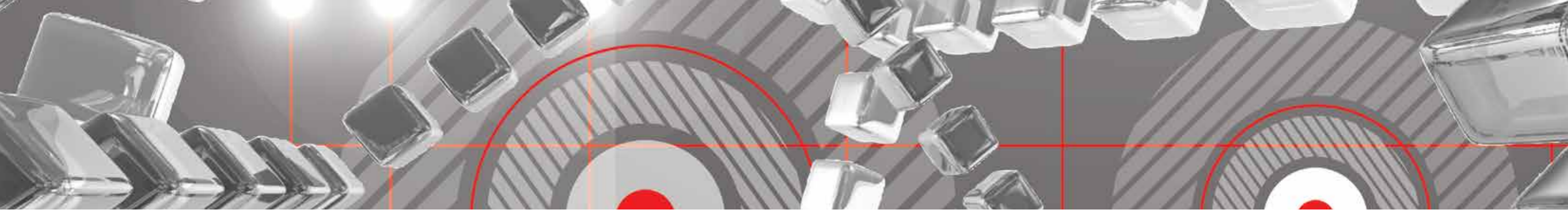


# **e-IRG** Task Force Report on Legal Issues



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# 1 Introduction

Between December 2012 and May 2013 a Task Force of the e-Infrastructure Reflection Group (e-IRG) considered the legal and regulatory issues likely to arise from the increasing use of state-funded e-Infrastructures by non-state funded researchers and organisations. Such use, on a national and international scale, appears essential to achieve the Horizon 2020 goals for a European Digital Research Area.

The Task Force report formed part of the e-IRG White Paper 2013 (long version).<sup>1</sup> This document contains the text of the report and, as annexes, the individual working papers that were developed as input to the final report. These provide further detail on the following topics:

- State Aid
- Pre-Commercial Procurement and Public Procurement of Innovation
- Network Regulation
- Data Protection
- Terms of Use
- Software Licenses

# 2 Facilitating Use of State-Funded e-Infrastructures by non-State-Funded Parties: Legal Issues

*(as published in e-IRG White Paper 2013)*

Existing state-funded e-Infrastructures are mostly used by state-funded researchers in universities and other academic research institutions. There are also significant potential benefits for both organisations and society if non-state-funded research and development could also use data-intensive computing and storage resources, high-performance hardware, and specialized networks to connect them. For example in e-Health access to, and processing of, genomic information could benefit public-private collaborative research and development or R&D by private companies. Similar opportunities are likely to exist in very many other fields of research and industry; these are already being exploited on a small scale in some countries. Facilitating use by a wider range of researchers as part of the e-Infrastructures' existing mission will be essential to achieve Horizon 2020 goals.

Concerns have, however, been expressed that legal and regulatory barriers may hinder these wider uses of e-Infrastructures. This paper reports the conclusions of an investigation of relevant areas of European law to determine whether they do, or could in future, create such barriers.

Six areas of law and regulation have been identified as relevant to use of state-funded e-Infrastructures by non-state-funded parties: state aid law, public procurement law, network regulation, data protection, terms of use of e-Infrastructure providers, and software licences.

## 2.1 Context

As the detailed sections on individual areas below indicate, the investigation concluded that current European law should not prevent the use of e-Infrastructures for research and development by non-state-funded parties, subject to the State Aid Block Exemption's limits on the contribution that the state can make to such activities (typically 50%) and the requirement that any state aid create an incentive effect. However lack of clarity about the application of State Aid and Data Protection law, and differences between national implementations, may create actual or perceived barriers because of difficulties in ensuring compliance.

Expanded use may, however, be prevented by the current terms of use of e-Infrastructure components and by licence terms of the software that those components rely on. If e-Infrastructure procurements were too narrowly drawn there may be a risk of challenge if the scope of use is subsequently expanded. Infrastructures wishing to support new uses will need to review, and possibly amend, these. Specific procurement and taxation exemptions for public sector infrastructure operators may also limit the overall amount of private sector involvement they can accept.

Finally, new laws in the areas of State Aid, Data Protection and Network Regulation are all being developed at European level. The Commission's proposal to modify State Aid law explicitly mentions and supports the wider use of e-Infrastructure. Those developing other legislation

<sup>1</sup> <http://www.e-irg.eu/publications/white-papers.html>

may well be unaware of its potential effect on e-Infrastructure use, even though the impact could be severe. Data Protection legislation intended for commercial cloud services could make the law even harder to apply to research infrastructures; Network Regulation that requires particular services or implementations could be incompatible with flexible, innovative, high-performance research services. These, and other, unintended consequences of legislation need to be identified and avoided.

## 2.2 State Aid

e-Infrastructures are generally supported by state funding, which will confer a benefit on users, operators and providers of the infrastructure. Some or all of these may be acting as economic undertakings. It is also possible that e-Infrastructures might be used in ways that distort existing competitive markets. This could apply particularly to GEANT which has the power to reach across national borders at extremely high capacity. European State Aid law is therefore likely to apply either directly or through the conditions imposed on any relevant exemptions.

A block exemption for research, development and innovation allows the state to contribute funding or support to projects by economic undertakings, up to a specified proportion (typically 50%, with the permitted contribution reducing as activity gets closer to production) and provided that the contribution results in activities that would not have taken place under pure market conditions. Some formalities are required in calculating the respective contributions and to demonstrate the incentive effect, though the latter requirement is waived for Small and Medium Enterprises (SMEs). These requirements may create a perception that applying state aid law is difficult: the Commission's paper on modernizing State Aid suggests that the formalities might be improved in the next version of the block exemption after 2013, and specifically mentions e-Infrastructures as an area to be supported. Clarification and simplification would be helpful for non-state-funded use.

More challenging problems may arise in calculating the value of the state contribution. Normally this is done by comparing against a market rate, but for many of the services provided by e-Infrastructures there may be no relevant market to compare against. Assigning a value to new intellectual property or to long-distance, high-performance network services that do not exist outside research and education may be particularly difficult. This might be simplified by the distinction already recognised in some countries between innovation costs and operational costs. Guidance on acceptable ways to value state contributions, and on revenue sharing or other ways to deal with intellectual property, could reduce uncertainty for both e-Infrastructure providers and their commercial partners.

Offering fully commercial services using an e-Infrastructure would not be compatible with the Block Exemption, so would need to use other mechanisms to avoid challenges under State Aid, and possibly Competition, Law. These may well require new organisational structures - in other areas state assets are made available through trading companies that buy services from the state and act as economic undertakings in their own right.

## 2.3 Procurement law

e-Infrastructures are likely to involve large procurements by public authorities, which will be subject to EU procurement laws. Pre-Commercial Procurement (PCP) and Public Procurement of Innovation (PPI) procedures may be appropriate, particularly for the development and pro-

typing of innovative technologies or applications. As these areas are not well understood by practitioners at the present time, this may require particular attention.

