

**Designing together
the ‘ideal house’
for public-private partnerships
in European research**

JTI Sherpas’ Group

Final Report

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Executive Summary

- This document presents the report of the JTI Sherpas' Group, set up at the initiative of Commissioners Potočnik and Reding to take stock of the first experience with setting up Joint Technology Initiatives (JTIs) under the Seventh Framework Programme.
- Joint Technology Initiatives are Public-Private Partnerships (PPPs) set up under Article 171 of the EC Treaty in scientific and technological areas of European strategic importance.
- JTIs represent the first experience with setting up public-private partnerships in research at the European level. They bring together EU, national and private resources, know-how and research capabilities, for a period of many years, with the aim of addressing major issues by sharing pre-competitive knowledge, achieving critical mass, scale and scope in areas where global competitiveness is at stake, thus ensuring that the EU can lead the world in developing breakthrough technologies with high innovation potential.
- Currently five JTIs exist in the areas of innovative medicines (IMI), aeronautics (Clean Sky), embedded computing systems (ARTEMIS), nanoelectronics (ENIAC) and fuel cells and hydrogen (FCH). Three of the JTIs are now autonomous and this is, in itself, a major achievement as it has taken significant efforts on all sides to reach this point.
- In addition, three other major PPPs in research have also been launched under the European Economic Recovery Plan in relation to Factories of the Future, Energy Efficient Buildings and Green Cars.
- The importance of PPPs for the long-term, sustainable development of the EU is recognised in the Commission's recent Communication on "Mobilising private and public investment for recovery and long-term structural change: developing Public Private Partnerships".¹ In this context, PPPs in research are recognised as a powerful instrument for addressing critical issues that impact on Europe's competitiveness and responding effectively to major socio-economic challenges.
- Setting up the JTIs has been a challenging and cumbersome resource-intensive experience for all parties.
- Accordingly, it is now important to draw lessons from this initial experience, complemented by evidence from the increasing body of experience with PPPs in research at the national level, as a basis for developing recommendations in relation to the "ideal house" for future JTIs.
- The Group is of the opinion that the future JTIs must be built on a genuine partnership between the public and private players, the cornerstone of which should be mutual trust and confidence. In this regard, it has identified a number of key principles that

¹ COM(2009) 615 final, Brussels, 19.11.2009.

should underpin the implementation of future JTIs as regards legal structure and governance, operational modalities, funding and Member States' participation (in the cases where Member States are also formal partners in the JTIs).

JTI legal structure and governance: key principles

- ✓ A risk-tolerant and trust-based approach
- ✓ Flexibility to adapt to the specific needs of the different sectors and challenges

JTI operational modalities: key principles

- ✓ Openness, transparency, effectiveness, efficiency and sound financial management
- ✓ Clear roles and responsibilities among partners
- ✓ A transparent but also flexible recruitment process
- ✓ Simple reporting procedures with proportionate audits
- ✓ A transparent and sound proposal evaluation system
- ✓ Shared responsibilities as well as rights
- ✓ Effective engagement of the SME community

JTI funding: key principles

- ✓ Long-term commitment and critical mass of funds
- ✓ Competitive funding rates
- ✓ Balanced funds matching and sustainability of running costs

JTI Member States' participation: key principles

- ✓ Bringing added value and honouring commitments
- ✓ Accommodation of national interests
- ✓ Harmonisation of national procedures
- ✓ Clear collaboration with Eureka initiatives

- The Sherpas advocate 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 in terms of the degree to which it enables balanced and trust-based partnerships with private players to be set up effectively.

- Other possible options for legal structures should be examined with a view to providing the necessary flexibility to fit the purpose of setting up and implementing JTIs as effective public-private partnerships in European research.
- In this regard, the Sherpas considered four different types of legal structure:
 - private law entity
 - contractual partnership
 - "Community body" under the EU Financial Regulation
 - recognition of PPPs in research as a "special body" in the context of the current revision of the EU Financial Regulation.
- While each of the options examined presents certain advantages and limitations, the "special body" option is the one most favoured by the Sherpas. This responds to the identified need to recognise that PPPs in research are special cases and should be treated as such in the applicable framework and regulations. This option also offers the opportunity to develop a framework regulation, adapted to the specific needs of PPPs, allowing a more risk-tolerant and trust-based approach in governance, facilitating the efficient launch of new PPPs and drawing on the best of what the public and private partners can provide.
- The Sherpas further recommend that, in order to maintain momentum pending the development of the new framework for JTIs, cooperation with the legal entities representing the private sector within the research PPPs created under the European Economic Recovery Plan should be continued and strengthened.
- The Sherpas emphasise, finally, that their recommendations should be implemented as a whole in order to provide a comprehensive blueprint for designing the "ideal house" for future JTIs, as well as guidance for the mid-term reorientation of existing JTIs.
- To make their recommendations as specific as possible, the Sherpas will provide input to the Commission on issues such as the revision of the Financial Regulation.

1. Introduction

Joint Technology Initiatives (JTIs) are a new way of realising public-private partnerships (PPPs) in research at the European level. Established under Article 171 of the Treaty, in scientific and technological areas of strategic importance for Europe, JTIs are one of the novel elements of the Seventh Framework Programme for Research, Development and Demonstration. They are intended to support trans-national cooperation in fields of key importance for industrial research.²

Currently, JTIs have been set up in five areas:

- public health (the Innovative Medicines Initiative)
- aeronautics and air transport (the Clean Sky Initiative)
- embedded computing systems (the ARTEMIS Initiative)
- nanoelectronics (the ENIAC Initiative)
- fuel cells and hydrogen (the FCH Initiative).

The first three are already autonomous and the last two are expected to become autonomous by March 2010. Accordingly, it is now important to take stock and see what lessons can be learnt from the experience to date with a view to combining the best of the private and public sector approaches to arrive at a common, co-operative method of working together for the future.

The JTIs Sherpas' Group was set up at the initiative of Commissioners Potočnik and Reding in response to this need and the concerns about the cumbersome processes involved in establishing the JTIs. The aim was to draw lessons from the JTIs experience and to develop practical proposals for the existing JTIs as well as for future JTIs.

The Group took as the starting point for its discussions the following issue-questions posed by Commissioners Potočnik and Reding:

1. Can the development of JTIs be seen as part of the wider trend towards establishing PPPs in research?
2. What lessons can be learnt from the PPPs in research that have been set up at national or transnational levels? To what extent are JTIs similar to or different from these other forms of PPP?
3. How can potential areas be identified where the scale and scope of the challenge require a PPP-based approach to provide a truly European strategy.
4. Does the current set-up and structure of JTIs, including legal and administrative aspects and covering also those where Member States are partners, facilitate getting the best out of the public and private sides and give the JTIs the potential to deliver?
5. In what ways are JTIs an effective means of enforcing greater involvement of industry in Community research?
6. How can the long-term sustainability of JTIs be ensured?
7. What specific methodology is required to assess the future impact of the JTIs?

² CEC (2007), 'Joint Technology Initiatives: Background, State-of-Play and Main Features', Commission Staff Working Document SEC(2007) 692, Brussels, 15.05.2007.

To address these issues, the Group combined a problem-solving approach with a broader strategic perspective in order to identify the 'ideal house' for future JTIs. To this end, the Group drew not only on the experience to date with the current JTIs but also on evidence from other public-private partnerships in research at Member State level. This enabled the identification of key principles to better meet the challenges of establishing public-private partnerships in research at the European level.

