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**REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND
THE COUNCIL**

**Annual Report on the progress achieved by the Joint Technology Initiatives
Joint Undertakings in 2010**

{SWD(2012) 105 final}

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1. INTRODUCTION

The Joint Technology Initiatives are a novel way of realising public-private partnerships in industrial research at European level. They were established as pilots in 2007-2008 under the Seventh Framework Programme¹ in five strategic areas – aeronautics and air transport (the Clean Sky Initiative), public health (the Innovative Medicines Initiative), fuel cell and hydrogen technologies (the Fuel Cells and Hydrogen Initiative), embedded computing systems (the ARTEMIS Initiative) and nanoelectronics (the ENIAC Initiative)². Bringing together industry, the research community and the EU to define common research agendas and invest in large-scale multinational research activities, especially in times of a global economic downturn, the JTIs represent an intriguing opportunity for Europe to strengthen its competitiveness based on the principles of scientific excellence, openness and innovation.

The Annual report on the progress achieved by the Joint Technology Initiatives Joint Undertakings (hereinafter referred to as "JTI JUs") is prepared pursuant to Article 11(1) of each Council Regulation setting up the individual JTIs, which states that *"the Commission shall present to the European Parliament and to the Council an annual report on the progress achieved by the [name of the JTI] Joint Undertaking. This report shall contain details of implementation including number of proposals submitted, number of proposals selected for funding, type of participants, including SMEs, and country statistics"*.

The legal basis also sets out a requirement to include, if relevant, information on the assessment results of the *Technology Evaluator* which shall define the environmental impact and benefits of the overall output of the Clean Sky Joint Undertaking³. Since the first assessment was anticipated in the end of 2011, this report gives an overview of the preparatory steps in the design and development of the *Technology Evaluator* system undertaken in 2010.

The present report is the second stand-alone document providing information to the European Parliament and the Council on the progress achieved by the JTI JUs since their establishment. The activities of the Joint Undertakings in 2008 were included in the general *Annual report on*

¹ Decision No 1982/2006/EC of the European Parliament and of the Council of 18 December 2006 concerning the Seventh Framework Programme of the European Community for research, technological development and demonstration activities (2007-13), OJ L 412, 30.12.2006, p. 1.

² This document does not report on the SESAR Joint Undertaking (Single European Sky Air Traffic Management Research), which is a public-private partnership funded from the Seventh Framework Programme and the trans-European Transport Networks and has its specific governance and reporting mechanisms.

³ Referred to in Article 8(1) of the Statutes of the Clean Sky JU, Council Regulation (EC) 71/2008 of 20 December 2007 setting up the Clean Sky Joint Undertaking, OJ L 30, 04.02.2008, p. 1.

research and technological development activities of the European Union in 2008⁴, and in particular, annexed to the *Commission Staff Working Document*⁵ accompanying the report. Later on, it was decided to change the scope of the report and to separate the description of the JTI JUs' activities from the general research and development activities of the Commission.

The first stand-alone report on the JTI JUs' activities in 2009⁶ was adopted in September 2011. The Commission's services have undertaken substantial efforts to present the next year's results of the JTI JUs' activities, object of this report, to the European Parliament and the Council in a timely manner.

The present *Annual report on the progress achieved by the Joint Technology Initiatives Joint Undertakings in 2010* is prepared after the first interim evaluations of the Joint Undertakings foreseen in Article 11(2) of their Council Regulations. It takes into account the recommendations of the experts in the interim evaluation reports and the response from the Commission⁷, as well as the specific actions planned by the JTIs in line with these recommendations. It also considers the opinion of the European Court of Auditors expressed in the reports on the annual accounts of the JTI JUs for the financial year ended 31 December 2010⁸.

The report starts with a brief introduction of the JTI JUs, summarises their key achievements in 2010 and outlines the fields for improvement in the future. It is accompanied by a *Commission Staff Working Document* containing essentially statistical information on the research activities of the JTI JUs during the year in compliance with Article 11(1) of their Council Regulations.

2. THE JTI JUS AT A GLANCE

The Joint Technology Initiatives have been set up in the form of Joint Undertakings on the basis of Article 187 of the Treaty on the functioning of the EU (ex Article 171 of the Treaty establishing the European Community) stipulating that "*the Union may set up joint undertakings or any other structure necessary for the efficient execution of Union research, technological development and demonstration programmes*". They were established as

⁴ Annual Report on research and technological development activities of the European Union in 2008, COM(2009) 558 final, Brussels, 22.10.2009.

⁵ Commission Staff Working Document accompanying the Annual Report on research and technological development activities of the European Union in 2008, SEC(2009) 1380 final, Brussels, 22.10.2009.

