COUNCIL OF THE EUROPEAN UNION

Brussels, 8 January 2013

5076/13

RECH 1
COMPET 5
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COVER NOTE

from:	Secretary-General of the European Commission, signed by Mr Jordi AYET PUIGARNAU, Director
date of receipt:	14 December 2012
to:	Mr Uwe CORSEPIUS, Secretary-General of the Council of the European Union
No Cion doc.:	COM(2012) 758 final
Subject:	Report from the Commission to the European Parliament and the Council - Annual Progress Report on the activities of the Joint Technology Initiatives Joint Undertakings (JTI JUs) in 2011

Delegations will find attached Commission document COM(2012) 758 final.

Encl.: COM(2012) 758 final

EUROPEAN
COMMISSION

Brussels, 14.12.2012
COM(2012) 758 final

REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL

Annual Progress Report on the activities of the Joint Technology Initiatives Joint Undertakings (JTI JUs) in 2011

{SWD(2012) 430 final}

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1. INTRODUCTION

The Joint Technology Initiatives are a novel way of forming public-private partnerships in industrial research at European level. They were set up as pilots in 2007-2008 under the Seventh Framework Programme[1] in five strategic areas — aeronautics and air transport (the Clean Sky initiative), public health (the Innovative Medicines Initiative (IMI)), fuel cell and hydrogen technologies (the Fuel Cells and Hydrogen (FCH) initiative), embedded computing systems (the ARTEMIS initiative) and nanoelectronics (the ENIAC initiative). The SESAR[2] (Single European Sky Air Traffic Management Research) programme should also be mentioned since it is funded under the Seventh Framework Programme. Bringing together industry, the research community, regulators and the EU to define common research agendas and invest in large-scale multinational research activities, the JTIs represent an intriguing opportunity, especially in a global economic downturn, for Europe to strengthen its competitiveness based on the principles of scientific excellence, openness and innovation.

An annual report on the progress achieved by the Joint Technology Initiatives Joint Undertakings ('JTI JUs') is required by Article 11(1) of the Council Regulations setting up the individual JTIs, which state 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'.

This 2011 annual report follows the first interim evaluations of the Joint Undertakings carried out under Article 11(2) of the Council Regulations. It provides information to the European Parliament and the Council and outlines the progress achieved by the JTI JUs since they were set up.

The report starts with a brief introduction of the JTI JUs, summarises their key achievements in 2011 and outlines the areas of improvement in the future. It is accompanied by a Commission Staff Working Document mainly quantifying the research activities of the respective JTI JUs in 2011. Moreover, it includes updated information on results and progress relating to calls launched in previous years.

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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 JU. Although the SESAR JU has the same legal basis as the other JUs, it is funded under the Seventh Framework Programme and the trans-European Transport Networks Programmes, over a different lifetime, and has different governance and reporting mechanisms from the other JUs.

2. THE JTI JUS

The Joint Technology Initiatives were set up in the form of Joint Undertakings under Article 187 of the Treaty on the Functioning of the EU, which states 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 are 'Community bodies' under Article 185 of the EU Financial Regulation[3]. They were a major new feature of the Seventh Framework Programme (FP7), introduced to support key areas of research and technological development that can contribute to Europe's competitiveness and quality of life but that were not best served by existing FP7 instruments[4].

Under the FP7 'Cooperation' Specific Programme, five JTI JUs were set up in 2007-2008 for the period 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 (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.

The European Commission, as a co-founding member, was responsible for starting up the JTI JUs. Once they had built up their legal and financial framework and demonstrated their capacity to manage their own budgets, ARTEMIS, IMI and Clean Sky were given autonomy in October-November 2009, followed by ENIAC in May and FCH in November 2010. Thus, 2011 was the first full year in which all the JTI JUs operated autonomously.

The Joint Undertakings select projects through annual open and competitive calls for proposals following one- or two-stage submission and evaluation. They provide funding for ***collaborative projects*** and ***coordination and support actions***. The calls for proposals launched by the Clean Sky JU are more specific in scope, of shorter duration and demanding expected results at higher technology-readiness levels. Clean Sky publishes several calls per year.

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[3] 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, 16.9.2002, p. 1.

[4] Commission Staff Working Document 'Joint Technology Initiatives: Background, State-of-Play and Main Features', SEC(2007) 692, Brussels, 15.5.2007.

3. PROGRESS ACHIEVED IN 2011 AND MAJOR CHALLENGES

3.1. Outcome of the first interim evaluation

The Council Regulations setting them up require two interim evaluations of the JUs. The first interim evaluation was performed on time and assessed their quality and efficiency and the progress achieved towards their objectives. All the reports concluded with a favourable opinion; they agreed that the JUs should continue beyond 2013 and took a common position on the following matters. First, the evaluation panels supported the Sherpa Group's recommendations[5], in particular '*that the current legal framework be streamlined to fit the purposes of setting up and implementing future JTIs*'. In this respect, the current 'Community body' status of JTIs should be reviewed. They recommended reinforcing and streamlining processes and decision-making. They also referred to the need for more structured coordination and complementarity with FP7 and national programmes and funds; for improved communication, to enhance the visibility of JTI actions aimed at the general public and at international level; and for systematic data collection and a monitoring system for key performance indicators.

The panels identified specific issues and challenges and made a series of recommendations for action by the various stakeholders (JUs, the European Commission, industry, Member States, Governing Boards, etc.). Details of the evaluations are given in the *Commission Staff Working Document*.

The Commission's response to the evaluations of Clean Sky, IMI and FCH was published as a staff working paper with the communication *Partnering in Research and Innovation* (COM(2011) 572), in September 2011. Its communication *First interim evaluation of the ARTEMIS and ENIAC Joint Technology Initiatives* (COM(2010) 752) was published, with a staff working paper detailing its response, in December 2010.

For the Clean Sky, IMI and FCH JUs, the panels recommended prompt action on improving communication with citizens, setting-up key performance indicators and making the JUs' Executive Directors, rather than the Governing Boards, responsible for matters pertaining to day-to-day management. For ENIAC and ARTEMIS, the panel made 18 recommendations for Member States, industry, the Commission and the JUs. It urged Member States to make multi-annual budgetary commitments and industry and the JUs to make a stronger commitment to implementing the European strategy. The Commission was advised to gather data for future evaluation of the JTI JUs.

3.2. Strategic Research Agenda

The strategic research agendas (SRAs) were revised to set new priorities for the JUs, to meet current challenges and to take into account the industrial progress achieved in recent years. Most JUs started this work in 2010 and completed it in 2011.

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[5] The Sherpa Group was called on by the Commission in July 2009 to take stock of initial experience of setting up JTIs under FP7. Its members came from industry partners of the JTIs and the Recovery Plan public-private partnerships. Meetings were chaired by the Director-General of DG RTD and also attended by various Commission staff. For its conclusions and recommendations, see the report 'Designing together the 'ideal house' for public-private partnerships in European research' (January 2010), at: ftp://ftp.cordis.europa.eu/pub/fp7/docs/jti/jti-sherpas-report-2010_en.pdf.

In aeronautics, the targets set for Clean Sky JU were reassessed, updating the development plan and prediction of the environmental benefits to be expected by the end of the programme. In the pharmaceutical sector, the Innovative Medicines Initiative's SRA was revised to reflect scientific advances and changes in the industry. This update was completed in 2011, focusing on large scale, game-changing projects and setting eight new priorities.

The strategic research and demonstration priorities of the Fuel Cells and Hydrogen JU were also revised in 2011. New targets were set in the Multi-Annual Implementation Plan (MAIP) for the four FCH application areas, to reflect technical and scientific progress made since the first MAIP. As a result, some topics will no longer be considered in future calls and six new ones will be introduced. The revised targets were also extended to 2020, to align them with the next framework programme, *Horizon 2020*.

