Project N°: 610456

D7.1 Plan for Using and Disseminating the Knowledge (Preliminary)

April 25, 2014

Abstract:

This document defines the dissemination objectives for the EUROSERVER project, as well as the different targets for all its activities, the dissemination tools, the interaction with similar projects, and the policy used to disseminate the results.

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The EuroServer Consortium consists of the following partners:

Participant no.	Participant organisation names	short name	Country
1	Commissariat à l'énergie atomique et aux énergies alternatives	CEA	France
2	STMicroelectronics Grenoble 2 SAS	STGNB 2 SAS	France
3	STMicroelectronics Crolles 2 SAS	STM CROLLES	France
4	STMicroelectronics S.A	STMICROELECTRONICS	France
5	ARM Limited	ARM	United Kingdom
6	Eurotech SPA	EUROTECH	Italy
7	Technische Universitaet Dresden	TUD	Germany
8	Barcelona Supercomputing Center	BSC	Spain
9	Foundation for Research and Technology Hellas	FORTH	Greece
10	Chalmers Tekniska Hoegskola AB	CHALMERS	Sweden
11	ONAPP Limited	ONAPP LiMITED	Gibraltar

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Revision history

Version	Author	Notes
0.1	Y.DURAND	creation
0.2	P.CARPENTER	Press release and other edits
0.3	R. GIMÉNEZ, M.GRAY	Edits to sections including introduction, objectives, press releases and dissemination pack

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Introduction

Effective dissemination of project outputs is of great importance to EUROSERVER partners and will be closely linked to the project's success. This document sets out how the knowledge generated during the EUROSERVER project will be disseminated and used. It includes the general objectives which dissemination activities are intended to achieve, the methods by which these will be carried out and the metrics with which they will be measured.

The dissemination strategy falls under WP7, which is divided into three main strands:

- Communicating project progress to a wide audience
- Establishing the de-facto standard for specifications and models developed during the project through publications and knowledge transfer to industry partners
- Exploitation activities

The inclusion in the project of worldwide research centers and well known universities provides a clear path to immediate dissemination of EUROSERVER outcomes through conferences and publications, as well as through teaching new students who will be the architects of future systems.

The difficulty in finding and recruiting skilled engineers is a reality in Europe and western countries. This requires training and development of students and junior engineers. Although EUROSERVER is technically challenging it is foreseen that there will be opportunities for junior engineers and PhD students to participate in the project, not only having a direct contribution to the project, but learning from a diverse set of companies in order to realize changes that will have an impact on society. This training is invaluable and assists not only the consortium but also the next generation of scientists, engineers and designers.

Since the project requires the creation of a functional prototype a commercial deployment of such a prototype would be comparatively simple and as such the applicability to market is high. The chiplet concept supports and encourages reuse and could be aimed at multiple target markets with limited NRE cost and effort. Different I/O configurations allow the same base compute chiplet to be used in a variety of different device configurations, across different applications without incurring the significant reimplementation costs associated with current 2D IC design and manufacturing. The partners in the project have selected key individuals that have a strong bearing on company policies. These individuals and the companies have been selected not only for their understanding of the technical challenges required and the ability to meet them but also such that they can help alter the direction of the company roadmaps.

General objectives

The main objectives of the dissemination activities undertaken as part of WP7 outlined in this document are as follows:

- To ensure visibility among key project stakeholders

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- To raise awareness of the project, the issues it raises and project outcomes among a wider audience, especially potential end users
- To engage key groups such as PhD students, engineers and businesses and encourage their participation in the project
- To influence the IT industry in terms of the energy efficiency and total cost of ownership of their products
- To establish the de-facto standard for specifications and models developed over the course of the project
- To exploit EUROSERVER outcomes with industrial partners

Target audience

This section lists the target groups of the EUROSERVER project. The project should be able to attract the attention of the following groups:

- EUROSERVER partners
    - Researchers, technical management, senior management, sales, marketing
- Scientific community involved in the topics related to the project, as well as end users of the possible technology to be developed
- European IT Industry vendors of servers and microservers
- Cloud computing service providers
- Research organizations
- Stakeholders
- Policy makers
- Related EU and International Projects: HiPEAC, Mont-Blanc, DreamCloud, FIPS, POLCA, PRACE
- General public

Dissemination strategy

A summary of the dissemination activities is listed in Table 1.

