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Partnering in Research and Innovation

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PARTNERING IN RESEARCH AND INNOVATION

1. INTRODUCTION

Europe is gradually recovering from the deepest economic and financial crisis since the 1930s. At the same time, as the Spring 2011 European Council emphasises, "risks remain and we must continue our determined action"¹.

For the recovery to be maintained, we must use existing public and private resources for research and innovation (R&I) in a smart way to optimise the contribution of public and private players in achieving sustainable growth. This is essential to achieving the European Research Area (ERA) by 2014 and for delivering on the Innovation Union, the Digital Agenda and other EU 2020 Flagships.

The Commission's Innovation Union Communication highlights the importance of partnering in European R&I as a means of "pooling forces to achieve breakthroughs"².

Partnering brings together European and national level public players in Public-Public Partnerships (P2Ps) and public and private players in Public-Private Partnerships (PPPs), with a number of aims:

- build critical mass to ensure the scale and scope required;
- facilitate joint vision development and strategic agenda setting, including at international level;
- contribute to the evolution to a programming approach in European R&I so as to realise a broad-based focus embracing all potential partners;
- provide for flexible structures that facilitate the size and scope of a partnership, depending on its nature and goals.

In these ways, the partnering approach can help to address major societal challenges and strengthen Europe's competitive position by making the R&I cycle more efficient and shortening the time from research to market. It can also contribute to environmental and resource efficiency objectives. When the necessary commitment to partnering exists, Europe can excel in science and technology and achieve critical mass.

For this reason, under the Seventh Framework Programme for Research (FP7)³, the Competitiveness and Innovation Programme (CIP)⁴, the ERA and the Innovation Union policy framework, different forms of partnering have been developed and piloted. This has been an important step towards establishing a common vision of how partnering can maximise the contribution of R&I to achieving smart, sustainable growth in Europe. There is now a need to go

¹ Conclusions of the European Council, 24/25 March 2011

² COM(2010) 546

³ 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 (2007-2013)

⁴ Decision no 1639/2006/EC of the European Parliament and of the Council of 24 October 2006 establishing a Competitiveness and Innovation Framework Programme (2007 to 2013)

further to overcome unnecessary duplication and to provide clarity on how partnering can best be implemented. In this context, the aim of this Communication is to learn from and build on experience to date and to take forward the partnering concept.

2. CURRENT STATE OF PLAY

2.1. Overview of current EU-level partnering

P2Ps align national strategies, helping to overcome fragmentation of public research effort. They also provide potential for more efficient interaction with strategic international partners.

As Table 1 illustrates, P2Ps involve varying degrees of joint effort, from ERA-NET and ERA-NET Plus, where Member States (MS) co-ordinate national programmes, to Article 185 Initiatives, which represent the closest integration of national programmes. Joint Programming (JP) is an emerging P2P concept founded on high-level commitment to address a particular societal challenge. P2Ps can also contribute to joint policy learning, as with Europe INNOVA/PRO INNO Europe.

PPPs at European level are undertaken jointly by the EU and other public entities together with private partners to achieve shared objectives. PPPs in R&I aim at strengthening European industrial leadership and are used to support and leverage R&I investments in a specific area.

As shown in Table 2, European R&I PPPs were first implemented under FP7, both as distinct legal entities in the form of Joint Undertakings, for the Joint Technology Initiatives (JTIs) and SESAR, and as contractual partnerships (e.g. Recovery Plan PPPs).

The European Institute of Innovation and Technology (EIT), an EU body aimed at boosting innovation capacity, is neither a P2P nor a PPP. However, its main operational arms, the Knowledge and Innovation Communities (KICs) are structured partnerships integrating education, research and business actors to address major societal challenges.

European Innovation Partnerships (EIPs) were proposed in the Innovation Union flagship⁵ to speed up innovations addressing major societal challenges. They are neither a P2P nor a PPP but provide a framework bringing together stakeholders across policy areas, sectors and borders to integrate or initiate supply and demand side measures across the whole R&I cycle.

The pilot EIP on Active and Healthy Ageing (AHA) is intended to test the concept and assess how it can best be implemented. While it is premature to assess the efficiency and effectiveness of the AHA EIP at this stage, a first analysis of the processes used to date has been carried out⁶.