Current procurements for shared public sector e-Infrastructures may benefit from the *Teckal* exemption, which can help National Research and Education Networks (NRENs) develop and provide services to public authorities without the need for each authority to run a separate public tender exercise. If tenders were required, publicly-funded NRENs might be prohibited by State Aid law from responding to them. The exemption is only available where the relationship between the NREN and its customers involves both structural control and economic dependency. However the draft Public Procurement Directive suggests that this will only apply where at least 90 % of the NREN's activities benefit the public-sector community. In some countries taxation arrangements for public-funded infrastructure operators may have similarly high thresholds. These requirements might well limit non-public-funded use of e-Infrastructures to a low level, thus conflicting with the desire of State Aid law and the Horizon 2020 goals to expand such use.

Procurement law requires the purpose of the procurement to be specified. Provided future e-Infrastructure procurements include the possibility of non-state-funded use this should not be a problem. However if procurements of existing e-Infrastructures contained statements that ruled out expanded use there may be a risk of challenge if the change of scope would have affected the bids made. This possibility will need to be reviewed by e-Infrastructure operators considering extension to non-state-funded use. On occasion it may be appropriate for e-Infrastructures to consider public procurement of innovation (PPI) where a product or service required by the e-Infrastructure is not currently available on the market. Since this is likely to involve state funds underwriting some of the risk of developing a new product it may raise the same issues identified in the previous (State Aid) section of pricing and managing the benefits of creating newly-created intellectual property.

The investigation also considered possible roles for pre-commercial procurement (PCP) relating to e-Infrastructures. According to the Commission's guidance, PCP involves funding research, rather than buying a product or service. If suitable research questions arise during the design or construction of e-Infrastructures then, provided there are sufficient candidates to compete for the work, a PCP competition might be an appropriate vehicle. However existing mechanisms for providing research grants should also be considered. Alternatively, access to e-Infrastructure services might be offered as part of a PCP competition in some other field of research, in which case the grant of access would be covered by normal State Aid provisions discussed above.

## 2.4 Network Regulation

e-Infrastructure components may be covered by two separate areas of European law. Networks and connectivity are likely to be classed as Electronic Communications Services, covered by the Telecommunications Framework Directive and associated legislation; data storage and processing services may fall within the definition of Information Society Services in the e-Commerce Directive and others. Assigning regulatory duties to specific parties within an e-Infrastructure that comprises connectivity, storage and processing components under the control and management of several different organisations may prove difficult. However the current laws regulating private communications services and information society services do not appear to present significant problems for non-state-funded use of e-Infrastructures.

Were the status of National Research and Education Networks (NRENs) as private electronic communications services to change there would be much more, and much less harmonised, regulation to accommodate. In particular public networks could be required to implement par-

particular designs and technologies that would restrict the ability to provide flexible advanced communications facilities, such as bandwidth on demand, that are critical for high-performance e-Infrastructures. NRENs should therefore ensure they continue to offer service to demarcated groups of users, in order to keep their private status.

A recently proposed Directive on Network and Information Security illustrates the risk of legislation having unintended consequences for e-Infrastructures. The draft Directive creates a special category of Information Society Services, known as “market operators”, that could be required to implement specified processes for preventing and responding to security and privacy breaches. Although the Directive is aimed at payment services, blogging sites, etc. it is possible that an e-Infrastructure service might fall within the definition of a market operator. Since the duties to be imposed are designed for consumer platforms, it is unlikely that they would be compatible with the very different design and user relationships of an e-Infrastructure service.

## 2.5 Data Protection

Where e-Infrastructures are used to process personal data, that use will be subject to Data Protection law. Information about the users of the infrastructure is also likely to be regulated. Both may raise new issues when processing is done across an e-Infrastructure provided by multiple organisations rather than by a single data controller; even the Article 29 Working Party were apparently unable to assign the critical roles of data controller and data processor to the various components of a ‘research grid’. If e-Infrastructures cross national borders then the problems are worse as national implementations of the European Directive differ, and are sometimes contradictory, on questions as fundamental as what constitutes personal data and what formalities are required to process it.

Problems of interpreting and complying with data protection law already limit the use of e-Infrastructures by public-sector researchers. In e-Health it is not clear (and national laws may differ) whether the research exemption may be used, or whether explicit consent is required from every person whose data may be processed. The absence of clear, authoritative guidance on these questions is likely to delay significant health benefits. Non-state-funded use is unlikely to alter the problems, though private sector organisations may be more concerned about the resulting regulatory uncertainty.

A new Data Protection Regulation is currently being debated. As a Regulation it should reduce differences between Member States, however the implications are far from clear as more than 4 000 amendments to the Commission’s original draft have been proposed in the European Parliament and Council. Depending on their eventual definition and implementation new policies such as the rights to be forgotten and to data portability could significantly affect the e-Infrastructure model. The new law seems likely to favour approaches such as Privacy Enhancing Technologies and Privacy by Design: e-Infrastructures should consider how these can be used to reduce both privacy and regulatory risks.

## 2.6 Terms of Use of e-Infrastructure providers

Existing research networks and services have been established under different legal and political bases and with different rules for what types of organisation may connect to them. Few research networks currently provide direct connections to commercial organisations. This may not be a barrier if commodity internet connectivity is sufficient to reach and use the e-Infra-

structure service, but may prevent the use of services requiring high-performance or specialist network connections. In particular, unless terms of use are harmonized internationally, it is likely to be difficult to provide users outside the traditional state-funded research and education community with high-performance connections to international e-Infrastructures. Many research networks are now considering how to connect commercial service providers where this would be of benefit to research and education; these discussions should also consider whether there is a case for allowing connection by commercial users of services at academic organisations. Many network policies prohibit charging for access to the network, which may conflict with requirements under State Aid law to at least account for network use on a full economic basis.

e-Infrastructure services seem somewhat more likely to have policies that permit non-state-funded participation in R&D projects, though there is considerable variation both between services and between projects. Several only allow use by academic researchers. In the short term it may be sufficient to amend the policies of individual projects, however if existing e-Infrastructures are to be linked into a general-purpose facility there will need to be national and international harmonization of at least the basic rules permitting access.

## 2.7 Software licences

Processing, storage and communications components of the e-Infrastructure all rely on software that is subject to licences. e-Infrastructures for academic use may have obtained licences for standard software that are limited to non-profit use, to particular subject areas or to particular groups of users. Such licences may need to be extended, replaced or re-negotiated to permit different types of use, such as those involving non-state-funded partners. This may involve an increase in the licence fee.

Where bespoke software has been developed for an e-Infrastructure, particularly if this was done during research projects, there is a possibility that no licence or intellectual property agreement was made with those contributing. In the worst case this can result in a situation where it cannot be determined either whether the software can be used for new purposes or who are the owners of intellectual property in the software whose agreement would be needed for such use.

e-Infrastructures considering expanded use should identify the licences they have and whether there are any that do not permit non-state-funded use. Where bespoke software is being developed, rights to the intellectual property should be agreed before development starts. To reduce the possibility of state aid problems if publicly-funded software is subsequently used by economic undertakings, licences should be as open as possible to avoid discrimination between undertakings.