Accordingly, the issues posed by the Commissioners are dealt with either implicitly or explicitly in the subsequent sections of this report. Section 2 discusses the JTIs in the context of the overall trend towards establishing PPPs in research (issue no. 1) along with means of identification of areas requiring a PPP-based approach (issue no. 3). This section also examines the major benefits and anticipated impacts of JTIs in terms of promoting greater industry involvement (issue no. 5). Given the multiple levels at which it is anticipated that JTIs will impact, the appropriate approach to impact evaluation of JTIs is also discussed (issue no. 7).

Section 3 analyses the lessons learnt from the current JTI experience (issue no. 4). It should be noted that this section presents a composite overview of the main issues and problems reported as not all JTIs have encountered the same problems.

Section 4 of the report draws on lessons from other experiences with PPPs in research (issue no. 2) as a basis for identifying key principles and good practices to ensure the sustainability of JTIs (issue no. 6).

Finally, the report presents the conclusions and recommendations put forward by the Sherpas. These are made in line with the Group's mandate to provide strategic recommendations for future JTIs and PPPs in research at the European level in general, as well as offering guidance for reorientation of the existing JTIs at mid-term.

The present report also responds to the invitation in relation to JTIs in the Commission's recent Communication on PPPs³ to take a strategic perspective with JTI leaders and other stakeholders to identify what the specific obstacles are and how they can best be addressed", with the intention that "a report including policy recommendations will be presented in the coming months".

The Sherpas believe that their recommendations provide a useful starting point for defining a new framework for JTIs, on the basis of appropriate provisions in the Commission's proposals for a revised Financial Regulation, due to be presented during the first half of 2010. They also consider that their reflections are important in the context of the forthcoming Interim Review of the Seventh Framework Programme.

³ CEC, (2009), 'Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. Mobilising private and public investment for recovery and long term structural change: developing Public Private Partnerships', COM(2009) 615 final, Brussels, 19.11.2009.

2. What are JTIs and why are they important?

Section 2 discusses JTIs in the wider context of the general trend towards establishing public-private partnerships in research. In this context, the main benefits and anticipated impact of the JTIs are set out. Reflecting the breadth of such impacts, multiple levels and perspectives are considered within a systemic approach to impact assessment of JTIs.

2.1 *The increasing trend towards establishing PPPs in research*

Public-private partnerships (PPPs) in research are defined by the OECD⁴ as: “Any formal relationship or arrangement over a fixed-term/indefinite period of time, between public and private actors, where both sides interact in the decision-making process, and co-invest scarce resources such as money, personnel, facilities, and information in order to achieve specific objectives in the area of science, technology, and innovation”. In deciding what types of interaction constitute a partnership, additional criteria are applied: institutionalisation, government as partner, shared objectives and a clearly defined public interest, active involvement and co-investment of resources.

PPPs in research are relatively novel in comparison with the traditional procurement-based public-private partnerships for public service delivery or for developing and operating infrastructures⁵, which have existed for more than a decade. The latter type of PPP aims at producing concrete outputs by exploiting the advantages offered, notably in terms of access to additional finance and capitalising on private sector operational efficiencies to reduce costs and increase quality⁶. In contrast, the outputs of PPPs in research may not be so tangible in the short term and, indeed, may be less predictable and quantifiable. This is primarily due to the uncertainties inherent in the field of research, which also makes it difficult to anticipate any specific rates of return on investments in the same way as in other sectors.

The trend towards establishing PPPs in research is increasing and occurs in various forms and contexts. In comparison with other policy instruments pursuing similar goals, PPPs respond better to the latest trends in research and innovation processes, i.e. increased scientific content of technological development, increasing dependency on external knowledge for innovation generation, changing business R&D strategies (e.g. open innovation) and rapidly evolving social needs⁷.

The importance of PPPs for the long-term, sustainable development of the EU is recognised in the Commission's recent Communication on "Mobilising private and public investment for recovery and long-term structural change: developing Public Private Partnerships".⁸ PPPs in research are a powerful instrument for addressing major issues that impact on Europe's competitiveness and the ability to respond effectively to major socio-economic challenges such as promoting alternative energy sources, supporting sustainable transport and combating climate change.

⁴ Guinet, J., (2005), ‘Public-Private Partnerships for Research and Innovation. The experience of OECD countries’, Science and Technology Policy Division, OECD, Paris (unpublished paper), pp.3-4.

⁵ OECD, (2008) ‘Public-Private Partnerships. In Pursuit of Risk Sharing and Value for Money’ OECD, Paris.

⁶ EC, (2003) ‘Guidelines For Successful Public – Private Partnerships’, DG Regional Policy, March 2003.

⁷ Guinet, J., (2005), ‘Public-Private Partnerships for Research and Innovation. The experience of OECD countries’, Science and Technology Policy Division, OECD, Paris (unpublished paper).

⁸ COM(2009) 615 final, Brussels, 19.11.2009.

2.2 Joint Technology Initiatives: PPPs in research at European level

Joint Technology Initiatives (JTIs) are the first experience with setting up public-private partnerships in research at the European level. They focus on key areas where research and technological development could contribute to Europe's wider competitiveness goals and where the traditional instruments of the Framework Programme are not adequate.⁹ The European Commission has set specific criteria to identify the areas where JTIs should be set up: strategic importance of the topic; existence of market failure; concrete evidence of Community value added; evidence of substantial, long-term industry commitment; and inadequacy of existing Community instruments¹⁰.

JTIs bring together EU, national and private resources, know-how and research capabilities, for a period of many years, with the aim of addressing major issues by sharing pre-competitive knowledge, achieving critical mass, scale and scope in areas where global competitiveness is at stake, thus ensuring that the EU can lead the world in innovation and developing breakthrough technologies. The strategic importance of the JTIs is significant whilst their capacity to deliver is not only essential for EU competitiveness, but also for tackling major societal challenges such as combating climate change or promoting health.

JTIs define a common vision and implement a common Research Agenda through a detailed work programme, while respecting the Framework Programme principles of competition and excellence. The activities of the JTIs are co-funded under the Seventh Framework Programme for Research.

Currently five JTIs exist in the areas of innovative medicines (IMI), aeronautics (Clean Sky), fuel cells and hydrogen (FCH), nanoelectronics (ENIAC) and embedded computing systems (ARTEMIS).¹¹ Three of the JTIs are now autonomous and this is, in itself, a major achievement as it has taken significant efforts on all sides to reach this point.

Although the JTIs established in 2008 are only now becoming autonomous, and despite impatience voiced during the building phase, industry partners express positive views and high expectations of the JTI concept. The establishment of the JTIs is seen as a public statement of support for industrial research. The collaboration across borders is perceived positively and enthusiastically by both industry and the academic research community. In summary, it is considered that a positive start has been made to the public-private collaboration, which testifies that the ability and willingness to work together exists.

In this regard, the JTIs have played an important role in bringing together all important stakeholders. The description offered by the Sherpa representing Clean Sky captures the essence: *'For the first time the whole aeronautical community is working together in one programme, with common targets'*.

In addition, the capacity of the JTIs to define and focus on research topics of strategic importance and of potential high societal impact is also deemed a success.

⁹ CEC (2007), 'Joint Technology Initiatives: Background, State-of-Play and Main Features', Commission Staff Working Document SEC(2007) 692, Brussels, 15.05.2007, p. 3.

