

Power Hardware-in-the-Loop Conception: How to Design a Field-Test Environment for Large-Scale Smart Grid Integration Studies

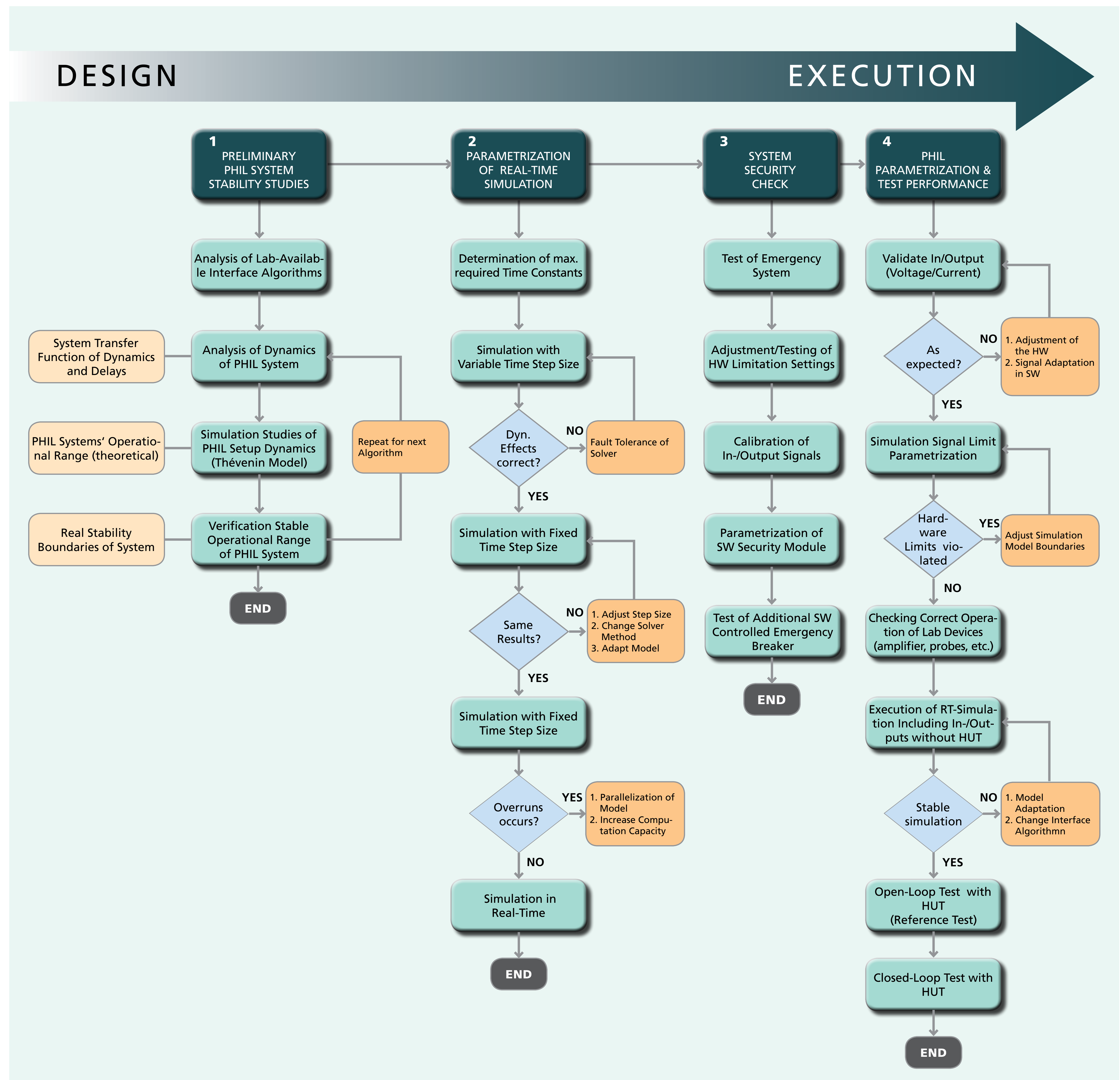
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Process for the set-up and execution of PHIL experiments

Motivation

Power Hardware-in-the-Loop (PHIL) enables investigations of close-to-reality and worst-case test scenarios.

Nevertheless:

- no out-of-the-box systems exist,
- no general setup or unified description are available,
- standardized usage and applications are needed.

Addressing the Challenge

A step-wise approach for setting up PHIL testing systems is being proposed:

- Step 1: Execution of preliminary stability studies
- Step 2: Parametrization of the RT simulation
- Step 3: System security check
- Step 4: PHIL parametrization and performance evaluation.

This approach offers a straightforward process to support the design and the execution of successful PHIL-based tests.



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