⁵ COM(2010) 546 of 06.10.2010

⁶ SEC(2011) 1028, 01.09.2011

Table 1: Existing EU-level P2P Concepts/Instruments

	Objective	Implementation	Impact/ Key lessons learnt
ERA-NET 100 projects since 2002	Coordinate national research programmes in a selected area	-MS launch and implement joint actions/calls (MS invested €1.17 billion in joint calls up to 2010) -EU supports MS networking €273 million up to 2010	-Efficient mechanism in defined fields, but initially not designed to create critical mass and/or multiannual programmes -Creates new opportunities for transnational R&D activities -Helps to reduce fragmentation and benchmark national programmes -Mutual learning improves national research systems -Staging post to more ambitious partnerships
ERA-NET Plus 9 projects since 2007	Enhance joint funding by MS and EU in a selected area	-MS launch and implement a joint call with a top-up of EU funding (€230 million in joint calls, with EU funding of €68 million up to 2010)	-Functions efficiently for a single call with substantial budget -Means of increased financial integration -Lack of support for coordination and thus lack of continuous implementation structure -Bridge between coordination of joint actions and full integration of programmes
Article 185 Initiatives 5 initiatives since 2003	Integrate national and European research programmes in a selected area	-EU contributes with matching funds to implement MS multiannual programmes (over €1.55 billion, EU funding of €700 million)	-Promotes large scale and wide scope with preparation of multiannual financial commitments -Effective in achieving scientific and management integration -Helps overcome unnecessary overlap and fragmentation of R&I effort -Further progress needed towards financial integration
JPIs 10 initiatives since 2008	Coordinate / integrate national research programmes to address a societal challenge	-MS develop and implement common Strategic Research Agenda -EU supports MS networking	-High-level political endorsement secured -Political endorsement still to be matched by concrete resource commitment -Need to implement agreed rules -Need for stable, impartial and transparent implementation structures
SET (Strategic Energy Technology) Plan since 2007	Accelerate development of low-carbon energy technologies and streamline national research programmes in strategic technology areas at EU level	-Implementation via European Energy Research Alliance (EERA), currently through own resources of the partnering institutes	-Contributes to reducing fragmentation and coordinating energy research effort in EU -Openness and transparency of decision-making process -Needs a formalised set-up to fully exploit its potential
Europe INNOVA/PRO INNO Europe since 2008	Joint policy learning and development of better innovation support	-25 pilot projects targeted at Eco-innovation/innovation in services and clusters	-Effective innovation support platform -High multiplier effects in participating regions -Limited take-up of results in regional/national innovation systems -Concrete assistance required to project and recipient with longer timeframe

Table 2: Existing EU-level PPP Concepts/Instruments			
	Objective	Implementation	Impact/ Key lessons learnt
JTIs 5 initiatives since 2007	Strengthen European industrial leadership in well defined areas	<ul style="list-style-type: none"> -Joint Undertakings under Article 187 TFEU -Build on Strategic Research Agendas of European Technology Platforms (ETPs) -EU matching funds for research (over €3 billion from FP7 and equivalent from industry, mostly in-kind) 	<ul style="list-style-type: none"> -Efficient for public-private cooperation, leveraging private investments in strategic domains -Rules and procedures need to be made fit-for-purpose -Facilitate emergence of new forms of collaboration among stakeholders, bringing together public and private know-how and capabilities -Effective vehicle for involving SMEs in R&I programmes -Facilitates prioritisation of R&I in line with industry needs
SESAR	Modernise European Air Traffic Management (ATM)	<ul style="list-style-type: none"> -Joint Undertaking under Article 187 TFEU -Co-funded by EU (€350 million from FP7 + €350 million from TEN-T), Eurocontrol (€700 million) and 15 industry members (€700 million) 	<ul style="list-style-type: none"> -Optimal response to the needs of users and service providers -Integration of Single European Sky objectives of high societal relevance -Leveraging and pooling of funding and know-how -Flexible and dynamic instrument to support an interactive relationship between development and deployment -"Technological ambassador " for promoting global ATM interoperability
Recovery Plan PPPs 3 PPPs since 2008 Future Internet since 2011 COLIPA since 2009	Recovery Plan PPPs: Maintain and strengthen industry sectors hit by economic crisis FI-PPP: Ensure future Internet development at the service of society COLIPA: Help industry comply with EU legislation	Project-based FP7 funding with industry contributing to developing a multiannual Roadmap to define research priorities Recovery Plan PPPs: €3.2 billion (2010-2013) FI-PPP: €300 million up to 2013 COLIPA: €25 million	<ul style="list-style-type: none"> -Efficient for short-term actions to maintain research investment and reinforce Europe's competitiveness (Recovery Plan PPPs) -Bring together wide range of industrial stakeholders -Facilitate prioritisation of R&I in line with industry needs -Need to formalise governance between partners -Should extend scope to include closer-to-market activities
European Industrial Initiatives (EIIs) under the SET Plan 7 EIIs since 2010	Address the demonstration/market rollout bottleneck in the innovation chain of low carbon energy technologies	<ul style="list-style-type: none"> -Technology roadmaps with specific R&D actions and 10 year perspective -Calls under FP7 for joint actions among MS 	<ul style="list-style-type: none"> -Effective in focusing EU, MS and industry efforts to achieve common goals and create critical mass -Obstacles remain to the development of an integrated EU level innovation approach and to get concrete resource commitments of MS -Need for new investment and large-scale research infrastructures in energy technologies

