



# MORPHEUS

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## D3.6 Description of the extended simulation environment

CONTRACT NO	MORPHEUS IST 027342
TYPE OF DOCUMENT	Publishable abstract of D3.6
DATE	10/07/2006
ABSTRACT	This document is the abstract of the D3.6. It is available on the MORPHEUS public website
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WORKPACKAGE	WP3
CONFIDENTIALITY LEVEL	PU
FILING CODE	MORPHEUS-UK-D36_R1 4.doc

### Context

This deliverable is part of the MORPHEUS project which is a european initiative financed under the 6th FP and addresses innovative solutions for embedded computing based on dynamically reconfigurable platform and tools.

MORPHEUS project aims at satisfying embedded systems new demanding requirements in terms of computing performance, cost-efficient development, functional flexibility and sustainability by developing a global solution based on a modular heterogeneous SOC platform providing dynamically reconfigurable computing completed by a software oriented design flow and a consistent toolset.

MORPHEUS is a 3-year project started in 2006 and gathering all the required expertises from several countries : academics, industrials, SMEs.

### Aim of the deliverable

The intention of that deliverable to make the reader familiar with the simulation environments developed in the MORPHEUS project. The approach is threefold. Application Kernels can be tested on IP specific simulators, where most of the operating system is developed in a SystemC Simulation Environment. Final Application and Performance Tests must be accomplished on the HDL platform since only that guarantees the correct behaviour compared to the produced chip.

## **Content of the deliverable**

This deliverable presents for the first time the complete MORPHEUS simulation environment with all integrated simulators.

Emphasis of the simulation strategy is to focus on the RTL simulation, since the RTL simulator is the only available simulator of the MORPHEUS architecture which is functionally complete. So application development will focus on the RTL simulator. SystemC simulation can be used if higher simulation performance is required. However, the SystemC simulator is functionally not complete and not fully verified against the RTL simulation.

However, since the RTL simulator as well as the SystemC simulator do not reflect the customization flexibility of the MORPHEUS reference platform architecture, approaches to extend both simulators are discussed and evaluated in order to provide the same level of flexibility also for simulation.

Due to resource limitations it was decided not to implement the proposed simulator extensions.