For embedded computing systems, new technical options and challenges have arisen since 2006 when the ARTEMIS European Technology Platform issued its first SRA, so the ARTEMIS SRA was also updated and research priorities for the development and adoption of key technologies across different application areas were reviewed. The revised SRA gives a clear idea of what is needed in Europe in the next decade from all R&I players to allow the emergence of new markets and applications important to society.

For ENIAC JU and nanoelectronics components, there were calls for all the technology fields and 9 of the 16 application fields in 2011. The next 2012 calls will include all applications and technology fields.

3.3. Communication and administration

One of the objectives that the interim evaluations wished to see for the Joint Undertakings in 2011 was to take a more proactive and target-oriented approach to their communication activities, especially with SMEs and the research community to increase their participation in the research projects. They recommended that the JTI JUs develop and implement clear communication and dissemination plans, establish a separate identity and work more on synergies with national programmes and international cooperation with non-EU stakeholders.

In 2011 special attention was in fact given to communication, stressing promotion of JU activities among European citizens and dissemination of initial results. Clean Sky and FCH both acquired new websites. Factsheets were updated, a newsletter (from IMI and Clean Sky) and a paper magazine (ARTEMIS) were circulated regularly and some press releases on significant achievements were also published. JU representatives also attended international conferences and specific events were held to publicise calls. The tables at Annex and the Staff Working Paper list the main communication activities of each JU.

For the first time, the five JTI JUs jointly organised a one-week event, 'Innovation in action', in the European Parliament building in Brussels in October 2011. The event was hosted by Maria de Graça Carvalho, MEP. A joint exhibition ran for the week and each Joint Technology Initiative had its own conference and ran sessions on particular topics. The press attended a joint press conference and covered the event. The Executive Directors of all five JUs presented their organisations' key successes and the Commission Director-General and Deputy Director-General took part in the discussions.

JTI research activities were fully under way and 2011 saw the first success stories. Some projects won awards for being particularly innovative and others were recognised as excellent for their research achievements (see 'success stories' in the tables at Annex).

On the administrative front, the five JUs moved successfully in January 2011 from a Commission building to dedicated premises in the heart of Brussels. By the end of the year, they had made progress in staff recruitment: both FCH and ENIAC reached full capacity; IMI, Clean Sky and ARTEMIS were closed to fully staffed, however IMI had three vacant temporary posts and one contract post above the authorised level. Recruitment to the Clean Sky JU was in line with the Governing Board's decision, but there was a Contract Agent post vacant and an urgent need for additional staff to handle the workload that could not be covered by the current team so extra, temporary staff were hired. ARTEMIS had two vacant contract agent posts.

The JUs complied with planning and reporting requirements, both their governing and advisory bodies met on a regular basis, and their Governing Boards approved strategic documents such as the 2010 final accounts and draft budgets. New chairs of the Governing Boards of Clean Sky and FCH were elected in 2011.

3.4. Operational progress

JUs aim to coordinate resources and funding from industry and public bodies so as to achieve synergies and help build Europe's future growth, competitiveness and sustainable development. In 2011, the five JUs launched further calls for proposals in line with their strategic research agendas and continued to evaluate and negotiate grants arising from previous calls. Since they differ in terms of the number of calls, topics, evaluation stages, sector and governance, the operational progress achieved during 2011 in call implementation is reported in separate sections below.

4. PROGRESS ACHIEVED BY THE CLEAN SKY JU

For the period 2008–2013, Clean Sky was allocated a total budget of € 1.6 billion: a maximum € 800 million from the European Commission (in cash), to be matched by industry contributions (in kind) worth at least € 800 million. Three main objectives were set for Clean Sky: (i) to accelerate environmental improvements in Air Transportation System (ATS) through the introduction of advanced technologies and full scale demonstrators, (ii) to improve on the overall ATS impact on the environment (reducing noise, emissions, and fuel consumption), and (iii) to consolidate the European aeronautics industry around a project of common interest.

Clean Sky's performance needs to be judged in the light of its specific characteristics, in particular the considerable industry involvement in the JU at various levels, from strategic management to the definition and description of call topics and direct participation in the evaluation of projects. Unlike the other JUs, Clean Sky works mainly via grants to named beneficiaries rather than calls for proposals. In fact, its main achievements result from the work of its members, organised in six different technical areas called Integrated Technology Demonstrators (ITD), supported by a Technology Evaluator who continuously monitors and assesses the result. There is effective and organised coordination with other organisations, particularly the Single European Sky Air Traffic Management Research (SESAR) JU.

Much of the overall budget (€600 million, or 75%) is distributed to these members or 'named beneficiaries'; the remaining €200 million is allocated to calls for proposals. These calls are launched on a regular but one-off basis when ITD members express a need for additional specific research activities to complement their work. Consequently, the Clean Sky calls for

proposals are targeted calls, cover various topics (23 to 58 during 2011) and are of short duration (averaging six months to one year).

In 2011 Clean Sky completed the evaluation of call 7 and published three calls for proposals: calls 8, 9 and 10. It managed 159 topics in total, resulting in a total of 325 partners from 22 countries selected after call 10. The table below gives an overview of the calls launched and evaluated by Clean Sky in 2011, including proposals submitted and evaluated.

Call indicative		No of topics	Proposals			Evaluation results		Success rate (%)	Indicative budget [max. funding] (€m)	Outcome of the call (€m)
			Submitted	Eligible	% eligible	Above the threshold	**Selected for funding**			
7	SPI-JTI-CS-2010-05	38	71	67	94.37%	45	**29**	64%	23.0	14.6
8	SPI-JTI-CS-2011-01	58	127	119	93.70%	84	**49**	58%	31.9	22.5
9	SPI-JTI-CS-2011-02	23	62	59	95.16%	32	**16**	50%	12.7	6.1
10	SPI-JTI-CS-2011-03	40	62	60	96.77%	35	**24**	68%	19.5	9.4
TOTAL		**159**	**322**	**305**	**95%**	**196**	**118**	**60%**	**87.1**	**52.6**

In comparison with the other JUs, overall participation in the calls is high and so is the number of projects selected for funding. The participants are evenly distributed between research organisations, industry, universities and SMEs. However, Clean Sky appeared to be less attractive to public bodies and regulatory agencies in 2011. SMEs accounted for a very high number of participants in the projects funded (37 %); over the period 2008–2011, SMEs accounted for 38% of the EU's Clean Sky funding[6].

Based on the data available for the funded projects, calls 7 to 10 attracted participants from 23 countries. The countries best represented were the United Kingdom, Germany, Spain, Italy and France, which have an industrial tradition in aeronautics. Clean Sky attracted the most participants from the EU-12 countries of any JU. Of the 'associated' countries, Switzerland led with six coordinators, while the main international partners were China and Russia; the US did not participate.

The Technology Evaluator covered four main research work packages, which all had activities and deliverables in 2011. Overall, carrying out the 2011 plan was a significant challenge. Despite some difficulties, the Technology Evaluator managed to put in place reinforced planning and control mechanisms for 2012. The first assessment performed, also served to 'demonstrate' the full process and proved to be encouraging. The quality and timeliness of deliverables should improve significantly in 2012 and will be closely monitored by the JU as a top priority.

For more information, including success stories, see 'Clean Sky JU: main achievements in 2011 at a glance', in the Annex.