⁶ Annual Report on the progress achieved by the Joint Technology Initiatives Joint Undertakings in 2009, COM(2011) 557 final, Brussels, 14.09.2011.

⁷ 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", COM(2010) 752 final, Brussels, 16.12.2010.

Commission Staff Working Paper "Report on the first interim evaluation of the [IMI, Clean Sky and FCH JUs]" accompanying the Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions "Partnering in research and innovation", SEC(2011) 1072 final, Brussels, 21.09.2011.

⁸ Reports on the annual accounts of the [name of the JTI] Joint Undertaking for the financial year 2010, together with the replies of the Joint Undertakings, OJ C 368, 16.12.2011.

"Community bodies" as defined in Article 185 of the EU Financial Regulation⁹. Having as a main objective to support key areas where research and technological development can contribute to the European competitiveness and quality of life, but where the traditional instruments of the Framework Programme are not adequate¹⁰, the JTI JUs have been introduced as a major novelty under the Seventh Framework Programme (FP7).

In line with the FP7 "Cooperation" Specific Programme, five JTI JUs were established in 2007-2008 for a limited period up to 31 December 2017:

- (1) ***Aeronautics and Air Transport (Clean Sky) JU*** increasing the competitiveness of the European aeronautics industry while reducing emissions and noise, established by Council Regulation (EC) 71/2008 of 20 December 2007;
- (2) ***Innovative Medicines Initiative (IMI) JU*** fostering the development of better and safer medicines for patients, established by Council Regulation (EC) 73/2008 of 20 December 2007;
- (3) ***Fuel Cells and Hydrogen (FCH) JU*** speeding up the development and deployment of hydrogen supply and fuel cell technologies, established by Council Regulation (EC) 521/2008 of 30 May 2008;
- (4) ***Embedded Computing Systems (ARTEMIS) JU*** helping the European industry to consolidate and reinforce its world leadership in embedded computing technologies, established by Council Regulation (EC) 74/2008 of 20 December 2007;
- (5) ***Nanoelectronics Technology 2020 (ENIAC) JU*** targeting to achieve a very high level of miniaturisation required for the next generation of nanoelectronics components, established by Council Regulation (EC) 72/2008 of 20 December 2007.

To achieve their objectives, the Joint Undertakings select projects through annual open and competitive calls for proposals following a one- or two-stage submission and evaluation process. They provide funding for ***collaborative projects*** and ***coordination and support actions***. The calls for proposals launched by the Clean Sky JU are more specific due to their scope, shorter duration and expected results which should be at higher technology readiness levels. Thus, Clean Sky publishes several calls per year.

Until they became autonomous, the European Commission, as a co-founding member, was responsible for the establishment and the initial operation of the JTI JUs. When the Joint Undertakings built up their legal and financial framework, demonstrating capacity to implement their own budget, they were granted autonomy from the Commission. ARTEMIS, IMI and Clean Sky gained officially their autonomy in October-November 2009, followed by ENIAC in May and FCH in November 2010. Thus, 2010 was the first full year of autonomous functioning of most of the JTI JUs.

⁹ Council Regulation (EC, Euratom) 1605/2002 of 25 June 2002 on the Financial Regulation applicable to the general budget of the European Communities, OJ L 248, 16.09.2002, p. 1.

¹⁰ Commission Staff Working Document "Joint Technology Initiatives: Background, State-of-Play and Main Features", SEC(2007) 692, Brussels, 15.05.2007.

3. KEY ACHIEVEMENTS IN 2010

After the relatively slow operational start of the JTI JUs, to a certain extent due to the limitations of the existing legal and the regulatory framework for a "Community body"¹¹, in 2010 the five Joint Undertakings revealed that the new business model between public and private sectors in research promises to be successful. The JTIs' activities that have been launched and already ongoing were recognised to be overall efficient and of a high quality according to the conclusions of first interim evaluations of the Joint Undertakings performed in 2010 (April 2011 for the FCH JU).

3.1. Operational activities

In 2010, the five JTI JUs concentrated efforts on the **management of their calls for proposals** – finalising negotiations, signature of grant agreements and kick-off of the projects coming out from the 2008 and 2009 calls, as well as launch of the 2010 calls, evaluation and selection of the winning proposals and, for some JTIs, start of the negotiation process. The Joint Undertakings worked also on the preparation of the 2011 calls for proposals: based on the lessons learned from the previous calls and consultations with the various stakeholders, they came out with a definition of the next calls' topics.

All JTI JUs were successful in attracting a wide variety of participation in their calls from Europe and FP7-associated countries. Overall, a large number of SMEs took part in the proposals. There were, however, some obstacles which the JTIs had to deal with to further strengthen the SME involvement in their research activities.

