INFORMATION SOCIETIES TECHNOLOGY
(ICT)
PROGRAMME

Information Society

REVIEW REPORT

ICT- 214373 - ARTISTDESIGN

Embedded Systems Design

Review Y1

Covering project month M01 to M12: 01/01/2008 – 31/12/2008

Contract start date:	January 1 2008
Contract end date:	December 31 2011
Project type:	Network of Excellence
Review date:	23 January 2009
Review location:	Beaulieu 25 0/S1 Brussels
Project Officer:	Berta FERRER LLOSA
Reviewers:	Gilles LE CALVEZ
	Janos SZTIPANOVITS
	Martin TIMMERMAN
Report number:	20090225
Classification:	Consortium + Reviewers
Report version:	3.0
Revision History	1.0, 06/02/2009, Martin: initial draft with inputs from reviewers
	2.0, 23/02/2009, Martin incorporating comments from Janos and Gilles
	3.0, 25/02/2009, Martin incorporating comments form Berta

Table of contents

1   Executive Summary

1.1   Project summary:

The ARTISTDESIGN NoE is the visible result of the ongoing integration of a community, that emerged through the Artist FP5 Accompanying Measure and that was organised through the Artist2 FP6 NoE. The central objective for ARTISTDESIGN is to build on existing structures and links forged in Artist2, to become a virtual Centre of Excellence in Embedded Systems Design. This will be mainly achieved through tight integration between the central players of the European research community. Also, the consortium is smaller, and integrates several new partners. These teams have already established a long-term vision for embedded systems in Europe, which advances the emergence of Embedded Systems as a mature discipline.

ARTISTDESIGN will become the main focal point for dissemination in Embedded Systems Design, leveraging on well-established infrastructure and links, such as a web portal and newsletter. It will extend its dissemination activities, including Education and Training, Industrial Applications, as well as International Collaboration. ARTISTDESIGN will establish durable relationships with industry and SMEs in the area, especially through ARTEMISIA/ARTEMIS. ARTISTDESIGN will build on existing international visibility and recognition, to play a leading role in structuring the area.

The research effort aims to integrate topics, teams, and competencies, grouped into 4 Thematic Clusters: "Modelling and Validation", "Software Synthesis, Code Generation, and Timing Analysis", "Operating Systems and Networks", "Platforms and MPSoC". "Transversal Integration" covering both industrial applications and design issues aims for integration between clusters.

ARTISTDESIGN has defined a four-year work programme, with a strong commitment to integration and sustainability. To achieve the aims, the estimated support from the EC is approximately 4.5 MEU. This support is a very small proportion of the overall investment by the core partners.

Project Cost: 5.86 million euro
Project Funding: 4.5 million euro

1.2   Period under review and main review objective

The first 12 months are under review. The review objectives are to verify contribution to the main objectives during this period:
- Strengthening Scientific and Technological Excellence for Embedded Systems Design
- Spreading Excellence in Embedded Systems Design
- Structuring European R&D in Embedded Systems Design

The review was planned and executed in accordance with the contract. The consortium has consumed the expected resources and is in the progress of incurring the expected costs for this phase of the project.

1.3   Overall reviewers' conclusion

The ARTISTDESIGN Network of Excellence has made an impressive and remarkable work during this first year. The Community is well established. It is a very active, visible and high energy

community with a worldwide impact. This is shown by the research output, the website, the summer schools, the joint publications as well as by the generated projects both at European level (FP7, Artemis) and at national level.

At the review meeting, presentations were at the right level of detail, well presented and the timing was good.

The main points are summarised below:

- **Strengths:**
  - The NoE project continues to be well on track with a lot of high-quality research and internal communication activities in all the clusters.
  - Quality management - the technical deliverables were on time.
  - There is a very good integration between the different partners.
  - The website continues to be extensively used as a dissemination tool for interaction in the clusters and as a means to inform the global embedded systems' community.

- **Improvements:**
  - Prepare in a more timely fashion the financial management documents delivered on time.

This report is a combined effort of all the reviewers and there are no points of disagreement between them on its content.

2   Organisation and logistics

This review was held in Brussels, Beaulieu 25 0/S1 Friday January 23 2009. Each cluster was represented throughout the review. See list of participants, list of reports and deliverables & agenda (appended to this report). An electronic copy of each presentation was available.