## 3 Proposed approach

In order to reduce both perceived and actual barriers to the expanded use of e-Infrastructures, action is needed at two levels: clarification and, where possible, simplification of the legal position by national and European regulators and legislators; combined with removal of barriers within existing e-Infrastructures and components. Successful exploitation of e-Infrastructures is also likely to require an investigation of issues relating to research content: some that were identified during the investigation of barriers are noted here but this should not be taken as a comprehensive list.

### 3.1 Regulatory clarification

Although the investigation concluded that the current Research, Development and Innovation Block Exemption does permit non-state-funded parties to use state-funded e-Infrastructures for research and development, there is considerable uncertainty over how to achieve this. The Commission's paper on Modernising State Aid intends to facilitate the use of e-Infrastructures: we believe this can be achieved by providing clear and easy to use guidance that provides certainty for funders, public and private participants. In particular we consider that clearer guidance would be helpful on assessing whether a project satisfies the requirements of the exemption in terms of aid intensity and incentive effect, and the formalities required to report on applications that are granted. There appears to be particular uncertainty over applying the exemption to larger organisations. Authoritative advice on how to value services and results for which there is no obvious market price – including intellectual property, developed software and international, high-performance network connections – would increase confidence among both providers and researchers that their use of e-Infrastructures is not exposed to legal challenge.

In procurement law there is a concern that including possible non-state-funded use in the scope of procurements might be open to challenge on the grounds that definitions are too wide and uncertain. Guidance on appropriate scope definition would be helpful. Inappropriately low thresholds for the *Teckal* exemption or taxation arrangements could also create a barrier to increased use. Guidance on how Public Procurement of Innovation can be carried out in compliance with State Aid laws might increase confidence in the use of this mechanism. Pre-Commercial Procurement of research and development might be used to develop future e-Infrastructures if existing grant-funding mechanisms are inadequate, however the apparent complexity of the approach indicates that this would best be done in collaboration with a partner organisation that was familiar with the mechanism.

In future both e-Infrastructures and projects using them may be conducted by public-private partnerships (for example between a public genomics database and a private health provider). The requirements for such partnerships to comply with both state aid and procurement law appear unclear, which may act as a barrier to this type of development.

Uncertainty over the application of data protection law is limiting the use of national and international e-Infrastructures for both public and private sector research in socially important areas. Varied definitions of personal data and formalities for handling it, and the difficulty of assigning the roles of data controller and data processor, are particular problems for international e-Infrastructures. If the current revision of the law does not provide greater clarity and harmonization and give clear policy guidance on how appropriate research can be performed

within the law, then European research in social and health sciences will not achieve its potential. The investigation concluded that, apart from Data Protection, current legislation does not create significant barriers to expanded use of e-Infrastructures, though there are risks that future legislation on networks and networked services may do so. Impact assessments for such legislation should include the effect on e-Infrastructures so that unintended consequences are identified and avoided.

### 3.2 Development of e-Infrastructures

Expanding use of e-Infrastructures is likely to require changes to current access policies for both networks and services. Where discussions are already taking place about allowing use of networks by private-sector service providers, these should also include consideration of use by private-sector service users. However there are considerable benefits for e-Infrastructures in remaining within the definition of a private communications service and this may be essential for providing flexible, innovative services. Expanded access policies should therefore avoid placing this status at risk, for example by ensuring that the organisations able to connect to the network are sufficiently demarcated rather than left completely open. Building international e-Infrastructures will require that access policies be harmonized across both networks and services, to avoid creating policy barriers to interoperability. Policies should at least adopt a “country of origin” principle, by respecting the access policy of the network or service where a user first connected. Greater policy harmonization should be encouraged as part of work on end-to-end services.

e-Infrastructures considering expanded use will need to identify the software licences they have and whether these limit the uses that can be supported. If necessary, plans (and budgets) should be made for expanding key restrictive licences. These inventories and plans should be updated as new software licences are obtained, though organisations should avoid limited licences unless the benefits clearly justify the limitations. e-Infrastructures should have clear policies on the ownership and licensing of bespoke software, to avoid the risk that uncertainty over intellectual property rights will make this unusable in future. Past procurement documents should be checked to determine whether expanding use creates a risk of these being challenged.

These procurement, licensing and policy development activities should help to provide data for the service costing models that will be required for State Aid compliance.

Finally, all e-Infrastructures should consider the use of Privacy Enhancing Technologies (PETs) and Privacy by Design (PbD) approaches both within Europe and by international partners. Federated access management, a recognized PET, is already used for authentication and authorization by some e-Infrastructures. The application of PETs and PbD to protecting research data within e-Infrastructures is itself a valuable research area.

### 3.3 Content related issues

The investigation noted two areas of regulation and policy that may in future affect the content processed within e-Infrastructures, and where there is a risk that inappropriate laws could create unnecessary barriers. A full investigation of content-related barriers was not undertaken, as it would require subject specialists' knowledge. However these areas should be monitored in future.

As the use of e-Infrastructure increases, the reliability and integrity of the information that is processed, and ultimately relied upon, may be subject to the legal system. For example in the case of drug discovery and DNA sequencing, the integrity of the data produced could be subject to health and safety regulation; or in safety-critical research questions of liability for failure might arise. Future laws regulating modeling and simulation will need to be aware that these types of research will not necessarily be done within the boundaries of a single organisation.

The developing Open Access agenda may affect both the information available for processing in e-Infrastructures and the products generated by them. While open access should, in general, support the work of e-Infrastructures, licences and agreements that give significance to the location where information is held, processed or created may become increasingly hard to apply.

### 3.4 Recommendation

Recommendations to the European Commission for State Aid and procurement laws that promote the use of e-Infrastructures:

- Ensure that the new exemption for research, development and innovation is clear, easy to use, and provides certainty for funders, public and private participants. In particular
- Provide guidance on the necessary formalities, demonstrating incentive effect, and valuing contributions from state and private sources (particularly when those are not SMEs);
- Provide guidance on determining reference prices for products and services where there is no effective “market price”, such as intellectual property, bespoke software, specialized services and international networks;
- Clarify any risks arising from the use of international state-funded networks to access services;
- Ensure that a revised Teckal exemption does not create barriers to wider use of public-sector e-Infrastructures.

Recommendation to the European Commission to facilitate the development of e-Infrastructures by public/private partnerships:

- Provide guidance on the application of procurement and state aid law to the establishment of e-Infrastructures by public/private partnerships.

Recommendations to the Commission, regulators and national legislatures on Data Protection law that facilitates the use of e-Infrastructures:

- Harmonise and clarify the application of key data protection concepts – controller/processor, personal data - to international e-Infrastructures;
- Ensure that rules and formalities for processing personal data are either harmonized, or at least based on a clearly-defined, single country for each processing activity;

Recommendation to the Commission and national legislatures on other laws relating to networks and networked services:

- Include effect on international e-Infrastructures in the impact assessment of new legislative proposals.

