Our partners

Selected Software Components

1. Mercurium

Source-to-source compilation infrastructure for task-based applications

2. Nanos6

Runtime that implements the OmpSs-2 parallel programming model

3. Xitao

Runtime for mixed-model parallel applications

4. SmartMirror

Official repository for a MagicMirror² prototype

5. FTI

Application-level checkpointing that improves efficiency of space, time and energy

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HZI HELMHOLTZ Zentrum für Infektionsforschung

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LEGaTO GitHub
https://github.com/legato-project

The LEGaTO project has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No. 780681

LEGaTO

Low Energy Toolset for Heterogeneous Computing

Plugging the software-stack support gap for energy-efficient computing

www.legato-project.eu

Project goals

One order of magnitude improvement in energy-efficiency for heterogeneous hardware through the use of the energy-optimised programming model and runtime.

5× improvement in Mean Time to Failure through energy-efficient software-based fault tolerance.

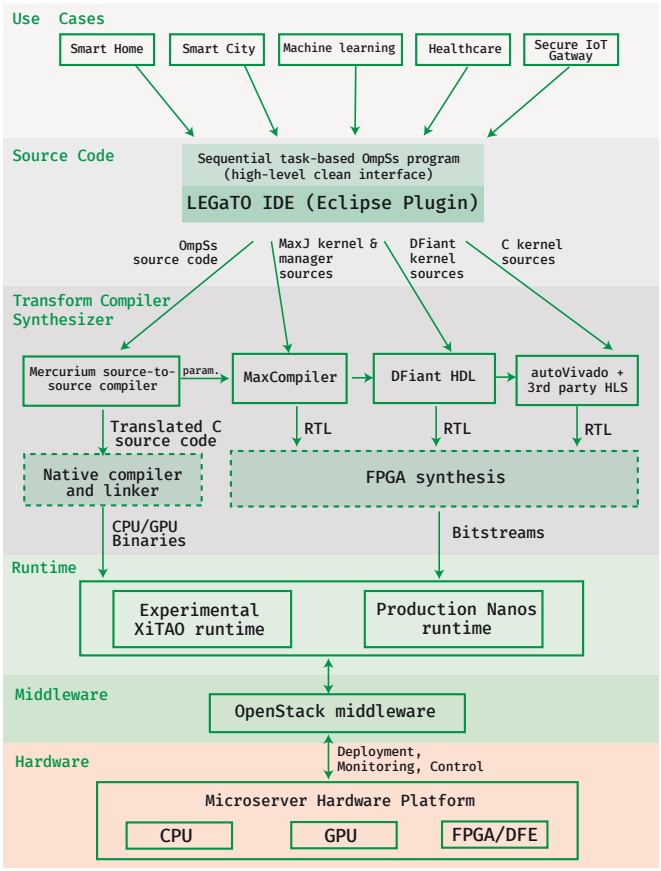
Size reduction of the trusted computing base by at least one order of magnitude.

5× increase in FPGA designer productivity through the design of novel features for hardware design using dataflow languages.

LEGaTO approach

- Optimise Made-in-Europe mature software stack to support energy efficiency.
- Integrate software stack supporting task-based programming model.
- Support energy-efficient computing on a commercial cutting-edge European-developed CPU-GPU-FPGA heterogeneous hardware substrate and FPGA-based Dataflow Engines (DFE)
- Use cases (machine learning, healthcare, smart home/city, secure IoT gateway) to test the integrated stack.

LEGaTO stack



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