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6 The 38% share of the SMEs participation concerns only their participation in the calls for proposals. Only € 200 million of EU funding for Clean Sky is dedicated for calls for proposals while € 600 million is distributed to the 'named beneficiaries'.

5. PROGRESS ACHIEVED BY THE INNOVATIVE MEDECINES INITIATIVE JU

For the period 2008–2013, the Innovative Medicines Initiative (IMI) JU was allocated a total budget of € 2 billion. The European Commission contributes maximum € 1 billion from its Seventh Framework Programme budget, to be matched by in-kind contributions (consisting mostly of research activities) worth at least another € 1 billion from member companies of the European Federation of Pharmaceutical Industries and Associations (EFPIA). This makes the IMI Europe's largest public-private partnership overall, as well as the largest pharmaceutical-related PPP.

The IMI's main objectives are: (i) to build a more collaborative environment for pharmaceutical R&D in Europe; (ii) to speed up the development of more effective and safer medicines for patients and (iii) to increase the competitiveness of the EU pharmaceutical sector. The main challenges are: (i) industrial: insufficient R&D investment; (ii) scientific: technological complexity, and (iii) European: research is fragmented in Europe.

Industrial partners are heavily involved in IMI; in particular, EFPIA companies participate much more in IMI projects than in FP7 Health Projects. Another feature of IMI is the two-stage process for calls for proposals: applicants send Expressions of Interest (EoIs) in stage one, then in stage two the best ranked participants and the EFPIA consortium are invited to form a full project consortium and draft a Full Project Proposal (FPP).

In 2011, IMI completed the evaluation of call 3 and published a fourth call for proposals. The table below presents a general overview of the calls launched and evaluated in 2011, with data on the submitted EoIs and evaluated FFPs.

Call indicative	No of topics	Submitted EoIs	Eligible EoIs	% of retained	EoIs above the threshold	FPPs selected for funding	Success rate (selected FPPs/ submitted EoIs)
2010-03	7	32	30	93.75%	16	7	21.88%
2011-04	7	86	80	93.02%	30	7	8.14%
TOTAL	**14**	**118**	**110**	**93.4%**	**46**	**14**	**11,86%**

Calls 3 and 4[7] attracted wide interest and a high number of applicants: 1377. But because of the restricted number of topics, only 20 % (266) of the initial applicants were finally included in the projects selected for funding together with industry participants — about 50 teams from EFPIA companies joined the consortia. The total number of participants in the calls in 2011 is 316, resulting in an average success rate of 23 %.

The participants' typology of IMI is very specific. Industry is well represented (by EFPIA companies and SMEs) and there is also very high participation from universities. At the first stage, a good number of EoIs were submitted by SMEs, followed by other participants and patients' organisations. But academia accounted for most of the participants in the projects eventually funded (208) followed by the EFPIA (53) and SMEs (47), with the latter representing 17.7 % of total participation. SMEs received 13.56 % of the EU funding over the period from 2008 to 2011.

[7] EFPIA companies are not included at the first stage of the process (EoIs), they are only taken into account when it comes to FPPs and proposals selected for funding.

Regarding the geographical distribution of the applicants, the available figures relate to Call 3. Participants in the winning projects (123, excluding EFPIA companies) came from 19 countries, mostly the United Kingdom, Germany, the Netherlands, France and Sweden. The Czech Republic and Hungary were the only EU-12 countries (recent EU members) represented, with a single participant each. Switzerland led the 'associated' countries, with six participants, followed by Israel and Iceland. As for international participation, the US had three participants (as many as Spain). For call 4, IMI recorded 143 participations in the proposals selected for funding, but the geographical distribution is unknown yet.

For more information including success stories, see 'IMI JU: main achievements in 2011at a glance', in the Annex.

6. PROGRESS ACHIEVED BY THE FUEL CELLS AND HYDROGEN JU

For the period 2008–2013, the Commission allocated the Fuel Cells and Hydrogen (FCH) JU a budget of €470 million. This amount is expected to be matched by cash contribution for the running costs and by in-kind contributions for the operational costs from the legal entities participating in its activities. FCH is therefore expected to have a total budget of €940 million**.**

FCH's main objectives are: (i) to accelerate the development and deployment of fuel cell and hydrogen technologies; (ii) to provide the technology base to start marketing them within the timeframe 2015 to 2020, reducing the 'time to market', and (iii) to place Europe at the forefront of these technologies worldwide.

FCH uses two types of funding schemes to further a wide spectrum of RTD activities: collaborative projects (for basic research and demonstration) and coordination and support actions (for networking activities, including pre-normative research). Another feature of FCH is its cross-cutting activity: to complement the four scientific application areas it aims to raise awareness, educate the public and support the market. Submission and evaluation are carried out by means of a simple single-stage process.

FCH launched one call in 2011 (FCH-JU-2011-1 — see table below). The table below presents data on the submitted and evaluated proposals to this call.

Call indicative	No of topics	Submitted proposals	Eligible proposals	% of retained	Above the threshold	Selected for funding	Success rate
2011-01	36	82	81	98.78%	53	30	36.59%

FCH attracted a wide range of participants of all types, including public authorities (e.g. national/regional bodies, energy agencies) and NGOs. This could be because of their particular interest in the coordination and support actions. The participants were also evenly distributed between research organisations and industry. Of the 667 applicants responding to the call, 225 had their projects funded. The projects selected for funding involved 73 SMEs, representing 25.6 % of total participation. Over the period 2008 to 2011, SMEs accounted for 22.15 % of EU funding in FCH.

A total of 26 countries were represented in the call, led by Germany, the United Kingdom, France, Italy and Belgium. EU-12 countries were well represented, with 10 participations.

Switzerland and Norway led the list of 'associated' countries (with seven coordinators each) followed by Iceland and Turkey with one participant each. The international partners included participants from the US, the Republic of Korea, China, Canada and Serbia.

In terms of administrative progress, FCH overcame some of the limits on in-kind contribution when Council Regulation (EU) No 1183/2011 was adopted on 14 November 2011. Recognising the membership of the N.ERGHY Research Grouping, this amendment allowed non-industry participants such as the N.ERGHY Research Grouping to make in-kind contributions counting as matching funding. This amendment was also expected to improve funding levels.

For more information, including success stories, see 'FCH JU: main achievements in 2011 at a glance', in the Annex.

7. PROGRESS ACHIEVED BY THE ARTEMIS JU IN 2011

For the period 2008–2013, the Commission allocated a maximum budget of € 420 million to the Embedded Computing Systems (ARTEMIS) JU, which was boosted by ARTEMIS Member State funding of at least 1.8 times the EU contribution (€ 756 million). A matching contribution in kind at least equivalent to the public authorities' total is expected from industry.

On 5 July 2011, ARTEMIS signed an additional Administrative Agreement with the Brussels Capital Region of Belgium. An Administrative Agreement with Poland was signed in December 2011, making it the 23rd ARTEMIS Member State, with the intention of committing a budget to the 2012 call.

The main objectives of ARTEMIS are to tackle the research and structural challenges faced by industry in embedded systems and to help the European industry consolidate and reinforce its world leadership in embedded computing technologies. The participation of Member States in funding and governance alongside the EU and industry is a major feature of the JU. The submission and evaluation procedure is two-stage: applicants first send a project outline (PO), then a full project proposal (FPP).

In 2011, 10 grant agreements relating to the 2010 call 3 were signed and call 4 was launched. The table below gives an overview of the POs and FFPs submitted in response to call 4, together with the results of the evaluation.