As to the running projects, according to the initial observations, they manage to address the identified priorities of the JTI JUs' research agendas and are complementary to other FP7 activities in the same domain without overlapping or duplicating them. This has been ensured by regular checks. At the same time, the ongoing projects were showing a satisfactory technical progress in line with the different industrial implementation strategies.

Detailed information on the JTI JUs' research activities in 2010, types of applicants, SME participation, statistics per country and amounts of funding in the calls is presented in the *Commission Staff Working Document* accompanying this report.

During the year 2010, most of the Joint Undertakings started **revision of strategic documents and updating research priorities** laying the foundation of the calls' topics in order to reflect the scientific advances and the evolution of needs of the different industries. Clean Sky carried out an assessment of its environmental objectives, as defined originally in its technical proposal¹². The result of this re-evaluation widely confirmed the relevance of Clean Sky's initial targets. The ITD work programmes and the related calls topics were also revised based on these updated elements. IMI considered the recommendation from its industry stakeholders, expressed also in the first interim evaluation report and endorsed by the European Commission, to launch a number of large initiative projects and apply a "Think

¹¹ Designing together the "ideal house" for public-private partnerships in European research, JTI Sherpas' Group, Final Report, January 2010.

¹² This consisted in defining more precisely the environmental forecasts according to the "concept aircraft" specified for the first Technology Evaluator assessment, starting in 2010 and to be completed in 2011. This exercise was linked to the revised selection of applicable technologies and definition of the demonstrators, performed during the first two years of the Programme.

Big" approach in formulating its calls topics. FCH undertook specific actions to overcome the limitations of the matching principle and the funding rates identified as a main risk factor for its operational activities. ARTEMIS started work and ENIAC elaborated a new release of their research agendas to keep pace with the new trends and fast evolution in their fields.

3.2. Clean Sky JU: Technology Evaluator

The *Technology Evaluator* is at the core of Clean Sky with the purpose of assessing the environmental performance of the technologies developed with its support. The *Technology Evaluator* recovered from the delays faced in 2009 and all work packages were active in 2010. The first *Technology Evaluator* assessment was planned to be done through modelling the air transport system by comparing two scenarios – with and without the participation of Clean Sky. It was scheduled for the end of 2011. The results of the assessment will be presented in the next Commission's reports.

3.3. Administrative activities

After the cumbersome, but successful **set-up and launch** of the five Joint Undertakings, ARTEMIS, IMI and Clean Sky progressively developed their legal and financial framework and, by the end of 2009, were granted autonomy from the Commission. Thus, 2010 was the first year of autonomous functioning of the entities.

Following the same path, in 2010, ENIAC and FCH focused on completing the establishment of their governance and internal control systems and elaborating their risk management processes. After these Joint Undertakings met the autonomy criteria, they were also granted **administrative and operational autonomy** from the Commission.

One of the main tasks of the Joint Undertakings in 2010 was to **develop their internal systems and processes**, backing up the successful implementation of their research activities. Clean Sky's processes have been analysed and mapped, which resulted in the production of a quality manual and a manual for financial procedures. A review of the IMI JU's organisational structure was carried out to better respond to the expectations of the stakeholders. Similar revision and upgrading activities were undertaken in the other JTIs as well.

An important issue in this context was the development of **key performance indicators**. Among the five JTI JUs, by the end of 2010 only FCH and ENIAC had implemented quantitative indicators. Clean Sky, IMI and ARTEMIS designed their indicators, but the completion was expected during the next year. Furthermore, as autonomous bodies, the Joint Undertakings had to decide on their **internal audit processes**. Clean Sky, IMI and FCH established their own internal audit capability and appointed internal auditors. ARTEMIS and ENIAC chose this activity to be exercised by the Internal Audit Service (IAS) of the European Commission.

For most of the JTIs, key staff had already taken up their positions before 2010 and the **recruitment** of the remaining posts was in its final stages. In 2010, the entities recruited staff in compliance with their *Staff Policy Plans*. It is important to note that in the end of year the JTI JUs, in close collaboration with the European Commission, concluded the joint procurement procedure for their new office location. In January 2011 they moved to their **new premises** in the White Atrium building in Brussels.

Regarding their **communication activities**, Clean Sky and ENIAC adopted a *Communication and Dissemination Strategy*, which has been included in the agenda of the other Joint Undertakings as a priority for 2011. Overall, during the year, the JTI JUs were focused on promoting their activities among interested parties and maintaining the relations with stakeholders through various events – information days, workshops, meetings and conferences. The relations with media have been maintained; various press releases on key research topics were published. The JTIs worked also on improving their visual identity and re-designing their websites, which were used as a tool to announce calls for proposals, exchange of information and provision of information on the latest developments in the respective industry.