Recommendations to e-Infrastructure operators to facilitate expanded use of e-Infrastructures:

- Network operators should consider how to extend their access policies to support wider use, but
- Network operators should ensure their policies comply with the definition of a private communications service, for example demarcating the communities to which connection is available;
- Network operators should harmonise access policies internationally to facilitate the provision of end-to-end services and avoid creating barriers to international research use.
- Infrastructure services should consider how to extend their access policies to support non-state-funded use
- Infrastructure services should harmonise their policies across projects, services, and countries, to facilitate inter-operation of their e-Infrastructures.
- e-Infrastructure operators should assess whether existing and future software licences limit use and, if necessary, plan how to extend those licences
- e-Infrastructure operators should ensure they have clear policies for ownership and licensing of any bespoke software they may develop or use.
- e-Infrastructure operators should assess the risk of past procurements being challenged if use is extended to non-state-funded research and development.
- e-Infrastructure operators should develop models for costing their services under State Aid exemptions.
- e-Infrastructures should consider the use of Privacy Enhancing Technologies (PETs) and Privacy by Design approaches both within Europe and by international partners.

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## 5 Annex I: Working Paper on State Aid

### 5.1 Relevance to e-Infrastructures

e-Infrastructures are generally supported by state funding, which will confer a benefit on users, operators and providers of the infrastructure. Some or all of these may be acting as economic undertakings. It is also possible that e-Infrastructures might be used in ways that distort existing competitive markets. This could apply particularly to GEANT which has the power to reach across national borders at extremely high capacity. European State Aid law, which prohibits the use of state funds to distort competition between undertakings, is therefore likely to apply either directly or through the conditions imposed on any relevant exemptions.

The most likely exemption to apply is that on Research, Development and Innovation, which permits the use of state funds only up to a specified proportion of the cost of the research. Different limits apply depending on how close to market the activity is. There are also reporting and administrative requirements. Use of e-Infrastructures by non-state-funded parties is therefore likely to involve more preparatory work, accounting and reporting by the user and the infrastructure provider. If an e-Infrastructure wishes to support activities that are not covered by the R&D&I Block Exemption it is likely to have to ensure that the full costs of doing so are recovered without using any state subsidy.

### 5.2 EU position

The Treaty on the Functioning of European Union contains no express definition of the concept of aid or subsidy (Article 107 TFEU, ex article 87 TEC). State aid is actually mostly jurisprudentially defined [ex. *CE Judgment of the Court of 23 February 1961. – De Gezamenlijke Steenkolenmijnen in Limburg v High Authority of the European Coal and Steel Community. – Case 30-59*] as “a payment in cash or in kind made in support of an undertaking other than the payment by the purchaser or consumer for the goods or services which it produces, (...) which, on the contrary to the subsidy, places emphasis on its purpose and seems especially devised for a particular objective which cannot normally be achieved without outside help. The concept of aid is nevertheless wider than that of a subsidy because it embraces not only positive benefits (...) but also interventions which, in various forms, mitigate the charges which are normally included in the budget of an undertaking and which, without therefore being subsidies in the strict meaning of the word, are similar in character and have the same effect.” State aid is in principle prohibited by Article 107 TFEU for being incompatible with the common market because it distorts competition. However, it can be exempted only on the basis of the article 107 paragraphs 2 and 3.

As far as the Research, Development and Innovation (hereinafter: R&D&I) is concerned, according to the article 179 TFEU (par.1 and 2) (ex. Article 163 TEC), “1. The Union shall have the objective of strengthening its scientific and technological bases by achieving a European research area in which researchers, scientific knowledge and technology circulate freely, and encouraging it to become more competitive, including in its industry, while promoting all the research activities deemed necessary by virtue of other Chapters of the Treaties. 2. For this purpose the Union shall, throughout the Union, **encourage undertakings**, including small and medium-sized undertakings, research centers and universities in their research and technological development activities of high quality; it shall **support**

*their efforts to cooperate with one another, aiming, notably, at permitting researchers to cooperate freely across borders and at enabling undertakings to exploit the internal market potential to the full, in particular through the opening-up of national public contracts, the definition of common standards and the removal of legal and fiscal obstacles to that cooperation.”* The e-Infrastructures are considered to belong to the domain R&D&I, so all the relevant dispositions can be directly applied to them.

In this framework the increase in the level of R&D&I, as an important objective of common interest, is not optimal for the economy in the Community, so as to resort to the instrument of State Aid under the circumstances of compatibility. Aid for R&D&I can primarily be justified on the basis of article 107 par. 3(b) “aid to promote the execution of an important project of common European interest or to remedy a serious disturbance in the economy of a Member State” and par.3 (c) “aid to facilitate the development of certain economic activities or of certain economic areas, where such aid does not adversely affect trading conditions to an extent contrary to the common interest”. To this direction, the Commission lays down rules which it will apply in the assessment of aid notified to it, thereby exercising its discretion and increasing legal certainty and transparency of its decision-making.

The implementation of State aid in the e-Infrastructures belongs to the same framework of the above-mentioned plan.

A part from the dispositions of the Treaty on the Functioning of the European Union (TFEU), which design the outline of the state aid policy in the European Union, the “State aid action plan for state aid reform 2005–2009” is considered to be another significant reference text. ([http://ec.europa.eu/competition/state\\_aid/reform/saap\\_en.pdf](http://ec.europa.eu/competition/state_aid/reform/saap_en.pdf)). At the end of the State aid action Plan, the Commission proposes an overview of the future papers and guidelines to be implemented.

Among those papers, the Community framework for state aid for research and development and innovation (Official Journal C 323, 30/12/2006 P. 0001 – 0026, <http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2006:323:0001:01:EN:HTML>) is the most typical in the area of R&D&I. One of the most important elements given in this text is the **incentive effect of state aid**, which means that in order to speak about a compatible state aid with the needs of the internal market, the undertakings should have to do something extra with the aid they receive; they should go beyond their normal practices. More precisely, according to the framework of 2006 “*The Commission considers that the aid does not present an incentive for the beneficiary in all cases in which the R&D&I-activity has already commenced prior to the aid application by the beneficiary to the national authorities. If the aided R&D&I-project has not started before the application, the Commission considers that the incentive effect is automatically met for the following aid measures:- project aid and feasibility studies where the aid beneficiary is an SME and where the aid amount is below EUR 7,5 million for a project per SME,- aid for industrial property rights costs for SMEs,- aid for young innovative enterprises,- aid for innovation advisory services and innovation support services,- aid for the loan of highly qualified personnel.*”

In fact this community framework is the successor of two previous frameworks of 1986 and 1996 and it will expire by end 2013. Since August 2008 most of the provisions of this framework were included in the **General Block Exemption Regulation (GBER)** (<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32008R0800:EN:NOT>). Actually before that the Council had adopted Regulation No 994/98 of 7 May 1998, which enables the Commission to adopt the so-called **Block Exemption Regulations for State aid**. With these regulations, the Commission can declare specific categories of State aid compatible with the Treaty if they fulfil certain conditions, thus exempting them from the requirement of prior notification and Commission approval. As a result, Member States are able to grant aid that meets the conditions laid down in these regulations without the formal notification procedure and only have to submit information sheets on the implemented aid.