Call indicative	Submitted project outlines (POs)	Submitted proposals (FPPs)	Eligible proposals	% of retained	Above the threshold	Selected for funding	Success rate
2011-1	41	27	27	100 %	16	9	22 %

540 applicants reached the FPP stage of the 2011 call for proposals and 206 were involved in the projects funded (an average of 23 participants per project). ARTEMIS seeks to foster collaboration between all stakeholders — industry, including SMEs, national and/or regional authorities, and academic and research centres — pulling together and focusing research efforts. There was a good balance in the types of participants in 2011, with 71 from research organisations and academia, 73 industrial partners and 62 SMEs. The scientific and research community is well represented and coordinated. SMEs accounted for 37.9 % of total

participations in 2011, and obtained 19.18 % of EU funding to ARTEMIS over the period 2008 to 2011.

The projects funded involved 17 countries, led by Spain, Italy, Germany, Finland, France and Austria. The EU-12 countries were also represented, by Czech Republic, Latvia and Estonia. Only one associated country was involved in the projects selected for funding: Norway, but with a good number of participants (6). The US was the sole international partner, with one participant.

For more information see 'ARTEMIS JU: main achievements in 2011 at a glance', in the Annex.

8. PROGRESS ACHIEVED BY THE ENIAC JU

For the period 2008–2013, the Commission allocated a maximum budget of € 450 million to Nanoelectronics (ENIAC), which was boosted by ENIAC Member State funding of at least of 1.8 times the EU contribution (€ 810 million). A matching contribution in kind at least equivalent to the public authorities' total is expected from industry.

The main objectives of ENIAC are: (i) to tackle research and innovation in nanoelectronics technologies and their integration in smart systems; (ii) to help European industry consolidate and reinforce its position in nanoelectronics technologies and systems and (iii) to contribute to further incorporation and miniaturisation of devices, and increase their functionalities while delivering new materials, equipment and processes. As with ARTEMIS, the participation of Member States in funding and governance alongside the EU and industry is a major feature of ENIAC. The submission and evaluation process is similarly two-stage (PO, then FPP).

In 2011 a decline in commitments by ENIAC Member States was reversed and this increase in commitments is expected to continue in 2012. However, it was observed that the 1.8 ratio between the ENIAC JU and the Member States' grants to the projects would likely not be achieved at the life end of the JU. As a consequence, the Public Authority Board took a decision to reduce ENIAC JU's participation from 16.7% to 15% of total eligible costs and up to 52% of the ENIAC Member States' contributions to the calls for proposals. This should result in a ratio close to 1.8, provided that (i) the ENIAC JU uses the maximum EU contribution provided for in the Council Regulation and (ii) the ENIAC Member States fund their participants at funding rates similar to those in the past.

In 2011 ENIAC launched two calls for proposals, call 4 and call 5 (the latter with a one-stage procedure because of a tight deadline). The table below gives an overview of the two calls launched and evaluated in 2011.

Call indicative	Submitted project outlines (POs)	Submitted proposals (FPPs)	Eligible proposals	% of retained	Above the threshold	Selected for funding	Success rate % (FPP level)
2011-1	20	9	9	100%	7	**6**	66.7%
2011-2	NA	8	7	87.50%	6	**6**	75.0%
TOTAL	**20**	**17**	**16**	**93.75%**	**13**	**12**	**70.85%**

Of the 286 applicants that sent Full Project Proposals (FPP) for the 2011 ENIAC calls, 195 were selected for funding, a good success rate. The balance of partners is very specific to the

sector: research organisations (50), industry (71) and SMEs (74) are quite evenly represented while public bodies and academia are absent. SMEs accounted for 37.9 % of all participations from 2008 to 2011 they accounted for 13.30 % of EU funding.

Participants in the calls came from 19 countries, with the Netherlands in the lead, followed by Italy, France, Germany and Austria. EU-12 countries also participated, mostly represented by the Czech Republic, Poland and Slovakia. There was good participation from 'associated' countries, led by Israel, with 5 participants, Norway (3) and Switzerland (1). However, there were no international partners.

Towards the end of 2011 the ENIAC JU launched a call for Expressions of Interest in setting up pilot lines. This call aims to prepare the JU to be a preferred instrument for implementing the KET policy on improving Europe's position in six 'key enabling technologies' including nanoelectronics. The pilot lines will allow innovation at higher technology-readiness levels (4 to 8) providing a bridge to *Horizon 2020*.

For more information, including success stories, see 'The ENIAC JU: main achievements in 2011 at a glance', in the Annex.

9. GENERAL PROGRESS ACHIEVED IN 2011

9.1. Stakeholder participation

Thanks to the experience gained with setting up the JUs, it is now possible to start providing data on progress achieved in terms of participation.

	Participations in proposals submitted (2011)	***Participations in projects selected for funding (2011)***
Clean Sky	*600*	*238*
IMI	*1377*	*319*
FCH	*667*	*285*
Artemis	*540*	*206*
Eniac	*286*	*195*
Total	***3470***	***1243***

In 2011, JUs registered 3470 participations in submitted proposals while the participations in funded projects equalled 1243. The overall success rate of 35.8 % is very promising and can be regarded as positive given that JUs are conducting highly specific, industry-driven research.

The JUs have made efforts to widen participation, for example by improving communication with potential applicants to the open calls for proposal. Tailored Info Days have been held and JU participation in seminars, events and major technological fairs and exhibitions has grown. Progress has also been made in increasing the public visibility of JTIs. Almost all JTIs' web pages were revamped to present better and more user-friendly information.

This action has helped make the JTIs JUs initiatives more accessible to the research and scientific communities. As a result, for example, IMI received twice as many expressions of interest in response to its second call as it had in response to its first.

The types of stakeholders involved in the research projects vary according to the JU:

- Participation in FCH projects funded is diverse, with all stakeholders being represented in funded projects: 77 research organisations, 49 universities, 76 large industries, 73 SMEs, 7 others and 3 public bodies among its 285 participants.

- IMI has attracted some 50 participations from EFPIA companies (large industry), 208 universities, 47 SMEs, 6 patients' organisations and 5 others.

- Clean Sky, ENIAC and ARTEMIS have no public bodies or 'others' participating in their funded projects.

- Industry accounts for 73 and 71 participations in ARTEMIS and ENIAC respectively and 53 in Clean Sky.

- Universities account for 54 participations in Clean Sky, whilst they are included in research organisations in ARTEMIS.

- Research organisations account for 43 participation in Clean Sky and 71 and 50 respectively in ARTEMIS and ENIAC.

After two years of full activities, stakeholder participation seems well balanced overall, though there still is room for improvement in less well-represented categories.

When looking at participation and representativeness figures, it is well to remember that targeted results are expected in each technological sector.

9.2. The Innovation dimension and SME involvement

The current five JUs can already be considered an innovative model of implementing research. The partnership between public and private sectors is a significant step forward in transferring research results to the market. The JTIs JUs set their own research agendas in close cooperation with industry, with the aim of turning results into applications in the shortest possible time. This process of accelerating the use of research results will be pushed further under Horizon 2020, in particular under the 'Industrial Leadership' objective.

That being said, we can already highlight elements which allow a first appreciation of the innovation achieved by the five JUs in 2011, even if this report does not aim to present a detailed analysis of this aspect.

- The concept of Technology Readiness Level (TRL) has been introduced in the Clean Sky JU and projects submitted in reply to the open calls are also evaluated in terms of the level of maturity of the technology. The TRL is used to evaluate and compare the different stages of development of a given technology; the maximum level 6 refers to research projects which have reached the stage before product development.

- In ARTEMIS, an Index of maturity and an Index of SME engagement in the proposals are used to facilitate the evaluation of those projects which can best contribute to developing innovation from research.