The **cooperation with third parties** was of a great importance for recognising the JTI JUs as players on the world scene. FCH, for instance, developed good international cooperation with the USA, Japan and the Republic of Korea. Clean Sky maintained close links with the SESAR Joint Undertaking which investigates the air traffic management technologies in line with the Single Sky initiative of the European Commission. ARTEMIS increased its collaboration with the ARTEMIS-IA Working Group and the EUREKA cluster programme ITEA-2.

4. PERSPECTIVES AND CHALLENGES FOR THE FUTURE

The first interim evaluations of the Joint Undertakings were carried out as planned by the end of 2010 (in April 2011 for the FCH JU) covering the quality and efficiency of their work and assessing the progress towards the set objectives. The overall result of the evaluations is positive, affirming good prospects for achievement of the JTI JU's goals.

As the Joint Undertakings are only now fully autonomous, there needs to be a period of some years of consolidation before the real benefits can be assessed. Nevertheless, the importance of cross-sectoral co-operation in key strategy setting is considered extremely important. In the case of the FCH JU, for example, where there are very specific market entry barriers, the industrial partners have been very effective in organising objective assessment of market potential in relation to other competing technologies. The stable allocation of funds has also underpinned the industry commitment – especially SMEs – at a time when the FP funds could easily have been diverted to competing technologies.

In 2011, the five Joint Undertakings had to follow up on the implementation of the ongoing activities and kick off the next waves of **projects**, as well as on the preparation and launch of the future calls. Calls topics needed to be defined on the grounds of the **revised research agendas**, considering the market forces and the quick pace of technology development in their industries.

As recommended by the European Court of Auditors and the experts in the first interim evaluation reports, the entities which experienced initial delays in starting their operations, such as Clean Sky, should have promptly **recovered** in order to achieve their objectives within the set timeframe. This would have also contributed to shorten the time for payments to beneficiaries and improve the implementation of the budget, which had been perceived overall as being low among all JTI JUs in 2010.

The JTI JUs had to further encourage the **wide participation** of industrial and academic partners, and particularly of SMEs, in their research activities. They needed to remove the obstacles for **SMEs**, where such existed. IMI had put on its agenda to develop a methodology

for in-kind contribution and calculation of indirect costs, and FCH already initiated the process to adopt an increase in the funding rates, which were considerably lower than those in FP7. Clean Sky, ARTEMIS and ENIAC were challenged to keep the high interest of SMEs in the calls for proposals they were launching.

From an administrative perspective, after the initial start-up and preparatory phase before autonomy, the JTI JUs had to then work on their **consolidation** as a pre-requisite for sustainability and a factor for success. Although the establishment of the five public-private partnerships was a considerable achievement on its own, the Joint Undertakings needed to further develop their **internal control frameworks**, and introduce, if necessary, additional control mechanisms. This was also pointed out in the reports of the European Court of Auditors which found out that by the end of 2010 none of the entities had completely implemented their internal controls and financial information systems and/or had yet validated their underlying business processes as required by the Joint Undertakings' financial rules.

Moreover, implementation of **key performance indicators** in 2011 by all JTI JUs had to avoid making the output of the initiatives scattered and diffuse. Their task would be not only to assess and periodically monitor quality in order to maximise impact across research programmes, but also to be tracked by a sound monitoring and evaluation system. An important step towards this in 2011 had to be the implementation or adoption, where not done yet, of comprehensive **internal audit plans** and the performance of regular **ex-ante verifications** and **ex-post audits**. Moreover, as expressed by the European Court of Auditors, the JTI JUs had to clearly define the role of the Commission's IAS in their financial rules.

Concerning the IT and logistics matters, all Joint Undertakings needed to further consider the establishment of **formal IT policies and procedures** to ensure the proper functioning of the IT planning and monitoring cycle and provide for reliable risk management tools. Also, a **host agreement** had to be concluded with the Belgian authorities concerning the office accommodation, privileges and immunities, and other support provided by the State. Both comments were taken into consideration by the JTI JUs and actions are already underway.

Among the objectives of the Joint Undertakings in 2011 should have been the enhancement of their **communication activities** using a more proactive and target-oriented approach, especially within SMEs and the research community to increase their level of participation in the research projects. As recommended in the interim evaluation reports, the JTI JUs should develop and implement clear communication and dissemination plans, obtain a separate identity and work more on the synergy with national programmes and international cooperation with non-EU stakeholders.

Taking into consideration that the present report is looking at the JTI JUs' development in the first year of their autonomous operations, and at a point where none of their projects are completed, the prospects for the future remain to be considered. The results achieved by the five JTI JUs so far sets them as ambitious European initiatives with the potential to become a new affirmed model of a public-private partnership.