EARTO Answer to the EC Consultation on Public Procurement of R&I:
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EARTO Proposals to Leverage the Untapped Opportunities of Public Procurement of R&I in Europe

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Introduction

In the context of preparing the next EU Multiannual Financial Framework and the next Framework Programme for Research and Innovation, EARTO very much values the recent Competitiveness Council Conclusions' "*call on the Member States together with the private sector to strive for increasing their investments in R&I to jointly reach the 3% goal*". In addition, the Lamy Group Lab-Fab-App Report noted that "*Private sector investment should be leveraged as much as possible, with Member States exploiting measures that fit their national policy toolbox, such as tax credits and innovative public procurement*" and that "*public procurement is key in designing demand-side innovation policies that help reduce market uncertainty for innovative solutions, shape future markets and open new opportunities for European companies.*"

Indeed, public governments and their public extensions, including Research and Technology Organisations (RTOs), can drive innovation from the demand side by acting as technologically demanding customers that buy a new product or a new service for their own needs while testing new solutions. Public procurements for RD&I can also be highly beneficial to the economy and society at large by addressing the funding gap for deep-tech start-ups and facilitating technology transfer, and by supporting SMEs to access funding, develop new technologies, and scale-up.

However, public procurement of R&I remains underused in Europe compared to other parts of the world, despite recent efforts undertaken via Horizon 2020 to support such instrument. In answer to the European Commission Public Consultation on "*How to stimulate innovation through a modernisation of public procurement*", EARTO hereby proposes recommendations to the European Institutions to improve the EU regulatory framework and further leverage the potential of public procurement of RD&I in Europe.

EARTO Recommendations to leverage the potential of public procurements of RD&I

At the time of the final consultation on the revision of the Community Framework for State Aid to R&I in early 2014, many actors have already raised the difficulties of the European Public Procurement framework for Research Development & Innovation (RD&I) and proposed solutions to overcome them. For instance, EARTO Answer to this past state-aid consultation as well as the German and French positions were particularly convergent on the question of public procurement of R&I. EARTO also provided inputs in 2016 to improve the Horizon2020 rules regarding pre-commercial procurement.

Today again, EARTO hereby very much supports the European Institutions to improve the EU regulatory framework and leverage the potential of public procurement of R&I in Europe. This entails to undertake the following steps:

1. **Negotiate a derogation with the World Trade Organisation's Government Procurement Agreement (WTO GPA) Committee on public procurement of R&I.** Such negotiation should aim to exclude the procurement of the goods resulting from successful RD&I for the small businesses (commercialisation phase) from the scope of the WTO GPA to have the same rules as those negotiated by the US.
2. **Amend the EU Public Procurement Directives accordingly.** Such amendment should aim at exempting from their scope not only the provision of RD&I services but also the subsequent purchase of the products resulting from the successful RD&I.
3. **Amend the EU RD&I state aids rules and the Horizon 2020 Pre-Commercial Procurement rules accordingly**.

EARTO members hope that those recommendations will be taken into consideration by the European Institutions in further planning actions towards improving our EU regulatory framework for public procurement of innovation. The following chapters give background information to those recommendations.

Public procurements are an important means to create a strong market for innovative products and services in Europe

Public Procurements enable to share the risks and benefits of designing, prototyping and testing a limited volume of new products and services with the suppliers. It helps creating in a limited setting the optimum conditions for the wide commercialisation and take-up of R&I results. A public purchase of RD&I often involves a RD&I phase at high Technology Readiness Level (TRL), followed by a Manufacturing & Commercialising phase, both of which requiring the investment of resources. This means that:

- Technological improvement via new RD&I is needed to develop new technological ideas into near-to-market commercially viable solutions with 1) the desired price and quality requirements and 2) the ability to create competitive advantage on the market.
- Then, these new developed solutions need to be adopted and diffused to gradually replace the older technologies throughout many firms and applications. This starts with a manufacturing and scaling-up process of the solution by early industrial adopters. Those early industrial adopters will be committed to procuring a critical mass of end products as well as to scale up the production chain for large scale deployment.

