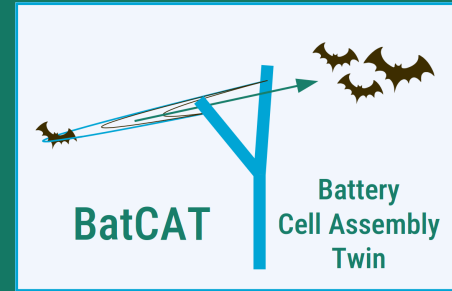
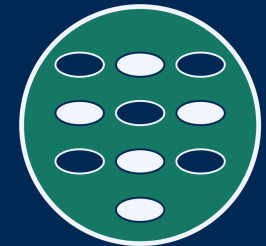


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# The new project BatCAT: Battery cell assembly twin

Martin Horsch, Norwegian University of Life Sciences  
Ivano Castelli, Technical University of Denmark  
Gerhard Goldbeck, Goldbeck Consulting

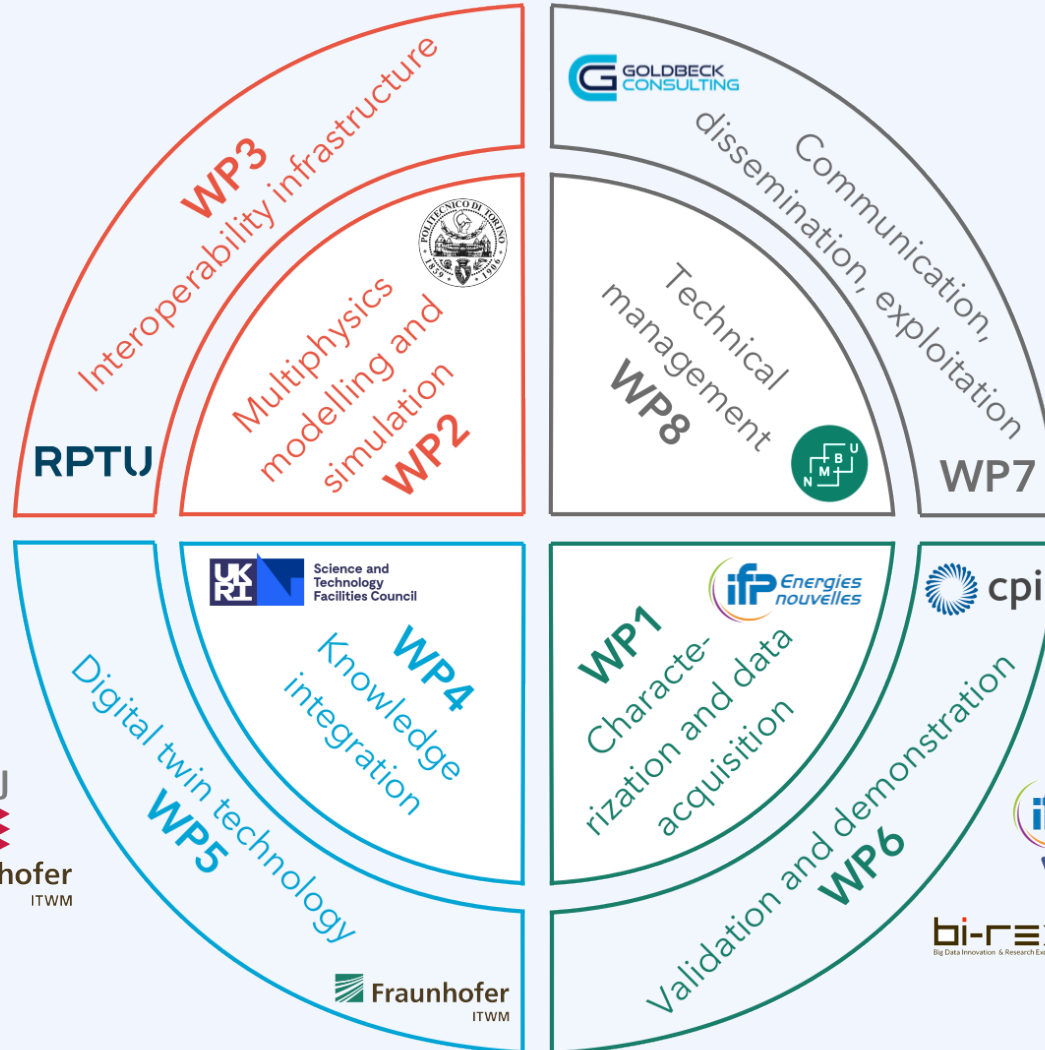
Grindelwald, 29<sup>th</sup> January 2024

