EUROPEAN COMMISSION
Information Society and Media Directorate-General

Components and Systems
Embedded Systems and Control

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<u>By registered mail</u>

Dear Mr Guerard,

Subject: **ICT- 214373 - ARTISTDESIGN – Review report – Covering the period from 01-01-09 to 31-12-09**
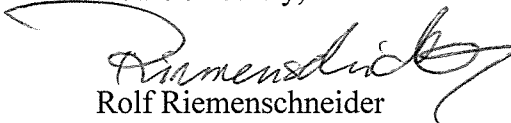
Please find attached the reviewer's report of the review for the above mentioned project, to which I agree. Would you please distribute the report to your project partners. As a conclusion of the review, I hereby accept the review and the deliverables as specified in the report. I approve that the project continues without modification.

This letter is sent without prejudice to the processing of the financial statements on which you will be notified under separate cover.

If your consortium has any comments to the requested actions or to the recommendations given, please notify me within 30 days. Otherwise, I expect that you agree to carry out the actions and to take into account the recommendations given in the report.

Should you have any questions please do not hesitate to contact me. Please acknowledge receipt of this letter and inform your partners of its content.

Yours sincerely,

Rolf Riemenschneider

Enclosure: Review Report

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Information Society

REVIEW REPORT

ICT- 214373 - ARTISTDESIGN

Embedded Systems Design

Review Y2

Covering project month M13 to M24: 01/01/2009 – 31/12/2009

Contract start date:	January 1 2008
Contract end date:	December 31 2011
Project type:	Network of Excellence
Review date:	12 February 2009
Review location:	Beaulieu 25 0/S1 Brussels
Project Officer:	Rolf.RIEMENSCHNEIDER represented by Tom CLAUSEN
Reviewers:	Gilles LE CALVEZ
	Janos SZTIPANOVITS
	Martin TIMMERMAN
Report number:	20100327
Classification:	Consortium + Reviewers
Report version:	2.0 of 28 March 2010

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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 second 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 rich web of industrial connections, the attention industry pays to ArtistDesign activities is a testimony that ArtistDesign is an excellent investment: it is an engine of innovation in a strategic field.

The "superstructure" ArtistDesign creates over a number of EU research projects is valuable: the coordination is already working, the clusters are active, communities interact and a shared vision is formulated. But most importantly, ArtistDesign has a major promise that new insights will emerge from the vertical, cross-cutting activities that could not have emerged otherwise.

ArtistDesign gives a unique identity to research in EU in embedded systems. The scope of activities, the level of involvement of the researchers, the volume of produced results is impressive. The ArtistDesign portal is a shared intellectual asset used now worldwide.

This all 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. However, more time for discussion could have been beneficial.

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. This seems to be a constant issue as this was also the case last year.

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 February 12 2010. Each cluster was represented throughout the review. See list of participants, list of reports and deliverables & agenda (appended to this report). The deliverables were available in electronic version precious to the meeting on the website. An electronic copy of each presentation was available at the review meeting.

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:
- PARADES switched to Trento
- Aveiro switched to University of Porto
- EPFL team moved to IST Austria
  - but EPFL retained : Giovanni De Micheli
  - leadership for the Modelling activity switched to Susanne Graf (Verimag)
- Ed Brinksma (Embedded Systems Institute) replaced by Boudewijn Haverkort : organised WESH 2009 (ArtistDesign WS on Embedded Systems in Healthcare)
- Budget updated to reflect :
  - Changes above
  - Distribution of funds for events organised in WP2: Spreading Excellence

4 Dealing with previous review recommendations

4.1 Recommendation 1:

ARTISTDESIGN world-wide impact could be accelerated by establishing a mode 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/

Reported ACTION:
Setting up direct links with SIGBED
- Links to SIGBED on the NoE home page (http://www.artist-embedded.org/)
- APRES 2009 (an ARTIST workshop) published:
  SIGBED Review, Volume 6, Number 3, October 2009
  Special Issue on the 2nd International Workshop on Adaptive and Reconfigurable Embedded Systems (APRES'09)
- SCOPES (an ARTIST workshop) in cooperation with ACM SIGBED

4.2 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.