3   Project Management

The Management deliverables adequately cover the management aspects of the project.

During the review meeting several changes within the Consortium composition were anticipated for Y2 reporting period. In principle and if recommendations given previously by the Commission regarding subcontracting terms are observed, the mentioned changes should not be a problem. The Consortium would need to request for an amendment that will be evaluated by the Commission at due time.

The following changes were reported during the review meeting in respect to the initial DOW:
- ESI change of representative
- EPFL transfer to IST Austria (effective Sept 1st). Giovanni De Micheli will be the new EPFL representative.
- Susanne Graf will lead the Modeling activity
- Mr. Aveiro is now at Porto (effective July 2009)
- PARADES => Mr. Alberto Sangiovanni becomes a consultant

4   Dealing with previous review recommendations

NA for this first year review.

5 Deliverables

5.1 General comments on presentations

The presentations by each cluster were homogeneous, following a template. The quality of the presentations was overall very high: at the right level of detail and respecting the timing.

5.2 General comments on deliverables

The Project Management Report is **incomplete** (Financial information missing for 15 partners)
Project Activity Report (chapter 1 to chapter 5) is **accepted**.
All Y1 technical deliverables have been **accepted.**

The Y1 deliverables were of a uniform excellent quality, written very professionally. The template provides fields for exactly what is needed to report on progress, and the authors have clearly and concisely populated the template in each case.

Pre-assessment of deliverables will be performed for the following years' reporting period of ARTISTDESIGN Network of Excellence. All technical deliverables should be made available for the pre-assessment approximately two months before the review. Pre-assessment feedback will then be made available by the experts and the Commission one month later. Financial information will be made available to the Commission one week before the review meeting.

5.3 WP0: Joint Program of Management Activities (JPMA)

5.3.1 D1-0.1-Y1 Project Management Report

The document is delivered to the commission but is still incomplete. Consortium needs more time to complete the document. This is understandable as this review was scheduled only 3 weeks after the Y1 finished.

5.3.2 D2-0.2-Y1 Project Activity Report

D2-0-2a-Y1_ExecSummary+Overview.pdf
The project management has a simple, well defined and working organization structure. The Strategic Management Board and the Executive Management Board work well with the Clusters and Cluster Leads. Mechanisms are in place to modify the cluster structure if technological changes require organization change. The General Assembly provides sufficient interaction across the NoE and resolves potential problems with isolation of cluster activities.

The structure of research activities is recognizes the necessary overlap across areas and creates a nice solution for managing it by establishing horizontal and vertical clusters. Advantage of the matrix organization is distribution of information and flexibility: transversal integration activities intentionally cut across design activities.

The description of the structure and main results of the research activities is concise and clear. The summaries are specific and point to achievements that are real and substantial.

A particular strength of the report is the Metrics table with well established excellence indicators. The very large number of publications, conferences, meetings, workshops and tutorials present a convincing snapshot about the work of a scientific community which is extremely active, productive and major driver of the technical field.

In summary, ARTISTDESIGN continues the excellent work in Artist2

D2-0-2b-Y1_Modelling_and_Validation.pdf
The overall objectives of the cluster are appropriately defined, including contribution with reference to the quantitative values targeted by ARTEMIS strategy (number of development cycles, system design cost, revalidation effort reduction...). The mention on present test techniques would benefit to consider some additional statistical test methods, in order to assess their effective impact on development efficiency.

D2-0-2c-Y1_SW_Synthesis_Code_Generation_and_Timing_Analysis.pdf
There is a huge challenge regarding Timing analysis and its impact on code generation, especially, as being noticed, due to the specifics of parallel architectures. The remark that software synthesis is a wide area the full breadth of will not be covered will deserve to get more detailed in terms of future work plan, so objectives are clear on this topic (this can be done in D7-4-1)

D2-0-2d-Y1_Operating_Systems_and_Networks.pdf
Splitting this cluster in three domains is a pragmatic approach. The concern regarding "hard real-time versus soft real-time", as well as the mix of "safety-related and non-safety-related functions" in a same "ECU" is really at the core of future efficiency for developing cost-effective ECU's.

D2-0-2e-Y1-Hardware_Platforms_and_MPSoC_Design.pdf
This deliverable highlights clearly the challenges that must be tackled, especially regarding co-integration and the impact of non-stationary workload (on CPU power, energy power, resource availability ...). The multi-criteria optimization is one of the most important topic, considering that some performances induce an extra-cost (as stated in 3.5.2). Quantitative objectives would bring benefit to the evaluation of the achievements in the future.