BIG-MAP "European Unified Battery Data Space" Workshop

# Consortium and focus areas



Norwegian University of Life Sciences



Focus area simulation



Focus area management



Focus area data



Focus area process



# BatCAT key objectives

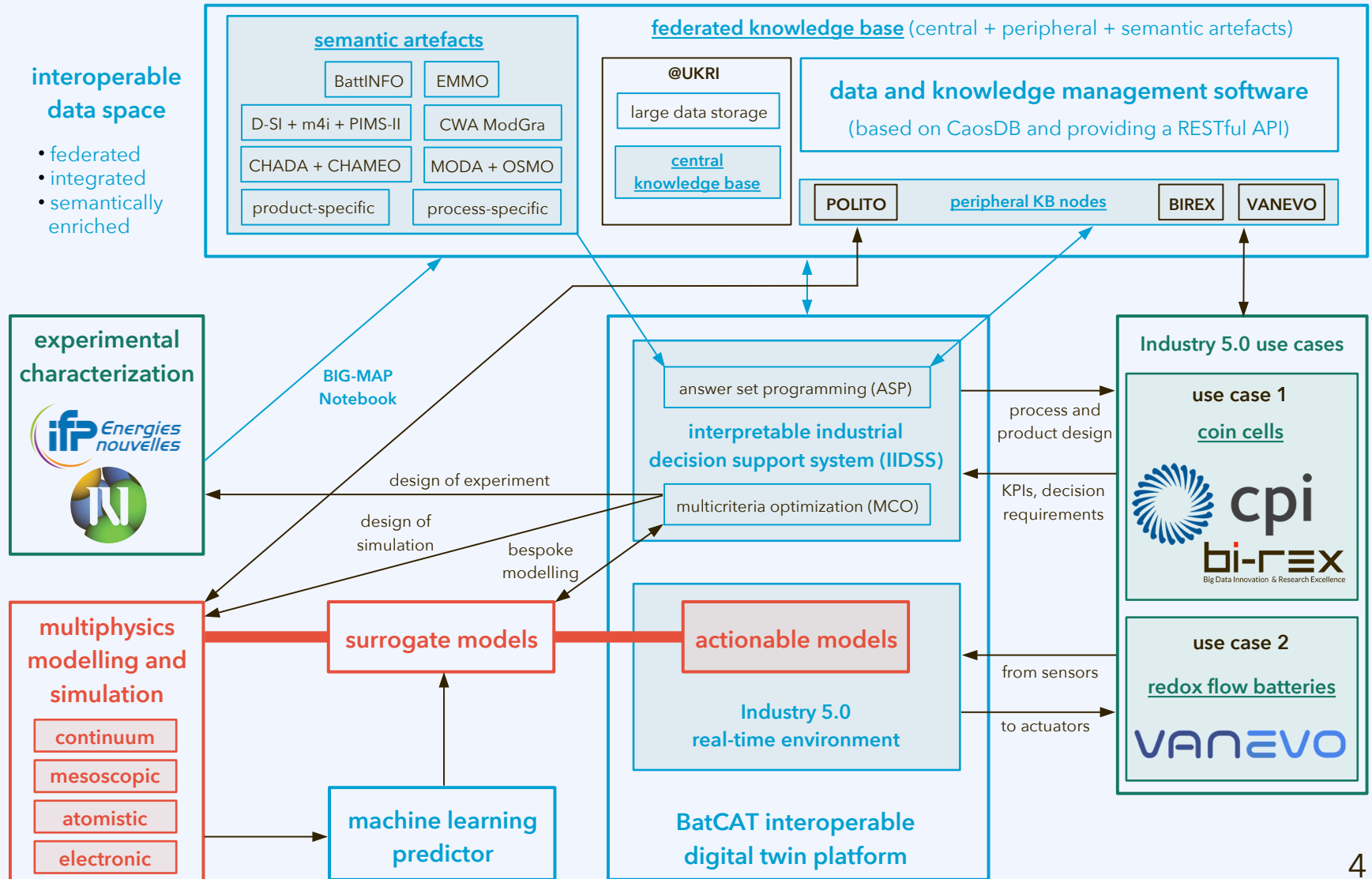
WP lead		IFPEN	POLITO	RPTU	UKRI	ITWM	CPI	GCL	NMBU
		WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8
		characterization	simulation	interoperability	knowledge	digital twin	demonstration	exploitation	management
KO1	experiments and sensorics	main responsible work package	minor contribution	some contribution	some contribution	substantial contribution	minor contribution	minor contribution	minor contribution
KO2	multiphysics modelling	some contribution	main responsible work package	substantial contribution	some contribution	substantial contribution	minor contribution	minor contribution	minor contribution
KO3	technical interoperability	minor contribution	substantial contribution	main responsible work package	substantial contribution	substantial contribution	minor contribution	substantial contribution	minor contribution
KO4	integrated data space	substantial contribution	substantial contribution	some contribution	main responsible work package	some contribution	minor contribution	minor contribution	minor contribution
KO5	digital twin platform	some contribution	some contribution	substantial contribution	substantial contribution	main responsible work package	substantial contribution	substantial contribution	minor contribution
KO6	pilot and transferability	substantial contribution	minor contribution	some contribution	substantial contribution	substantial contribution	main responsible work package	substantial contribution	minor contribution
KO7	long-term exploitation	minor contribution	minor contribution	substantial contribution	substantial contribution	substantial contribution	substantial contribution	main responsible work package	substantial contribution

