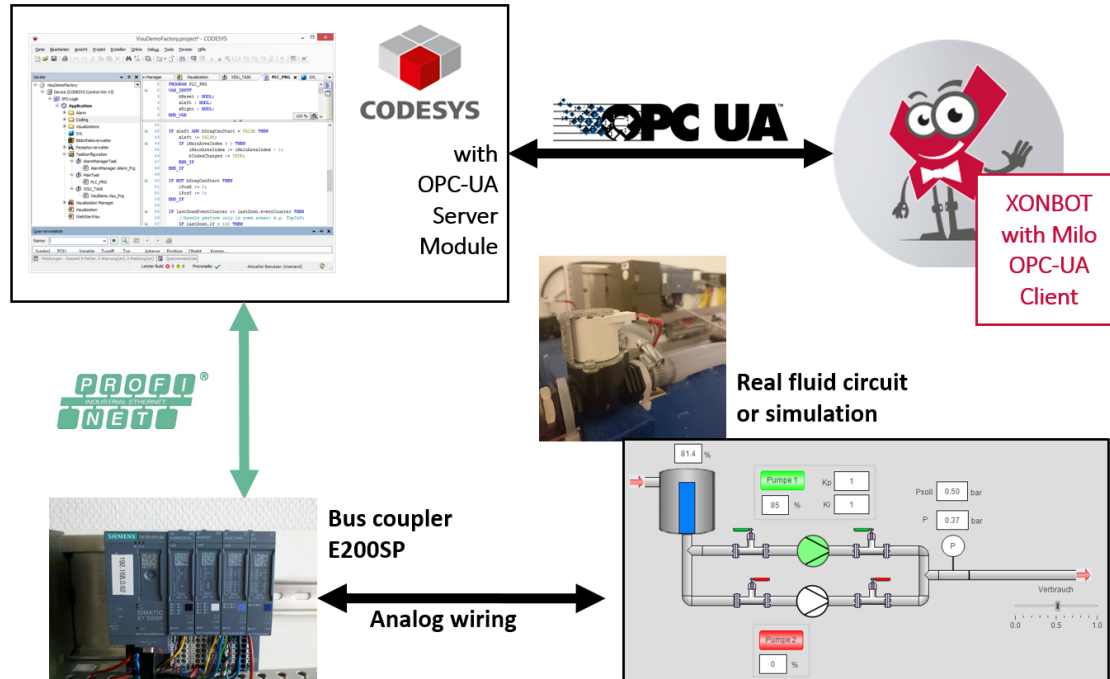


# RELKAT – REINFORCEMENT LEARNING FOR COMPLEX AUTOMATION TECHNOLOGY



Exemplary plan for the employment of optimizing procedures in the industrial production.

- In the industrial production, energy efficiency can be raised by novel machinery or by optimizing the existing machinery without having to buy innovative hardware.
- For energy optimization powerful control systems are needed together with algorithms for complex optimization tasks for energy efficiency.
- The project ReLkat aims at the enhancement of local control through the implementation of Artificial Intelligence, especially Reinforcement Learning.
- Fraunhofer IPK and Signal Cruncher investigate jointly the possibilities of introducing those innovative algorithms into real production processes and create an automated decision system for the Industry 4.0.
- To match the needs of industrial applications, we generalize an already developed Reinforcement Learning algorithm to be applicable on a broad class of self-learning real-time control tasks and enrich it with domain specific energy related modules.



Fraunhofer IPK is certified by DQS against ISO 9001:2015

In cooperation with:



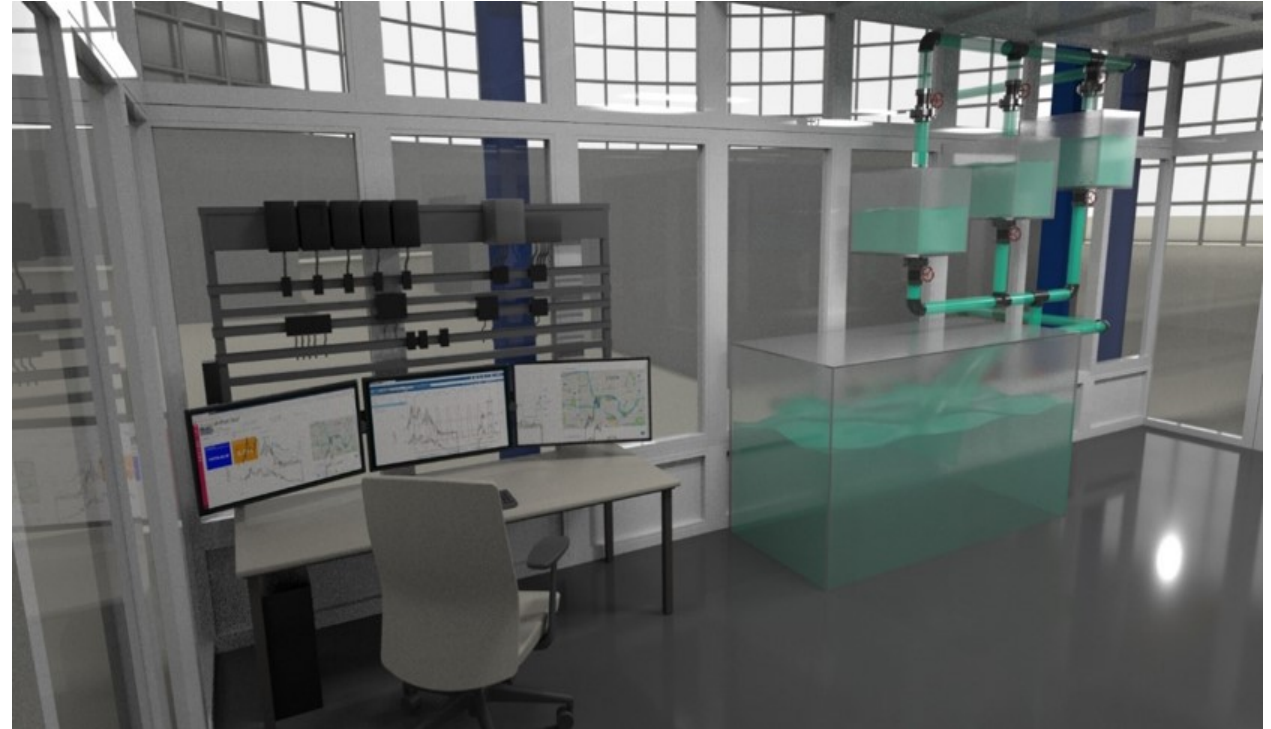
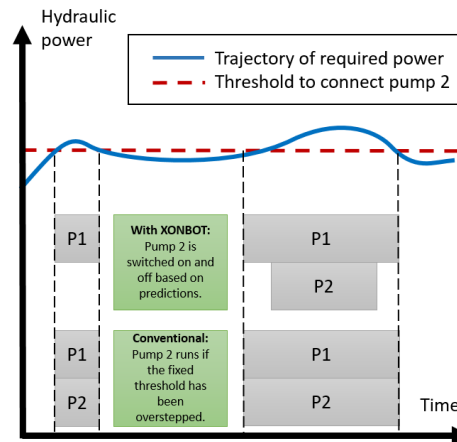
This project is being co-funded by the European Regional Development Fund [ERDF].



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# L4EE – LAB FOR ENERGY EFFICIENCY

- There is a high demand for testbeds to demonstrate and test possibilities for monitoring and raising energy efficiency on real machines and systems.
- The Lab's exhibits will exemplify how Industry 4.0 technologies can be used to increase the energy efficiency of industrial processes.
- To ensure a maximum level of practical relevance companies will be invited to contribute their use-cases and act as mentors to the exhibits, take part in workshops or individually arranged consultations and training programs.
- The technologies on offer should be regularly updated in line with the findings of on-going projects.



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The Lab for Energy Efficiency (L4EE)  
makes solutions hands-on and tangible.

Use-case with  
two pumps.



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In cooperatin with:



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