More recently, on 8 May 2012 the European Commission set out an ambitious State aid reform program in the Communication on State aid modernization (SAM) (<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52012DC0209:EN:NOT>).

On 17 January 2013, the European Parliament adopted a Resolution on SAM (<http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+TA+P7-TA-2013-0026+0+DOC+XML+V0//EN>), taking also into consideration the opinion on SAM of the European Economic and Social Committee of 15 November 2012 as well as the opinion on SAM of the Committee of the Regions (<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2013:017:0025:0029:EN:PDF>).

More precisely, concerning the R&D&I in the framework of the State Aid Modernization policy, the Commission has given basic State aid guidelines in the issues paper ([http://ec.europa.eu/competition/state\\_aid/legislation/rdi\\_issues\\_paper.pdf](http://ec.europa.eu/competition/state_aid/legislation/rdi_issues_paper.pdf)) of December 2012 **“Revision of the state aid rules for research and development and innovation”**. As a matter of fact, this paper announces the intention of the Commission to revise all the above mentioned papers so as to cope with the Europe 2020 objectives as well as the problems and obstacles possible to be faced with. More or less the plan of the State Aid Modernization policy in R&D&I is described in the issues paper as following : *“As stated in the Europe 2020 communication, Europe needs to focus on the impact and composition of research spending and to improve the conditions for private sector R&D in the EU. The key issue is thus how Member States should intervene to reach the objective of investing 3% of the EU GDP in R&D, and what should be the role of state aid rules in this respect. The Europe 2020 communication makes an explicit reference to the role of state aid policy by considering that it can “actively and positively contribute [...] by prompting and supporting initiatives for more innovative, efficient and greener technologies, while facilitating access to public support for investment, risk capital and funding for research and development”. This notwithstanding, it is important to stress that state aid is only one element of R&D policies and that it currently concerns only a limited subset (less than 1/8) of public R&D expenditure. (...)The revision of the R&D&I Framework needs to ensure that it sufficiently caters for Europe 2020 objectives, including with regard to areas such as the promotion of demonstration and pilot projects, R&D infrastructures, and certain innovation activities. Following the logic of state aid rules, support in these areas must be provided in a manner that enhances overall economic efficiency with the least possible distortion of competition and effect on trade between Member States.”*

Other reference texts:

- [http://ec.europa.eu/competition/state\\_aid/legislation/rdi\\_mid\\_term\\_review\\_en.pdf](http://ec.europa.eu/competition/state_aid/legislation/rdi_mid_term_review_en.pdf)
- [http://ec.europa.eu/competition/state\\_aid/legislation/gber\\_practical\\_faq\\_en.pdf](http://ec.europa.eu/competition/state_aid/legislation/gber_practical_faq_en.pdf)
- [http://www.pwc.com/sk/en/odborne-clanky/assets/2010/2010-04\\_Connection\\_Res-Dev\\_Bartonova.pdf](http://www.pwc.com/sk/en/odborne-clanky/assets/2010/2010-04_Connection_Res-Dev_Bartonova.pdf)
- Phedon Nikolaides, “Incentive Effect : Is State Aid Necessary when Investment is Unnecessary” , Δ η Σ Κ Ε (PubContracts&State aid) 1-3/2007

### 5.3 Are there areas where further study is required?

In the above-mentioned issues paper for the revision of the state-aid for research and development and innovation (R&D&I) they are already highlighted the areas where further study could be useful. For instance, they can be indicatively mentioned:

- The new forms of Public Private Partnerships are increasingly used to build infrastructures. It is thus important that state aid rules are clear for the assessment of public resources involved in Public Private Partnerships. More generally, as a consequence of the recent opening of formerly state- controlled markets, public bodies are increasingly involved in a number of markets. This may raise legal issues regarding the applicability of state aid rules.
- The conditions/criteria for excluding state aid through pre-commercial procurement (or “innovation procurement”) of products and services
- Member states should be encouraged to rely on sectoral comparisons (possibly with benchmarks) as a means to possibly identify a concrete market failure. A “market failure” is consequently a situation where the market does not lead to an economically efficient outcome. *“First of all, for state aid to contribute to growth, it should address a material and well-identified market failure. Aid should be directed towards value-added activities that the market does not adequately supply. For example, state aid to R&D has the potential to promote new and otherwise unrealised innovative projects, especially where it increases (rather than replaces) private funding”* (issues paper, 12.12.2012, p.16)
- The formal requirements should be strengthened in order to presume that aid has an incentive effect by requiring that the project does not start before the aid granting decision. *“Under the revised rules, the demonstration of the incentive effect of the aid will remain a central and necessary compatibility condition. In that respect, the relevance of the current formal criterion will be examined. Also, the type of information needed for the substantive demonstration of the incentive will be revised to ensure that it strikes the right balance between the need to cater for sector-specific conditions and the need to ensure an objective and coherent assessment across cases.”* (issues paper, 12.12.2012, p.17)
- The use of innovation aid has so far been rather limited; it could be possibly developed one single set of compatibility rules covering a wide range of innovation measures, which could replace all or some of the existing measures.

Etc.

### 5.4 Conclusion

Taking into consideration the intention of the Commission to modernize the policy towards the State Aid in all the relevant areas, the section R&D&I is considered to be among the most important priorities. As a matter of fact all the above mentioned texts have shown that there is a lot of things to be explicitly clarified in order to achieve the best application of the state aid plan under the GBER and the Europe 2020 strategy.

## 6 Annex II: Working Paper on Pre-commercial Procurement (PCP) & Public Procurement for Innovation (PPI)

### 6.1 Relevance to e-Infrastructures

Public procurement law regulates the purchasing by public sector bodies and certain utility sector bodies of contracts for goods, works or services. However, due to the societal challenges the public sector in European Union is faced with, the common Public Procurement law rules cannot cover all the specific cases. In this case, it has been suggested that procedures such as “pre-commercial procurement” and “public procurement of innovation” may help to achieve quality and effectiveness of public goods, works and services.

Research, Development and Innovation (R&D&I) is considered to be one of the main domains of public sector where the Pre-Commercial procurement can be applied. By developing forward looking procurement strategies that include R&D&I procurement to develop new solutions that address these challenges, the public sector can have a significant impact on the mid to long term efficiency and effectiveness of public services as well as on the innovation performance and the competitiveness of European industry.