main responsible work package	substantial contribution	some contribution	minor contribution

- KO1:** In situ measurements and **characterization**, targeting cell manufacturing and behaviour.
- KO2:** Multiscale and **multiphysics modelling**, targeting scalability and computational efficiency.
- KO3:** Technical interoperability and **linking of models, data, and processes**.
- KO4:** **Knowledge base** for a federated, integrated, and semantically enriched data space.
- KO5:** Interpretable industrial **decision support system** and Industry 5.0 **real-time environment**.
- KO6:** Demonstrate the developments in a **pilot production line** and verify transferability.
- KO7:** Create the preconditions for a **long-term exploitation** of the project outcomes.

# BatCAT architecture



# Milestones and responsibilities



Norwegian University  
of Life Sciences



**Experimental campaign** management (T1.1): Led by IFPEN.

“The BIG-MAP Notebook is used throughout.” Milestone MS2 (M6, June 2024):

“BIG-MAP Notebook in operation in all experimental labs.”

- Contact on T1.1 and MS2 at IFPEN: Martin Petit.

**Knowledge integration** work package (WP4): Led by UKRI.

- Contacts on WP4 at UKRI: Silvia Chiacchiera, Ilian Todorov, *et al.*

Lead for **communication, dissemination, and exploitation** (WP7): GCL.

- Contacts on WP7 at GCL: Vikki Cantrill and Gerhard Goldbeck.