Reported ACTION:
- Common Technical Baseline development is being pursued
- Discussions initiated on a collaboration with Vanderbilt

The actions taken are somewhat weak. Therefore this point is cited again in the recommendations this time. See recommendation 1.

4.3 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.

Reported ACTION:
The consortium has indicated in each deliverable, for each section, whether the text is unchanged, partially updated, or entirely new.

Taken over again in the recommendations this time for finetuniong. See recommendation 2.

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 in general respecting the timing. Next review meeting, presentations should be shorter leaving more time for discussions.

5.2 General comments on deliverables

The Project Management Report is **unavailable at the date of february 26.**
Project Activity Report (chapter 1 to chapter 5) is **accepted.**
All Y2 technical deliverables have been **accepted.**

The Y2 deliverables were, as for the Y1 deliverables, of a uniform excellent quality, written very professionally. Y2 deliverables include a specific indication stating which highlights the newly integrated content for Y2 compared to Y1.

5.3 WP0: Joint Program of Management Activities (JPMA)

5.3.1 D1-0.1-Y2 Project Management Report

The document is not delivered to the commission.

5.3.2 D2-0.2-Y2 Project Activity Report

D2-0-2a-Y2_ExecSummary+Overview.pdf

There is a high level synthesis of the achievements for Y2 in §3.1.2, which is an entry point to the more detailed deliverables. As there is no detail, mentioning the "external projects" (ADAMS for instance, as there are activities related to MARTE) that feed the exchanges facilitated by ARTISTDESIGN would be welcome in this overview.
Note: The indication on what has changed between Y1 deliverable and Y2 deliverable would benefit to be always either at the beginning of the chapter (3.1.2) or at the end (3.2.1), as this eases clearly the analysis of the document. (see recommendation 4)

D2-0-2b-Y2_Modelling_and_Validation.pdf

In general:

The overall objectives of the cluster being appropriately defined in Year 1, including contribution with reference to the quantitative values targeted by ARTEMIS strategy (number of development cycles, system design cost, and revalidation effort reduction), such figures are stated in the Indicators section. In addition, the deliverable would now benefit to provide such quantitative figures on the overall assessment since the start of ARTISTDESIGN NoE as a synthesis (for instance, page 9, "significant" or "several" could be replaced by such figures).
Good point for the Objectives for Y3 which were introduced in the presentation, along with examples of possible "field operational tests".

Specific observations:

There is a broad coverage of the domain based on well defined challenges. The scientific level is excellent, research directions include world leading results that not only lead but define the international research agenda.
This cluster positioned extremely well in the research community; there are many links, and extensive use of produced results is reported.
There is an impressive array of activities: a large number of workshops, conferences organized, joint publications, all signs of a very healthy, strong area.
An intellectual freshness can be observed: move toward quantitative modelling and verification, discussions on predictability v.s. determinism, extended interpretations for modelling (non functional properties)
This cluster produces high value, transitionable tools (UPAAL, BIP, etc.) that attracts significant industry interest.
There is a good plan for future directions: MPSoC, Low Power

Suggestions in the framework of this work: (see recommendation 5)

- Tool integration should go beyond individual projects; the team should at least formulate conditions for integratability
- One should think about solution for "saving the tools" produced by the community as outcome of research

D2-0-2c-Y2_SW_Synthesis_Code_Generation_and_Timing_Analysis.pdf

In general:

There is an advance in the topic through connexion of compiler and timing analysis tool. The focus mentioned on multi-core is also clearly in line with the trend observed in industry, and there might also be an interest to check if it might be possible to extend the mechanisms to address in a way the distributed architectures. It would be good to underline the huge effort that this domain requires in terms of coordination as the topics for optimization are numerous and sometimes may be contradictory, or just seen with different opinions (one considering that architecture is frozen while another considers architecture is adaptable).

Specific observations:

The report has relatively little to say about the technical achievements of the cluster.
The primary identified challenge is appearance of MP platforms and the cluster addresses issues related to this technology trend.
Among the many issues of platform modelling for multi core platforms, only the timing analysis was detailed.
The thrust correctly identified that the dominant trend is moving away from traditional compiler technology, but relatively little information was provided about the new approaches for software synthesis and code generation.

