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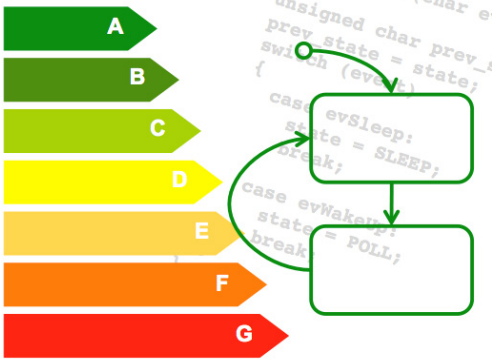

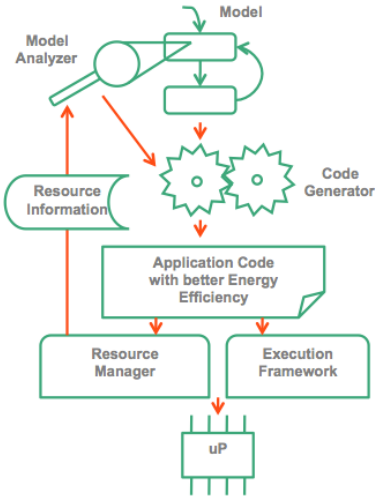

COLD

Energy Efficient Embedded Software Development

Project Summary

The goal of the COLD project is to consequently reduce energy consumption of embedded software without constraining system functionality and, not less important, without complicating the traditional model based development process.

Two different approaches are combined to encounter this quite complex challenge:

- An architecture with an execution framework and a resource manager is introduced. Both contribute to a significantly lower energy consumption by setting the processor and the peripheral devices asleep or even shutting them down when ever possible.
- An model analyzer and a code generator work together in order to generate code against the above mentioned architecture. The analyzer identifies energy consuming resources inside the model and introduces code to set them asleep or to shut them down and to wake them up again appropriately.

These combination of these approaches reduces energy consumption as much as possible and keeps development complexity at a low degree. Thus, the developer can focus on system functionality and anyhow create systems with enhanced energy efficiency. Changes of the system behavior are automatically considered by the model analyzer and the code generator.

Valorisation

The results of the COLD project will be involved into Bachelor degree and Master degree courses of the HES-SO. A competence group whit its focus on energy efficient embedded system development has been formed with the COLD team members. This group is ready to deploy his know-how at academic and industrial level. Several interesting contacts with solar industry partners exist, but no project has been agreed for this moment.

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