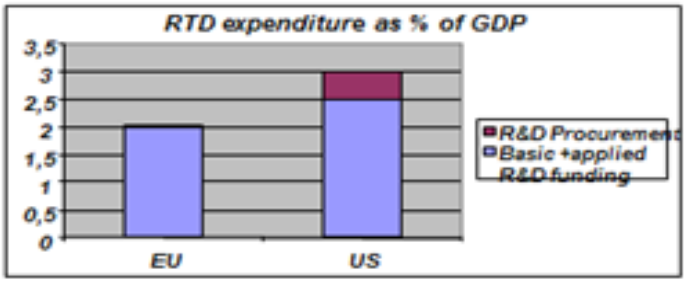
Promoting an efficient EU regulatory framework for public procurement of R&I will be highly beneficial for the economy and society at large. It will:

- Facilitate and stimulate public purchasers (governments, RTOs, public hospitals, etc.) to boost their own innovative purchases and help tackle societal challenges in many fields such as healthcare, environment, transport, energy, etc.
- Boost entrepreneurship and accelerate the development of innovative start-ups and SMEs by enabling their first order and addressing the funding gap (see EARTO paper on RTOs deep-tech start-ups). Indeed, many analyses confirmed that for a start-up or an innovative SME having a first commercial order is one of the most important stages of their development. Indeed, having a first commercial order facilitates capital venture investment in such start-up/SME and gives confidence to the bankers[1] to invest in their almost proven business case then by this first order. Getting first order by mean of winning a public procurement contract, help start-ups/SMEs to reach new customers and investors, considerably reducing time-to-market and strengthening both the technology sector and the venture capital sector.
- Increase the global amount of RD&I activities in the EU coming as a complement to current Member States RD&I budgets which are today constrained. Indeed, innovative public procurement are taken from the purchasing budget of Member States and other regional/local public authorities. This would support the Member States to reach the EU 3% target of GDP invested in RD&I.

Innovation procurement potential remains underused in Europe

However, despite recent efforts undertaken in Europe to support such instrument through the co-financing of joint public procurement initiatives via Horizon 2020, it is widely acknowledged that public procurement of R&I remains underused in Europe compared to other parts of the world such as the US (see EC presentation). In "Pre-commercial procurement regulatory effectiveness" (2014), Anca Ramona Apostol states for instance that "*experts pointed out that other competing economies such as the United States succeed relatively better in "pulling" R&D into the commercialisation phase and in enhancing the international competitiveness of their domestic suppliers*".

Figure 1 : R&I Expenditure as % of GDP in EU and US



Even though public expenditure is 37% in the US (OECD), while it reaches 47% of GDP in EU-28 (Eurostat), the US RD&I expenditure is close to the 3% target, whereas this is not the case in the EU-28, where RD&I expenditure barely reaches 2% (figure 1). An important part of this difference is due to RD&I

[1] Philippe Berna, "L'ENA hors les murs" n°430, Avril 2013: "*The Innovative and growth start-up or SME allows to meet the challenges and the economic and social demands of our time: accelerate the entry of innovation and growth (yes to incentives, no to assistantship) ... the priority for innovative companies will remain market access, the first order and the first listing*".

public procurement: 20 times less is spent via such instruments in the EU (~€2.6bn) compared to the US (~€50bn)[2]. So, half of the EU-US RD&I investment gap is due to the higher demand in the US to develop new innovative solutions for public sector challenges for which there are no products on the market yet. In the US, the Small Business Innovation Research (SBIR) program is used by the US federal agencies (i.e. DARPA, NASA, etc.) both for public procurement of RD&I and for funding classical SME RD&I projects. The global yearly funding is about $1bn for pre-commercial procurements and $1bn for classic SME RD&I projects where federal agencies do not buy product for their own needs. **At the end of a SBIR public procurement project, the US government can buy the product or service developed by the SME. However, the key is that the SME retains the right to sell it to other customers as well. Businesses keep the ownership of the intellectual property developed. Economists have demonstrated the efficiency and the success of such programme in pulling valuable RD&I projects into the commercialisation phase and enhancing the competitive position of its suppliers on the global market**. David Connell states for instance that *"over a 10-year period, SBIR funded companies generated five times as many new jobs as non-SBIR funded firms. Over 300 SBIR award winners now have public market listings"*[3].

In Europe, the demand is very fragmented with small project size: most of public procurement contracts being below €60k[4]. At EU level, the Horizon2020 pre-commercial procurement (PCP) programme is underused: limited number of proposals due to the complexity of the rules. Given its poor results[5], the Horizon2020 PCP programme can hardly be considered as a European window of successful best practices that should be followed by all the public purchasers in the EU Member States. Yearly funding of selected projects for the PCP program in H2020 is less than €50M. This is 20 times less than the SBIR-PCP like projects in the US. This very low yearly amount of EU Member States invested in PCPs is not redressing this situation: with less than $5bn, 10 times lower than in the US.