Suggestions in the scope of this work: (see recommendations 6)

- There is a need for a vision for new generation of software synthesis and code generation tools,
- There should be a deeper integration of results inside the cluster,

- A better structured interface with other clusters (operating systems, hardware platforms, etc.) is welcome.

D2-0-2d-Y2_Operating_Systems_and_Networks.pdf

In general:

Impressive list of disseminating activities is provided, mentioning an broadening of the perimeter of contacts.
The bridge between industry and research would require clarification the same way as the projects that were initiated thanks to ARTISTDESIGN networking are explicitly mentioned.
The indicators section seems not to have been updated (*"All these objectives has been achieved by the cluster in the first year"*), whereas the dissemination is, as mentioned above, impressive (timings of the events would help apprehending such widening).

Specific observations:

The cluster has a very clear focus and scientific vision that is aligned well with technology trends
The Report includes a very impressive list of main technical achievements:
- Extension of the Linux kernel is a very practical, effective approach for getting state-of-the-art results to the community
- The work on partitioning RT applications on multi-core platforms is impressive
- The projects on the Erika RT kernel, MPARM are well coordinated
- The created educational platform is exemplary for the value and benefits of ArtistDesign
- The thrust has a clear vision for the future research agenda.
- The research groups are extremely active, work together very well and their interfaces to other clusters are well understood.
- Impressive joint publication activities
- The cluster initiative on creating a taxonomy on resource usage is exemplary

Suggestions in the scope of this work: (see recommendation 7)
- It seems that increased interaction with the Modelling cluster would be beneficial. OS and network properties are essential for composition and verification, so the opportunity for interaction is there.

D2-0-2e-Y2-Hardware_Platforms_and_MPSoC_Design.pdf

In general:
As explained during the presentation day, pragmatism was used to enrich the scope regarding biochips, which is of high interest (and great challenge) for European research.
Application to the sensors network is undoubtfully a pragmatic way to structure activities of research.
Extensive description of the results is impressive, even though the request from Y1 review on quantitative objectives for multi-criteria optimization is still to be provided (extra cost is not mentioned, but the team has highlighted the difference between dependable systems and "reliability through over-provision").

Specific observations:

In spite of the huge technical area covered by the cluster, it has a clear focus, addresses important problems and drives a very ambitious agenda.

The scientific level of the cluster is extremely high: the excellence of publications is demonstrated by the best paper awards at major conferences.

Collaboration across the cluster is exemplary; it is signified by high number of joint publications. The cluster has a well defined collaboration map in design and in analysis. The result is an emerging suite of tools that are complementary and address a large problem space.

The individual projects are of very high quality, and represent the cutting edge in their respective areas.

Suggestions in the scope of this work: (see recommendations 8)

- There should be an increased interaction with software synthesis and code generation
- Approaches for platform modelling to be considered: how to do it in order to help software synthesis?

ALL D2 reports are ACCEPTED

5.4 WP1: Joint Program of Integration Activities (JPIA)

5.4.1 Integration Activities Report

D3-1-0-Y2_JPIA_Integration_Activities_Report.pdf

This extensive list of meetings, conferences and visits / hosting of researchers showing how active the group of ARTISTDESIGN members is, already appreciated in the Y1 deliverable, has been enlarged with information on tools and people exchange among partners. However, in the last paragraph, there is missing information (*In particular, we have had XX joint technical meetings, bringing together a wide audience.*

These meetings have covered a broad spectrum of topics, including XXXXXX.

The NoE has facilitated the mobility of YYYY researchers, for a total period of HHH in Year 2.

This is widely considered to be the best way to integrated research teams, through the phyical transfer of persons and competencies. They lead to lasting collaboration and synergy.

