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# ASSAS



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**@ASSAS**

**Horizon Europe  
project**



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## ASSAS Project

### Objectives

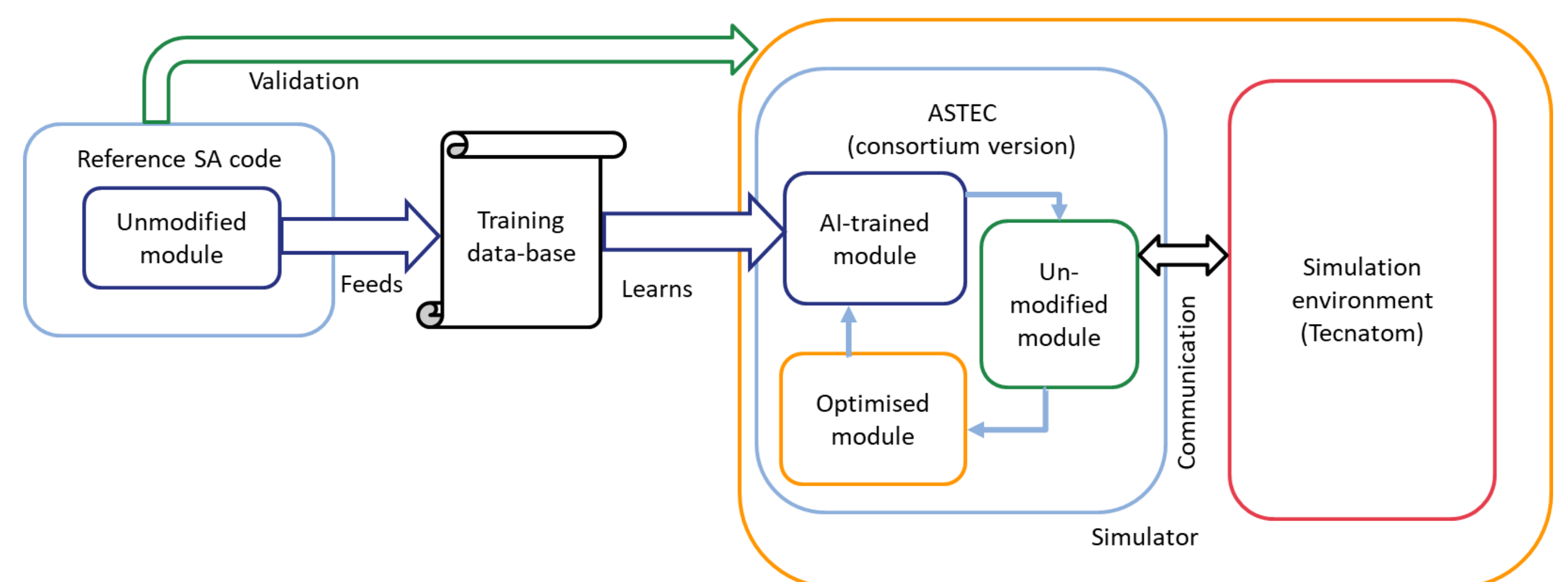
- Develop a basic-principles severe accident simulator:
  - Close to best-estimate accuracy
  - With real-time execution
  - A prototype for industrial simulators
- Develop fast surrogate models for ASTEC and MELCOR thanks to machine-learning
- Project duration from November 2022 to October 2026 with a budget of €3.7 million
- 14 partners from nuclear and data science



### Work packages

ASSAS (Artificial intelligence for the Simulation of Severe AccidentS) is divided in 5 technical work packages:

- Methodology
  - Strategy to develop data-driven surrogate models
- Generation of the training database
  - Data hosted by the Large-Scale Data Facility (KIT)
  - PWR (main focus), VVER, Nordic BWR designs
- Development of data-driven surrogate models
  - 5 strategies targetting different physical models and phases of the accident for ASTEC and MELCOR
- Optimisation of ASTEC
  - Parallelization & low-level algorithmic optimisation
  - Simplification of models and input decks
- Development of the simulator
  - Focused on ASTEC and the PWR design
  - Development of the human-machine interface based on TEAM\_SUITE® and connection with ASTEC



## Partners