Table 1: Overview of the dissemination and exploitation activities

Objectives	Activities
To disseminate generally understandable information about the project idea, approach and results	- Public website, including press release and project abstract - Brochure, various presentations - Electronic newsletters - Attending events related to the outcomes of EUROSERVER

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Objectives	Activities
To interact with stakeholders, other researchers in the field and the general public	- Wide dissemination on the website of the public deliverables, jobs offers, potential collaborations, news, etc. - Submitting collaborative, peer-reviewed publications and depositing them into an online repository, making efforts to ensure open access within 6 months after publication - Careful and strategic revision of the plan for the use and dissemination of foreground - Electronic newsletters - Participate and publish articles at relevant, top-tier conferences, such as Usenix ATC, ASPLOS, EuroSys, MICRO, OSDI, SOSP - Presentation and demonstration of prototypes in supercomputer events, i.e., ISC – June, Europe, and Supercomputing – November, US. in partner booths.
To push scientific and technological innovations for uptake by market actors, increase the acceptability of understanding for uptake by market actors, increase the acceptability of understanding of the field	- Dissemination of confidential and restricted deliverables having a direct potential use for end-users and other stake-holders (following protection of results and signature of non-disclosure agreements) - Business-to-business communication in dedicated end-user magazines. - Disseminating project results at working groups and strategic committees beyond the consortium through...

The first step of the dissemination plan was to design and build the project website which will play a major role in informing public awareness and opinion. It will detail the project objectives, its partners and its results. The website will also display the required brochure and poster and also updates on the results of publicly shared deliverables. Regular editions of the project brochure and flyers will be provided to partners for distribution at trade fairs, conferences and other meetings.

The partners will disseminate the findings of EUROSERVER to the scientific and industrial communities though traditional channels including follow-on press releases, peer-reviewed publications, and specialized websites and participating in well-known scientific conferences.

Through the WP7 activities associated with the creation of specification documentation, the commercial participant associated with the IP and design of associated devices will be able to build on the ARM ecosystem to further broaden the attractiveness of EUROSERVER technology based design. This market pull will in turn extend the market opportunity for the initial participants of the project through their time to market advantage and experience in developing such solutions.

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To monitor and evaluate the effectiveness of communication and dissemination activities within EUROSERVER, a set of data will be collected and analyzed. All project partners will contribute. The table below is a synthesis of the definition of data to collect together with the target figures.

Table 2 : Dissemination metrics and target

description	Measure	target
International events (fairs)	Name, date and location of events What was presented (prototype, presentation, poster...)	Embedded World Conference (Nuremberg - DE) International Supercomputing Conference (Leipzig - DE) Cloud Computing Expo (Santa Clara - US) Supercomputing (USA)
Scientific conferences	Number of papers produced that were submitted to a scientific conferences Number of papers accepted	Application: ICDCS, IEDM Circuit design: DAC, DATE, ESSIRC/ESSDERC Embedded: DATE, ESWEEK, HiPEAC HPC: ACM TACO / HiPEAC, ACM ICS, HPCA, ISC Storage: MSST, FAST, ISSCC System/Architecture: ACM TACO / HiPEAC, ISCA, MICRO, HPCA, ICS, ASPLOS, Usenix ATC OS: EuroSys, ASPLOS, OSDI, SOSP
Dedicated workshop	Number of people actively participating	A specific EUROSERVER workshop will be organized during the last year of the project to present the project achievements and to discuss the beyond state of the art topics.
Journal Publications	Number of papers produced and submitted Number of papers accepted	ACM Tran. on Architecture & Code Optimization (TACO), IEEE Tran. on Computers (TC)
Project web site	Number of visits Number of requests for further information	The website will display the required poster and also updates on the results of publicly shared deliverables
Press releases	Number of press releases issued Number of media inserts Number of individual press impacts	

Project Image

Logo

The main image of the project is the design of the logo presented below.

