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**REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE  
COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE  
COMMITTEE OF THE REGIONS**

**First interim evaluation of the ARTEMIS and ENIAC Joint Technology Initiatives**

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## **First interim evaluation of the ARTEMIS and ENIAC Joint Technology Initiatives**

### **1. INTRODUCTION**

This report highlights the findings and recommendations of the first interim evaluation of ARTEMIS and ENIAC. They are the two Joint Undertakings implementing the Joint Technology Initiatives (JTIs) in the fields of embedded systems and nanoelectronics research. The report formulates the Commission's initial response to the evaluation's recommendations and sets out follow-up measures. Thereby the Commission complies with the requirement to report on the first interim evaluation of ARTEMIS and ENIAC as laid down in their founding acts<sup>1</sup>. Furthermore, the Commission intends to prepare a Communication, scheduled for the first half of 2011, to set out its overall conclusions on the interim evaluations of all the JTIs and the interim assessments of the Recovery Plan Public-Private Partnerships (PPPs).

### **2. BACKGROUND**

In its current Seventh Framework Programme for research, technological development and demonstration activities, the European Union supports a number of Joint Technology Initiatives (JTIs). In the field of Information and Communication Technologies (ICT), the ARTEMIS and ENIAC JTIs were established in 2007 as Joint Undertakings (JUs), based on Article 187 TFEU (ex Article 171 EC). These two bodies constitute public-private partnerships between industry, a number of EU Member States and associated countries, and the European Union. Their aim is to implement, by means of a budget from both the EU and participating Member States<sup>2</sup>, a research agenda defined by the European research communities (industry and academic/research organisations) in their respective fields. The JTIs thereby seek to strengthen Europe's future growth, competitiveness and sustainable development. Their ambition and scope, the scale of the financial and technical resources that need to be mobilised, and the need to achieve effective coordination and synergy of resources and funding called for action at European level.

After their first two calls for proposals, ARTEMIS and ENIAC have launched 25 and 18 projects, respectively, each with an average duration of three years. The EU and JTI Member States together have so far committed €576 m to both JTIs combined (2008-2010), in addition

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<sup>1</sup> Council Regulation No 74/2008 of 20 December 2007 on the establishment of the 'ARTEMIS Joint Undertaking' to implement a Joint Technology Initiative in Embedded Computing Systems; Article 11 Council Regulation No 72/2008 of 20 December 2007 setting up the ENIAC Joint Undertaking, Article 11.

<sup>2</sup> ARTEMIS Member States: Austria, Belgium, Cyprus, Czech Republic, Germany, Denmark, Estonia, Spain, Finland, France, Greece, Hungary, Ireland, Italy, Latvia, Netherlands, Norway, Portugal, Romania, Sweden, Slovenia, United Kingdom  
ENIAC Member States: Austria, Belgium, Czech Republic, Germany, Estonia, Spain, Finland, France, Greece, Hungary, Ireland, Italy, Latvia, Netherlands, Norway, Poland, Portugal, Romania, Slovak Republic, Sweden, United Kingdom.

to private R&D efforts worth about double that amount. While this represents a considerable public investment in two crucial technology fields, the present public support falls far short of the original objectives set in the Commission's proposals for establishing the Joint Undertakings (total of €900m combined for the same period). The current investments in the two JTIs also do not live up to the expectations of the research stakeholders, who had ambitions for programmes amounting to €2.5 to €3 billion each (corresponding to the Commission's overall proposal).

### **3. CONDUCT OF THE EVALUATION**

The objective of this evaluation was to assess the quality and efficiency of the JTI operations, as well as the likelihood that ARTEMIS and ENIAC, in their current set up, would achieve their objectives. To this end, the Commission invited a panel of independent experts<sup>3</sup>, chaired by Dr Wulf Bernotat, to review evidence and interview stakeholders<sup>4</sup>.

The evaluation panel issued its report in July 2010. The full report is available on the EUROPA website<sup>5</sup>.