¹⁰ CEC (2005), 'Report on European Technology Platforms and Joint Technology Initiatives: Fostering Public-Private R&D Partnerships to Boost Europe's Industrial Competitiveness', Commission Staff Working Document SEC (2005) 800, Brussels, 10.6.2005.

¹¹ The JTIs are briefly described in Annex II.

Taking a wider perspective, by promoting research collaboration among firms, research institutions and universities from across Europe as well as facilitating a satisfactory level of SME participation, JTIs have become significant entities within the European Research Area. There is evidence to support the view that JTIs can have a catalytic effect by increasing interest in industry-driven research at Member State and regional level across Europe. This offers the potential to combine JTI funds with those of the regions and Member States. This, in turn offers the prospect of co-ordinating the content of national and regional programme calls with those of the JTIs, thus contributing to reduced fragmentation of research activities.

It is anticipated that the JTIs will have a wide range of impacts: at national and European levels; at project, programme and policy levels; as well as at the level of the participants in JTIs. Any methodology to evaluate the future impact of the JTIs should be comprehensive and address each of these levels. At the same time, a multi-criteria approach is required that takes account of the operational, technological, economic and societal dimensions in examining current and potential future impacts.

A holistic approach should be applied addressing not only the agreed overall programme objectives but also the different motives and expectations of each of the partners in the JTIs. Evaluation issues should focus primarily on the leverage of Community funding and programme additionality effects on private investment and national funding in research, JTIs have to demonstrate the added value of the 'European partnership approach' vis-à-vis alternative schemes and approaches at European, intergovernmental or national level. In summary, evaluating JTIs and assessing their impact should be systematic. It should adopt a systemic approach to accommodate examination of all different levels, layers and types of impacts. It should also be seen as a learning process.

Notwithstanding the high expectations of the stakeholders in JTIs and the positive impacts anticipated, the establishment of the first JTIs has not been without difficulties. It is now essential to draw lessons from this initial experience, complemented by evidence from national experiences with PPPs in research, as a basis for developing the "ideal house" for future JTIs.

2.3 New European PPPs in response to the financial crisis

PPPs in research are also playing a part in the European response to the recent financial crisis and economic downturn. To support competitiveness through industry-driven research in manufacturing, the Commission proposed to launch three major PPPs under the European Economic Recovery Plan in the areas of Factories of the Future, Energy Efficient Buildings and Green Cars, as part of a progressive response to the significant downturns in demand which the manufacturing, construction and automotive sectors experienced as a consequence of the global financial crisis.¹²

In order to achieve the necessary rapid start-up, these PPPs were not set up as JTIs, but make use of existing FP7 instruments through a series of cross-thematic coordinated calls for proposals. In order to have legal entities that can engage in these public-private partnerships,

¹² EC, (2009), 'European PPP research supports economic recovery. New public-private partnerships for research in the manufacturing, construction and automotive sectors', 2009.

the private sector has established the non-profit organisations EFFRA (European Factories of the Future Research Association) and E2BA (Energy-Efficient Buildings Association).

In parallel, multi-annual roadmaps of research priorities were drawn up for the period up to the end of FP7 in 2013 by ad-hoc Industrial Advisory Groups with the direct participation of industrial representatives in the three industrial sectors, in cooperation with the Commission services.¹³ Based on these roadmaps and the lessons learnt from the establishment and operations of the five existing JTIs, industry partners in these PPPs have the expectation that they will be among the first to put into practice a new "ideal house"-based framework for future JTIs.

3. Lessons learnt: problem analysis

This section presents the lessons learnt from the experience to date with the existing JTIs. It should be noted that this is a composite overview of the main issues reported by the Sherpas. Some of the problems discussed are common to all the JTIs while others are specific to certain JTIs.

3.1 Legal Structure and Governance Arrangements

The existing JTIs have relatively similar governance structures. Each of the Joint Undertakings (JU) has a Governing Board with overall responsibility for operations, an Executive Director responsible for the day-to-day management and stakeholder committees including research actors elaborating the scientific and technological content of the JTI. In the two JTIs where Member States are full members of the partnership (ARTEMIS and ENIAC) a Public Authorities Board also exists. In the other JTIs the Members States are involved in an advisory role through a States' Representatives Group.

The general governance structures do not raise concerns for the partners. However, the private partners, which in most JTIs are associations of private research actors, consider that they are not playing their full role in the partnerships as initially envisaged. This is primarily due to the legal status of 'Community body' that was chosen for the set up of the Joint Undertakings (JU), the bodies responsible for the implementation of the JTIs, and the associated financial regulations that have to be followed.

The specific legal structure, using the 'Community Body' framework, was chosen to enable the Commission to contribute the resources envisaged in a direct and controllable way. Nevertheless it implies the application of rules and procedures that the private partners have experienced as burdensome and disproportionate. This entails the risk that they feel discouraged and lose motivation, thereby jeopardising the capacity of the JTIs to fulfil their missions.

The Sherpas recognise that EU funding, subject to scrutiny, requires certain audits and controls aimed at minimizing risks for European public funds. However, they consider that currently the system is excessively control-based. This severely hampers the speed and flexibility necessary to facilitate combined investment in research in fast-moving markets, which involves outputs much closer to applications than in the case of classical collaborative

¹³ Ibid.

research. Moreover, the numerous rules and audits are seen to reflect an overall risk-adverse attitude, which hinders effective partnership with the private players.

The existing legal framework is designed for public bodies and not for partnerships involving private players. Overall, it is not considered appropriate for establishing balanced and trust-based partnerships that ensure equal rights among the partners and shared operating principles and expectations. JTIs are special bodies and should be treated as such in the applicable framework and regulations.

Furthermore, it must be recognised that there are significant differences between the JTIs in terms of the industrial sectors covered and the scientific and technological challenges addressed. For this reason a "one-size-fits-all" solution does not fit the needs of all JTIs.

3.2 Operational Modalities

Given the nature of the challenges they are intended to address, speed, effectiveness and efficiency are of the essence in the implementation of the JTIs. However, the current legal and administrative set-up is considered far from optimum in this respect. Defining and jointly agreeing upon clear roles and responsibilities among the partners is important in this regard but this has not yet been fully achieved.

The private partners consider that the current Implementing Rules of the Staff Regulations do not permit them to play the appropriate role in the recruitment process as this is confined to an advisory capacity. This also raises concerns in relation to the extent to which the interests and needs of both the public and the private sectors can be met regarding human resources.

In addition to the numerous audits and related procedures, certain administrative tasks require disproportionately large effort. For instance, the reporting of in-kind contributions of the industry partners is considered complex and disproportionate to the type of contribution¹⁴, while problems are also perceived to exist regarding the ways in which in-kind contributions should be calculated.

In some JTIs the private partners are excluded from certain procedures. For example, the industrial partners are not informed about the details of project proposals or adequately involved in the project selection process. From an industry perspective there are concerns about the degree to which the proposal selection mechanism ensures consideration of both scientific / technological excellence and industrial relevance as evaluation criteria of equal importance.¹⁵

Despite the fact that the Joint Undertakings were set up as Community bodies, they do not have automatic access to information technology and other Commission services, tools and infrastructure. Instead, "Service Level Agreements" must be established and this is seen as an additional administrative burden.