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Figure 1: project logo

The logo image was designed to suggest a stylised version of a manycore server, while the colour green was chosen to reflect the sustainability and enery-saving objectives of the project. The font was chosen to give the text a clean, modern feel. This branding will be applied across the dissemination channels of the project, including the website, press releases and any material produced to publicise events.This logo has been approved by all EUROSERVER partners.

Project Templates

Project templates for deliverables and PowerPoint presentations are available under the project repository.

Figure 2: project templates available in the WP1 folder

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Publication acknowledgement sentence

When appropriate, following acknowledgment paragraph should appear in the text of journal papers or conference proceedings:

> This research project is supported by the European Commission under the 7th Framework programme under the "Information and Communication Technologies" theme, with grant number 610456.

Management of Intellectual Property Rights (IPR) for dissemination

The detailed terms, rights and responsibilities of the partners concerning intellectual property are detailed in the Consortium Agreement.

However, dissemination of the foreground will be carried out as swiftly as possible. Nevertheless, special efforts will be made so that dissemination doesn't endanger the protection and use of the foreground (IP) by partners in line with the confidentiality clauses of the Consortium Agreement, all project results will be considered confidential at first. Partners who would like to disseminate research results will transmit a summary to all partners prior to the expected dissemination date as defined in the Consortium Agreement. Any partner can raise an IPR issue concerning the summary of research results.

External Dissemination tools and events

External website

The project website will play a major role in informing public awareness and opinion. It will detail the project objectives, its partners and its results. The website will also display the required poster and also updates on the results of publicly shared deliverables.

The website http://www.euroserver-project.eu/ has been active since Feb. 2014. Its first version contains basic information, and as yet no deliverable or foreground information. Its front page is displayed below:

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Figure 3 : project website front page (1st version)

Events and Conferences

The partners will disseminate the findings of EUROSERVER to the scientific and industrial communities through traditional channels including peer-reviewed publications, specialist websites and participating in scientific conferences in the field of computer architecture, information technology, embedded computing, etc. Presenting the latest updates of the project at such events, meetings or workshops will be an effective means of involving industry leaders in standards discussions early on. The list of targeted academic/industrial events includes conference and networks of excellence is listed above.

The list of events and conference attended is listed below:

dissemination : past events				
date	event	where	type	partner
10-Dec-13	Next Generation Computing Systems: components and architectures for a scalable market	Brussels	workshop	CEA

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28-Jan-14	Final workshop of the Next Generation Computing Roadmap Study	Brussels	workshop	CEA
20-Jan-14	HiPEAC 2014	Vienna	poster	EUROTECH CHA CEA FORTH
17-Apr-14	SEmba	Pont-en-Royans (FR)	workshop	CEA

Participation to other events is planned for the next period. A preliminary list is listed below:

dissemination : planned events (short term)				
date	event	where	type	partner
17-août-14	DSD 2014 : Special Session on European Projects (EPDSD)	Verona	conference	BSC/CEA/…
29-mai-14	Xen project Hackathon	London	conference	OnApp

Education and Training

Participation or organization of activities specifically connected to education and training such as research exchanges, seminars or training courses will be planned

Journals

At least one joint EUROSERVER journal publication is expected to be submitted, either near the beginning of the project, to outline the EUROSERVER vision, or near the end, to describe the project outcomes. Suitable journals include ACM Transactions on Computer Systems, Future Generation Computer Systems and IEEE Micro.

Mentions to EUROSERVER will also appear in publications. The list below displays some of them:

dissemination : journal publications			
date	publication	content	reference
March 2014	PanEuropean Networks "Science and technology" issue 10	paragraph "green computing node" about EUROSERVER	http://www.paneuropeannetworks.com/ST10/

Press releases

Press releases are one of the most effective ways of communicating the existence of the project to a specific target audience (general public and related institutions) by attracting attention to the project's progress and its achievements. The initial press release is the most important one, because it defines the EUROSERVER project objectives as well as its working plan. There may be further press

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releases during the project. In the middle of the project there could be a press release to explain the project's progress, and at the end of the project, a press release for the scientific results. All press releases and press impacts will be uploaded on the project website. For more details, please read D 7.2 where the complete press strategy has been defined.