- A number of prototyping and demonstration activities were present in the Annual Implementation Plans for the JTIs. For Clean Sky, in 2011, there were 15 research

topics open to demonstrators and 1 on prototyping. For FCH, there were 7 topics for demonstrators and one for a proof of concept focused on fuel cell systems.

- In 2011, ENIAC introduced the 'ENIAC Innovation Award' to recognise projects approaching completion or having recently been completed that produced the most impactful innovation. The 'E3Car' project, with 28 demonstrators and a total budget of € 180 million, was the first winner.

- Two JUs also won Innovation Awards:

  – Clean Sky was given an award at the 'Inter Airport Europe' event in Munich for the 'TaxiBot' project, for having found an innovative solution applicable to towbarless aircraft tractors for taxiing in and out at airports that reduces environmental impact.

  – One of the smaller companies active in FCH received the EU prize for women innovators at the 2011 Innovation Convention. An Italian company with 40 employees was the first to develop a self-recharging hydrogen fuel cell system for back-up power, a cleaner, renewable alternative to lead-acid batteries and diesel generators.

In this way, JUs achieved **further progress in knowledge and scientific quality** in 2011, with projects having potential impacts on the industry and the research environment.

In aeronautics, a new system was developed to reduce manufacturing and maintenance costs: the Breakthrough Laminar Aircraft Demonstrator in Europe (BLADE) and analyses of airline economics including the requirements of new environmental regulations are ongoing: this is the Contribution of Airlines for the Reduction of Industry Nuisances and Gases (CARING) project.

In fostering the development of better and safer medicines for patients, the NEWMEDS database is the world largest repository of antipsychotic clinical trial data, comprising data on 23 401 patients from the five leading pharmaceutical companies in the area. It is important to emphasise that, for the first time, competing companies have a common will to open and share the results of their clinical trials. This is essential support for better targeted and personalised health care.

In the transport sector, the Clean Hydrogen In European Cities Project (CHIC) is introducing environmentally-friendly city buses in European cities to reduce the impact of buses on the environment, and promotes them with the aim of shortening the 'time to market'. The E3Car project, funded to manage the power train of electrical vehicles improved power conversion and distribution and increased energy efficiency, by 10 % and 35 % respectively, offering a competitive environment of 28 demonstrators.

The JUs encouraged SME participation, with good results in 2011: about 28 % of successful participants were SMEs. Of the five JTIs, ENIAC proved most attractive to SMEs, which accounted for 37.9 % of total participation in the JU, followed by Clean Sky (37 %)[8];

[8] The 37% share of the SMEs participation concerns only their participation in the calls for proposals. Only € 200 million of EU funding for Clean Sky is dedicated for calls for proposals while € 600 million is distributed to the 'named beneficiaries'.

ARTEMIS (31%); FCH (25.6%) and IMI (17.7%)[9]. The average rate of EU funding which went to SMEs for all JTIs JUs in the period 2008-2011 was slightly over 21%, which exceeds the general FP7 objective of 15%. The table below presents a detailed overview of SME participation in the five JUs, both in proposals submitted and in projects selected for funding (2011).

	Participations in submitted proposals	***Participations in projects selected for funding***
Clean Sky	239	88
IMI	263	47
FCH	174	73
ARTEMIS	182	62
ENIAC	109	74
Total	***967***	***344***

The number of SMEs participating strongly suggests that there is a good balance of research activities tailored to SMEs, in which their contributions are essential to the achievements of more general research and innovation objectives.

With the progress achieved in 2011, JTIs JUs are on the way to reaching their innovation potential and to contributing to meeting the future challenges set under the Horizon 2020 programme.

9.3. Participation in terms of geographical location

The five JUs involve an average of **20 Member States** in the implementation of the SRAs. The most diverse is FCH, which has a number of international partners. The top players belong to Member States that have an advanced industrial environment surrounded by dynamic systems of SMEs, research centres and universities.

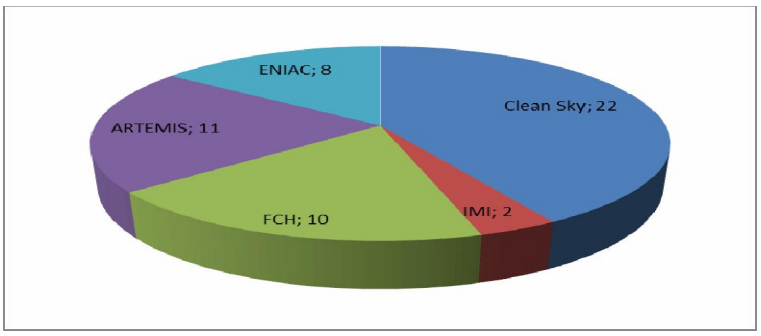
	No of countries participating in projects selected for funding	***Top players[10]***
Clean Sky	*23*	*UK, DE, ES, IT FR*
IMI	*15*	*UK, DE, NL, FR, SE*
FCH	*26*	*DE, UK, FR, IT, BE*
ARTEMIS	*17*	*ES, IT, DE, FI, FR & AT*
ENIAC	*19*	*NL, IT, FR, DE, BE*

We also note that all but one of the **EU-12 countries** have participated.

- Overall, the EU-12 accounts for roughly 15% of the total participation in funded projects. Clean Sky leads with about 10%, whereas EU-12 participation in IMI projects is negligible. The graph below shows EU-12 participation by JTI in 2011 (funded projects only).

[9] The respective percentage rates for the participation of SMEs in each JTI relate to the year 2011.

[10] Best performing countries ranked in terms of number of participations in the funded projects.



- The best represented EU-12 Member State is Poland with 18 participations in funded projects (6 in FCH and ENIAC altogether, 12 in Clean Sky), and 5 projects coordinated by Polish organisations. The Czech Republic follows with 16 participations in funded projects and positions in all JTIs, led by ARTEMIS with 7 Czech participations. Romania accounts for 6 participations and Hungary 3. By contrast, Lithuania is not involved in any selected projects.

- Clean Sky organised a round table on aeronautical research in Central and Eastern Europe in 2011, to boost the participation of less active areas. This is considered good practice, and the Commission wants to see this emulated by the other JTIs in future. In 2012, the Commission will hold further discussions with the JUs on how to substantially increase EU-12 participation.

JTI research activities also proved attractive to countries associated with the FP7, which accounted for roughly 15% of participations. The most active **Associated Country**, in 2011, was Switzerland, followed by Norway and Israel. FCH attracted the highest number of participants from associated countries, followed by Clean Sky and IMI. Assessments of associated country involvement in ARTEMIS and ENIAC should also take into account their tripartite model of funding.

Country	IMI	FCH	CS	ARTEMIS	ENIAC	Total
Switzerland	6	7	6		1	20
Norway		7	1	6	3	17
Iceland	2	1				3
Israel	2		2		5	9
Turkey		1	1			2
Serbia		1				1
Total	**10**	**17**	**10**	**6**	**9**	**52**

9.4. The International dimension

A number of international partners have been involved in JTI activities, accounting for roughly 3% of participations in projects funded in 2011. The range of experience gained with international partners varies greatly from one technological sector to another. It also depends on the strategies and synergies that JTIs pursue in research, innovation or regulatory fields.

As shown in the table below, the United States showed interest in almost all JTIs and had the greatest participation in funded projects overall.

Country	IMI	FCH	CS	ARTEMIS	ENIAC	Total
US	3	1	1	1		6
Russia			1			1
China		1				1
Korea		1				1
Canada		1				1
Total	**3**	**4**	**2**	**1**	**0**	**10**

In order to compete in the global arena, industry needs not only to reinforce cooperation and decrease fragmentation in Europe, but to establish synergies elsewhere, in particular with key international players. The international dimension of JTIs initiatives is thus an element which is going to be further developed. The Commission is currently discussing with the JUs how to reach out to international partners to meet the particular needs of the sectors concerned.