Involvement of SMEs in the JTIs is recognised as important and critical. However, SMEs may be discouraged from participating due to the relatively long JTI processes in relation to applying for, determining and receiving project support. At the same time the limited asset

¹⁴ This concern was expressed more in relation to IMI than to the other JTIs.

¹⁵ These concerns were mainly expressed by the representatives of ARTEMIS and ENIAC.

base of SMEs, especially in start-ups/spin-outs, means that they cannot provide the bank or other forms of guarantee required in order to benefit fully from participating in JTIs.

3.3 Funding

The overall budgets available for the R&D activities and running costs of the JTIs depend on contributions from three main sources, namely, the European Commission, the private sector and the Member States in the cases where they are involved as full partners, as in ARTEMIS and ENIAC. The maximum Community contribution is stated in the JTI Regulations for the whole duration of the JTIs, while the annual amounts are earmarked and made available annually.

Sufficient levels of funding are crucial for the JTIs. There are cases where the accumulated contributions to date are less than expected. This is mainly due to the fact that certain Member States' contributions have not reached the levels initially envisaged.¹⁶

Project funding rates are important incentives for participation. In this respect, the funding rates at which project partners are supported are not considered optimal. They are low in general and in many cases inferior to what is commonly available under the Cooperation Specific Programme of the Framework Programme. This may act as a disincentive for potential project applicants. Furthermore, European multi-national firms compete at global level. Thus, it is important to also consider programme funding rates available in other parts of the world.

Another problem associated with funding refers to the obligations and sustainability of the associations of research actors created.¹⁷ According to the JU Statutes, the associations created have certain financial obligations to meet in relation to covering the running costs of the offices of the Joint Undertaking. However, they face challenges in meeting these obligations. The corresponding sums should be collected from the associations' members. Yet, membership of the associations is not mandatory for participants in the JTI projects. This makes collection of the required sums unreliable and dependent upon the association members. This issue is exacerbated by the fact that the Joint Undertaking offices are currently not permitted to directly charge project fees to any project participants to cover the Joint Undertaking's running costs.

At the same time, non-mandatory membership in the respective associations is a cause of 'free-riding' problems. A number of project participants are not willing to become members of the associations or otherwise pay their corresponding shares by signing for example a Declaration of Acceptance. This phenomenon puts an inequitable burden on other project participants who are association members and who may decide to leave to avoid having to compensate for the unpaid shares. Thus, the associations' sustainability may be put in danger.

There is a particular issue in relation to unbalanced matching of funds in the case of the FCH. The FCH includes the research sector as a formal partner sharing with industry the Commission investment in the JU. However, it is only industry that is required to match the Commission's total investment, and this burden is proving unsustainable. The matching

¹⁶ This problem concerns the two JTIs with full MS participation (ARTEMIS and ENIAC) and it is discussed in the next section along with other problems associated with the participation of Member States in the JTIs.

¹⁷ These problems concerns ARTEMIS, ENIAC and FCH in particular.

principle is also complicating the provision of funds to both the industry and research sectors, effectively reducing rates of funding.

3.4 Involvement of Member States

Following the variable geometry principal, more than twenty Member States and Associated Countries are full members in two of the five JTIs (ARTEMIS and ENIAC). In principle, the involvement of Member States offers additional resources as well as an opportunity to tackle fragmentation and improve coordination of European and national research activities in the given sector.

In practice, however, it entails several difficulties. There are cases where Member States do not honour their original commitments in terms of contributions to the JTIs. This is largely attributed to the fact that some Member States consider that their interests are not well covered by existing procedures or by the outcome of project selection processes.

Cases have also been reported where the execution of project proposals that have been short-listed for funding is threatened. The major reason is the inability of certain Member States to fund the participation of national organisations because this would exceed the budget they had committed for the call concerned. It is not unusual that the budget available to cover participation of bodies from a particular Member State is exhausted even though short-listed proposals may include organisations from that Member State. As a consequence, such proposed transnational collaboration projects cannot proceed or require major readjustments.

In principle, participating Member States are committed to undertake best efforts to synchronize their procedures and associated terms and conditions with those of the JTI and to disburse the appropriate financial contributions to national participants in a timely manner. Yet, the reality is that time-to-contract periods or timing of funding vary across participating Member States. This creates problems that hinder the smooth start of selected projects and discourage potential participants.

Moreover, Member States' contributions not only differ in terms of volume and timing, but also differ in terms of the funding rates applied. In some cases these are much lower than those of the Framework Programme, and so act as a disincentive to participation in JTI projects.

4. How can JTIs be made fit for purpose?

4.1 *Proposed principles on which future JTIs should be vested*

The purpose of this section is to highlight the principles that should be adopted in developing the "ideal house" for future JTIs. It draws upon the experience gained thus far from the existing JTIs as well as from national experiences with PPPs in research.

a. Legal Structure and Governance Arrangements

The legal framework should be streamlined to make it fit for the purpose of setting up and implementing JTIs and PPPs in research in general in the future. In this respect, the status of 'Community body' should be reviewed with regard to the degree to which it enables true and balanced partnerships to be put in place. Other possible options should also be examined in terms of their suitability to the special needs of JTIs.¹⁸

At the same time, it has to be realised that PPPs in research are a special case and should be treated as such. The Triennial Review of the Framework Financial Regulation in 2010 presents a good opportunity for recognising PPPs, including JTIs, as "special bodies" and so to better accommodate their needs. In parallel, it offers the opportunity to establish principles on which contributions from the EU budget and Commission participation in PPPs can be based and which would permit the development of tailor-made provisions for PPPs. This in turn would provide the context for exploring the development of a framework regulation for PPPs under EU law.

In addition to the above, the governance of future PPPs in research should follow certain principles that appear significant based on the experience up to now.

A more risk-tolerant and trust-based approach

The Sherpas point to the need for a more risk-tolerant and trust-based approach as an essential pre-condition for increased effectiveness and efficiency in implementation and delivery of the JTIs. Such risk-tolerant and trust-based approach would be in line with the Conclusions of the Competitiveness Council of 3 December 2009. Efforts should be directed towards establishing a balanced, trust-based partnership involving public and private stakeholders on an equal basis. Building confidence in the partnership depends on the joint development of rules, shared expectations, and by combining best practice from both the private and public sectors.

Flexibility

The importance of flexibility in defining the type of legal structure to be applied is highlighted by the national experiences in PPPs in research. The fact that the Leading Technological Institutes (LTI) instrument in the Netherlands did not prescribe in detail how the governance and membership models should be organized has been important in maximising LTI effects¹⁹. Conversely, the complexity of governance arrangements and lack of flexibility to respond to the needs of the partners proved to be draw-backs in the Australian Cooperative Research

¹⁸ Four different types of legal structures are being examined in the following section.

¹⁹ van der Veen, G., Arnold, E., Boekholt, P., Deuten, J., van Giessel, J-F., de Heide, M., Vullings, W., (2005), 'Evaluation Leading Technological Institutes', Final Report, Technopolis, December 2005.

Centres²⁰. The aim should be to ensure that the structure chosen fits the preferences of the partners as well as the specific needs of the different industrial sectors involved and the challenges addressed.

b. Operational Modalities

In order to promote a genuine partnership, the manner in which the JTIs function operationally should respect a number of basic principles.

