

# Simulation Model Surrogater

AI dramatically reduces the computational load of xILS simulation models, contributing to improved development efficiency.

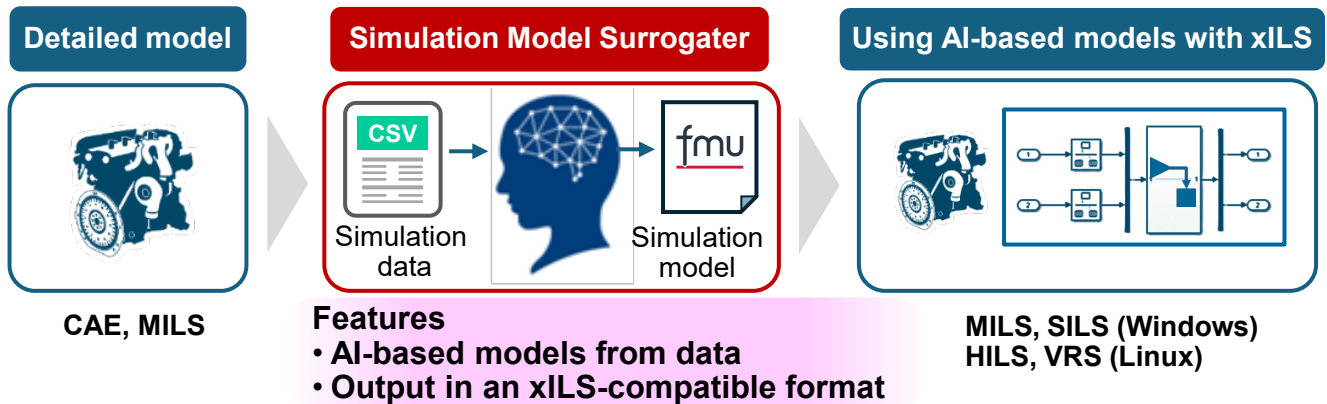
## 1 Issues

Larger and larger models → Longer simulation (computation) times  
→ Lightweight models are sought

**Creating lightweight models need high levels of expert knowledge**

## 2 Solutions

"Simulation Model Surrogater" generates lightweight models without expert knowledge.



## 3 Function/performance

◆ **Types of AI (machine/deep learning)**

- XGBoost
- LSTM, GRU, Transformer

◆ **Input trained models**

- ONNX format

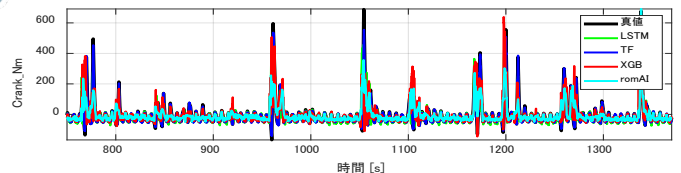
◆ **Output an FMU/S-Function**

### Example: CAE engine model

NA engine



- **Computation time:**  
5 days → 5 minutes
- **Accuracy (R2): 95%**



## 4 Contact

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