FCH has already revised its Multi-Annual Implementation Plan to make it more ambitious and competitive in comparison with the worldwide efforts in the technological domain. The updated ARTEMIS SRA now clearly shows what is needed in Europe in the next decade from all players in R&D and innovation to make Europe a leader in Embedded Systems.

9.5. Grant portfolio

The Grant Agreements (GAs) portfolio varies from one JU to another, along with the types of projects, the size of consortia and the budget allocated. JUs may not only develop collaborative research but also support networking activities (e.g. FCH) with Coordination and Support Actions, where consortium size is naturally smaller and its composition different.

	Grants under negotiation in 2011	Grants signed in 2011	Grants for which activities have ended
Clean Sky	24	80	7
IMI	2	13	0
FCH	0	26	5
ARTEMIS	9	10	3
ENIAC	0	22	0
Total	**35**	**151**	**15**

In the first three years of activity, the portfolios of Grant Agreements signed by JUs differed in size, number of partners and budget allocated.

- Clean Sky's GAs are the most distinctive. The number of projects funded and GAs signed is bigger, but with fewer partners in each and relatively small budgets. Clean Sky calls allow single-partner projects, particularly if the research topic is so specific that only one organisation (or few competing in selection and evaluation) fits the call requirements. There are on average two partners in Clean Sky GAs, with an average allocated budget of € 515,000. So while the number of GAs to be signed calls for considerable management efforts, coordination in the consortia requires less effort.

- IMI and FCH attract similar types of consortia: there are fewer projects (and GAs signed) but they are bigger in terms of both the budget allocated and the number of partners. The average number of partners in an IMI project is 26, taking EFPIA and non-EFPIA organisations together, and the average budget of GAs signed is roughly € 10 million (IMI JU contributions only). For FCH, on average there are 9 partners per project with a budget of € 3.8 million.

- ARTEMIS and ENIAC average 23 (ARTEMIS) and 22 (ENIAC) partner organisations in a consortium, with an average budget of € 15.8 million (ARTEMIS) and € 23 million (ENIAC)[11].

10. CHALLENGES AND OUTLOOK

The first interim evaluations of the Joint Undertakings were carried out as planned and reports were finalised in April 2011. The overall outlook for the JUs was considered to be good. The external experts' recommendations included improving communication with citizens, setting key performance indicators and delegating more of the Governing Boards' responsibilities for day-to-day management to the JUs' Executive Directors. The recommendations should be fully implemented before the second interim evaluation is conducted in 2013.

In 2011, the JUs considerably **improved communication** activities directed at the general public. The projects' visibility increased and the standard of their main communication tools (e.g. their web pages) rose.

They also **set up key performance indicators**:

- IMI set key performance and results indicators for two major priorities: SRA implementation and Programme Office performance. The average Time to Grant (TtG) has fallen by over 90 days.

- Clean Sky implemented most of the recommendations made by the experts. The performance of the Integrated Technology Demonstrators (ITDs) was subject to annual review by independent experts.

- FCH introduced 'Operational Indicators' to monitor progress in RTD activities; these are set against results indicators using target and latest known results.

- ENIAC introduced a Key Performance Indicator (KPI) including the time taken from the Public Authorities Board funding decision to the first payment to each beneficiary.

Further progress will be assessed in the second interim evaluation and the 2012 Annual Progress Report.

As the JUs are now fully autonomous, we can make an initial assessment of their benefits. The stable allocation of funds illustrates industry commitment. **SMEs were attracted** by the

[11] Note that the ENIAC data refers to calls launched in the last three years, whereas the ARTEMIS data on average consortia size only applies to the 2011 call.

JTIs JUs' research topics, especially because of the stability and continuity of the research and innovation environments and the funding modalities. Overall, by the end of 2011, SMEs had received 21% of the EU funding. As noted in Section 9.2, JTIs met the challenge of becoming a truly attractive way of implementing research for small and medium-size companies. SMEs can benefit from participation in specific working environments, from research topics that are clearly geared to the market and from the JUs as an instrument which better fits their needs'.

Taking a broader view, **overall stakeholder participation is well balanced** and all parties have been involved in JTIs' research activities. Budget allocation shows that research organisations and universities accounted for 45% of EU funding on average and industry 34%. Other organisations, such as NGOs, umbrella organisations and foundations, accounted for 2% of the EU funding and SMEs for roughly 21%.

In 2011 the main research objectives evolved to reflect the latest progress in their fields of technology. The JTIs JUs **strategic research and innovation agendas have been fed with ambitious objectives over a longer timeframe**.

- In aviation, Clean Sky updated its research objectives following the guidance given in *Flightpath 2050, Europe's vision for Aviation* report, produced in 2011 by ACARE.

- The revision of the IMI's strategic research agenda will change the types of projects funded: calls will focus on large-scale and game-changing projects.

- FCH revised its Multi-Annual Implementation Plan and the targets for the Application Areas were extended to 2020 (from 2015).

- ARTEMIS revised its Strategic Research Agenda to take better account of the intrinsic nature of embedded systems as the 'neural system' of society, reflecting their pervasiveness in all modern products, infrastructure and services.

- ENIAC's Strategic Research Agenda continues to be pertinent to tackling major societal challenges, which very much depends on improving integrated circuit functionality and reducing power consumption.

In general, and in comparison with previous versions, the JUs' updated strategic research and innovation agendas have largely taken into consideration the strategy for research and innovation put forward by the European Commission under '*Horizon 2020'*. Those links will ensure consistency and will make it easier to align EU actions with the overall objectives of increasing competitiveness in industry, excellence in science and growth and job creation.

The JUs' **administrative consolidation** continued, particularly development of their internal control frameworks, with significant advances in their control mechanisms. The Governing Boards adopted ex post audit strategies and considered new procedures to complete and strengthen their Internal Control Systems. All Joint Undertakings improved their IT and logistical functions.

The results achieved by the five JUs so far confirm them as **ambitious European initiatives** with the potential to be recognised as models of public-private partnership.

The Commission is now collecting contributions from the industrial partners with a view to further extending the JUs in the next Multi-Annual Financial Framework. Open consultations are also ongoing, in order to attract the widest possible response with a view to designing the future of JUs for the next period of financing.

For the future, a number of challenges remain open:

- Administrative burden

The JUs are relatively small, so running costs are relatively high. One way to improve efficiency could be for the JUs and opt for a common administrative structure. The relatively small size of the JUs was considered as 'risky element' by experts involved in the first interim evaluation of ARTEMIS and ENIAC. The independent experts proposed, amongst the possible scenarios for JUs evolution both merging the two and setting up a joint structure for administrative tasks only.

- Complementarities and coordination with other EU and national programmes and commitment from industry and Member States in ARTEMIS and ENIAC

It is time to seek better alignment of ARTEMIS and ENIAC research agendas with national programmes. The Commission is currently discussing possible organisational effects with stakeholders, taking also into account the present economic situation. Along these lines, common vision documents were produced with Eureka, the clusters CATRENE and ITEA2 in 2010. This approach could prove useful and discussions are under way to provide a common framework for the JTIs while still keeping their specific approaches — top-down for the JTIs and bottom-up for the Eureka clusters, with an industry-led strategy for both instruments. Increased cooperation with Member States to strengthen synergies may be sought for all JTIs, in particular for the benefit of potential new entrants and for SMEs.