In short, public procurement in the EU could create an important market for innovative products and services, but its potential remains vastly untapped and current situation is well proof that a new regulatory framework needs to be put in place urgently if we want to redress the current situation.

Current European regulatory framework hinders the development of public procurement of R&I in Europe

As explained in the ENIRI Study[6]: "*Undoubtedly the USA has put a driving force innovation in place through its public procurement policies. However, the (European) Union, through Pre-Commercial Procurement, cannot copy the US system without undertaking profound legal adjustments*". Indeed, **in the US the public purchaser can make public procurement in a single call for tender for both the RD&I phase and the manufacturing/commercialisation phase when the public procurements are reserved to SMEs, which is the case in PCP-SBIR like projects**.

This positively results in:

- A simple process for the public purchaser, even in the case of large commercial volumes and not only for a limited set of first products/services developed in the PCP.
- Motivating IP rules for the beneficiaries: not only the beneficiaries own the IP they create, but also there is no obligation that they should have to grant non-exclusive licenses to third parties. Surely, march-in rights do exist in the Bayh Dole Act[7] which applies to SBIR-PCP projects, but march-in rights are never applied by US agencies[8].

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[2] European commission, "Pre-Commercial Procurement, building together innovative solutions that meet public needs", June 2006: "*In the US and Asia, public authorities traditionally strongly drive innovation in the supplier base from the demand side. The demand of public procurers for new innovative products and services that require R&D is today 20 times lower in the EU than in the US. Pre-commercial procurement represents some 50 B$ in the US*".

[3] David Connell, "*Secret of the World's Largest Capital Fund - how the US government uses its Small Business Innovation Research (SBIR) Programme and Procurement Budgets to Support Small Technology Firms*", 2006

[4] EC Commissioned study, *Quantifying the amount of public procurement of ICT and R&D across Europe,* 2011

[5] European Commission, Results EU Funded Pre-Commercial Procurements: In H2020 PCP, only 16 projects funded since 1st of January 2014, total of selected projects funding less than the total available funding in H2020 for PCPs, very high success rates due to very little number of projects submitted, that results in a risk that lower quality projects are funded.

[6] EC Commissionned study, ENIRI - "*State aid support schemes for RDI in the EU's international competitors in the fields of Science, Research and Innovation*" (p.622-625)

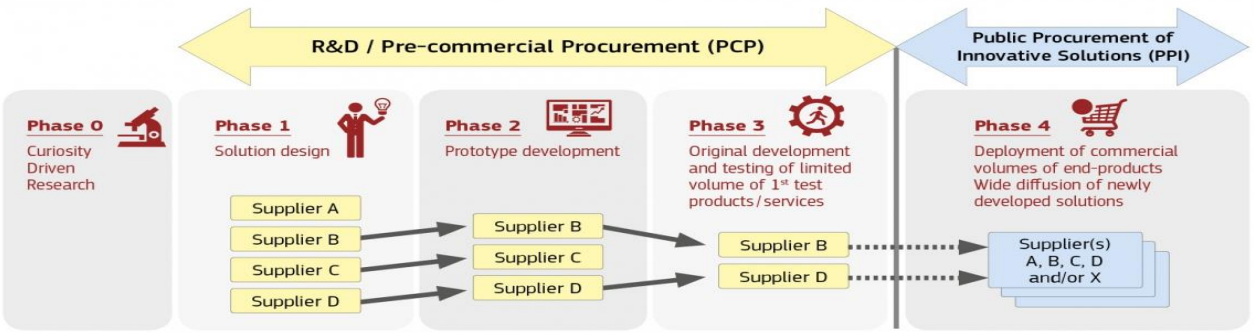
[7] March-in Rights allow the funding agency, on its own initiative or at the request of a third party, to effectively ignore the exclusivity of a patent awarded under the act and grant additional licenses to other "reasonable applicants (Bayh-Dole Act - codified at 35 U.S.C. §203)

[8] Congressional Research Service, March-In Rights Under the Bayh-Dole Act, 2016: Since 1980, "*no federal agency has ever exercised its power to march in and license patent rights to others. In particular, the National Institutes of Health (NIH) has received six march-in petitions and has denied each one*"

- An obligation to manufacture mainly in the US, in the US public interest (SBIR Act[9]).: *"The US succeeded thus to offer a strong home market to their domestic suppliers"* says Anca Ramona Apostol in "Trials and tribulations in the implementation of PCP in Europe" (2016).