Openness, transparency, effectiveness, efficiency and sound financial management

International experience shows that it is important to set up clear, efficient and durable management structures so as to facilitate implementation of the principles of openness, transparency, effectiveness, efficiency and sound financial management.²¹

Clear roles and responsibilities among partners

Clearly defined and agreed roles and responsibilities among the partners are essential in a partnership. While agenda setting and strategic decision-making should be a shared task, the private partner should take responsibility for operational management while the public partner should be responsible for oversight, protection of the public interest and ensuring the long-term stability of the initiative.

Transparent and flexible recruitment processes

It is important that implementing rules to Staff Regulations, establishment plans and recruitment procedures for JU Offices are transparent, sufficiently flexible to be adaptable to changing needs and agreed among the partners. It is also important to ensure that the interests of both the public and the private sectors are adequately met. The private partner should be responsible for selecting the staff in compliance with the agreed rules. The public partner should ensure that open competition and transparency are respected during the recruitment process.

Simple reporting procedures with proportionate audits

Getting the balance right between the need for controls and the need for a more risk-tolerant approach is crucial. The aim should be to simplify the reporting procedures and make the applicable audits proportionate to the level and type of contribution (financial or in-kind).

A transparent and robust proposal evaluation system

Selected proposals should excel both in terms of scientific and technological merit and industrial relevance. For this reason, it is important to include experts from both industry and academia in the project evaluation process.

Shared responsibilities as well as rights

To avoid 're-inventing the wheel' and improve the efficiency of operations, the JTIs' personnel should - under appropriate conditions - be allowed access to relevant information technology tools and services available to the partners involved.

²⁰ Commonwealth of Australia, (2008) 'Collaborating to a Purpose. Review of the Cooperative Research Centres Program', July 2008.

²¹ CEC (2007), 'Joint Technology Initiatives: Background, State-of-Play and Main Features', Commission Staff Working Document SEC(2007) 692, Brussels, 15.05.2007; Guinet, J., (2005).

Effective engagement of the SME community

Involvement of SMEs is recognised as important and critical. JTIs must adapt their policies and operations to accommodate better the needs of SMEs and ensure that they engage effectively in JTI activities.

c. Funding

Long-term commitment and critical mass

Long-term commitment and sufficient levels of funding ('critical mass') are crucial for effective PPPs. National experiences also highlight the importance of additionality of funding²². In the case of the JTIs, the appropriate framework has to be defined to ensure that Community funding achieves the greatest possible leverage of private investment and national public funding in research.

Competitive funding rates

Funding rates, with regard to both the industry and research entities' participation, should be set at levels comparable to those of the Framework Programme.

Balanced funds matching and sustainability of running costs

Matching of funds should ensure fairness for all partners involved. Additionally, the sustainability of the JTI running costs should be ensured.

d. Involvement of Member States

Bringing added value and honouring commitments

Participation of Member States and Associated Countries is important in the cases where significant added value is created by pooling together complementary resources and expertise. The problems related to honouring their financial commitments should be resolved.

Accommodation of national interests

Putting in place means of accommodating Member States' interests in the JTI rules and procedures might help to make full participation in the JTIs more attractive to them. Demonstrating the benefits and additionality of JTIs would also help persuade Member States of the advantages of JTIs relative to other programmes and initiatives.

Harmonisation of national procedures

Efforts should aim at reducing time-to-contract periods and harmonising timing of funding across the participating Member States.

Closer collaboration with Eureka initiatives

Where related research activities are currently also being implemented through intergovernmental R&D schemes (Eureka), a close and effective collaboration should be developed. This should include, when added value can be created, their progressive integration into the JTI.

²² Guinet, J., (2005), 'Public-Private Partnerships for Research and Innovation. The experience of OECD countries', Science and Technology Policy Division, OECD, Paris (unpublished paper).

4.2 Options to explore regarding the legal structure

Experience has shown that there exists no single ideal solution in relation to the legal form a research PPP should take. Nevertheless, it is important to identify possible options and indicate their advantages and disadvantages relative to the requirements identified for the JTIs to function efficiently and effectively as European-level PPPs in research. This section presents four options put forward by the Sherpas and including illustrations drawn from relevant national experiences with PPPs in research²³.

a. Private law legal entity

It is not uncommon at the national level to establish private law legal entities to bring together the main actors in a research partnership. Such entities usually take the form of associations, foundations or limited liability companies. These partnerships are usually created under a dedicated programme devised for this purpose. They involve the public and private research actors who submit proposals to set up the partnership based on an agreed research agenda for a given sector. Examples of such partnerships are the Austrian Competence Centres or the Strategic Centres for Science, Technology and Innovation (SHOKs) in Finland.

The SHOKs programme in Finland

The SHOKs funding scheme, run by the Finnish R&D Funding Agency Tekes, invites public and private research actors to submit proposals for establishing Strategic Centres for Science, Technology and Innovation (SHOKs). The centres are established as limited companies involving the public and private research actors as shareholders. The centres, once set up, draw up strategic research agendas for a period of three to five years for each SHOK research programme. The research is undertaken by consortia of research actors coordinated by the SHOK.

Public authorities do not have a predominant role in these partnerships. In the case of the Finnish SHOKs, for instance, public authorities do not participate in the management structures. In some Austrian Competence Centres, regional authorities are involved but this is usually done indirectly through the participating regional research organisations, rather than directly.

The Austrian Competence Centres and the COMET programme

The COMET programme (the new programme created after merging the Kplus and Kind/Knet programmes) invites proposals from universities, research organisations and private companies to establish Competence Centres, usually set up as limited liability companies. The programme is run by the Austrian Research Promotion Agency (FFG). The research is undertaken internally by the centres themselves.

The option of a private-law legal entity offers flexibility in operations and an ‘environment’ that is conducive to the private partner.

²³ A table summarising the pros and cons of the options examined is attached in Annex I.

In the case of the JTIs, it could allow for a better balanced partnership between the EU and industry in setting up JTIs and provide more certainty by applying tried and tested rules and procedures with known consequences.

On the other hand, a private law entity would not enjoy EC privileges and immunities, such as exemption from VAT, taxes or duties. At the same time it would be subject to national legislation and taxation of wages. If this model was adopted, the rules applying to the JTIs would inevitably vary from one JTI to another depending on the country in which the JTI was set up. In addition, the scope for controls by the Commission aimed at minimising risks for European public funds would be limited.

b. Contractual partnerships

In this model the partnership is between the grouping of research actors, usually represented by a private law legal entity as in the previous case, and a government agency responsible for proposal selection and funding. This is often facilitated by the existence of a dedicated government programme tailored to the needs of the partnership. The public authorities are bound with the legal entity of research actors through the government agency with bilateral arrangements like a partnership framework agreement. An example of this type of public-private partnerships in research is the ‘Innovation Programmes’ in the Netherlands.

Dutch ‘Innovation Programmes’

The Dutch ‘Innovation Programmes’ are part of a national scheme supporting the creation of industry-driven PPPs in key strategic domains. In each PPP, a private law legal entity of research actors defines a roadmap and proposes annual plans for R&D and additional innovation support measures in a specific domain. In turn, Agentschap NL, the national funding agency, issues calls for proposals on the basis of the annual plans, and takes the funding decisions. The organisation of research actors and the national funding authority are mutually committed by a letter describing the overall conditions and budget for the duration of the PPP.

Adopting this model implies that agreements would be concluded between the Commission and a legal entity grouping of research actors. The research actors would be responsible for developing the strategic research agenda subject to the Commission’s approval, and the Commission would be responsible for issuing calls for proposals and funding selected projects by mainly using the resources available in the Framework Programme (FP).