Funding for ARTEMIS and ENIAC projects follows a unique tripartite model. Partners obtain much of their funding from their own governments or regional agencies under grant agreements. The JUs also provide funding directly to the partners worth up to about 16.7% of their eligible costs. This funding model worked well in the first years of ARTEMIS, but with certain limitations — mainly caused by sharply lower commitments by Member States in the context of the economic and financial crisis. In 2011 for the first time the trend was upwards and this is expected to continue in 2012.

To summarise the **experience gained** in the first year of autonomy of all the Joint Undertakings, in which the **first successful results** have been delivered[12]:

(1) The Joint Undertakings represent an innovative model for conducting research in partnership for technologies considered strategic for Europe; commitment from all partners is vital to achieve the expected results and to effectively contribute to the Europe's competitiveness. Irrespective of the funding mechanisms put in place by the different JUs, the past two years have shown certain difficulties in matching funds from industry and Member States.

[12] See the Call Implementation section for the relevant JUs in the Annex.

(2) It is unquestionable that the JUs have gained speed and visibility and have started to be seen as relevant players in their fields of technology at global level.

(3) Additional flexibility in implementing structures (the JUs) should be granted to allow them to focus on research rather than on administrative tasks; if necessary, in order to improve their effectiveness, they could be organised differently to optimise the use of resources.

(4) The JUs' achievements need to be monitored and evaluated against a set of KPIs, which should be formulated in a way that reflects their diversity but still enables comparison.

(5) JUs should maintain and even increase their simplicity, openness and accessibility to all potential beneficiaries. Particular consideration should be paid to new entrants from less well-represented countries and to SMEs.

(6) Appropriate international strategies should be defined for each JTI JU, taking into account their specific research areas, the potential benefits of cooperation in terms of research, innovation and regulation and, of course, the collateral risks.

Based on the experience gained and looking to the future, JUs are on the way to consolidating their potential to be recognised as a model of public-private partnership for EU research activities. They already made improvements in 2011 in line with the recommendations made in the first interim evaluation and further improvements are still expected.

First successes in 2011, such as cutting manufacturing and maintenance costs in aeronautics, analysing future airline economics, and opening up competing companies to their industrial partners (e.g. via a central database of results), demonstrate that JTI JUs are able not only to address technical challenges, but also to boost the industrial and research environment. A major step in the collection of project results is expected in 2012.

Moreover, an initial analysis of the benefits of the PPPs is currently ongoing and the results will be reported in 2012. In assessing the extent of the JTI JUs' impact on the implementation of research and innovation activities at EU level, the analysis will also refer to the criteria set in the *Horizon 2020* programme agreed with the Member States. In this respect, the JUs' experience so far will also be assessed against the criteria established for setting up future PPPs.

11. ANNEX — PROGRESS ACHIEVED IN 2011 BY JTIS JUS AT A GLANCE

1.1. Article Clean Sky (CS) JU: main achievements in 2011 at a glance

<table>
<tr><th>AREA</th><th>PROGRESS — ACHIEVEMENTS</th></tr>
<tr><td>Strategic Research Agenda (SRA)</td><td>The targets set in the CS SRA were re-assessed as well as the actual progress and validity assumptions. The results were: an updated Development Plan and updated forecasts of achievable environmental benefits by the end of the programme. The First Internal Assessment has been published in 2012.</td></tr>
<tr><td rowspan="2">Call implementation</td><td>Number of calls in 2011: 3 calls launched (2011-1; 2011-2; 2011-3). The last call launched in 2010 (2010-5) was also implemented.
Number of proposals submitted: 322
Number of eligible proposals: 305
Number of proposals funded: 118
Global project portfolio: 298 (including 247 signed grant agreements)</td></tr>
<tr><td>Success stories:
- BLADE (Breakthrough Laminar Aircraft Demonstrator in Europe), selected to be exhibited at the first Innovation Convention, (Brussels, 5 and 6 December 2011), developed a monitoring system that detects damage and defects in newly designed natural laminar flow wing in real time, reducing manufacturing and maintenance costs.
- TaxiBot Dispatch Towing Vehicle (DTV) project won the 2011 Innovation Award at Inter Airport Europe in Munich. It is a towbarless aircraft tractor for single aisle aircraft (e.g. A320, B737), which allows the aircraft to switch off engines during taxiing.
- CARING (Contribution of Airlines for the Reduction of Industry Nuisance and Gases) is the only Clean Sky project involving airlines. Running from early 2010 to December 2012, it aims to analyse how current and future environmental regulations could affect airline economics and how airlines can best adapt to regulatory changes.</td></tr>
<tr><td>Participation, including SMEs</td><td>In 2011:
Total number of participants: 600
Number of participants in funded projects: 238
Number of SMEs in funded projects: 88 – 37% of total participations
Participants by category in funded projects: Large Industry (PRC): 53; Higher and Secondary Education (HSE): 54; Research Organisations (RCE):43

From 2009 to 2011:
Global geographic coverage of participation (in calls 1 to 10) broken down by country in funded projects: 23 countries involved.

<table>
<tr><th>Top countries</th><th>Coordinators</th><th>Participants</th><th>Total participation</th></tr>
<tr><td>UK</td><td>52</td><td>45</td><td>97</td></tr>
<tr><td>DE</td><td>52</td><td>34</td><td>86</td></tr>
<tr><td>ES</td><td>31</td><td>31</td><td>62</td></tr>
<tr><td>IT</td><td>28</td><td>33</td><td>61</td></tr>
<tr><td>FR</td><td>39</td><td>45</td><td>84</td></tr>
</table>
Participants from associated countries (Switzerland, Israel, Norway, Turkey) coordinated 10 winning projects. One Chinese and one Russian participant were also selected in 2010 and 2011 calls, both as coordinators.</td></tr>
<tr><td>Communication</td><td>CS participated in two major European technical conferences (Aerodays in Madrid and the Paris Air Show). Info Days for potential applicants were organised in Ankara,</td></tr>
</table>

	Dublin, Lisbon, Toulouse, Vienna and Warsaw. CS took part in the first Innovation Convention, held in Brussels on 5 and 6 December. In Brussels, it hosted a joint event with the other JTIs at the European Parliament on 5 and 6 October. The web page was revamped in April and the quarterly newsletter sent to about 3000 recipients. Three press releases on crucial events were published and CS was quoted in 14 in EU articles and publications. In June 2011 CS organised a round table on Aeronautical Research in Central and Eastern Europe to boost the participation of less active areas in Europe. A focus on SMEs' experiences with CS was issued (2 interviews)
Governance	The Governing Board met four times in 2011. At the December meeting the Chair (Charles Champion) and Vice-Chair (Catalin Nae) were elected.

1.2. IMI JU: main achievements in 2011 at a glance

<table>
<tr><th>AREA</th><th>PROGRESS — ACHIEVEMENTS</th></tr>
<tr><td>Strategic Research Agenda (SRA)</td><td>SRA revision finalised, shifting the focus to large-scale, game-changing projects.</td></tr>
<tr><td rowspan="2">Call implementation</td><td>Number of calls launched in 2011: 1. The last call launched in 2010 (call 3-2010) was also implemented. Both calls used a two-step submission and evaluation procedure.
Number of proposals submitted (Expressions of Interest, first-stage proposal): 118
Number of eligible proposals: 110
Number of proposals funded: 14
Global project portfolio: 30</td></tr>
<tr><td>Success stories:
NEWMEDS, an IMI project on depression and schizophrenia, created new databases allowing the collection and storage of large datasets, which led to the assembly of the largest known repository of antipsychotic clinical trial data, comprising data on 23 401 patients from the five leading pharmaceutical companies in this area.
For more information see: http://www.newmeds-europe.com/</td></tr>
<tr><td>Participation, including SMEs</td><td>Total number of participants: 1377 altogether for calls 3 (438) and 4 (939)
Participants in funded projects: 266 altogether for calls 3 (123) and 4 (143).
53 EFPIA companies have to be added for call 3. For call 4 the number of EFPIA companies is not yet known.
Number of SMEs in funded projects: 47 – 17.7 % of total participations in calls 3 and 4.
Participants by category in funded projects, excluding industry: Patients organisations: 6; Higher and Secondary Education (HSE): 208; Others (OTH): 5

Participation in funded projects in call 2010-3 broken down by country (data not yet available for 2011-4): 19 countries involved.