The level of effort started in Year 1 has been maintained. We currently have XXX platforms developed in collaboration with ArtistDesign, covering the technical domains of the NoE)

The report is ACCEPTED

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

5.5.1 Spreading Excellence Report

D4-2-0-Y2_Spreading_Excellence.pdf

The Common technical Baseline has been adapted to a ne technical background for future maintenance, but the update and completion of the content should be relaunched. Sustainability was also mentioned as a topipc to be addressed with respect to Website for instance: ACCEPTED

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

The Modeling and validation cluster continues to focus 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 an extensive and valid evaluation of the trends and activities in EU and internationally, with a detailed description of the works done by each parner: this could benefit to be synthesized in one of the books that are planned to be published.

The emphasis that appeared in Y1 on integrating academic tool components into existing industrial tool chains that improve the impact and increases probability of transitioning must be effectively pursued.
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-Y2_Modelling.pdf
Good level for this deliverable, with a modelling example given, but the strategy of the cluster shall be adapted to address the closing of the control loop to effectively provide applicable techniques for industry (measures of the result on the energy bill shall be compared to expectation based on the use of the model for Home Energy Planner for instance): ACCEPTED

5.6.2 Validation Report

D6-3-2-Y2_Validation.pdf
Good level for this deliverable, which just would need to elicitate the coordination with Timing Analysis: ACCEPTED

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

Compilation techniques and timing analysis addressed in Year 1 have now been subject to one connection of tools. The Optimization concern is of broad scope and the cluster would beneit to clearly define the way rough data and estimates are available before making the optimization loops, to ensure proper measure of the achievements. Related to this is also the definition of the criteria that need to be considered (thermal aspect, performance ...). Coordination on the basics (such as architecture being adjustable or frozen) needs to be enforced.

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-Y2_Software_Synthesis_Code_Generation.pdf
No further comments: ACCEPTED

5.7.2 Timing Analysis

D8-4-2-Y2_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. As Intelligent Transportation Systems are in the scope, connection to the various national or European initiatives needs to be engaged.

5.8.1 Resource-Aware Operating Systems

D9-5-1-Y2_Resource-aware_Operating_Systems.pdf
No further comments: ACCEPTED

5.8.2 Scheduling and Resource Management

D10-5-2-Y2_Scheduling_and_Resource_Management.pdf
No further comments: ACCEPTED

5.8.3 Embedded Real-Time Networking

D11-5-3-Y2_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-Y2_Platform_and_MPSoC_Design.pdf
No further comments: ACCEPTED

5.9.2 Platform and MPSoC Analysis

D13-6-2-Y2_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. 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 and has set up contacts with Japanese industrials (Toshiba, Toyata among others).

5.10.1 Design for Adaptivity

D14-7-1-Y2_Design_for_Adaptivity.pdf

The vertical addresses another core cross-cutting issue with huge practical and theoretical significance.
This transversal integration is still in its initial state, but the results and interest in the activities are encouraging.

Suggestions in the scope of this work: (see recommendation 9)
* Progress of the cluster would be stimulated by writing an annual position paper about the new/emerging insights. This is a very complex issue and taking stock periodically of the status of current thinking would be very helpful not only for the cluster but also for the research community.

Deliverable: ACCEPTED

5.10.2 Design for Predictability

D15-7-2-Y2_Predictability.pdf

The topic of this transversal activity is right on target. It identifies one of the major tradeoff issues in embedded system design
The activity is very well organized: it links together teams from different clusters and poses cross-cutting questions.
Elements of key research direction are observed, it is early to state the new insights that will emerge.

Suggestions in the scope of this work: (see recommendation 9)
  - Progress of the cluster would be stimulated by writing an annual position paper about the new/emerging insights. This is a very complex issue and taking stock periodically of the status of current thinking would be very helpful not only for the cluster but also for the research community.

Deliverable ACCEPTED

5.10.3 Industrial Integration

D16-7-3-Y2_Integration_Driven_by_Industrial_Applications.pdf
No further comments: ACCEPTED

6 Future work

The consortium is more and more internationally well known after ARTIST, ARTIST2. ARTISTDESIGN should take profit of that and continue exploring the international recognition, leveraging the contacts already taken with sectorial industry standards organizations (for instance, Autosar membership to e leveraged for automotive).

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:

Previous Y1-recommendation 2 is to be reconsidered:

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.

