

Marine Test Bench using the Opal RT Simulator

CONVERTEAM
Olivier RUDLOFF



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- Convertteam
- The Marine Test Bench
 - Functions of the Test Bench
 - Implementation of the Real Time Simulator
 - Example on a project
- Benefits of the Real Time Simulation on the Test Bench
- Evolutions of the Test Bench

Converteam is an engineering company providing customised solutions and systems converting electrical energy into productive performance



Marine & Offshore



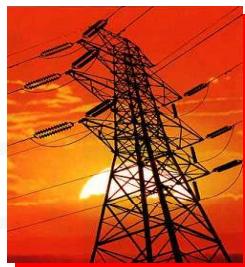
Oil & Gas



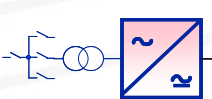
Industries



Power generation



Power transmission & distribution

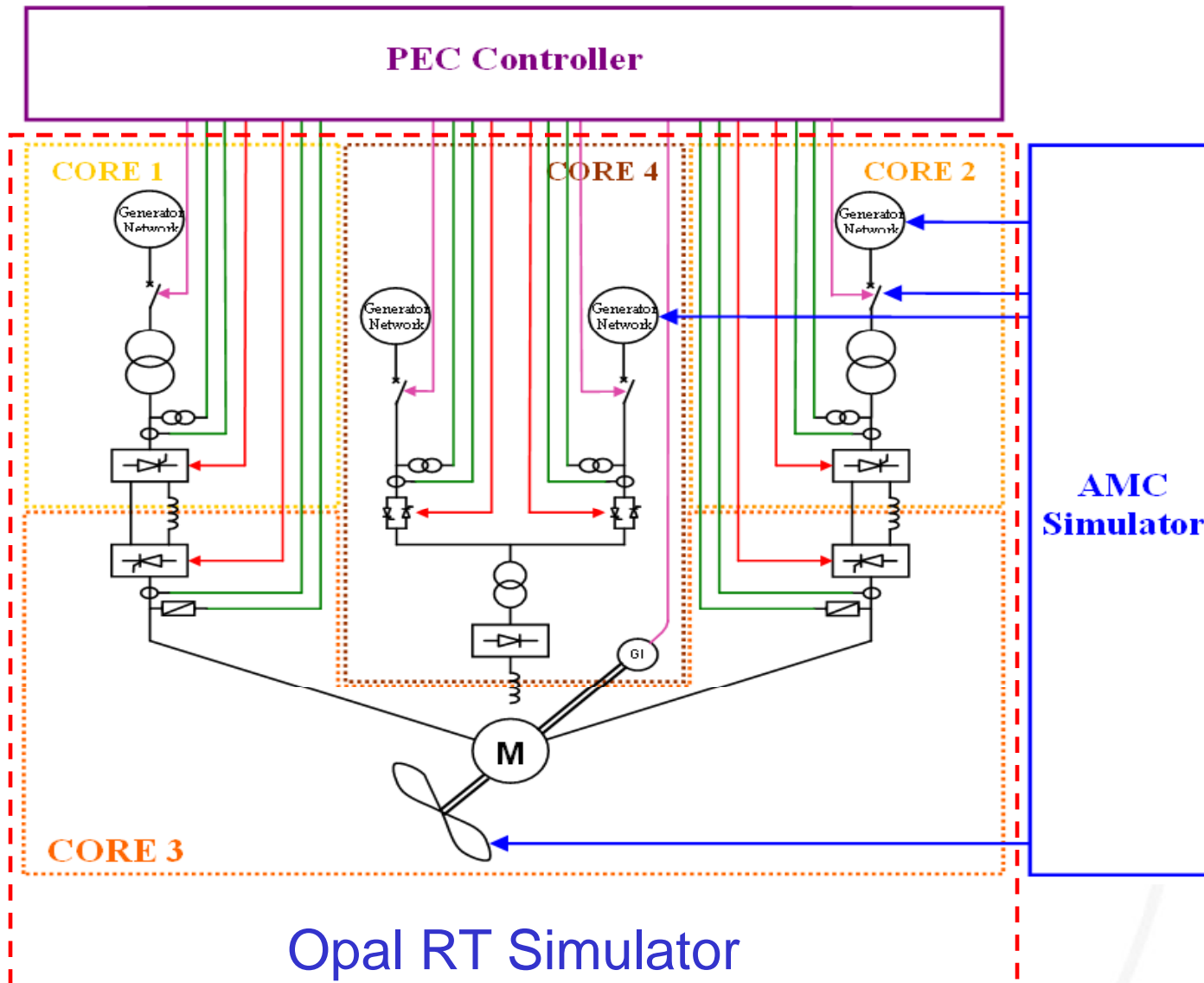


Converteam

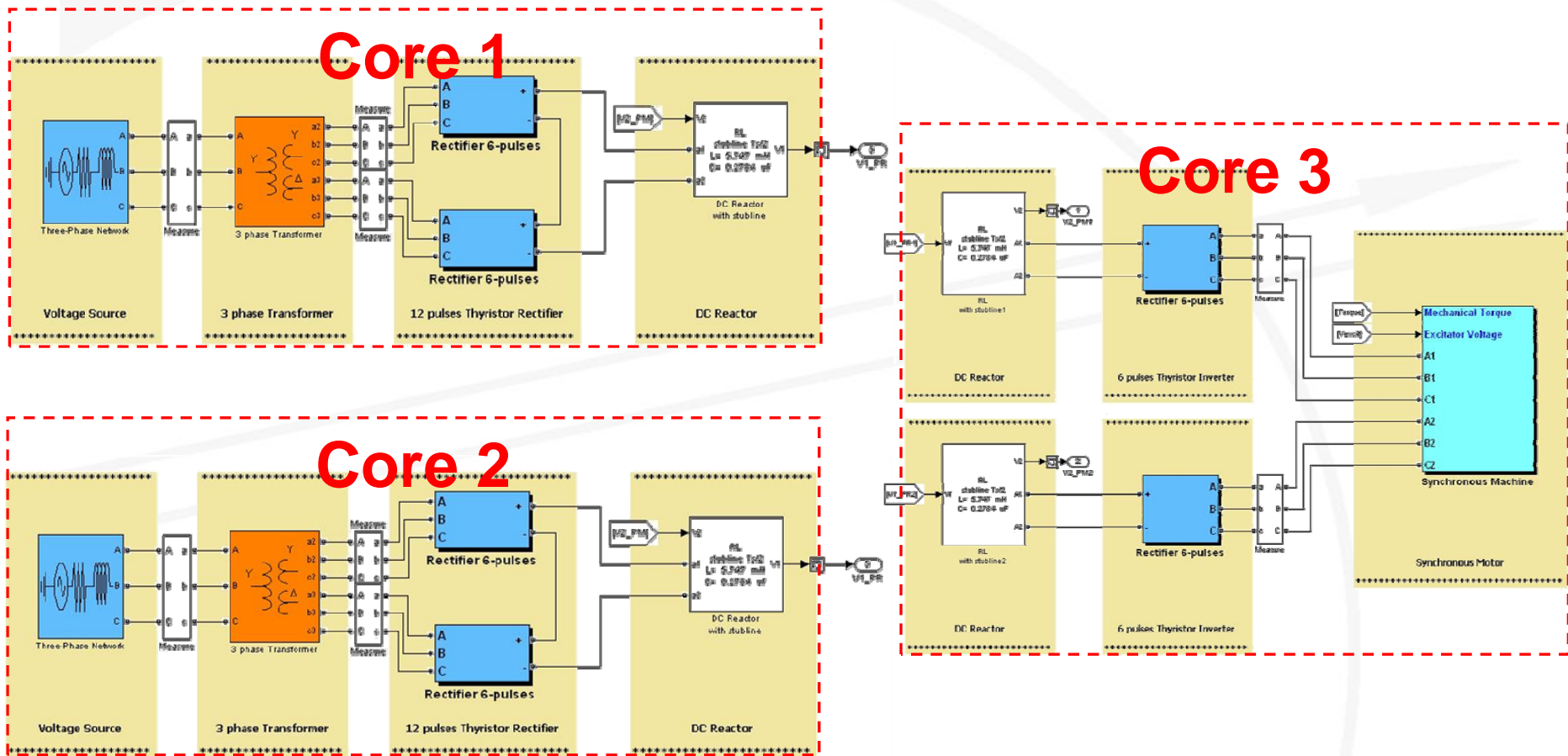
- To be used for the customer training, to be able to reproduce the exact customer application
- Support for the Engineering Department in case of defaults on customer equipment
- To be used to valid new controller technology (hardware and software)

- To be used to valid new controller technology
 - Meyer Werft Factory Acceptance Test
 - Successfully completed
 - Software Conformity Assesment
 - In progress

■ Meyer Werft Factory Acceptance Test



■ Meyer Werft Factory Acceptance Test



■ The Real Time Simulator Cubicle

including :

- the Opal RT simulator
- Optical/Electrical pulses conversion



■ The PEC Controller Cubicle

including :

- the PEC system
- a local control Keypad
- a I/O Wago rack



■ The AMC Simulation Cubicle

including :

- a Converteam Advanced Controller
- a I/O Wago rack



- Model simulated close to the real application
- The controller has not been changed to be used on the Test Bench
- All the tests have been successfully performed during the Factory Acceptance Test
- **Congratulations from the Customer**

- Hardware In the Loop simulation without changing the controller parameters
- Simulated parameters are the same as the real application one
- Simulation of network fluctuation
- Ease to simulate parameters variations

- Reduction of the step time, actually $45\mu\text{s}$
- Simulation of more than 12 switches per core

- Implementation in the Test Bench Simulator the model of our voltage inverter : MV7000
- Simulation of two MV7000 drive in parallel
- Validation of the transformerless topology and its command with the Real Time Simulator
- Implementation in the Test Bench of our latest Controller technology : PECe
- Simulation of projects to reduce the Commissioning on site and to de-risk the projects