ALL D2 reports are ACCEPTED

5.4   WP1:   Joint Program of Integration Activities (JPIA)

5.4.1   Integration Activities Report

D3-1-0-Y1_JPIA_Integration_Activities_Report.pdf
This extensive list of meetings, conferences and visits / hosting of researchers shows how active the group of ARTISTDESIGN members is, leveraging efficiently the work already initiated through the former Artist Networks of Excellence. This deserves to be acknowledged and pursued in the coming years.
The report is ACCEPTED

5.5   WP2:   Joint Program of Activities for Spreading Excellence (JPASE)

5.5.1   Spreading Excellence Report

D4-2-0-Y1_Spreading_Excellence.pdf
No further comments: ACCEPTED

5.6   WP3:   Thematic Cluster: Modeling and Validation (JPRA)

The Modeling and validation cluster focuses on the combination of model-driven and component-based design. Research addresses modeling formalisms, analysis methods establishment of theories of compositionality, realization of tool chains and interactions with vertical themes.

The deliverable provides a concise and valid evaluation trends and activities in EU and internationally.

The results summarized show valuable progress in tools for simulation and verification. The long-term vision of the cluster continues to be model-driven and component based design. A particular strength to be emphasized is the goal of integrating academic tool components into existing industrial tool chains that improve the impact and increases probability of transitioning.

The cluster is very active, which is signified by the Summer School, by the 7 workshops organized and by the impressive number of student and staff visits across the participating organizations.

A special strength of the cluster is that results are available in the form of tools and tool boxes that make serious impact in EU and worldwide.

5.6.1 Modeling Report

D5-3-1-Y1_Modelling.pdf
No further comments: ACCEPTED

5.6.2 Validation Report

D6-3-2-Y1_Validation.pdf
No further comments: ACCEPTED

5.7 WP4: Thematic Cluster: Software Synthesis, Code Generation and Timing Analysis (JPRA)

The cluster addresses the challenges created by the upcoming wave of multiple heterogeneous processors on a chip, advanced memory hierarchies and communication interfaces. The specific problems investigated include software synthesis and code generation, timing analysis and advanced compilers.
Results of the Year 1 activities show healthy progress particularly in compilation techniques for MPSoC and timing analysis.

The cluster is very active, which is signified by the number of workshops, keynotes, tutorials and intra-cluster activities.

5.7.1 Software Synthesis, Code Generation

D7-4.1-Y1_Software_Synthesis_Code_Generation.pdf
No further comments: ACCEPTED

5.7.2 Timing Analysis

D8-4-2-Y1_Timing_Analysis.pdf
No further comments: ACCEPTED

5.8 WP5: Thematic Cluster: Operating Systems and Networks (JPRA)

The distribution between the three sub-activities is an appropriate way of addressing the subject, one with enriched model capabilities, the second one considering the resource constraints and the third one on design frameworks joining modeling and quantitative features. The description of the contribution of the partners allows checking non-redundancy and consistency between the tracks that are worked out.

5.8.1 Resource-Aware Operating Systems

D9-5-1-Y1_Resource-aware_Operating_Systems.pdf
No further comments: ACCEPTED

5.8.2 Scheduling and Resource Management

D10-5-2-Y1_Scheduling_and_Resource_Management.pdf
No further comments: ACCEPTED

5.8.3 Embedded Real-Time Networking

D11-5-3-Y1_Embedded_Real_Time_Networking.pdf
No further comments: ACCEPTED

5.9 WP6: Thematic Cluster: Hardware Platforms and MPSoC Design

5.9.1 Platform and MPSoC Design

D12-6-1-Y1_Platform_and_MPSoC_Design.pdf
No further comments: ACCEPTED

5.9.2 Platform and MPSoC Analysis

D13-6-2-Y1_Platform_and_MPSoC_Analysis.pdf
No further comments: ACCEPTED

5.10 WP7: Transversal Integration (JPRA)

This activity demonstrates a good understanding of the needs of the industrial stakeholders, especially regarding the consistency and connection of the various tools that are developed, in a development workflow that can be used by the industrial development teams. The approach dealing with abstraction layers is a very sound one (pushed for instance by Autosar for the automotive industry). This activity shows also a worldwide collaboration, as it involves Canada and US academic institutes, as well as communication in a Summer School held in China and workshop in Korea.