8.2 Recommendation 2:

Previous Y1-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.
Taken into consideration mentioning the evolution or not of the content of paragraphs with respect to Y1 deliverables.

It would be beneficial having a standard presentation: The indication on what has changed between Y1 deliverable and Y2 deliverable would benefit to be always either at the beginning of the chapter (3.1.2) or at the end (3.2.1), as this eases clearly the analysis of the document.

8.3   Recommendation 3:

Put emphasis on links and levers towards Industry standardization organizations, as this is a key lever to spread and get visibility and feedback on the works and achievements.
Preparing the future is a key task for Y3, so the good work and network will not fade away.

8.4   Recommendation 4:

Presentations during the review meeting should be shorter, leaving more time for interaction.

8.5   Recommendation 5

About modelling and validation:
- Tool integration should go beyond individual projects; the team should at least formulate conditions for integratability
- One should think about solution for "saving the tools" produced by the community as outcome of research

8.6   Recommendation 6:

About Synthesis_Code_Generation_and_Timing_Analysis:
- There is a need for a vision for new generation of software synthesis and code generation tools,
- There should be a deeper integration of results inside the cluster,
- A better structured interface with other clusters (operating systems, hardware platforms, etc.) is welcome.

8.7   Recommendation 7:

In the framework of Operating Systems and Networks:
- It seems that increased interaction with the Modelling cluster would be beneficial. OS and network properties are essential for composition and verification, so the opportunity for interaction is there.

8.8   Recommendation 8:

In the framework of hardware platforms and MPSoC design:
- Increased interaction with software synthesis and code generation
- Approaches for platform modelling: how to do it to help software synthesis?

8.9   Recommendation 9:

Progress of the clusters design for adaptivity and predictability would be stimulated by writing an annual position paper about the new/emerging insights. This is a very complex issue and taking stock periodically of the status of current thinking would be very helpful not only for the cluster but also for the research community.

8.10 Recommendation 10

ARTEMIS link is somewhat fuzzy. This should be improved or clarified.

9 Review conclusion

The ARTISTDESIGN Network of Excellence continues to make an impressive and remarkable work 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; however the timing was sometimes a problem. Recommendations made by the reviewers during the previous reporting period were correctly taken into account by the Consortium.

Next Meeting:

Year 3 ARTISTDESIGN review meeting is planned for Friday 24th February 2011 in Brussels Deliverables should be available by Dec 18 – 2010. The financial information should be made available before 05/02/2011.

Brussels, 28 March 2010

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-Y2	Project Report		Incomplete	D1 – received by the commission but incomplete
D-0.1-Y2	Project Activity Report		Accepted	D2-0-2a-Y2_ExecSummary+Overview.pdf
				D2-0-2b-Y2_Modelling_and_Validation.pdf
				D2-0-2c-Y2_SW_Synthesis_Code_Generation_and_Timing_Analysis.pdf
				D2-0-2d-Y2_Operating_Systems_and_Networks.pdf
				D2-0-2e-Y2-Hardware_Platforms_and_MPSoC_Design.pdf
WP1: Joint Programme of Integration Activities (JPIA)				
D-1.0-Y2	Integration Activities Report		Accepted	D3-1-0-Y2_JPIA_Integration_Activities_Report.pdf
WP2: Joint Programme of Activities for Spreading Excellence (JPASE)				
D-2.0-Y2	Spreading Excellence Report		Accepted	D4-2-0-Y2_Spreading_Excellence.pdf
WP3: Thematic Cluster: Modeling and Validation (JPRA)				
D-3.1-Y2	Modelling Report		Accepted	D5-3-1-Y2_Modelling.pdf
D-3.2-Y2	Validation Report		Accepted	D6-3-2-Y2_Validation.pdf
WP4: Thematic Cluster: Software Synthesis, Code Generation and Timing Analysis (JPRA)				
D-4.1-Y2	Software Synthesis, Code Generation		Accepted	D7-4.1-Y2_Software_Synthesis_Code_Generation.pdf

