

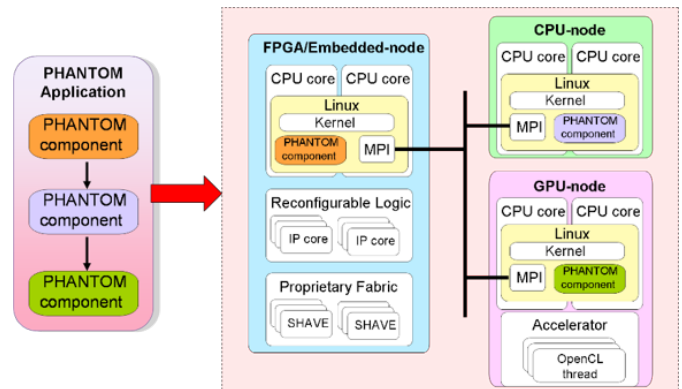
PHANTOM

Cross-layer and multi-objective Programming approach for next generAtioN heTerogeneous parallel cOMputing systems

Modern software applications have to struggle with a great variety of the available hardware platforms, ranging from the commodity Intel's and low-power ARM's CPUs to the accelerators like NVIDIA's GPU, reconfigurable-logic systems like Xilinx's FPGA or dedicated systems like Movidius' Myriad2.

The selection of the most proper platform for the specific application, which has to fulfil the user-imposed functional and non-functional requirements, is a very challenging task, even without considering the required development efforts. Moreover, the challenge is getting even more complex when assuming all those hardware working in a collaborative way within the common infrastructure (which might range from the "server-on-chip" to the cluster-like distributed systems). The term "Cloud" has become common even for such restrictive in terms of hardware domains like embedded systems.

PHANTOM is a EU-H2020 project (under grant agreement No. 688146) carries out the mission to provide a platform that allows the components constituting the application (within the specified control- and data-flow) to be executed in heterogeneous, parallel, and distributed hardware environments (see Figure 1) without any hardware-specific adaptation of the source code.



Role of HLRS:

- Use case provider:
Dynamic simulation of aero- and gas-dynamic processes in real-time
- Technology provider:
Monitoring and Resource Management
Framework, Parallelisation Toolkit

Duration: December 2015 – November 2018

Further Informations:

<http://www.phantom-project.org/>

Project Partners:

- The Open Group (UK)
- Easy Global Market (France)
- GMV (Portugal)
- Intecs (Italy)
- HLRS (Germany)
- University of York (UK)
- Unparallel Innovation (Portugal)
- WINGS ICT Solutions (Greece)