Surely, the US SBIR/PCP program is only a small part of the total public procurement of R&I made by public purchasers in the US[10], but it is a federal window of successful best practices that can be followed by all the public purchasers in the US, complying with WTO rules and the US legal framework.

Figure 2: European Public Procurement Separated into Two Distinct Phases (European Commission, 2014)



On the contrary, European public procurements are separated into two phases with two separate calls for tenders: a RD&I phase via Pre-Commercial Procurement (PCP) and a commercialisation phase via Public Procurement of Innovative Solutions (PPI) (figure 2).

Such difference is mainly due to the World Trade Organisation's Government Procurement Agreement (WTO GPA), which requires that open, fair and transparent conditions of competition are ensured in government procurement. But these rules do not automatically apply in the same way to all procurement activities of all countries.

Indeed, the US has succeeded in removing all public procurement of R&I from the WTO GPA (R&I and manufacturing/commercialisation phases) when public procurement of R&I are reserved to SMEs, presumably by linking this to the "Buy America Act" (1933) and the "Small Business Act (1953). Moreover, the US SBIR Policy Directive also aims at ensuring that successful products and services developed in the SBIR Programme are purchased by public institutions, ensuring market-creation for the innovative products and subsequent commercialisation by the awardee.

However, **the EU has only succeeded in removing the R&I phase from the WTO GPA, but not the manufacturing/commercialisation phase, which is therefore covered by the WTO GPA. As a result of the lack of such derogation, the European Commission's Communication on PCP (2007) provides for the separation of the pre-commercial procurement phase from the public procurement for the manufacturing/commercialisation phase, with the need to re-compete by tender between the two phases. Besides, the EU RDI Framework for state aids (2014) details the cumulative conditions which need to be met for PCP not to entail state aid**, including the fact that "*the procurement does not give any of the participant providers any preferential treatment in the supply of commercial volumes of the final products or services to a public purchaser in the Member State concerned*". **On this legal basis, neither the EU nor its Member States can design their schemes falling under PCP in such a way that they commit themselves to purchase the developed products by start-ups/innovative SMEs.**

On top of these WTO GPA specificities unfavorable to public procurement of R&I in Europe, the new EU procurement directives further reduce the few flexibilities it contained for European PCPs. In "*Trials and tribulations in the implementation of PCP in Europe*" (2016), Anca Ramona Apostol discusses for instance these EU new procurement directives, stating that such new rules go even further than the WTO GPA in preventing the uptake of Public procurement of R&I in Europe by creating an even more unfriendly regulatory environment for such instrument:

- *"the GPA allows more flexibility than the current Procurement Directives or the recently adopted Procurement Directives"*
- *"the new procedure seems to have been adopted under increasing pressure of national interests and will constitute a serious threat to the uptake of the PCP"*

[9] In the US, PCP-SBIR like projects are ruled by a legal framework (SBIR Act: Public Law 97-219 July 22, 1982; S881) which is at the intersection of the Buy America Act, the Small Business Act and the Bayh Dole Act (35 USC §200 to 212). The common ground of these three closely intertwined laws is: manufacturing mainly in the USA, in the US Public Interest. For instance, in the Bayh Dole Act §200: *"Preference for United States industry"* or §209 (b): *"Manufacture in United States".*

[10] US SBIR/PCP program represents 1 B$ out of 50 B$ of total US public procurement for R&I

- *"the new Procurement Directives seem to restrict the flexibility to negotiate directly with one of the PCP finalists"*
- *"the market price criterion as currently recommended by the European Commission is complex and leaves room for abuse. In practice, none of the national PCP-like initiatives complies with it".*

In other words, **far from improving the regulatory framework for such instruments, the strict application of the provisions of these EU new procurement directives would lead to a regression of the PCPs made by the EU Member States**.