This option offers increased flexibility in the arrangements between the two partners and permits a faster launch path. However, contractual partnerships cannot guarantee long-term commitment of partners to the degree a more binding legal structure would. They may also be seen to limit the visibility of the partnership in comparison with an incorporated entity. In addition, the sometimes burdensome rules and procedures of the Framework Programme would apply fully. Dependence on the regular Framework Programme resources additionally entails the risk that calls are modified over time, in the light of changing policy priorities, thus undermining the sustainability of the partnership.

c. Community body under the current Financial Regulation

The status of Community body offers several advantages. It enjoys EC privileges and immunities and ensures a clear commitment of the EU towards the programme. It also provides a harmonised status for all JTIs independent of their location.

On the other hand, it presents certain disadvantages, notably the burdensome, slow and resource-intensive administrative procedures, which are not geared to lean and business-oriented entities. More fundamentally, there is no explicit recognition of the concept of PPPs, and hence none of JTIs, in the existing Financial Regulation because it has, heretofore, been designed for public bodies rather than partnerships involving private actors.

d. Recognition of the PPP as a special body under the revised Financial Regulation

This option would recognise PPPs explicitly, allowing JTIs to be treated as special bodies. This would overcome the failure of the current Regulations to take account of the particular characteristics of PPPs.

The triennial revision of the Framework Financial Regulation currently underway and due to be presented in 2010 provides a good opportunity both to recognise PPPs, and thus JTIs, as special bodies to which implementation tasks can be delegated and to develop tailor-made provisions accommodating the special needs and nature of research PPPs and leading to a new framework for JTIs.

This option has the same advantages as the Community body approach while at the same time acknowledging the specificities of PPPs. However, considerable work and time will be required to set up the new framework effectively.

5. Conclusions and Recommendations

5.1 Conclusions

1. The importance of PPPs for the long-term, sustainable development of the EU is recognised in the Commission's recent Communication on "Mobilising private and public investment for recovery and long-term structural change: developing Public Private Partnerships". This recognises that PPPs can be a valuable instrument, and that PPPs in research differ from PPPs in services, infrastructures, etc. While the latter aim at producing concrete outputs, the outcome of PPPs in research is less predictable and quantifiable, given the uncertainties inherent in research.
2. PPPs in research are a powerful instrument for addressing major issues that impact on Europe's competitiveness and the ability to respond effectively to major socio-economic challenges such as promoting alternative energy sources, supporting sustainable transport and combating climate change. In this regard, there is a clear trend towards increasing use of PPPs in research at national level in Europe and other parts of the world.

3. JTIs represent the first experience with setting up public-private partnerships in research at European level. JTIs bring together EU, national and private resources, know-how and research capabilities, for a period of several years, with the aim of sharing pre-competitive knowledge, achieving critical mass, scale and scope in areas where global competitiveness is at stake, thus ensuring that the EU can lead the world in innovation and developing breakthrough technologies.
4. JTIs define a common vision and implement a common Research Agenda, which details the research and development challenges to be addressed. They each carry out a detailed work programme, directly managing all aspects of the implementation of the JTI programme while respecting the Framework Programme's principles of competition and excellence. The activities of the JTIs are co-funded under the Seventh Framework Programme for Research. Such funding is a novel and major element of the Seventh Framework Programme, as it aims at overcoming fragmentation and tapping Europe's capabilities in highly competitive markets.
5. So far, JTIs have been set up in five areas:
 - public health (the Innovative Medicines Initiative)
 - aeronautics and air transport (the Clean Sky Initiative)
 - embedded computing systems (the ARTEMIS Initiative)
 - nanoelectronics (the ENIAC Initiative)
 - fuel cells and hydrogen (the FCH Initiative)

Moreover, three major PPPs in research have also been launched under the European Economic Recovery Plan. These are in the areas of Factories of the Future, Energy Efficient Buildings and Green Cars.

6. The process of setting up the JTIs has been a novel experience. The first three JTIs are now autonomous and this is, in itself, a major achievement. The fact that it has taken almost two years to reach this point since their formal establishment, in addition to several years of preparation, shows that considerable energy and work on all sides was required to make it happen.
7. JTIs respond to an important need in relation to industry-driven research that should continue to be pursued in future. Accordingly, it is now essential to draw lessons from the initial experience with setting-up the JTIs, complemented by evidence from national experiences with PPPs in research, as a basis for developing the "ideal house" for JTIs in the long run. Future JTIs should be based on these recommendations.
8. JTIs have been set up under the current financial and administrative rules and regulations of the EU. This has had consequences for:
 - Governance and legal structure: The "Community body" structure implies the application of rules that private partners have experienced as burdensome and disproportionate.

The participation of Member States in some JTIs has also had consequences for:

- Funding: In ARTEMIS and ENIAC where national authorities participate, they have not always delivered as envisaged at the time of adoption of the Council Regulation. Furthermore, in these two JTIs national funding arrangements and different time-to-contract periods complicate participation of industry.
9. The success of the JTIs depends on their ability to respond to developments in the market, in technology and in new knowledge. The JTIs are in fact participating in a tight global race to be first in developing and commercialising the new technologies of the future. Therefore speed, effectiveness and efficiency are of the essence. Within the current framework for public bodies, this has proved to be difficult due to the many checks and balances imposed on JTIs. The current regulations applicable to Community bodies are designed for public bodies, not for partnerships involving private actors. Industry is accustomed to working in a faster-moving, flexible environment, driven by market forces. When confronted by unfamiliar administrative procedures, the risk is that the private partners feel discouraged and lose motivation, thereby putting at risk the capacity of the JTIs to fulfil their missions.
 10. It is therefore necessary to define for the future a stable and reliable framework appropriate for a long-term common endeavour between the public and private partners based on mutual interests. It is essential to draw lessons from the initial experience with setting-up the JTIs and to find short and medium-term solutions so that JTIs can operate in a suitable framework that draws fully on the best of what the public and the private players can provide. Their capacity to deliver is not only essential for EU competitiveness, but also for tackling major societal challenges such as combating climate change or promoting health.

5.2 Recommendations

The Group is of the opinion that the future JTIs must be built on a genuine partnership between the public and private players, the cornerstone of which should be mutual trust. This has implications in relation to:

- legal structure and governance arrangements
- operational modalities
- funding
- involvement of Member States (in cases where Member States are also partners)

a. Legal Structure and Governance Arrangements

Form should follow function. Several options for the legal structure of the future JTIs can be considered, recognising that each poses potential limitations and risks. A key consideration should be the need for flexibility to adapt to the specific needs of the different industrial sectors.

Private law entity

Establish the JTI as a private law entity in one of the Member States. The JTI would have the same tasks and where possible the same actors as in the current JTIs.

- Pros:*
- more flexibility
 - operating in an environment that is more familiar to the private sector
 - can allow for better balanced partnership between the EU and industry in setting up JTIs
 - operate under rules that have been tested in practice, so providing legal certainty on the consequences of the legal structure
- Cons:*
- no immunities and privileges (such as VAT exemption) and national taxation of wages, leading to increased costs
 - the rules applying to the JTIs would vary from one JTI to another depending on the seat; as such the JTIs would be subject to applicable legislation in place in the particular Member State which is hosting the JTI.
 - participation of EU in private law entities will bring a number of limitations and substantial delays in the set up process.