5.10.1 Design for Adaptivity

D14-7-1-Y1_Design_for_Adaptivity.pdf
No further comments: ACCEPTED

5.10.2 Design for Predictability

D15-7-2-Y1_Predictability.pdf
No further comments: ACCEPTED

5.10.3 Industrial Integration

D16-7-3-Y1_Integration_Driven_by_Industrial_Applications.pdf
No further comments: ACCEPTED

6 Future work

The consortium is now visibly on track and internationally well known after ARTIST, ARTIST2. ARTISTDESIGN should take profit of that and continue exploring the international recognition, leveraging the contacts already taken with non-european organizations.

7 Assessment of objectives

The project continued to be relevant and the original objectives, as expressed in the DOW, were still valid.

8 Recommendations

8.1 Recommendation 1:

ARTISTDESIGN world-wide impact could be accelerated by establishing a more direct link with ACM SIGBED. For example, with a minimum effort, links between the SIGBED and ARTISTDESIGN websites could be established. ARTISTDESIGN could also supply information for the SIGBED Review (information about and summary of meetings, initiatives, etc.) http://www.sigbed.org/

8.2 Recommendation 2:

The Common Technical Baseline (CTB) initiative is extremely promising. In fact, it would be useful considering extending its goal and scope and creating an international activity patterned after the UMLS (Unified Medical Language System) in the medical field. (http://www.nlm.nih.gov/research/umls/). It could be an interesting topic for the EU-US collaborative activities, and very beneficial for the educational organizations.

8.3 Recommendation 3:

Concerning technical deliverables for Year 2 reporting period onwards and in order to avoid redundancy, we would like to propose the possibility of having just incremental documents containing only what is new for that reporting period and referring to previous year's documents for the unchanged sections.

9 Review conclusion

The ARTISTDESIGN Network of Excellence has made an impressive and remarkable work as a continuation of ARTIS2 in building a durable European research community on Embedded Systems Design. Results of these integration efforts can be perceived on the number of embedded systems related projects started at European and national level, on the number of related organised workshops, events, summer schools, joint publications, etc. All these dissemination actions (and more) are nicely collected and presented in the Artist web portal which we believe should be considered best practice. It is important to keep this good effort going and go beyond the borders of Europe.

At the review meeting, presentations were at the right level of detail, well presented and the timing was good. Recommendations made by the reviewers during the previous reporting period were correctly taken into account by the Consortium.

To finalise, reviewers would like to take the opportunity to congratulate and thank everyone involved in the ARTISTDESIGN Network of Excellence for the good work performed and for the successful results achieved so far.

Next Meeting:

Year 2 ARTISTDESIGN review meeting is planned for Friday 12th February 2010 in Brussels Deliverables should be available by Dec 18 – 2009. Reviewers will comment these before 15/01/2010. The financial information should be made available before 05/02/2010.

Reviewer's signature:

10 Appendix: state of project deliverables by WP

Del. No.	Deliverable name	Comments	Status	File
WP0: Joint Programme of Management Activities (JPMA)				
D-0.1-Y1	Project Management Report		Incomplete	D1 – received by the commission but incomplete
D-0.1-Y1	Project Activity Report		Accepted	D2-0-2a-Y1_ExecSummary+Overview.pdf
				D2-0-2b-Y1_Modelling_and_Validation.pdf
				D2-0-2c-Y1_SW_Synthesis_Code_Generation_and_Timing_Analysis.pdf
				D2-0-2d-Y1_Operating_Systems_and_Networks.pdf
				D2-0-2e-Y1-Hardware_Platforms_and_MPSoC_Design.pdf
WP1: Joint Programme of Integration Activities (JPIA)				
D-1.0-Y1	Integration Activities Report		Accepted	D3-1-0-Y1_JPIA_Integration_Activities_Report.pdf
WP2: Joint Programme of Activities for Spreading Excellence (JPASE)				
D-2.0-Y1	Spreading Excellence Report		Accepted	D4-2-0-Y1_Spreading_Excellence.pdf
WP3: Thematic Cluster: Modeling and Validation (JPRA)				
D-3.1-Y1	Modelling Report		Accepted	D5-3-1-Y1_Modelling.pdf
D-3.2-Y1	Validation Report		Accepted	D6-3-2-Y1_Validation.pdf
WP4: Thematic Cluster: Software Synthesis, Code Generation and Timing Analysis (JPRA)				
D-4.1-Y1	Software Synthesis, Code Generation		Accepted	D7-4.1-Y1_Software_Synthesis_Code_Generation.pdf