### **4. THE EVALUATION RESULTS AND RECOMMENDATIONS**

Significantly, the evaluation panel recognises the value of a tripartite structure for JTIs in these fields, pooling resources from industry, the EU *and* Member States:

‘Having a joint strategy with shared implementation is good for industry, good for Member States, and good for Europe. (...) The Evaluation Panel congratulates all those involved for their considerable achievements in the design and implementation of these new instruments.’

However, the experts express their concern that ARTEMIS and ENIAC are not giving sufficient attention to their European strategic aims. The panel calls for a strategic re-focusing of the two JTIs, involving all stakeholders and moving further towards a truly joint effort. In this context, the experts further demand that industry re-engage the top-level ‘thought leaders’ in industry, governments and the scientific community:

‘Industry, that asked for and was given leadership of these JTIs, has not maintained its initial engagement in the strategic direction and management of the JTIs so that they achieve all their objectives and specifically has not engaged effectively with Member States to address the problems.’

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<sup>3</sup> The expert panel consisted of the following members: Dr Wulf H. Bernotat (chairman) — formerly E.ON AG; Elke Eckstein — OSRAM Opto Semiconductors; Luke Georghiou — University of Manchester, Manchester Institute for Innovation Research; Terttu Luukkonen — the Research Institute of the Finnish Economy; Bob Malcolm (rapporteur) — Ideo ltd; Dominique Potier, Pôle Systématique and formerly Thales; Christian de Prost, ATMEL; Alberto Sangiovanni-Vincentelli, University of California/Berkeley.

<sup>4</sup> The evidence base for this evaluation included the legal and other documents setting up ARTEMIS and ENIAC, financial information, participation statistics and project information. Interviewees included representatives from the JUs, the Commission, Member State authorities and the business and research communities, including SMEs.

<sup>5</sup> [http://ec.europa.eu/dgs/information\\_society/evaluation/rtd/jti/index\\_en.htm](http://ec.europa.eu/dgs/information_society/evaluation/rtd/jti/index_en.htm).

The evaluation panel considers that the funding shortfall is a critical issue:

‘The funding commitment by Member States is significantly below that which was expected, jeopardising the ability to establish a critical mass of activity and severely constraining the construction of appropriate portfolios of projects.’

The shortfall appears to be partly related to the ITEA2 and CATRENE Eureka inter-governmental schemes, which work in parallel with ARTEMIS and ENIAC and which are supposed to progressively integrate with the JTIs where added value can be created<sup>6</sup>. The Commission’s position on this problem is outlined in section 6 of this report.

Addressing the European Commission, the evaluation panel highlights a number of lessons, such as the need for greater organisational and financial flexibility, which have been learned with the first generation of JTIs and should be taken into account when setting up potential future PPPs:

‘The present financial regulations and other administrative requirements (such as staff regulations) are too constraining and they inhibit rather than enable realisation of the strategic aims for JTIs.’

The list of the panel’s recommendations is reproduced in annex.

The timeframe for each recommendation indicates whether it is possible to act under the current legal framework or if the existing JU Regulations or Financial Regulation need to be amended. As the amendment of the legal framework is a resource-intensive procedure, this group of recommendations will be dealt with as part of the discussion about a next generation of PPPs.

## **5. PLANNED FOLLOW-UP ACTIONS**

The Commission welcomes the interim evaluation report and takes note of the evaluation panel’s recommendations. The Commission is committed to address its part of the recommendations and to work with industry, Member States and the Joint Undertakings to help them address their parts. In line with the timeframe suggested by the report, and considering the specific nature of ARTEMIS and ENIAC directly involving Member States, the Commission will undertake:

- 1) immediate actions for the existing Joint Undertakings (i.e. the JTI activities in the period 2011-2013) to be followed up through their governance structures; and
- 2) longer-term actions for the potential next generation of PPPs in these domains under the Innovation Union<sup>7</sup> and Digital Agenda for Europe<sup>8</sup> flagship initiatives launched to address the Europe 2020 strategy<sup>9</sup>.

The Commission’s response to the panel recommendations is summarised below.

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<sup>6</sup> Article 2(d) of Council Regulations No 72/2008 and No 74/2008.

