation of the end-user process-chains (IDEFO Formalism).
- Mapping of defect types and causes along the stages of the process-chain.
- Requirements for DT development at process and system level.
- Target KPIs at process and system level.



1) Which objectives of my project could be added to the roadmap goals?

- Support manufacturers operating their manufacturing processes and systems to deliver the required production rates of high-quality products, while minimizing the use of resources

2) What are the expectations of my project from the future roadmap?

- Support in closing the loop for the residual scraps/defects flows generated during the cell production processes and creation of circular value chain synergies
- Scale up of the platform to the production of batteries with other chemistries and technologies (e.g. solid state, ..)





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