

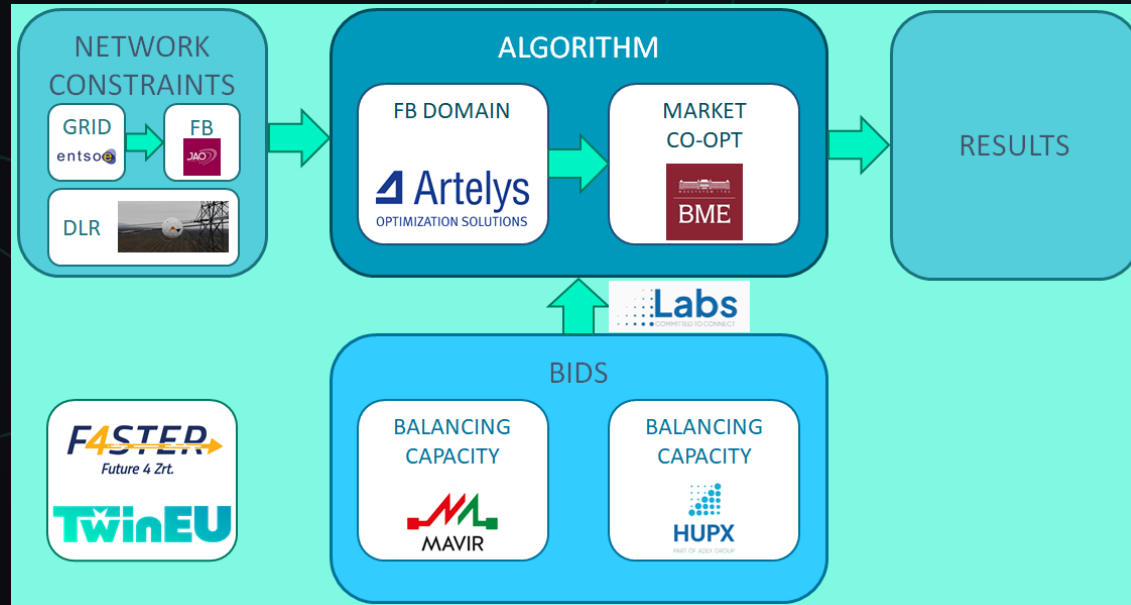
Hungary



Under the Thermal Limit

Virtual sensors and optimal markets by deploying
Digital Twins





Technology Readiness Level

1 2 3 4 5 6 **7** 8 9



Demo

- ANN conductor temperature + ampacity model as a digital twin of line sensors
- Dynamic line rating integrated into capacity calculations (constraints closer to real grid state)
- Co-optimisation algorithm + auction platform for energy & balancing capacity, including intraday products

Key results

- Improved transmission capacity utilisation → temporary margins become usable in clearing)
- Optimised market coupling with flow-based capacity auction → better cross-border allocation
- Improved congestion management → less conservative bottlenecks
- Enhanced network constraint representation → more realistic thermal limits
- Support for added intraday market products

Demo leader:



Demo partners:



OPTIMIZATION SOLUTIONS



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