<sup>7</sup> COM(2010) 546, <http://ec.europa.eu/research/innovation-union>

<sup>8</sup> COM(2010) 245, [http://ec.europa.eu/information\\_society/digital-agenda](http://ec.europa.eu/information_society/digital-agenda)

<sup>9</sup> COM(2010) 2020, <http://ec.europa.eu/europe2020>

## **(i) General recommendation**

Notwithstanding the currently modest collective financial commitment by the Member States to the existing JUs, which affects directly the European funding<sup>10</sup>, and the apparent complexity, the Commission agrees that the tripartite model can bring important benefits if all parties are working towards a strong common set of strategic objectives. Besides industrial leadership in the development of the strategy, this model offers a unique opportunity to coordinate national policies towards common European challenges. At the same time, the Commission agrees that the JTIs would benefit from recommitment by the partners to the tripartite model and to a European strategic agenda as soon as possible. The Commission will engage with industry and Member States to explore the best way to achieve this. This is particularly important because the JTIs are active in areas identified as Key Enabling Technologies for Europe<sup>11</sup>.

Without prejudice to future decisions on the architecture of Framework Programme 8, the Commission does not rule out that activities in areas addressed by ARTEMIS and ENIAC might be dealt with by a single JTI in the future. This might even cover a larger part of the value chain, addressing the burning issue of the trade-off between hardware and software and balancing technology-push and application-pull priorities. In addition, this would help increase the efficiency of the operational set-up.

## **(ii) Recommendations for Member States**

Given the strict link binding the European contribution to national contributions (see footnote 10), the Commission acknowledges that there is a need to increase the financial contributions from the Member States in order to reach the overall financial objectives set out in the Regulations<sup>12</sup>. In addition, the national budgets could cover a multi-annual period in order to set a longer-term perspective following industry's multi-annual strategic plan. The Commission will propose that the Member States agree on a multi-annual budgetary contribution for the remaining lifetime of the JUs with the aim of achieving the original goals of the JTIs. This is one element of the strategic recommitment the Commission expects from its partners.

Member States have so far paid little attention to the required synchronisation of their operations<sup>13</sup>. The Commission will insist that national practices be adopted in line with the terms of the Regulations and the Administrative Arrangements in place in order to help converge on common practices. The Commission will also propose the creation of a Working Group within the Public Authorities Boards to deal with the benchmarking of national practices to improve the harmonisation of administrative processes and national funding rates.

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<sup>10</sup> Article 13(4) of the statutes of the Joint Undertakings (annexed to Council Regulations 72/2008 and 74/2008) states that a JU's contribution (using the EU contribution) to the budget for each call for proposals must be equivalent to 55% of the total amount committed by the Member States.

<sup>11</sup> 'Preparing for our future: Developing a common strategy for key enabling technologies in the EU' COM(2009) 512.

<sup>12</sup> Article 11(6) of the statutes of the Joint Undertakings (annexed to Council Regulations 72/2008 and 74/2008), amounting to €440m + €792m public funding for ENIAC and €410m + €738m for ARTEMIS.

<sup>13</sup> Article 13(6)(b) of the statutes of the Joint Undertakings (annexed to Council Regulations 72/2008 and 74/2008): '... Member States shall undertake best efforts to synchronise the terms and conditions and the establishment of grant agreements and to disburse their financial contributions in a timely manner'..

In this context, the funding rules for universities and academic/research organisations deserve special attention.

The Commission agrees that there is value in making more visible the national support for specific topics in the Annual Work Programme. However, the European nature of the JTIs should not take the form of a collection of purely national interests. The Commission will propose in the Public Authorities Board to develop a simple way to include national support considerations at an appropriate level of detail in the Annual Work Programme.

### **(iii) Recommendations for the industrial associations**

The Commission agrees that adequate processes and tools should be put in place in order to monitor and analyse the strategic achievements of the JTIs. It will propose measurable indicators and ask the industrial associations to regularly undertake a strategic analysis of the results and impact of each call for proposals. More generally, the Commission will suggest to industry that strategic research agendas be updated and revised in due time and adopted at a high level in the companies involved, the Commission and Member States.