Partnering in Research and Innovation in Action

Examples of P2Ps:

*There are at least 6000 known rare diseases, affecting some 20 million European citizens. The **ERA-NET E-Rare** has developed a common European programme on rare disease research and launched three joint calls of €10 million. This, together with FP7 rare diseases related calls, means that up to 40% of public research in this area is now coordinated.*

*The Baltic Sea's capacity to provide the goods and services on which people depend has been significantly reduced due to natural and human pressures. To address this, nine countries are contributing to the **ERA-NET Plus - BONUS Plus**, through a joint call of €22 million. This action also addresses wider policy aims under the Commission's Marine Strategy and Maritime Policy.*

*The **Ambient Assisted Living Article 185 Initiative (AAL)** focuses on innovation in support of demographic change. A total investment of more than €600 million has been mobilised involving more than 40% SMEs to provide new ICT based products and services and sustainable care systems for active and independent living of the ageing population.*

*Since 2007, the science of measurement has been framed within the multiannual joint programme of the **Article 185 Initiative on metrology (EMRP)**. With a value of over €400 million, it has significantly reduced the duplication of research effort by pooling 44% of overall metrology resources in one initiative.*

*Neurodegenerative diseases are recognised by the MS as a major societal challenge. 23 countries have engaged in the pilot **Joint Programming Initiative (JPI) on Neurodegenerative Diseases, including Alzheimer's**. The JPI has launched its pilot call with a total budget of €14 million.*

Examples of PPPs:

*The **Clean Sky JTI** aims to reduce the environmental impact of aviation while safeguarding competitiveness in Europe's aeronautical sector. The long-term nature and inherent high risk of the research involved necessitate public funding and cooperation among key industrial players. To date, investment amounts to almost €300 million and the first flight tests involving innovative technologies have been carried out.*

*With public contributions from the EU and participating MS, the **ARTEMIS (embedded computing systems)** and **ENIAC (nanoelectronics)** JTIs aim to implement a research agenda defined by industry and academic/research organisations. Up to now, the EU and MS have committed more than €700 million to innovative collaborative research projects targeting application fields such as health, manufacturing, automotive and energy efficiency.*

*Under the European Recovery Plan, the **Factories of the Future PPP** involves a research programme of €1.2 billion to support the development of new and sustainable manufacturing technologies. It brings together a broad range of industrial stakeholders and aims to transform industrial processes to ensure global competitiveness and leadership.*

2.2. Overall assessment

Experiences of European level P2Ps and PPPs have shown that a partnering approach yields a number of benefits.

Networks, involving a range of public-public and public-private partners, have been formed in a spirit of creating mutual trust, the basis of any long-term, strategic partnership. Common visions have been developed often using variable geometry, and leading to agreed strategic research agendas and technology roadmaps. This is having a positive impact on the European R&I landscape. It is helping to build scale and scope, thus increasing the efficiency and effectiveness of R&I investment, making Europe a more attractive global partner in addressing major societal challenges.

By ensuring ownership and greater participation of MS and other stakeholders, including regions as well as public procurement and standardisation bodies, in building the Innovation Union, partnering increases financial leverage of European funding mechanisms (FP, CIP, Structural Funds) and strengthens the coherence of the European R&I landscape.

The partnering approach also enables stakeholders to undertake programmes they would not otherwise consider and fosters strategic cooperation with key third country partners.

At the same time, there are challenges in relation to governance, implementation/funding and framework conditions.