Contractual partnerships

Agreements would be concluded between the Commission and a legal entity grouping of research actors to carry out programmes within the Framework Programme.

- Pros:*
- flexible agreements
 - faster launch path
- Cons:*
- full application of the (sometimes heavy) FP rules and procedures
 - no long term commitment of the partners
 - less stability
 - no real partnership
 - no creation of a legal entity underpinning the public-private partnership and therefore less visibility.

Community body under the current Financial and Staff Regulations

The current set-up for JTIs, established as Community bodies located in Brussels.

- Pros:*
- clear commitment of the EU towards the programme
 - harmonised status for all JTIs independent of their location
 - immunities and privileges (such as VAT exemption)
- Cons:*
- burdensome, slow and expensive administrative procedures, which are not geared to small entities
 - no explicit recognition of the concept of PPPs and thus JTIs in the Regulations

Recognition of the PPP as a special body under the revised Financial Regulation

JTIs would be recognised as bodies to which implementation tasks can be delegated.

Under the current Financial Regulation, there are no specific provisions applicable to PPPs. As a consequence, the JTIs had to adapt to the general rules or request derogations from these rules. Rules designed for the public sector cannot be assumed to work for a public-private partnership.

A more positive approach would be to revise the Financial Regulation so that it recognises PPPs explicitly as bodies to which implementation tasks can be delegated and permits the development of tailor-made provisions (e.g. in the staff rules) which can be justified by the

specific nature of the (research) activities and the size of the PPP. This should lead to a version of the Framework Financial Regulation adapted to the needs of PPPs.

The Financial Regulation is revised once every three years. Proposals for the next revision are to be brought forward by the Commission by May 2010. The proposal will then be subject to an inter-institutional decision-making procedure before the new Regulation can enter into force, normally in 2012.

Pros:

- clear commitment of the EU towards the programme
- harmonised status for all JTIs independent of their location
- immunities and privileges (VAT exemption)
- tailor-made provisions for PPPs, including JTIs

Cons: - work and time needed to set up the new framework

Following on from the above the Sherpas propose the following recommendations regarding the legal structure and governance of the future JTIs.

Recommendation 1.1

JTIs are designed to address major issues that impact on Europe's competitiveness. Recognition of PPPs as special bodies under the revised Framework Financial Regulation would make them fit for purpose and allow them to deliver in an efficient and effective way.

Recommendation 1.2

Seize the opportunity of the current Triennial Review of the Financial Regulation in recognising PPPs, including JTIs, as special bodies in order to develop tailor-made provisions for them. In this context the opportunity to develop a framework regulation for PPPs under EU law should be explored.

Recommendation 1.3

Move towards a more risk-tolerant and trust-based approach, which would be in line with the Conclusions of the Competitiveness Council of 3 December 2009. This would be an essential pre-condition for effectiveness and efficiency and for the division of responsibilities as proposed in the following section.

Recommendation 1.4

To maintain momentum the European Commission should continue and strengthen its cooperation with the legal entities representing the private sector within the research PPPs under the European Economic Recovery Plan. This should allow for visibility of the cooperation activities and ensure long-term commitment from the public and private sectors, keeping in mind the need for long-term sustainability of these PPPs.

b. Operational Modalities

Recommendation 2.1

Each partner should have its own specifically defined role. In this context, the private partner should be responsible for the operational management, respecting the principles of openness, transparency and sound financial management. The public partner should be responsible for oversight and protection of the public interest and should ensure the necessary long-term stability of the programme. The development of objectives and strategy is a shared area of responsibility.

Recommendation 2.2

Ensure that the staff recruitment process is transparent, but also sufficiently flexible to allow the JTIs to respond rapidly to changing needs. It should be the role of the private partner to select the staff and the role of the public partner to ensure that the principles of open competition and transparency are respected so that the best possible staff can be recruited.

Recommendation 2.3:

Put in place clear and simplified reporting requirements, including proportionate audit and related procedures. These requirements must be defined at the outset so that the JTIs know exactly what is expected and that this is fixed so that they can take the necessary measures to meet these requirements.

Recommendation 2.4:

Develop and implement a sound and transparent proposal evaluation system based on both scientific/technological excellence and industrial relevance.

Recommendation 2.5:

To increase the efficiency and effectiveness of operations, the JTIs need to have access to investment in high-performance information technology tools.

Recommendations 2.6

JTIs should implement measures to more effectively engage the SME community.

c. Funding

JTIs should only be set up in areas where there is a strong commitment of all the parties and on the basis of sufficient levels of funding ('critical mass').

Recommendation 3.1

Define the necessary framework in which Community funding would be made more effective due to better leverage of private investment and national public funding.

Recommendation 3.2:

Ensure funding rates are comparable to those of the Framework Programme.

Recommendation 3.3:

Special consideration should be given to issues such as private-public funds matching and the sustainability of JTI running costs.

d. Involvement of Member States (in cases where Member States are also partners)

Recommendation 4.1:

Member States can be valuable partners in a JTI since they facilitate synergies with national programmes. However, only those countries that can bring added value to a particular JTI should be invited to participate. As all partners, they should honour their initial financial commitments without delays, which has not always been the case. Set the necessary rules so

that the interests of all partners are taken into account, allowing them to live up to their commitments.

Recommendation 4.2:

Member States should harmonise time-to-contract periods and timing of funding so as not to delay or jeopardise the start or execution of projects.

Annex I: Summary table of the legal structure options

Table 1: Options of legal structures for PPPs in research		
Legal type	Advantages	Disadvantages
<i>1. Private law entity</i>	<ul style="list-style-type: none"> ○ Increased flexibility in operation ○ Familiar ‘environment’ to the private sector ○ Better balanced partnership ○ Use of tested rules and known consequences 	<ul style="list-style-type: none"> ○ No EC Privileges & Immunities ○ Subject to national taxation and legislation ○ Varied rules depending on JTI seat ○ Delays in the set up process
<i>2. Contractual partnerships</i>	<ul style="list-style-type: none"> ○ Flexible agreements ○ Faster launch path 	<ul style="list-style-type: none"> ○ Full application of the (sometimes heavy) FP rules and procedures ○ No long term commitment of the partners ○ Less stability and visibility ○ No institutionalised partnership
<i>3. Community body under current Financial and Staff Regulations</i>	<ul style="list-style-type: none"> ○ Clear commitment of the EU towards programme ○ Harmonised status for all JTIs independent of location ○ Subject to the EC Privileges & Immunities 	<ul style="list-style-type: none"> ○ Burdensome, slow and expensive administrative procedures ○ No explicit recognition of PPPs (incl. JTIs) in the Regulations
<i>4. Recognition of the PPP as a special body under the revised Financial Regulation</i>	<ul style="list-style-type: none"> ○ Clear commitment of the EU towards programme ○ Harmonised status for all JTIs independent of location ○ Subject to the EC Privileges & Immunities ○ Tailor-made provisions for PPPs, incl. JTIs 	<ul style="list-style-type: none"> ○ Work and time needed to set up the new framework

Annex II: Description of JTIs

Innovative Medicines Initiative (IMI)

Overall aim and anticipated benefits: IMI aims to provide new methodologies and tools for accelerating the development of safer and more effective medicines for patients, by overcoming pre-competitive research bottlenecks in the drug development process.

