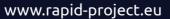
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Heterogeneous Secure Multi-level Remote Acceleration Service for Low-Power Integrated Systems and Devices



ABSTRACT

RAPID targets a novel heterogeneous CPU-GPU multilevel Cloud acceleration focusing on applications running on embedded systems of low-power devices.

The project takes advantage of abundant mobile computation power and ubiquitous high-speed networks to provide a distributed heterogeneous acceleration infrastructure that can change the future of mobile applications.

OBJECTIVES

- Development of a secure unified model where almost any device or infrastructure can operate as an accelerated entity and/or as an accelerator.
- Development of a registration mechanism which permits the accelerated entity to automatically find and connect the nearby accelerators.

SOLUTION

- Acceleration Client: runtime library used to find nearby accelerators and decide whether a task must be executed locally or offloaded remotely.
- Acceleration Compiler: compiler that bridges the gap between the RAPID Programming Model and the Acceleration Client.
- Acceleration Server: piece of software that executes incoming tasks (Plain) or forwards them to another suitable Server (Enhanced), returning the results.

IMPACT

- RAPID will create new innovation opportunities to service providers by introducing Acceleration as a Service.
- RAPID opens the door of GPU-based computation in the Cloud.

Within the RAPID project the first Public Acceleration Cloud service will become available and commercially exploitable!