Top countries Total participations

UK 28
DE 21
NL 13
FR 11
SE 9

In addition three US partners were involved in three winning consortia. Israel and Iceland had 2 participations each and Switzerland 6.</td></tr>
<tr><td>Communication</td><td>IMI held 6 events in 4 countries each with 60 to 250 participants. In Brussels IMI took part in a joint JTI event hosted at the European Parliament on 5 and 6 October.
Six press releases were issued and circulated to a target group of over 150 journalists. About 30 articles were published in media and journals, 6 of them for a specialised scientific public. The IMI newsletter reaches 1500 subscribers and the web page has up to 9000 visitors/month.</td></tr>
<tr><td>Governance</td><td>The Governing Board met three times in 2011.
In addition to decisions on running the JTI JU, the Board appointed the members of the Scientific Committee.</td></tr>
</table>

1.3. FCH JU: main achievements in 2011 at a glance

AREA	PROGRESS — ACHIEVEMENTS
Strategic Research Agenda (SRA)	Revision of the Multi-Annual Implementation Plan finalised. Revised targets for the Application Areas extended to 2020 (from 2015) to better align with Horizon 2020.
Call implementation	Number of calls in 2011: 1 Number of proposals submitted: 82 Number of eligible proposals: 80 Number of proposals funded: 30 **Global project portfolio: 98** (including 76 signed Grant Agreements)
	Success stories: A number of European cities are currently pioneering the development and introduction of city buses powered by environmentally-friendly hydrogen fuel cells. The Clean Hydrogen In European Cities project (**CHIC**) began in November 2010 to promote the development of hydrogen fuel cell buses for public transport and pave the way for widespread use of this technology and the necessary infrastructure from 2015. The project is an essential next step towards full commercialisation of hydrogen powered fuel cell buses. CHIC aims to reduce the 'time to market' for the technology and support 'market lift off'. For more information see: http://chic-project.eu/
Participation, including SMEs	Total number of participants: 667 Participants in funded projects: 285 Number of SMEs in funded projects: **73 –** 25.6 % of the total participation Participants by category in funded projects: Large Industry (PRC): 76; Research organisations (REC): 77; Higher and Secondary Education (HSE): 49; Public Authorities (PUB): 3; Others (OTH): 7 Participation in funded projects broken down by country: 26 countries involved. **Top countries** **Total participation** DE 67 UK 36 FR 31 IT 30 BE 26 Five international partners (the US, Korea, China, Canada and Serbia) took part in FCH research activities, with one participant in funded projects each.
Communication	In 2011 FCH developed a new web site, which from March to year end was visited over 40 000 times. Three major EU events were organised, while the Programme Office and the executive director attended 25 external events and conferences, some of them outside Europe (in the US, Japan, Korea, China, and Canada). FCH took part in the joint JTI event hosted at the European Parliament on 5 and 6 October.
Governance	The Governing Board met three times in 2011. In addition to decisions on running the JTI JU, the Board unanimously elected its new Chair, Mr Pierre Etienne Franc (of Air Liquide), in June.

1.4. Artemis JU: main achievements in 2011 at a glance

AREA	PROGRESS — ACHIEVEMENTS
Strategic Research Agenda (SRA)	The ARTEMIS Industry Association presented the revised SRA in May. The JU then updated its research objectives.
Call implementation	Number of calls in 2011: 1 (two-step submission and evaluation) Number of proposals submitted (Full Project Proposals): 27 Number of eligible proposals: 27 Number of proposals funded: 8 **Global project portfolio: 44**
Participation, including SMEs	Total number of participants (Full Project Proposals): 540 Participants in funded projects: 206 Number of SMEs in funded projects: **62 –** 31% of total participation Participants by category in funded projects: Large Industry (PRC): 73; Research organisations (REC) and Higher or Secondary Education (HSE) together: 71. Participation in funded projects, broken down by country: 17 countries involved. **Top countries** **Total participations** ES 31 IT 28 DE 23 FI 19 FR 15 AT 15 The US participated in the 2011 call and had 1 project funded.
Communication	ARTEMIS participated in 6 events held jointly with national partners to promote calls for proposal and project results among stakeholders and potential beneficiaries. The ARTEMIS Industry Association Summer Camp was held in June and followed by four other major events. ARTEMIS helped stage a joint JTI event at the European Parliament on 5 and 6 October. The magazine Artemis was issued three times and new information brochures were published. In addition, nine articles were published in various EU countries. The visual identity of the JTI was improved.
Governance	The Governing Board (GB) met three times and the Public Authorities Board (PAB) met twice. In addition to decisions on running the JTI JU, the GB agreed to include the option of hiring Seconded National Experts in the Multi-Annual Staff Policy Plan.

1.5. ENIAC JU: main achievements in 2011 at a glance

<table>
<tr><th>AREA</th><th>PROGRESS — ACHIEVEMENTS</th></tr>
<tr><td rowspan="2">Call implementation</td><td>Number of calls in 2011: 2 (call 1 used a two-step submission and evaluation procedure; call 2 a one-step procedure).
Number of proposals submitted (Full Project Proposals): 17
Number of eligible proposals: 16
Number of proposals funded: 12
Global project portfolio: 40</td></tr>
<tr><td>Success stories:
The E3Car project started in February 2008 with the aim of tackling the main challenges in the management of the electrical vehicle power train and reducing the energy lost in the intermediate stages of the power train. E3Car won an innovation award in November 2011 for its major achievements in many developments on several key components, in particular:
- improvement of power conversion and distribution by 10 %;
- increase in energy efficiency by 35 % overall.
The project achieved 28 demonstrators and generated an architectural view of the electrical vehicle and 7 more collaborative projects on electric mobility, mobilising more than 100 partners with a total budget of € 180m.
For more information see: http://www.e3car.eu/</td></tr>
<tr><td>Participation, including SMEs</td><td>Total number of participants (Full Project Proposals): 286
Participants in funded projects: 195
Number of SMEs in funded projects: 74 – 37.9 % of total participations
Participants by category in funded projects: Large Industry (PRC): 71; Research organisations (REC): 50

Participation in funded projects, broken down by country: 19 countries involved.
Top countries Total participations

NL 49
DE 29
IT 26
FR 21
AT 12

Five participants from Israel took part in call 2, joining winning consortia.</td></tr>
<tr><td>Communication</td><td>ENIAC held 10 ‘face to face’ meetings with Member States/public authorities. It helped organise the EU Nanoelectronic Forum and presented the new ‘ENIAC JU Innovation Award’ at the event.
ENIAC helped stage the joint JTI event at the European Parliament on 5 and 6 October.
ENIAC also participated in a number of international events.</td></tr>
<tr><td>Governance</td><td>The Governing Board (GB) met three times and the Public Authorities Board (PAB) met five times in 2011.
In addition to decisions on running the JTI JU, the GB decided to launch a call for Expressions of Interest for pilot lines related to Key Enabling Technology (KETs).</td></tr>
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