Any conclusions drawn at this stage about the potential of partnering should be further assessed in light of future experience. First indications are that Europe could capitalise more fully on the potential of partnering. However, a framework within which to develop solid and durable partnerships⁷ is needed.

2.3. European Innovation Partnerships

2.3.1. Objectives

The Innovation Union Communication called for more effective linking of 'supply-side' (research and technology) and 'demand-side' (e.g. user, regulatory, standardisation and public procurement) tools.

In this context, the European Innovation Partnerships (EIPs) can play an important role in providing coherence between the various partnering concepts and instruments. EIPs act across the entire R&I cycle to ensure that ideas can be turned into successful products or services to tackle societal challenges whilst also generating growth and jobs.

EIPs can provide an overarching framework to further reduce fragmentation of effort in areas of interest to a large number of stakeholders.

The partnering approach embodied within the EIP concept involves:

⁷ ERAC Opinion on ERA-related instruments, ERAC 1208/11, 26 May 2011

- bringing together actors in the R&I cycle, including national and regional level, and private-public-civil society, with the aim of optimising and streamlining the use of existing instruments, increasing synergies, aligning and pooling resources;
- embracing the 'supply' and the 'demand' sides and looking not only at research-driven innovation but also other forms, like new business models, organisational and social innovation;
- encouraging exchanges between stakeholders and ensuring high-level political commitment to agreed actions.

2.3.2. *Conclusions of the AHA Pilot EIP Evaluation*

The AHA pilot EIP in the preparatory phase has proved successful in mobilising stakeholders (through stakeholder consultation events at all levels). A Steering Group has been established with wide, high-level representation. This has adopted clear working methods focusing on the elaboration of a Strategic Implementation Plan.

The pilot has helped clarifying the relationship between EIPs and other policy initiatives: EIPs do not supersede other initiatives, in particular existing PPPs or P2Ps, and are not a means to determine research priorities outside institutional procedures.

Further conclusions at this stage are that partnerships should have structured processes to prioritise and validate the many ideas brought forward during the consultation process; that it is essential to include those actors that can ensure appropriate regulatory follow-up; and that a "one-size-fits-all" approach is not appropriate and each EIP, building on the experiences of the pilot, will need to develop its own specific approach.

The AHA pilot EIP has also allowed clarifying that there will be strong involvement of the European Parliament, the Council and the Commission during the different stages of the partnership, reflecting a high level of commitment to deliver.

3. **TAKING FORWARD THE PARTNERING APPROACH**

Combined efforts to develop a partnering approach in R&I at European and national level have yielded positive results.

However, if we are to fully overcome unnecessary duplication and fragmentation, we must go further. **In key areas where major societal challenges must be addressed and where European competitiveness is at stake, relevant joint programmes should be implemented on the basis of common strategic R&I agendas. These should align and pool public (European and national) and private resources through a partnering approach, involving organisations at each stage of the R&I cycle.**

To this end, the Commission envisages making greater use of partnering concepts and instruments developed and implemented at European level, recognising the need at the same time to avoid adverse effects on competition. A number of steps have been identified to address the challenges in relation to governance, implementation/funding and framework conditions.

3.1. Governance

3.1.1. All partners, both public and private, must maintain their commitment to partnering initiatives on a long-term basis.

(i) It is essential that Member States make up-front multi-annual financial commitments and honour them.

(ii) For private partners, commitment to participation in PPPs in research and innovation should be an integral part of company long-term strategy.

(iii) Reflecting the importance of long-term sustainability, in future commitments to all partnering initiatives will be confirmed by public declarations, on the part of governments from participating countries in the case of JPIs and by private sector leaders, as well as governments where appropriate, in the case of PPPs.

3.1.2. The international science, technology and innovation cooperation dimension of partnering will be pursued more vigorously on the basis of common priorities with third countries and within international fora.

P2Ps

3.1.3. With a view to addressing societal challenges more effectively, the Commission intends to facilitate coordinated implementation of European and national programmes and funding.

PPPs

3.1.4. PPPs in R&I are a means of strengthening Europe's competitiveness in key areas of industrial research and should become a significant element of the partnering approach, building on the positive experience to date.

3.1.5. Future PPPs in R&I should be identified on the basis of their potential contribution to enhanced industrial competitiveness and sustainable growth and to addressing major societal challenges.

3.1.6. Future PPPs in R&I will be developed on the basis of two approaches that build on existing PPP models.

– Contractual partnerships (e.g. Recovery Plan PPPs) and voluntary agreements (e.g. Set Plan EIIs) set up directly under the Framework Programme on the basis of formalised governance arrangements or agreements between the Commission and other parties.