ID	Deliverable	Status	File
D-4.2-Y1	Timing Analysis	Accepted	D8-4-2-Y1_Timing_Analysis.pdf

WP5: Thematic Cluster: Operating Systems and Networks (JPRA)

ID	Deliverable	Status	File
D-5.1-Y1	Resource-Aware Operating Systems	Accepted	D9-5-1-Y1_Resource-aware_Operating_Systems_.pdf
D-5.2-Y1	Scheduling and Resource Management	Accepted	D10-5-2-Y1_Scheduling_and_Resource_Management.pdf
D-5.3-Y1	Embedded Real-Time Networking	Accepted	D11-5-3-Y1_Embedded_Real_Time_Networking.pdf

WP6: Thematic Cluster: Hardware Platforms and MPSoC Design

ID	Deliverable	Status	File
D-6.1-Y1	Platform and MPSoC Design	Accepted	D12-6-1-Y1_Platform_and_MPSoC_Design.pdf
D-6.2-Y1	Platform and MPSoC Analysis	Accepted	D13-6-2-Y1_Platform_and_MPSoC_Analysis.pdf

WP7: Transversal Integration (JPRA)

ID	Deliverable	Status	File
D-7.1-Y1	Design for Adaptivity	Accepted	D14-7-1-Y1_Design_for_Adaptivity.pdf
D-7.2-Y1	Design for Predictability	Accepted	D15-7-2-Y1_Predictability.pdf
D-7.3-Y1	Industrial Integration	Accepted	D16-7-3-Y1_Integration_Driven_by_Industrial_Applications.pdf

11 List of PO and reviewers

Name	Organisation	Email
Berta Ferrer Llosa	EC	Berta.FERRER-LLOSA@ec.europa.eu
Gilles Le Calvez	Valeo	gilles.le-calvez@valeo.com
Janos Sztipanovits	Vanderbilt	janos.sztipanovits@vanderbilt.edu
Martin Timmerman	Dedicated Systems Experts	m.timmerman@dedicated-systems.info

12 Agenda (as executed)

January 23 2009

Time	Presentation	Speakers
9:30	Introduction by EC	Berta Ferrer
9:35	**Overview** Answers to the recommendations PPT: 1-ARTISTDESIGN_Y1Review_ScientificMgt_Sifakis.ppt	Joseph Sifakis
9:50	Modelling and Validation Cluster Achievements and Perspectives PPT: 2-ARTISTDESIGN_Y1Review_ModelingValidation_Larsen.ppt	Kim Larsen (Aalborg)
	Some questions & answers	
10:20	SW Synthesis, Code Generation and Timing Analysis Cluster Achievements and Perspectives - SW Synthesis, Code Generation PPT: 3-ARTISTDESIGN_Y1Review_SSGTA_Marwedel_Lisper.ppt	Peter Marwedel (Dortmund) Lisper (Malardaln)
	Some questions & answers	
10:50	Break	
11:00	Operating Systems and Networks Cluster Achievements and Perspectives PPT: 4-ARTISTDESIGN_Y1Review_OSNW_ButtazzoBurnsAlmeida.ppt.ppt	Giorgio Buttazzo (Scuola Sant'Anna - Pisa) Alan Burns (York) Ameida (Aveiro)
	Some questions & answers	
11:40	Hardware Platforms and MPSoC Design Cluster Achievements and Perspectives PPT: 5-ARTISTDESIGN_Y1Review_HWPlatformsMPSoC_Madsen.ppt	Jan Madsen (DTU)
	Some questions & answers	
12:10	Lunch	
13:25	Design for Adaptivity Achievements and Perspectives PPT: 6-ARTISTDESIGN_Y1Review_Adaptivity_Arzen.ppt	Karl-Erik Årzen (Lund)
	Some questions & answer	
13:55	Design for Predictability and Performance Achievements and Perspectives PPT: 7-ARTISTDESIGN_Y1Review_Predictability_Jonsson.ppt	Bengt Jonsson (Uppsala)
	Some questions & answers	
14:25	Integration Driven by Industrial Applications Achievements and Perspectives PPT: 8-ARTISTDESIGN_Y1Review_IndustrialApps_Sangiovanni.pptx	Alberto Sangiovanni (PARADES)
	Some questions & answers	
14:57	Spreading Excellence Achievements and Perspectives	Bruno Bouyssounouse