As far as the definition of these two public policy instruments is concerned,

**Public procurement for innovation (PPI)** occurs when a public organization places an order for a product (a good or a service or a combination of the two, which might be called a system) that does not exist at the time, but could probably be developed within a reasonable period of time. Innovation is needed in all PPI processes before delivery can take place.

**Pre-commercial procurement (PCP)** refers to the procurement of expected research results. For instance, it involves direct public R&D investments. However it does not involve the purchase of a non-existing product so no buyer is involved. This type of procurement may also be labelled “contract” research.

([http://www.circle.lu.se/upload/CIRCLE/workingpapers/201211\\_Edquist\\_Zabala.pdf](http://www.circle.lu.se/upload/CIRCLE/workingpapers/201211_Edquist_Zabala.pdf))

This paper focuses on Pre-commercial procurement in R&D services according to the plan of the European Commission towards the subject.

### 6.2 EU position

In 2006 the European Commission published a Communication paper [(2006), 502 final] entitled “*Putting knowledge into practice: A broad-based innovation strategy for the EU*”, where on the one hand it had been highlighted the importance of public procurement in reinforcing the innovation capabilities of the Union whilst improving the quality and efficiency of public services, on the other hand it had been underlined the untapped opportunities in

Europe for pre-commercial procurement (<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2006:0502:FIN:en:PDF>). Just a year later in June 2007 the European Parliament in its resolution [EP 2006/2084 (INI)] encouraged the wider use of pre-commercial procurement in the European Union. The Communication paper [COM (2007) 799 final [ftp://ftp.cordis.europa.eu/pub/fp7/ict/docs/pcp/pcp-brochure\\_en.pdf](ftp://ftp.cordis.europa.eu/pub/fp7/ict/docs/pcp/pcp-brochure_en.pdf)] from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions entitled “*Pre-commercial Procurement: Driving innovation to ensure sustainable high quality public services in Europe*” as well as the Commission’s staff working document accompanying the previous document [SEC(2007) 1668] entitled “*Example of a possible approach for procuring R&D services applying risk-benefit sharing at market conditions, i.e. pre-commercial procurement*” are considered to be among the most important papers regulating and describing the situation.

The above-mentioned Commission’s paper [COM (2007) 799 final] “*addresses the need for more innovation in the public sector and provides an approach to procure R&D services (pre-commercial procurement). It launches a debate on which areas could lend themselves to the approach presented for pre-commercial procurement. This debate should be seen in the wider context of the policy debate on supply and demand driven innovation and lead markets.*”

As far as the legal framework is concerned, it should be mentioned that the public procurement directives (2004/18/EC & 2004/17/EC) do not apply to public contracts only for R&D services. However taking into consideration the separation between R&D phase and deployment of commercial volumes of end-products “*separating pre-commercial procurement from the public procurement for commercial roll-out is (...) compliant with the provisions of the WTO Government Procurement Agreement and applicable bilateral agreements. Except for the EEA and Stabilisation and Association agreements with partner countries of the European Neighbourhood Policy, the EU has no national treatment and non-discrimination obligations to other parts of the world for the procurement of R&D services but it does for supplies.*”

Other reference texts:

- Commercializing University Research, paper for ESRC Sustainable Technologies Programme, Chris Hendry
- Public Procurement for research and innovation, independent Wilkinson expert group, 2005
- COM (2006) 589 final

### 6.3 Are there areas where further study is required?

Bearing in mind that the main focus concerning the application of pre-commercial procurement is on R&D services, it could be recommended a further study in the application of this procedure to R&D supplies and goods.

Moreover the European Commission is preparing a new directive in the Public Procurement law rules. A provision for the pre-commercial procurement in the text of this new directive, whether it is going to be exempted or not from the public procurement rules, it could be very useful for the development and expansion of this procedure.

## 6.4 Conclusion

Despite the fact that the pre-commercial procurement as well as the public procurement of innovation can offer a flexible legal framework in order to make easier the public tendering and improve the effectiveness and development of public sector, they have been underestimated by the contracting authorities in European Union. It is mainly the duty of the European Commission to familiarize the contracting authorities, purchasers and companies with these procurement procedures.

# 7 Annex III: Working Paper on Network Regulation

## 7.1 Relevance to e-Infrastructures

European law regulates both electronic communications networks and information society services and imposes various duties on their providers. The requirements are usually written to apply to standard commercial services and may be challenging or impossible to apply to different technological or organisational arrangements.

For example an e-Infrastructure “service” may well involve a combination of connectivity, storage, processing and authentication services operated by different organisations. The Article 29 Working Party apparently found it impossible to fit the Data Protection Directive’s definitions of Data Controller and Data Processor to “Research Grids” in 2010.<sup>2</sup> Regulations designed for commodity Internet provision or consumer websites would be likely to have similar difficulties.

At worst, imposing unsuitable laws could limit innovative services and architectures to those that can comply with the law’s particular model; even where it is possible to comply, assigning duties and liabilities to the appropriate parties may add significant complexity to contractual arrangements and could well make ad hoc use infeasible.

## 7.2 EU position

Two areas of European law are particularly likely to affect e-Infrastructures: the regulation of information society services (ISS) under the e-Commerce Directive (2000/31/EC), and the regulation of electronic communications networks and services (ECN & ECS) under the Telecommunications Framework Directive (2002/21/EC). Storage and processing components of e-Infrastructures may be classed as ISSes, networking components are likely to be classed as ECNs or ECSes.

## 7.3 Information Society Service law

Current Information Society Services law is mostly concerned with protecting service operators from liability for the use others make of their services; generally, operators will not be liable until they are informed of a possible breach of the law. Research use does not often raise claims of legal liability: it is possible that non-state-funded use might increase this. If an e-Infrastructure wished to benefit from the law’s protection it would face two challenges: demonstrating that it is an ISS, and ensuring that any complaints are directed to the appropriate place and handled correctly. The definition of an ISS as “any service normally provided for remuneration, at a distance, by electronic means and at the individual request of a recipient of services” (98/48/EC Art.1(2)) is being clarified by case law in the European Court of Justice. Complaint handling across an e-Infrastructure operated by several different parties may be challenging – infrastructure providers and their customers need to agree and their processes and publicise how to make complaints.

<sup>2</sup> [http://ec.europa.eu/justice/policies/privacy/docs/wpdocs/2010/wp169\\_en.pdf](http://ec.europa.eu/justice/policies/privacy/docs/wpdocs/2010/wp169_en.pdf) example 19

The 2013 draft Directive on Network and Information Security<sup>3</sup> defines a sub-class of ISSes as “market operators” who will be required to implement prescribed security measures and to report security breaches to national regulators. The definition in Article 3(8) of a market operator as a provider of an ISS that enables the provision of other ISSes could potentially include e-Infrastructure providers, particularly if these offer commercial services. The Directive intends to cover e-commerce platforms, payment gateways, social networks, search engines, cloud services and application stores so if e-Infrastructures do fall within this category there is a risk that requirements designed for those services may be unsuitable for them.