The first press release was released on March 27th 2014 with the content given in Annex A : text of press release, at the end of this document. It was sent to HPC Wire, Scientific Computing World, Technology Review, Wired, ComputerWorld, eWeek, The Register, GreenComputing Report, ISGTW.

Further details are given in D7.2 (Press Release Along with Project Web Site Address).

Contributions to standards and policy developments

The EUROSERVER consortium already has significant expertise in participating and leading standardization activities at an individual partner level. This knowledge and experience will be harnessed for the benefit of the standardization activities of the project.

There are many standardization bodies that are related to energy efficiency of datacenters. In the US the certification standard is LEED from the US Green Building Council. In Europe and in particular the UK, the BREEAM Standard has had the largest following. BREEAM and LEED have been used for datacenters but the standards are not so useful after the initial building design has been completed. Ongoing energy use and the real operating costs are large in proportion to the initial costs and as such these standards have limitations that the industry has reacted to by developing other, more targeted standards.

The EC have a code of conduct for datacenters but as it is a self-certification system the British Computer Society created the Certified Energy Efficiency Datacenter Award (CEEDA) that was launched at the end of 2010.

There is also an emerging pan-European standard that is being developed by Building Research Establishment (BRE), Centre Scientifique et Technique du Bâtiment (CSTB) and other leading groups for efficient building design and construction, the Sustainable Building Alliance.

EUROSERVER would look at further investigating the standardization bodies that are currently used and would look to promote further standards from the perspective of the operating efficiency of hardware. EUROSERVER is well placed to participate in standards bodies and also promote modifications to existing standards.

Dissemination Pack

The acknowledgement of the EC funding sources will be included in all dissemination materials with the following sentence:

> This research project is supported by the European Commission under the 7th Framework programme under the "Information and Communication Technologies" theme, with grant number 610456.

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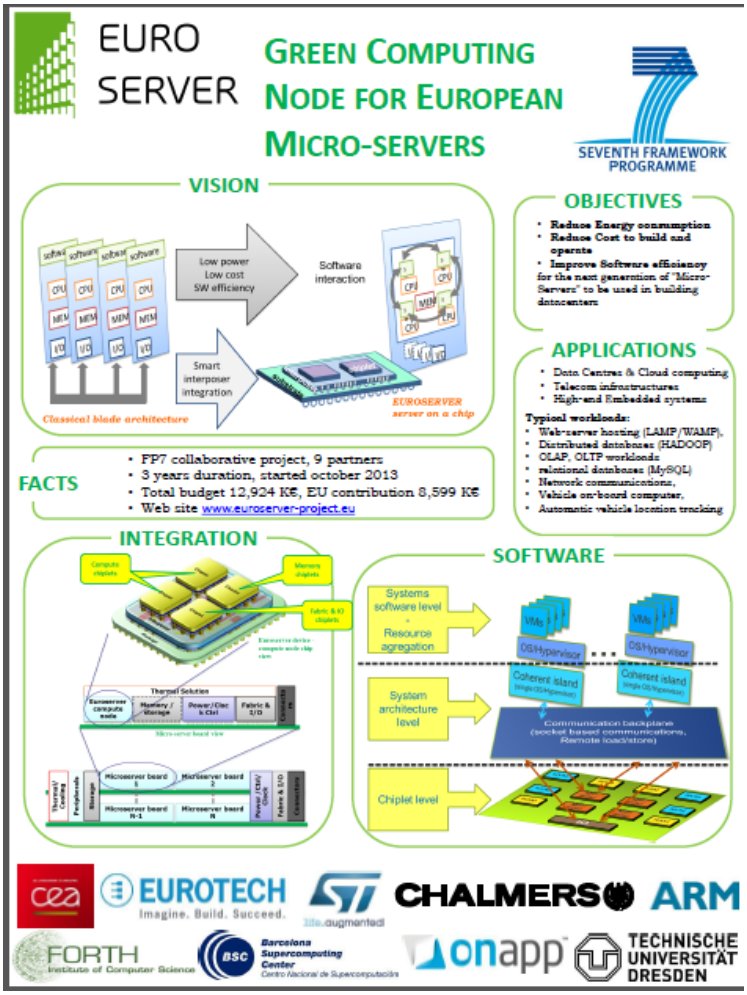
General Brochure