Figure 3: Comparison of EU and US public procurement programmes

	EU R&I public procurement	US R&I public procurement
Investment per year	~€2.6bn	~€50bn
Main programme	PCP & PPI	SBIR Programme
Average contracts' size	<€60k	$850k
Types of instrument	Pure procurement programme	Both a procurement and a grant programme
State Aids & funding Model	No State aid: shared R&D risks and benefits reflecting market value	Entails state aids: provides 100% of the funding needed for a project, plus a small profit element for the business (no cost sharing)
Intellectual Property (IP)	Either public purchaser remains owner of IP, or the company owns it but with the obligation to grant non-exclusive licenses to any third party who requests it	Business keeps ownership of IP
Structure	2 completely separated tender processes for R&I and manufacturing, with no preferential treatment	1 single tender for both phases for SMEs: in the end of a project the US government can buy the product or service developed by the SME, which can also sell it to others
Accessibility	Accessible to all types of companies and open to the world	Mostly reserved to SMEs and limited to US companies (US ownership requirement)

The split of EU public procurement of R&I and the EU regulatory framework for public procurement of R&I in general have several detrimental consequences in the EU:

1. It makes the instrument complex to use for both public purchasers and companies.
2. It also considerably lowers the incentive for companies to respond to the calls for tenders, mainly because of the obligation to win two successive calls for tenders without any preferential treatment in the second one after having invested in the first.
3. Intellectual Property (IP) rules are also limiting the use of such instrument, since either the public purchaser remains the owner of the IP, or the company owns it but with the obligation to grant non-exclusive licenses to any third party who requests it (clause 33d in EC's RDI States Aids document). Surely, this obligation is narrowed in the Horizon 2020 PCP programme[11]: "*non-exclusive licenses are mandatory only in the case where the awardee of the RDI phase is not the same than the awardee of the second phase*". But this means that the public purchasers will surely exercise their march-in rights in all the numerous cases where the awardee of the RDI phase is not the same than the awardee of the manufacturing phase.
4. As a consequence, capital venture will not invest in innovative start-ups and SMEs selected for the RDI phase because there is no warranty that its IP rights will be exclusive and that it will be the manufacturer for large commercial volumes, ensuring turn-over and benefits increase. Indeed, private equity invests only based on a sound business plan, which gives strong evidence on the increase in turnover and profit[12].

Such difference between the EU and the US systems is quite decisive in today's poor EU situation in terms of PCPs of innovation. Promoting innovation through public procurement very much depends on the ability of public authorities to purchase the innovative products developed. **Having only one call for tender for both phases provides additional incentives for companies to take part in the RD&I phase since they are assured to get an opportunity to recover part of their RD&I investment in the commercialisation phase by bringing their innovation to the market**. Indeed, one of the most crucial stages of development of innovative SMEs/start-ups is to get their first commercial orders, which then facilitates the obtaining of venture capital and gives confidence to bankers.

[11] See PCP communication/staff working document for PCPs funded by the EC in Horizon 2020

[12] See European Commission, "*Science, Research an Innovation of the EU 2016. A contribution to the Open Innovation, Open science Open to the world agenda*", March 2016: "*For high-growth entrepreneurial ventures patents can play a very important role in order to attract external sources of financing, as patents can be more easily analysed in due diligence processes and provide a formal right of protection against the commercialisation of the innovation by other firms".*

See also Business Europe, Open Access to Scientific Publications and Research, March 2016: "*Since start-ups often build on intellectual property generated in universities as their key asset for attracting loans and venture capital".*

EARTO members remain ready for further discussion to provide any additional information on such issue. Improving public procurement of R&I in Europe is key to create a strong European market for innovative products and services with high societal impact as well as an important step towards creating growth and jobs in Europe.

EARTO - European Association of Research and Technology Organisations
Founded in 1999, EARTO promotes Research and Technology Organisations and represents their interest in Europe. EARTO network counts over 350 RTOs in more than 20 countries. EARTO members represent 150.000 highly-skilled researchers and engineers managing a wide range of innovation infrastructures.

RTOs - Research and Technology Organisations
From the lab to your everyday life. RTOs innovate to improve your health and well-being, your safety and security, your mobility and connectivity. RTOs' technologies cover all scientific fields. Their work ranges from basic research to new products and services development. RTOs are non-profit organisations with public missions to support society. To do so, they closely cooperate with industries, large and small, as well as a wide array of public actors.

EARTO Working Group Legal Experts*: is composed of 25 corporate legal advisers working within our membership. Established in autumn 2013, this Working Group has also worked on the revision of the state aid rules & the GBER. Our experts also contributed to the setting-up of the DESCA Consortium Agreement model for Horizon 2020. More recently they were at the origin of the EARTO Paper on Open X, the EARTO Background Note on the US Federal Agencies Data Sharing Policies, and the EARTO Position Paper on the European Licencing Framework for Standard Essential Patents.*

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