The overall goal of the Innovative Medicines Initiative (IMI) is to re-invigorate the European bio-pharmaceutical sector and to make Europe more attractive for private research and development (R&D) investment in this sector. In the long term, IMI is also expected to provide faster access to better medicines for European citizens.

Founding Members: The founding members of the IMI Joint Undertaking are the European Community (represented by the Commission) and the European Federation of Pharmaceutical Industries and Associations (EFPIA).

Budget (2008-2017) is € 2 billion coming from:

-  European Community: € 1 billion, and
-  Private sector: at least equal to the Community Contribution.

Further information: <http://imi.europa.eu>, <http://www.imi-europe.org>

Aeronautics and Air Transport (Clean Sky)

Overall aim and anticipated benefits: Clean Sky aims to reduce CO₂ (carbon dioxide) aviation emissions by 20-40 %, NO_x (nitrous oxides) by 60% and perceived noise by 20dB, by 2020. The reduction in emissions and noise around airports will enhance European citizens' health and wellbeing. In addition, Clean Sky aims to reduce the impact of the manufacture, maintenance and disposal of aircraft and, by improving the competitiveness of the sector, to have a significant effect on job creation.

By using Community funds to coordinate the public, private and non-profit sectors, Clean Sky will bring technological development closer to the market and will contribute to achieving Europe's strategic environmental and social priorities, as well as sustainable economic growth.

Founding Members: The Joint Undertaking, which is the organisation set up to implement the Clean Sky objectives, is founded by 86 members and the European Community. Of these 86, 12 are large enterprises that will co-lead the various Integrated Technology Demonstrators (Airbus, AgustaWestland, Alenia Aeronautica, Dassault Aviation, EADS CASA, Eurocopter, Fraunhofer Gesellschaft, Liebherr, Rolls-Royce, SAAB, Safran, Thales). 74 other organisations participate as 'associates' in the Joint Undertaking, including European industry, academia, small and medium enterprises, and research centres.

Budget (2008-2017) is € 1.6 billion coming from:

- ✚ European Community: € 0.8 billion, and
- ✚ Private sector: € 0.8 billion.

Further information: http://www.cleansky.eu/index.php?arbo_id=83&set:_language=en

Embedded Computing Systems (ARTEMIS)

Overall aim and anticipated benefits: the aim of the ARTEMIS Joint Technology Initiative is to help European industry consolidate and reinforce its world leadership in embedded computing technologies and applications. The economic impact in terms of jobs and growth is expected to exceed € 100 billion over the next ten years.

Founding Members: The founding members of the ARTEMIS Joint Undertaking are R&D performers (industry and the research community), the European Community and 18 Member States (Belgium, Denmark, Germany, Estonia, Ireland, Greece, Spain, France, Italy, Hungary, the Netherlands, Austria, Portugal, Romania, Slovenia, Finland, Sweden, the United Kingdom). Other Member States and Associated Countries to the Framework Programme can also apply for membership. Meanwhile Cyprus, the Czech Republic, Latvia and Norway have also joined.

Budget (2008-2017) is € 2.7 billion coming from:

-  European Community: € 0.4 billion,
-  Member States: € 0.7 billion
-  Private sector: € 1.6 billion.

Further information: www.artemis-ju.eu/

Nanoelectronics Technologies 2020 (ENIAC)

Overall aim and anticipated benefits: ENIAC, the Nanoelectronics Joint Technology Initiative (JTI), provides a framework to coordinate resources and funding from the Framework Programme, industry, national R&D programmes and intergovernmental schemes (such as EUREKA). By integrating R&D efforts, ENIAC will foster durable large-scale strategic partnerships between European industry and institutes, thus anchoring R&D in Europe and boosting European competitiveness.

ENIAC will encourage long-term investment in nanoelectronics R&D. It will create sufficient critical mass, a higher level of flexibility and a better interaction between research and production. In addition to an economic impact exceeding € 100 billion, the JTI is expected to create thousands of jobs in Europe. This is Europe's response to globalisation, changing business and research models, as well as growing technological complexity and costs.

Founding Members: The founding members of the ENIAC Joint Undertaking, which is the organisation set up to implement the JTI, are R&D performers (industry and research organisations), the European Community and public authorities.

Budget (2008-2017) is up to € 3 billion coming from:

-  European Community: € 0.45 billion,
-  Member States: € 0.8 billion
-  Private sector: € 1.7 billion.

Further information: www.eniac.eu/

Fuel Cells and Hydrogen (FCH)

Overall aim and anticipated benefits: The overall objective of the JTI is to speed up the development of hydrogen supply and fuel cell technologies by up to 5 years to the point of commercial take off for early market applications (e.g. handheld devices, portable generators); for stationary applications (domestic and commercial power generation and Combined Heat and Power); and for mass market roll-out of transport applications.

Together with the other measures presented in the EU's '*Strategic Energy Technology Plan*' (SET-plan), the FCH JTI has the potential to contribute to substantial reduction of greenhouse gas emissions and local air pollutants, to enhanced security of energy supply and to increased employment by creating the conditions for the growth of a strong and competitive industry.

Founding Members: the founding members of the FCH Joint Undertaking, which is the body set up to implement the JTI, are the European Community and the JTI Industry Grouping, a not-for profit organisation which brings together the sector's industrial key players and which is open to any private legal entity sharing the objectives of the FCH JTI.

Budget (2008-2017) is minimum € 940 million coming from:

- ✚ European Community: € 470 million, and
- ✚ Private sector: minimum € 470 million

Further information: http://ec.europa.eu/research/fch/index_en.cfm?pg=governance

Annex III: Issues to be Addressed by the JTI Sherpas' Group

- Can the development of JTIs be seen as part of the wider trend towards establishing PPPs in research?
- What lessons can be learnt from the PPPs in research that have been set up at national or transnational levels? To what extent are JTIs similar to or different from these other forms of PPP?
- How can potential areas be identified where the scale and scope of the challenge require a PPP-based approach to provide a truly European strategy?
- Does the current set-up and structure of JTIs, including legal and administrative aspects and covering also those where Member States are partners, facilitate getting the best out of the public and private sides and give the JTIs the potential to deliver?
- In what ways are JTIs an effective means of enforcing greater involvement of industry in Community research?
- How can the long-term sustainability of JTIs be ensured?
- What specific methodology is required to assess the future impact of the JTIs?

Annex IV: Members of the JTI Sherpas' Group

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Commission Services Represented at Meetings of the JTI Sherpas' Group

DG Research:	Mr. José-Manuel Silva Rodríguez, Director General
	Mr. Wolfgang Burtscher, Deputy Director General
	Mr. Robert-Jan Smits, Director
	Mr. Seán O'Reagain, Acting Head of Unit
	Mr. José Lorenzo Vallés, Head of Unit
DG Information Society:	Mr. Khalil Rouhana, Head of Unit
	Mr. Jean-François Buggenhout, Assistant to the Director
DG Budget:	Mr. Eric Paradis, Director
DG Enterprise:	Mr. Jean-Noël Durvy, Director
	Mr. Keith Sequeira, Policy Officer
DG Human Resources:	Ms. Ciresica Butiu, Expert

Secretariat General: Mr. Gerard de Graaf, Head of Unit
 Ms. Stephanie Vadde, Policy Officer

Meetings of the JTI Sherpas' Group were chaired by Mr. José-Manuel Silva Rodríguez or, in his absence, by Mr. Wolfgang Burtscher.