A one-page general presentation is available on the project repository. The general brochure provides information about the project, its objectives and future achievements and its. The format of the brochure will be a single-sided A4 sheet, so that interested Project Partners can easily download and print for their own dissemination purposes. It will be distributed in all events or local actions to scientific and industrial contacts defined by each partner. It will also be available on the website

Generic poster

The generic poster initially designed for the HiPEAC 2014 conference is available on the project repository. It is represented below:



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Annex A : text of press release

INTRODUCING: THE EUROSERVER PROJECT

Europe invests realising next-generation green computing for micro-servers and scalable compute:

27 March 2014

The EUROSERVER project brings together under the support of the European FP7 ICT funding program world-class industrial and academic expertise to design and prototype technology, architecture and systems software for the future generations of energy-efficient reduced-cost micro-servers and scalable compute platforms

Data centres, and computing in general, are driving the Information Society worldwide and are one of the key resources for innovation and leadership of European industry. As data centre traffic and workloads continue to grow, data centre scaling is increasingly constrained by existing server technology due to insufficient server density, high power consumption and high total cost of ownership (TCO). This is why EUROSERVER has taken to reconsider the basic components and fundamental system architecture of future technology and the resulting server platforms, by architecting and proving their suitability through delivering into a full prototype system.

There are three key axes to the EUROSERVER approach. Firstly, the project will use the low-power 64-bit ARM Cortex™ processors fabricated using the FDSOI fabrication technology, an ideal silicon platform for data centre workloads. Secondly, the project will advance the state-of-the-art in 3D silicon-on-silicon and multichip module package integration, placing multiple silicon "compute chiplets" on a active silicon interposer, while also integrating multiple gigabytes of memory within package together improving fabrication yields, compute density, reduced energy consumption and significantly reducing the cost of acquisition and ownership. Thirdly, EUROSERVER proposes a new backwards compatible system software architecture that allows resource virtualisation and sharing of global memory and I/O between multiple compute nodes while delivering new memory models that will enable the future generation of more efficient and high-performance software paradigms.

EUROSERVER is a three-year project coordinated by Commissariat à l'énergie atomique et aux énergies alternatives (CEA) with a managed budget of 12.9 million euros, including 8.6 million euros funded by the European Commission's FP7 Programme plus significant indirect support from the industrial partners.

The three main project objectives are:

- To reduce energy consumption by: (a) using low-power 64-bit ARM cores, (b) reducing the core-to-memory distance through silicon interposer and packaging technology, and (c) while improving energy proportionality.
- To reduce the cost to manufacture, build and operate, by: (a) improved manufacturing yield through 3D integration of multiple chiplets on a active silicon interposer, and (b) small size of the packaged interposer module, and (c) and energy-efficient semiconductor process (FDSOI).
- To improve software efficiency through next-generation system software that (a) manages the resources in a server with a common global address space and (b) isolates and protects

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multiple workloads from each other when they share resources such as I/O, storage, memory, and interconnects.

"The EUROSERVER prototype will demonstrate how the proposed approach can improve energy efficiency by a factor of ten, by 2020" says Yves Durand, EUROSERVER project coordinator. The prototype will be evaluated using workloads for (a) data centres and cloud computing (LAMP, WAMP, HADOOP, MySQL), (b) telecom infrastructures (network communications), and (c) high-end embedded systems (vehicle onboard computer, automatic vehicle location tracking [AVL], advanced security and surveillance).

EUROSERVER brings together a European consortium, joining industrial technology providers, universities and research centres: Eurotech (Italy) as the system integrator, ARM (UK) as the world leader in embedded high-performance processor IP, and STMicroelectronics (France), Europe's leading semiconductor company, as well as OnApp (Gibraltar), which provides a complete IaaS platform for hosts, telcos and MSPs. In addition to the technology providers and users, EUROSERVER brings application and computer and memory architecture expertise from Barcelona Supercomputing Center (Spain), TU Dresden (Germany), FORTH (Greece) and Chalmers (Sweden).

EUROSERVER was launched in September 2013. More information is available at the project's website at www.euroserver-project.eu.

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