– Dedicated legal structures set up under Article 187 TFEU on the basis of a long-term trust-based approach. These will represent a simplification of the set-up procedures for the existing JTIs in that they will be based on a "light" EU public body structure. The feasibility of this option depends on acceptance by the European Parliament and Council of the Commission's proposal for "PPP body"

status implemented under Article 201 of the proposed new Financial Regulation⁸. It must also be recognised that there is a trade-off between simplification through harmonisation of structures and the degree of flexibility to adapt structures to the specific needs of individual JTIs.

- 3.1.7. It will be important to ensure coordination at national and regional level between partnering initiatives and innovation strategies for smart specialisation under Cohesion policy.

3.2. Implementation/Funding

P2Ps

- 3.2.1. The Commission proposes to simplify instruments supporting public-public partnering by merging existing ERA-NET and ERA-NET Plus actions, as well as relevant elements of Europe INNOVA and PRO INNO Europe, to form a single, more flexible ERA-NET instrument.
- 3.2.2. Commitment of participating countries to the three levels of integration (scientific, management and financial) will be an essential pre-condition for future proposals for Article 185 Initiatives. With regard to financial integration, participating countries must go further in making firm commitments of resources to joint programmes, such as by including these in their national planning, on the basis of common rules that provide for the participation of that country.
- 3.2.3. The Commission will support JPIs during the development of their Strategic Research Agendas through co-ordination and support measures, where appropriate.
- 3.2.4. Where the areas being addressed by JPI fit with FP priorities, their instruments may be used to support JPIs where appropriate. In general, JPI joint actions will be evaluated on a case-by-case basis to assess whether the EU value-added justifies funding via the ERA-NET scheme or co-funding via thematic research calls.
- 3.2.5. The Commission will only consider making a proposal for an Article 185 Initiative where a JPI has demonstrated in its Strategic Research Agenda that it has the capacity for significant collaboration and the necessary scale and scope to support full integration of national programmes.
- 3.2.6. All relevant national programmes must be taken into account in the implementation of a JPI. Accordingly, programme owners and programme managers from participating countries must be part of the management of JPIs. In this way, opportunities to build on existing experience with joint programmes can also be capitalised on.

⁸ COM(2010)815

PPPs

- 3.2.7. Given the scale of investment in PPPs and that the contribution of industry to PPPs is generally in-kind, transparent accounting methods are needed to measure industry contribution effectively.
- 3.2.8. Key selection criteria for PPPs should include scale of EU level impact, long-term commitment of partners and leverage effect on R&I investments.
- 3.2.9. For PPPs to achieve their goals, they must operate in an open and transparent set-up (no "closed shops").

3.3. Framework Conditions

P2Ps

- 3.3.1. The Voluntary Guidelines on Framework Conditions for Joint Programming provide a flexible catalogue of good practices to support implementation of JPIs. EU funding for a JPI will be conditional on appropriate application of the Voluntary Guidelines⁹.
- 3.3.2. If Joint Programming is to be effective in building strong, long-term public research partnerships, bottlenecks such as cross-border funding, knowledge circulation, ex-ante and ex-post evaluation must be overcome. The Commission will ensure that the ERA Framework addresses these obstacles as a priority.

PPPs

- 3.3.3. It is essential that Member States participating in PPPs harmonise and synchronise their administrative processes.

4. NEXT STEPS

The Commission's proposal for "Horizon 2020"¹⁰ will build on the steps set out in this Communication, providing a legislative basis for future EU P2Ps and PPPs in R&I. This should also provide a common set of rules for all initiatives supported under "Horizon 2020" in order to simplify participation, while leaving the necessary flexibility for individual initiatives to achieve their objectives, as well as ensure complementarity between the two Common Strategic Frameworks, for Research and Innovation and for Cohesion.

As we gain more experience with implementation of the partnering concepts and instruments developed under FP7, the Commission will launch a strategic exercise to determine where and how the partnering approach can be applied most successfully and the types of initiative to which the instruments are best suited.

As a first step, the Commission intends to establish benchmarks against which to assess the efficiency and effectiveness of the implementation of initiatives developed using the partnering concepts and instruments.

⁹ Council Conclusions on Joint Programming in research of 26 November 2010

¹⁰ Framework Programme for Research and Innovation (2014-2020)