## 7.4 Electronic Communications Network law

Most European regulation affecting Electronic Communications Networks derives from the Telecommunication Framework Directive (2002/21/EC) and in particular the concepts of “publicly available electronic communications service” and “public communications network” (a network wholly or mostly used for publicly available services) in Article 2. Networks and services that are not publicly available have few regulatory requirements: those that are “publicly available” have additional duties and restrictions under the e-Privacy (2002/58/EC) and Data Retention (2006/24/EC) Directives, and possibly others.

At present most Member States consider National Research and Education Networks (NRENs) not to be public networks or services. An attempt by the Dutch national regulator to class its NREN as public was rejected by the court on the grounds that the NREN only provided communications services to a sufficiently demarcated group (Dutch education and research organisations), not to the public.<sup>4</sup> The Finnish NREN has a closer relationship than most with its regulator, though it is not known whether this involves duties that might cause problems for non-state-funded e-Infrastructure use.

If NRENs were to be classed as public networks or services - for example if they were to offer connectivity services to the public or the interpretation of the law were to change - then the resulting obligations would be much less harmonised and more restrictive for e-Infrastructure use. For example the amended e-Privacy Directive (2009/136/EC) requires public networks to implement prescribed security measures that may limit NRENs’ ability to provide non-standard services; the Data Retention Directive (2006/24/EC) might require them to retain information they do not possess and cannot obtain (for example if other service providers authenticate users and assign IP addresses). There are considerable differences in Member States’ transposition of these requirements; different duties are also imposed on public communications services by national laws, so public status would make it much harder to provide an international e-Infrastructure.

## 7.5 Conclusion

The current laws regulating private communications services and information society services do not appear to present significant problems for non-state-funded use of e-Infrastructures. Were the private status of NRENs to change there would be much more, and much less harmonised, regulation to accommodate. Networks should ensure they continue to offer service to demarcated groups of users. As regulatory requirements expand in future problems might be caused if new regulations do not take account of new models of multi-layered service provision.

<sup>3</sup> [http://ec.europa.eu/information\\_society/newsroom/cf//document.cfm?doc\\_id=1666](http://ec.europa.eu/information_society/newsroom/cf//document.cfm?doc_id=1666)

<sup>4</sup> <http://www.surfnet.nl/en/nieuws/Pages/SURFnetconclusivewinnerincaseagainstOPTA.aspx>

# 8 Annex IV: Working Paper on Data Protection

## 8.1 Relevance to e-Infrastructures

e-Infrastructure computing and data services are likely to process personal data of individual users when they create and use their accounts; for some types of research, such as social science or medicine, they may also process personal data of research subjects. Connectivity providers are not generally considered to ‘process’ personal data merely because it passes over their networks.

Under European law, anyone processing personal data, except under limited exemptions, is required to comply with certain duties. These include informing the individuals whose personal data are processed, allowing them to exercise their legal rights over the data, and keeping personal data appropriately secure. e-Infrastructure services are likely to need to comply with these laws. Unfortunately it is not clear, in situations where services are provided by one party but used by others, who is responsible for ensuring compliance. The Article 29 Working Party of Data Protection Authorities described “large scale research infrastructures ... using distributed computing facilities” in 2010, but were apparently unable to assign responsibilities among the parties involved.<sup>5</sup>

This legal uncertainty, and significant differences of interpretation between different member states, are likely to hinder the use of e-Infrastructures to process personal data.

## 8.2 EU position

The processing of personal data is subject to diverse European and national rules such as Art.8 of the Charter on Fundamental Rights; Art.16 Treaty on the Functioning of the European Union and several directives such as 1995/46/EC; 2002/58/EC, 2006/24/EC; 2009/136/EC; 2009/140/EC. The landscape is fragmented due to interferences between national constitutional law, European secondary law and jurisdiction of different European and national courts (in particular the European Court of Justice and the European Court of Fundamental Rights).

As a response to the evident deficiencies of the existing, outmoded framework the European Commission launched an initiative to rewrite the European privacy-related regulatory framework. This initiative’s most important outcome so far is the presentation of a draft regulation and a draft directive on data protection in January 2012 (COM(2012) 11 final and COM(2012) 10 final).

The existing regulatory framework - as well as the proposed regulation - follow an “**all or nothing**” approach which means that the (full) set of data protection rules is only (but then always) applicable when personal data is processed. The processing of non personal data is not regulated at all. It is therefore of utmost importance to clearly distinguish personal and non personal data. The issue is that this distinction is far from being easily made. The answer to the question who is to be seen as an “identifiable person” in an e-Infrastructure

<sup>5</sup> [http://ec.europa.eu/justice/policies/privacy/docs/wpdocs/2010/wp169\\_en.pdf](http://ec.europa.eu/justice/policies/privacy/docs/wpdocs/2010/wp169_en.pdf), example 19

remains unclear when it comes to issues of third party knowledge, pseudonymization and anonymization.

The existing framework (as well as the proposed drafts) draws a **distinction between controller and processor**. The controller determines the purposes and means of the processing whereas the processor deals with personal data solely on behalf of the controller. The controller alone is responsible for ensuring that the principles of data protection are complied with. Whereas this distinction might have been easy to make in the 80-ies and 90-ies it becomes more and more challenging to separate controllers from processors in heterogeneous environments, in particular in the cloud.

A third – pending – issue is the identification of the **applicable law** and the **competent authority**, in particular when it comes to heterogeneous (cloud-)environments. The problems become worse when a Non-EU-partner is involved as the European framework allows transfer of data into third countries only under very restricted conditions and is at the same time rather unclear in fixing its own applicability.

Many of these issues are under review in the ongoing political process on data protection reform. It remains, however, rather unclear at the moment to what extent they will be solved. In particular, the all-or-nothing approach and the distinction between controller and processor seem likely to survive the reform.

### 8.3 Are there areas where further study is required?

It is important to closely follow – and (where this is possible) also steer the data protection reform as the Regulation will have direct effect on the business models of e-Infrastructures. The (new) concept of informed consent (see Art. 7 of the draft regulation), the right to be forgotten (art. 17) as well as the right to data portability (art. 18) will change (if they come into force) the provider-client-relationship significantly.

### 8.4 Conclusion

The current data protection laws are interpreted and lived differently in the member states. A combination of legal uncertainty, complexity and rigidity involves all kind of legal risks for e-Infrastructure-providers that are hard to balance. In addition, compliance with data protection rules is neither easy to achieve, nor does it seem to be a necessary condition for success in the market. A reform is therefore in the best interest of e-Infrastructure-providers. However, this reform needs to avoid repeating the same mistakes (and adding new problems on top) leading to a technology-averse, complex and diverse European framework.