The Commission supports the view that the industrial associations have a key role to play in driving the JTI strategy towards innovation ecosystems. The industrial partners should steer the development of a concrete plan with tangible targets which the JUs would have to implement, such as stimulating the participation of SMEs, clustering activities, and education and training actions.

Furthermore, the industrial associations are encouraged to provide more 'value for money' to their members, which should result in a broader representative set of stakeholders and a broader membership with a particular focus on SMEs. The Commission will also analyse the potential and legal implications of a simpler administrative involvement of some participants in the projects, for example the concept of 'associated partner' for SMEs with a view to reducing their administrative and financial burden.

### **(iv) Recommendations for the European Commission**

The evaluation panel calls on the Commission not to apply the framework Financial Regulation or the Staff Regulations to potential future PPPs. This is also broadly in line with the recommendations made by the JTI Sherpas' Group<sup>14</sup>. In this context, the Commission proposed, in the triennial revision of the Financial Regulation<sup>15</sup>, two additional options to implement public-private partnerships: a mixed public-private body based on Article 185a of the Financial Regulation and a private-law body (Article 53(1)(2)(g)). This proposal, if adopted by the legislator, would create the framework for following this recommendation.

The Commission will explore the relevance of extending the operational activities of potential future PPPs to encompass accompanying measures such as coordination, support, infrastructure and large demonstration actions. It will also investigate, with the help of the Member States, industry and other potential contributors, ways of combining funding from different sources. Similarly, the Commission will consider how to provide financial support to activities that are critical to achieve the European strategic objectives of the JTIs and that

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<sup>14</sup> Designing together the 'ideal house' for public-private partnerships in European research – JTI Sherpas' Group – Final Report - January 2010, <http://cordis.europa.eu/fp7/jtis/>

<sup>15</sup> COM(2010) 260, [http://ec.europa.eu/budget/documents/financial\\_regulation\\_en.htm](http://ec.europa.eu/budget/documents/financial_regulation_en.htm)

could not be supported under the current JTI set-up, such as infrastructure or innovation projects that are not R&D activities in the strict sense.

The Commission sees the contribution of the industrial associations to the running costs of the JUs as an important incentive for them to ensure good governance of the JU. It also takes note of the difficulty experienced by the associations to collect adequate membership fees. A future model in which each beneficiary would pay a 'fee' to the JU would need to be examined with great care.

The Commission also recognises the importance of gathering data to demonstrate the impact of the JTIs' work, which would be used in future evaluations. To this end, it will establish with the help of experts a set of indicators to assess the achievements of the JTIs against the goals enshrined in their founding acts<sup>16</sup> and their multi-annual strategic plans. The resulting data will be analysed yearly.

#### **(v) Recommendations for the Joint Undertakings**

The Commission is aware of the difficulties experienced by the industrial associations in generating sufficient income from their membership fees or other types of activities without mandatory contributions from all beneficiaries of the projects. On the other hand, the Commission considers that the industrial associations have the potential to generate extra revenue through a broader service offering to their members. The low income of the industrial associations is also due to the smaller volume of the programmes because of lower contributions from the Member States than originally expected. Besides its efforts to revitalise the commitment of stakeholders and to encourage the industrial associations to diversify and extend their activities and membership, the Commission will support steps by the JUs to improve the current situation.

The Commission concurs with the need to improve the match between the portfolio of supported projects and the strategic European aims of the programme. Therefore, it will propose to establish a working group to review the current evaluation criteria in order to better assess the way in which the projects contribute to the overall European aims of the JTIs and to enriching the innovation ecosystem.

Furthermore, the Commission will support the establishment of open and transparent processes by relevant stakeholders to provide early, more visible and constructive feedback to applicants on the prospects for support from the Member States.

### **6. THE COMMISSION'S POSITION TOWARDS EUREKA AND THE PROBLEM OF UNDER-INVESTMENT**

The Commission agrees that the parallel operation of Eureka clusters (CATRENE and ITEA2<sup>17</sup>) and the JTIs in the areas of nanoelectronics and embedded systems adds complexity to the European Research Area, is confusing for the research community and is intrinsically inefficient. Moreover, the Council had called for 'progressive integration' of these two funding mechanisms.