	PPT: 9a-ARTISTDESIGN_Y1Review_SpreadingExcellence_Bouyssounouse.ppt PPT: 9b-ARTISTDESIGN_Y1Review_CTB_Bouyssounouse.ppt	(UJF/VERIMAG)
	Some questions & answers	
15:30	Overview questions	
16:00	**Reviewer's meeting**	
17:00	**Conclusion and Feedback**	
17:30	**End**	

13 Attendees

13.1 PO & Reviewers

Berta Ferrer Llosa (PO) (DG Information Society and Media)
Gilles Le Calvez (Reviewer – Valeo)
Janos Sztipanovits (Reviewer – Vanderbilt)
Martin Timmerman (Reviewer – Dedicated Systems)

13.2 Participants from consortium

Name	Email	Organisation	Speaker
Sheng Weihua		Aachen	
Larsen Kim G	kgl@cs.aau.dk	Aalborg	YES
Almeida Luis	lda@det.ua.pt	Aveiro	YES
Pedrairas Paulo		Aveiro	
Brunelli Davide		Bologna	
Gonzalez Harbour Michael	mgh@unican.es	Cantabria	
Gerard Sebastien	sebastien.gerard@cea.fr	CEA	
Marwedel Peter	peter.marwedel@udo.edu	Dortmund	YES
Madsen Jan	jan@imm.dtu.dk	DTU	YES
Doyen Laurent		EPFL	
Borth Michael		ESI	
Bacivarov Luliana		ETHZ	
Guerard Olivier		Floralis	
Pereira Bahia Liliane		Floralis	
Mamagkakis Stylianos	mamagka@imec.be	Imec	
De Simone Robert		Inria	
Fohler Gerhard	fohler@eit.uni-kl.de	Kaiserslautern	
Jantsch Axel		KTH	
Torngren Martin		KTH	
Eles Petru	petel@ida.liu.se	Linkoping	
Arzen Karl-Erik	karlerik@control.lth.se	Lund	YES
Lisper Björn	bjorn.lisper@mdh.se	Malardalen	YES
Josko Bernhard	bernhard.josko@offis.de	Offis	
Sangiovanni Alberto	alberto@eecs.berkeley.edu	Parades	YES
Liebig Jurg		Passau	
Buttazzo Giorgio	giorgio@sssup.it	Pisa	YES
Lo Bello Lucia		Pisa (aff Atania)	
Andersson Bjorn		Porto	
Tovar Eduardo		Porto	
Sokolova Ana		Salzburg	
Ernst rolf	r.ernst@tu-bs.de	TU Braunschweig	
Schliecker Simon		TU Braunschweig	
Puscher Peter		TU Vienna	
Jonsson Bengt	bengt@user.it.uu.se	Uppsala	YES
Bouyssounouse Bruno	Bruno.Bouyssounouse@imag.fr	Verimag	YES
Graf Suzanne	susanne.graf@imag.fr	Verimag	
Sifakes Joseph	Joseph.Sifakis@imag.fr	Verimag	YES
Burns Alan		York	YES