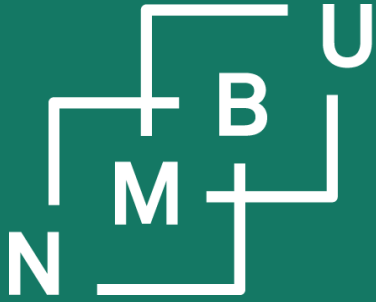
Responsible for connecting to **BIG-MAP** and **Battery2030+** (T7.1b lead): DTU.

- Contact on T7.1b at DTU: Ivano Castelli.

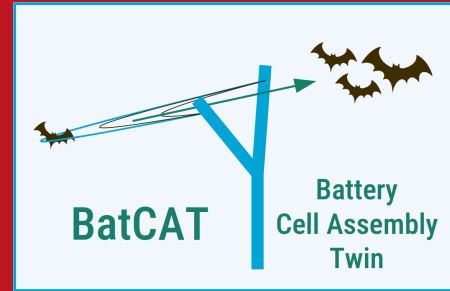
**Requirements analysis** (T4.1, T6.1, T7.2 leads): NMBU, VANEVO.

Agile requirements from interviews done by milestone MS3 (M6, June 2024).

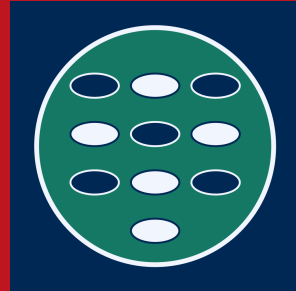
- Contacts on T4.1 and MS3 at NMBU: Fadi Al Machot, Martin Horsch, *et al.*



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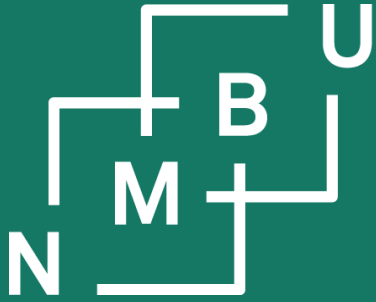
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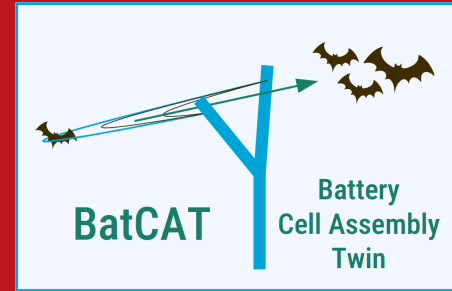
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Stay updated:

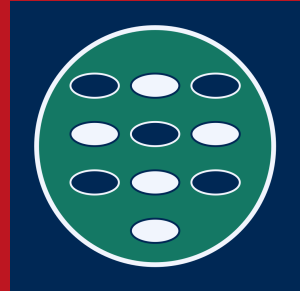
<http://batcat.info/>



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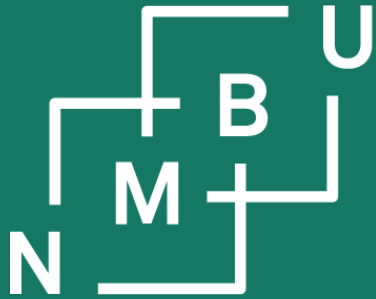


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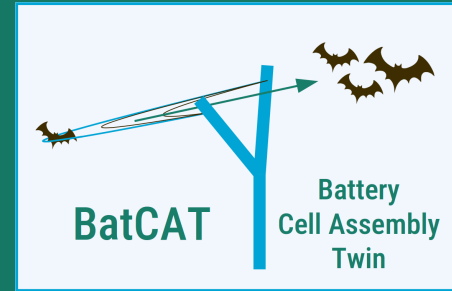
We are looking for  $\geq$  two or three contacts from this group:

<http://batcat.info/external/>

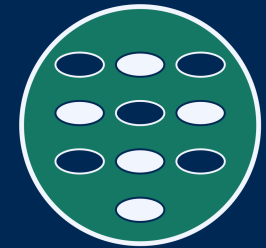
Within the framework of our requirements analysis, we will conduct interviews - also with selected external stakeholders.



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