



MORPHEUS

Morpheus Project Description D6.4

CONTRACT NO	MORPHEUS IST 027342
TYPE OF DOCUMENT	External Deliverable
DATE	25/04/2006
ABSTRACT	Presentation of the MORPHEUS Project
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WORKPACKAGE	WP6: Exploitation and Dissemination
CONFIDENTIALITY LEVEL	PU
FILING CODE	MORPHEUS-TRT-deliverable-D6 4-R1.4

DOCUMENT HISTORY

<u>Release</u>	<u>Date</u>	<u>Reason of change</u>	<u>Status</u>	<u>Distribution</u>
R1.1	17/03/2006	Creation	On-going	website
R1.2	12/04/2006	Insertion of modifications decided at the first EB meeting	On-going	WP6 leader



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1. Introduction

The purpose of this document is to present a summary of the key elements of the project:

- The objectives
- The IST context
- The technical content according to the final version of the Description of Work
- Projects details
- The Participants

This summary will be the basis for EC to build-up the Morpheus Project Fact Sheet page on the Cordis Web Site.

2. Executive summary

MORPHEUS stands for Multi-purpOse dynamically Reconfigurable Platform for intensive HEterogeneoUS processing. This project addresses a technology breakthrough for embedded computing by developing a reconfigurable platform and tools.

3. Detailed presentation

3.1. FP6 context

Project acronym: **MORPHEUS**

Funded under 6th FWP (Sixth Framework Programme)

Action Line: IST-2002-2.4.1: Nanoelectronics

3.2. Coordination

Coordinator:

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3.3. Content summary

The Multi-purpOse dynamically Reconfigurable Platform for intensive HEterogeneoUS processing (MORPHEUS project) is an integrated project which addresses innovative solutions for embedded computing based on dynamically reconfigurable platform and tools.

The large-scale deployment of embedded systems is indeed raising new demanding requirements in terms of computing performance, cost-efficient development, low power, functional flexibility and sustainability. This leads to an increasing complexity of the platforms and an enlarging design productivity gap: current solutions are out of breath while current development and programming tools do not support the time-to-market needs.

MORPHEUS copes with these challenges by developing a global solution based on a modular heterogeneous SOC platform providing the disruptive technology of dynamically reconfigurable computing completed by a software (SW) oriented design flow and a consistent toolset. These "Soft Hardware (HW)" architectures will enable huge computing density improvements (GOPS / Watt), reuse capabilities, flexibility and time to market thanks to a convenient programming toolset.

MORPHEUS ambitions to establish the European foundation for a new concept of flexible "domain focused platforms", positioned between general purpose flexible HW and general purpose processors and providing breakthroughs in performance and cost-effectiveness to embedded computing systems.

This will be achieved within a 3-years integrated project providing:

- A modular silicon demonstrator composed of complementary run-time reconfigurable building blocks to address the different types of application requirements
- The corresponding integrated design flow supporting the fast exploration of HW and SW alternatives

The suitability and the efficiency will be validated by a set of four complementary test cases: Broadband Wireless Access, Network routing, professional video, Homeland security.

The dissemination through silicon offer and supporting tools (baseline for further commercial products) will be completed by specific training and broad information to address the necessary cultural change.

This will be performed by a consortium where many partners are already involved in bilateral cooperation, and implemented along a 2-step process to monitor the final content of the project according to state of the art evolution and first results.

3.4. Project Details

Project Acronym: MORPHEUS

Project Reference: 027342

Start Date: 2006-01-01

Duration: 36 months

Project Cost: 15,236 M€

Contract Type: Integrated Project

End date: 2008-12-31

Project status: Execution

Project Funding: 8, 24 M€

Website address: <http://www.morpheus.arces.unibo.it>

3.5. Participants

Participant name	Participant short name	Country
THALES Research & Technology	TRT	France
Deutsche Thomson-Brandt GmbH	DTB	Germany
Intracom Telecom Solutions	Intracom	Greece
Lucent Technologies Network Systems GmbH	Lucent	Germany
Thales Optronics SA	TOSA	France
STMicroelectronics Srl	ST	Italy
PACT XPP Technologies AG	PACT	Germany
M2000	M2000	France
Associated Compiler Experts bv	ACE	The Netherlands
CriticalBlue	CBlue	United Kingdom
Universität Karlsruhe	UK	Germany
Technische Universiteit Delft	TUD	The Netherlands
Commissariat à l'Énergie Atomique - LIST	CEA	France
Université de Bretagne Occidentale	UBO	France
Universita di Bologna	ARCES	Italy
ARTTIC	ART	France