14 Partner list for this period

Beneficiary number	Beneficiary name	Beneficiary short name	Country
1 (coordinator)	UJF FILIALE	FLORALIS	France
2	UNIVERSITE JOSEPH FOURIER GRENOBLE 1	UJF/VERIMAG	France
3	RHEINISCH-WESTFAELISCHE TECHNISCHE HOCHSCHULE AACHEN	AACHEN	Germany
4	AALBORG UNIVERSITET	AALBORG	Denmark
5	UNIVERSIDADE DE AVEIRO	AVEIRO	Portugal
6	ALMA MATER STUDORIUM - UNIVERSITA DI BOLOGNA	BOLOGNA	Italy
7	TECHNISCHE UNIVERSITAET BRAUNSCHWEIG	TUBS	Germany
8	UNIVERSIDAD DE CANTABRIA	CANTABRIA	Spain
9	COMMISSARIAT À L'ENERGIE ATOMIQUE	CEA	France
10	DANMARKS TEKNISKE UNIVERSITET	DTU	Denmark
11	UNIVERSITAET DORTMUND	DORTMUND	Germany
12	ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE	EPFL	Switzerland
13	EMBEDDED SYSTEMS INSTITUTE	ESI	Netherlands
14	EIDGENOESSISCHE TECHNISCHE HOCHSCHULE ZUERICH	ETH Zurich	Switzerland
15	INTERUNIVERSITAIR MICRO-ELECTRONICA CENTRUM VZW	IMEC	Belgium
16	INSTITUT NATIONAL DE RECHERCHE EN INFORMATIQUE ET AUTOMATIQUE	INRIA	France
17	TECHNISCHE UNIVERSITAET KAISERSLAUTERN	TUKL	Germany
18	KUNGLIGA TEKNIKA HOGSKOLAN	KTH	Sweden
19	LINKÖPINGS UNIVERSITET	LINKOPING	Sweden
20	LUNDS UNIVERSITET	ULUND	Sweden
21	MAELARDALENS HOEGSKOLA	MDH	Sweden
22	OFFIS E.V.	OFFIS	Germany
23	PROJECT FOR ADVANCED RESEARCH OF ARCHITECTURE AND DESIGN OF ELECTRONIC SYSTEMS	PARADES	Italy
24	UNIVERSITAET PASSAU	PASSAU	Germany
25	SCUOLA SUPERIORE DI STUDI UNIVERSITARI E DI PERFEZIONAMENTO SANT'ANNA	SSSA-PISA	Italy
26	INSTITUTO SUPERIOR DE ENGENHARIA DO PORTO	PORTO	Portugal
27	UNIVERSITAET DES SAARLANDES	SAARLAND	Germany
28	UNIVERSITAET SALZBURG	PLU-SALZBURG	Austria
29	UPPSALA UNIVERSITET	UPPSALA	Sweden

| 30 | TECHNISCHE UNIVERSITAET WIEN | VIENNA | Austria |
| 31 | UNIVERSITY OF YORK | YORK | United-Kingdom |

15 Representatives form the different contributing companies as initially stated in the DOW

Rainer Leupers	Aachen	leupers@iss.rwth-aachen.de
Kim Larsen	Aalborg	kgl@cs.aau.dk
Luis Almeida	Aveiro	lda@det.ua.pt
Luca Benini	BOLOGNA	lbenini@deis.unibo.it
Silvia Cecchio	BOLOGNA	s.vecchi@unibo.it
Michael Gonzalez	Cantabria	mgh@unican.es
Juanjose Sanmiguel	Cantabria	juanjose.sanmiguel@gestion.unican.es
Sebastien Gerard	CEA	sebastien.gerard@cea.fr
Thierry Collette	CEA	thierry.collette@cea.fr
Peter Marwedel	DORTMUND	peter.marwedel@udo.edu
Jan Madsen	DTU	jan@imm.dtu.dk
Tom Henzinger	EPFL	tah@epfl.ch
Sylvie Vaucher	EPFL	sylvie.vaucher@epfl.ch
Ed Brinksma	ESI	ed.brinksma@esi.nl
Lothar Thiele	ETHZ	thiele@tik.ee.ethz.ch
F&W_Euresearch (Agatha Keller)	ETHZ	euresearch@sl.ethz.ch
Futternecht Beat	ETHZ	futterknecht@tik.ee.ethz.ch
Liliane Pereira Bahia	FLORALIS	liliane.pereira-bahia@floralis.fr
Mamagkakis Stylianos	IMEC	mamagka@imec.be
Alain Girault	INRIA	alain.girault@inrialpes.fr
Benoit Caillaud	INRIA	bcaillau@irisa.fr
Jean-Loic Delhaye	INRIA	jean-loic.delhaye@irisa.fr
Cedric Di Tofano	INRIA	cedric.ditofano@inrialpes.fr
Isabelle Puaut	IRISA	isabelle.puaut@irisa.fr
Gerhard Fohler	Kaiserslautern (TUKL)	fohler@eit.uni-kl.de
Hannu Tenhunen	KTH	hannu@imit.kth.se
Martin Torngren	KTH	martin@md.kth.se
Petru Eles	Linkoping	petel@ida.liu.se
Karl-Erik Arzen	LUND	karlerik@control.lth.se
Bjorn Lisper	MALARDALEN	bjorn.lisper@mdh.se
Clas Tegerstrand	MALARDALEN	clas.tegerstrand@mdh.se
Gunnar Widforss	MALARDALEN	gunnar.widforss@mdh.se
Werner Damm	OFFIS	werner.damm@offis.de
Bernhard Josko	OFFIS	bernhard.josko@offis.de
Alberto Ferrari	PARADES	aferrari@parades.rm.cnr.it
Alberto Sangiovanni-Vincentelli	PARADES	alberto@eecs.berkeley.edu
Christian Lengauer	Passau	lengauer@fmi.uni-passau.de
Giorgio Buttazzo	Pisa	giorgio@sssup.it
Eduardo Tovar	PORTO	emt@dei.isep.ipp.pt
Reinhard Wilhelm	SAARLAND	wilhelm@cs.uni-sb.de
Corinna Hahn	SAARLAND	c.hahn@eurice.eu
Saarland Secr.	SAARLAND	secr_rts@eit.uni-kl.de
Christoph Kirsch	SALZBURG	ck@cs.uni-salzburg.at
Arne Hamann	TUBS	arne@ida.ing.tu-bs.de
Peter Rueffer	TUBS	rueffer@ida.ing.tu-bs.de
Rolf Ernst	TUBS	r.ernst@tu-bs.de
Wang Yi	UPPSALA	yi@it.uu.se
Bengt Jonsson	UPPSALA	bengt@user.it.uu.se