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<sup>16</sup> Article 2 of Council Regulations 72/2008 and 74/2008.

<sup>17</sup> See: <http://www.catrene.org> and <http://www.itea2.org>.

The Commission fully supports retaining a top-down, strategic, pan-European and technological role for the JTIs, with funding to implement their programmes, but also recognises the added value of a complementary, bottom-up, shorter-term business- and market-oriented programme involving the collaboration of a few companies and funded to implement specific projects. However, the Commission considers that both approaches could be implemented under one single public-private partnership, which would also allow for significant economies in the running of operations. To date, all stakeholders have made great efforts to identify ways of delineating the two types of programmes. The resulting situation is sub-optimal. Experience has shown that it is very difficult to exclude topics from one or other programme when exploring detailed options beyond high-level principles. Indeed, a large number of research subjects are addressed by both programmes (in the application and technology fields). This should not come as a surprise when considering that most private founding partners are common to both sides. Continued co-existence would not ensure the coordination and synchronisation of the two independent initiatives or offer budgetary flexibility for Member States when allocating their resources to the different schemes (for those who are actively involved in both, which is the case for the largest contributors).

The Commission therefore considers that the co-existence of Eureka clusters and the JTIs contributes to the present shortfall in contributions from the Member States to the JUs and the Eureka clusters, as the financing of both instruments often comes from a single source at national level. This important issue is not addressed in the report. The Council, however, had acknowledged this situation when adopting the regulations establishing the JTIs, in particular in calling for ‘progressive integration’ of the two funding mechanisms. Integrating the two approaches under one roof would facilitate the implementation of a single strategy for Europe, ensure sufficient resources to reach critical mass and enable the partners involved to choose the right mix of instruments for their aims, i.e. through flexible use of the top-down and bottom-up mechanisms.

Even though the panel states that operational integration should only be considered over the long term and not for the period from 2014 onwards, the Commission’s ambition is to keep working on the progressive integration of these two funding mechanisms. The Commission will actively participate in the existing structures (JTI and Eureka) and working groups in order to make further progress with the differentiation and coordination of activities, and will study the detailed conditions under which the progressive integration of the Eureka clusters within the JUs’ operations would create added value.

**Annex - List of recommendations by the evaluation panel**

<b>No</b>	<b>Summary of recommendations</b>	<b>Timeframe</b>
1	Future JTIs <i>in these domains</i> to continue the tripartite JTI model	Next-gen JTIs
<b>Recommendations for Member States</b>		
2	Make multi-annual budgetary commitments	Now
3	Comply with the JTI Council Regulations	Now
4	Undertake benchmarking & alignment studies of national practices	Now
5	Give early annual indication of support for specific topics	Now
<b>Recommendations for industrial associations</b>		
6	Lead the establishment of processes to monitor progress toward JTI objectives	Now
7	Lead the preparation of action plans for achievement of innovation ecosystem aims	Now
8	Engage better with the JTI constituencies	Now
<b>Recommendations for the European Commission</b>		
9	Lead the drafting of new Council Regulations with alternative Financial Regulations and Staff Regulations	Next-gen JTIs
10	Regulations should allow JTIs to support innovation-related activities other than R&D	Next-gen JTIs
11	Regulations should allow JTIs to accept funding from other sources	Next-gen JTIs
12	Regulations should allow the EU to make additional financial contributions for strategic purposes	Next-gen JTIs
13	Regulations should allow the Joint Undertakings to claim some of their operational costs from non-members	Next-gen JTIs
14	The Commission should establish data gathering to support assessment of the benefits of these JTIs	Now
<b>Recommendations for the Joint Undertakings</b>		
15	Establish a mechanism for recovering some of their operational costs from non-member beneficiaries of the JTIs	Next-gen JTIs
16	Place greater emphasis on strategic, European aims in proposal evaluation & selection processes	Now
17	Establish processes to give early feedback to proposers	Now
<b>Recommendation for JTI–EUREKA coordination</b>		
18	ARTEMIS & ENIAC should continue their initiatives to differentiate from and coordinate with ITEA2 and CATRENE, respectively	Now