D-4.2-Y2	Timing Analysis	Accepted	D8-4-2-Y2_Timing_Analysis.pdf

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

D-5.1-Y2	Resource-Aware Operating Systems	Accepted	D9-5-1-Y2_Resource-aware_Operating_Systems_.pdf
D-5.2-Y2	Scheduling and Resource Management	Accepted	D10-5-2-Y2_Scheduling_and_Resource_Management.pdf
D-5.3-Y2	Embedded Real-Time Networking	Accepted	D11-5-3-Y2_Embedded_Real_Time_Networking.pdf

WP6: Thematic Cluster: Hardware Platforms and MPSoC Design

D-6.1-Y2	Platform and MPSoC Design	Accepted	D12-6-1-Y2_Platform_and_MPSoC_Design.pdf
D-6.2-Y2	Platform and MPSoC Analysis	Accepted	D13-6-2-Y2_Platform_and_MPSoC_Analysis.pdf

WP7: Transversal Integration (JPRA)

D-7.1-Y2	Design for Adaptivity	Accepted	D14-7-1-Y2_Design_for_Adaptivity.pdf
D-7.2-Y2	Design for Predictability	Accepted	D15-7-2-Y2_Predictability.pdf
D-7.3-Y2	Industrial Integration	Accepted	D16-7-3-Y2_Integration_Driven_by_Industrial_Applications.pdf

11 List of PO and reviewers

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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	TomClausen
9:35	**Overview** Answers to the recommendations PPT: 1_Sifakis_ScientificManagement.ppt	Joseph Sifakis
9:50	Modelling and Validation Cluster Achievements and Perspectives PPT: 2_Larsen_ModelingValidation.pptx	Kim Larsen (Aalborg) Susanna Graf (Verimag)
	Some questions & answers	
10:35	SW Synthesis, Code Generation and Timing Analysis Cluster Achievements and Perspectives - SW Synthesis, Code Generation PPT: 3_ArtistDesign_Y2Review_SSGCTA.ppt	Peter Marwedel (Dortmund) Lisper (IMEC)
	Some questions & answers	
11:10	Break	
11:25	Operating Systems and Networks Cluster Achievements and Perspectives PPT: 4_Buttazzo_OS+NW.ppt	Giorgio Buttazzo (Scuola Sant'Anna - Pisa) Alan Burns (York) Ameida (Aveiro)
	Some questions & answers	
12:05	Hardware Platforms and MPSoC Design Cluster Achievements and Perspectives PPT: 5_Madsen_MPSoC.ppt	Jan Madsen (DTU)
	Some questions & answers	
12:35	Lunch	
13:40	Design for Adaptivity Achievements and Perspectives PPT: 6_Arzen_Adaptivity.pptx	Karl-Erik Årzen (Lund)
	Some questions & answer	
14:15	Integration Driven by Industrial Applications Achievements and Perspectives PPT: 8_Sangiovanni_IndustrialApplications.pdf	Alberto Sangiovanni (TRENTO)
	Some questions & answers	
15:00	Design for Predictability and Performance Achievements and Perspectives PPT: 7_Jonsson_Predictability.ppt	Bengt Jonsson (Uppsala)
	Some questions & answers	
15:25	Spreading Excellence	Bruno

	Achievements and Perspectives PPT: 9_Bouyssounouse_SpreadingExcellence.ppt	Bouyssounouse (UJF/VERIMAG)
	Some questions & answers	
15:45	Budget and management PPT: 10_Bouyssounouse_Administration+Budget_Management.ppt	Bouyssounouse (UJF/VERIMAG)
	Some questions & answers	
15:45	Overview questions	
16:00	**Reviewer's meeting**	
17:00	**Conclusion and Feedback**	
17:30	**End**	

13 Attendees

13.1 PO & Reviewers

Tom Clausen (PO) representing Rolf Riemenschneider (DG Information Society and Media)
Gilles Le Calvez (Reviewer – Valeo)
Janos Sztipanovits (Reviewer – Vanderbilt)
Martin Timmerman (Reviewer – Dedicated Systems)

13.2 Participants from consortium

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Y	Susanne Graf	Susanne.Graf@imag.fr	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 from the different contributing companies present during the review meeting

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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 second year review starting month 13 up to month 24.
The review was executed in month 26.

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**	