Joseph Sifakis	VERIMAG	joseph.sifakis@imag.fr
Bruno Bouyssounouse	VERIMAG	bruno.bouyssounouse@imag.fr
Florence Maraninchi	VERIMAG	florence.maraninchi@imag.fr
Paul Caspi	VERIMAG	paul.caspi@imag.fr
Susanne Graf	VERIMAG	susanne.graf@imag.fr
Hermann Kopetz	VIENNA	hk@vmars.tuwien.ac.at
Peter Puschner	Vienna	peter@vmars.tuwien.ac.at
Guillem Bernat	York	bernat@cs.york.ac.uk
Alan Burns	YORK	burns@cs.york.ac.uk

WP list

WP	WP title	Type of activity	Lead partic no.	Lead partic. short name	Person months	Start month	End month
WP0	Jointly-executed Programme of Management Activities (JPMA)	MGT	1	Floralis	51	1	48
WP1	Jointly-executed Programme of Integration Activities (JPIA)	RTD	1	UJF/ VERIMAG	327	1	48
WP2	Jointly-executed Programme of Activities for Spreading Excellence (JPASE)	OTHER	1	Floralis	106,75	1	48
WP3	Thematic Cluster: Modeling and Validation • *Activity: Modelling* • *Activity: Validation*	RTD	4	Aalborg	87,25	1	48
WP4	Thematic Cluster: Software Synthesis, Code Generation and Timing Analysis (JPRA) • *Activity: Software Synthesis, Code Generation* • *Activity: Timing Analysis*	RTD	10	Dortmund	79,25	1	48
WP5	Thematic Cluster: Operating Systems and Networks (JPRA) • *Activity: Resource-Aware OS* • *Activity: Scheduling & Resource Mgt* • *Activity: Embedded RT Networking*	RTD	24	SSSA-Pisa	73	1	48
WP6	WP6: Thematic Cluster: Hardware Platforms and MPSoC (JPRA) • *Activity: Platform and MPSoC Design* • *Activity: Platform and MPSoC Analysis*	RTD	13	DTU	80,5	1	48
WP7	Transversal Integration (JPRA) • *Activity: Design for Adaptivity* • *Activity: Design for Predictability and Performance* • *Activity: Integration Driven by Industrial Applications*	RTD	22	PARADES	109	1	48
	TOTAL				913,75		

16 Project calendar

This is the first year review starting month 1 up to month 12.
The review was executed in month 13.

Month	2008	2009	2010	2011	2012
Jan	1	13	25	37	
Feb	2	14	26	38	
Mar	3	15	27	39	
Apr	4	16	28	40	
May	5	17	29	41	
Jun	6	18	30	42	
Jul	7	19	31	43	
Aug	8	20	32	44	
Sep	9	21	33	45	
Oct	10	22	34	46	
Nov	11	23	35	47	
Dec	12	24	36	48	