TASTE Multicore

The TASTE Multi-core project explored extensions of the TASTE Toolset towards multi-core SMP (symmetric Multi-Processor) and TSP (time and space partitioned) programming models.

In the course of the project, two representative use cases were derived from public case studies:

- ROSACE from ONERA, ISAE and Polytechnique Montreal
- GCU from CNES defined in the Spacify project

They both illustrate challenges in designing systems following the two parallel programming approaches.

From these case studies, and their POSIX and XtratuM hand-written implementations, we first derived requirements to bring at the TASTE CV (or AADL) levels the necessary configuration parameters.

We then extended TASTE generator to support code generation for RTEMS SMP and configuration generation for XtratuM. Finally, we provided high-level requirements to update TASTE domain-specific graphical tools to support these mechanisms.

As a conclusion of the study, TASTE is ready to support SMP, TSP and SMP+TSP systems.