Non-state-funded use of e-Infrastructures does not seem likely to change the amount or types of personal data being processed, or the duties that apply; however it may increase concerns about this uncertainty and discourage adoption by those concerned about regulatory risk. On the other hand, private sector organisations may be more used to using contracts to manage risk, which seems to be the best option currently available.

## 9 Annex V: Working Paper on Terms of Use

### 9.1 Relevance to e-Infrastructures

The individual components of e-Infrastructures each have their own rules on who is eligible to use them. These may be expressed as Terms of Use, Eligibility Policies or in the terms of grants giving access. Most of these rules have developed over time to reflect the policies of funders and the requirements of their primary constituencies. Rules may be based on a number of different factors, for example access may only be available to particular organisations (e.g. universities), or only for particular types of activity (e.g. fundamental research), or only for particular economic models (e.g. non-profit). Rules may offer a restricted service to those outside the primary classes, e.g. a National Research and Education Network may allow a connected organisation to access other customers, but not to transit traffic to the Internet.

Terms of Use of a research computing or data service are clearly critical to the possibility of use of that e-Infrastructure component outside the traditional state-funded research and education community – if the Terms only permit state funded use then there is nothing that can be done. Terms of Use of a research network may be less crucial if users can get satisfactory connectivity to the service in other ways (for example via the network's Internet peering points), but for applications requiring special performance, for example low delay or high bandwidth, a direct connection to the research network may be essential.

Terms of Use that prohibit charging for a service may conflict with State Aid requirements that commercial services be offered at a market rate.

### 9.2 EU position

Since the Terms of Use of services and networks have different implications for e-Infrastructures and the current situations are somewhat different, they are considered separately.

Current and planned research services seem to follow one of four different models:

- Pure research: service may only be used by researchers from academic institutions;
- Open research and development: service may be used by academic and commercial researchers, but only where research results will be published;
- Pre-competitive R&D: service may be used by commercial organisations on terms closely linked to State Aid exemptions for either research or SMEs;
- Commercial: service is available on a fully commercial basis (e.g. pay-as-you-use).

Most existing research services adopt one of the first two models: pure research or open R&D. For example PRACE allows participation by private sector organisations in open research projects that “demonstrate scientific excellence and focus on topics of major rel-

evance for European research” (PRACE<sup>6</sup>). The ELIXIR<sup>7</sup> project plans to go beyond this by allowing private sector organisations to run private searches across published bio-medical data, and mentions that organisations that finance central infrastructure may obtain service guarantees in exchange. It is not clear whether this is limited to pre-competitive R&D or is an unrestricted service. A PRACE study<sup>8</sup> found a few examples of national high-performance computing (HPC) services offering fully commercial access, for example the Irish Centre for High-End Computing is said to sell access at full economic cost plus a commercial-level margin. The only example of fully commercial access to an international e-Infrastructure appears to be the ESRF synchrotron where, subject to availability, experimental time is sold on a commercial basis. According to the PRACE study, this is possible because its status under French law allows 10% of the budget to be used for commercial activities.

Whereas the use policies for e-Infrastructure services seem to relate quite closely to divisions in State Aid law, the policies of National Research and Education Networks (NREN) are more varied and show fewer patterns, reflecting their different origins and longer history. There are even differences in the types of educational organisation allowed to connect, as shown by TERENA’s 2010 Compendium.<sup>9</sup> Some networks only allow Research and Education organisations to connect; some permit connections to other publicly-funded or non-profit organisations; Janet (UK) has for many years allowed education organisations to offer sponsored connections to their partners, including private-sector partners. In 2011 this Eligibility Policy<sup>10</sup> was extended to support universities’ and colleges’ activities in business and community engagement which may, for example, involve technology transfer or consultancy services.

A relatively common feature of NREN rules is that they prohibit selling access to the network. This may cause difficulties when State Aid compliance requires a service to be charged at the market rate.

Policies of both research services and research networks appear to be developing in ways that should make at least some private sector use easier. A number of research services mention private sector support in their plans (e.g. PRACE are investigating a commercial offer, while HELIX-NEBULA wishes to support SMEs in future); several research networks are discussing offering connections or equipment hosting (usually restricted to connectivity within the network) to private sector service providers such as cloud providers and outsourcers. These discussions should also provide an opportunity to consider support for private sector service users as well.

### 9.3 Conclusion

Few e-Infrastructures currently allow unlimited non-state-funded use, and many have significant restrictions or prohibit it. There does seem to be scope for limited expansion, at least to include Open R&D by private sector partners. Policy changes to allow greater access by private sector supplier organisations might provide an opportunity to increase access to private sector client organisations as well.

To move to pre-competitive or commercial use, e-Infrastructures are likely to have to take account of State Aid law (see other paper); supporting SMEs appears to be within the remit of a number of research services and organisations. Moving to a full commercial service may involve changes to infrastructure operators’ corporate, taxation or employment arrangements.

6 [http://www.prace-ri.eu/IMG/pdf/prace\\_call\\_7\\_terms\\_of\\_reference-final.pdf](http://www.prace-ri.eu/IMG/pdf/prace_call_7_terms_of_reference-final.pdf)

7 <http://www.elixir-europe.org/industry/benefits-industry>

8 <http://www.prace-ri.eu/IMG/pdf/d5.1.pdf>

9 <http://www.terena.org/activities/compendium/2010/pdf/TER-compendium2010-complete-web.pdf>

10 <https://community.ja.net/library/janet-policies/eligibility-policy>

## 10 Annex VI: Working Paper on Software Licences

### 10.1 Relevance to e-Infrastructures

The processing and storage components of e-Infrastructures rely on software at various levels, from operating systems to libraries and applications. Since most existing e-Infrastructures have been established for non-profit research and education purposes, it is possible that their software licences may not be appropriate for use for other purposes or by other organisations. For example:

- Open source operating systems or components may have licences that only allow non-profit use;
- Licences for commercial application software (e.g. for modelling) may have been bought at an educational discount, or limited to a particular domain of use;
- Where software is developed using the e-Infrastructure, run-time libraries that need to be distributed along with it may be limited, or more expensive, for non-state-funded use;
- Where software has been developed specifically for the e-Infrastructure, it may not be clear whether the licence permits non-state-funded use.

If restricted licences are present in e-Infrastructures then non-state-funded use may require them to be extended or replaced to avoid unlawful breaches of the licence terms. This may involve additional costs and, if not prepared sufficiently in advance, could delay or even prevent the wider use of e-Infrastructure components.

### 10.2 EU position

The software used by e-Infrastructures can be considered in three groups: standard, customised standard, and custom.

Standard software is obtained from external sources, often commercial suppliers or open source projects, and is used on e-Infrastructures in the same way as on other computing systems. For example many e-Infrastructures depend on Linux, Oracle, VMWare, Hadoop, Matlab or NAG. The licence conditions on standard software will be generally be set by the external source. e-Infrastructure operators may have had a choice of different options when they obtained the software, some may have negotiated individual licences with the supplier. Where an infrastructure was established for research and education use, it may have been reasonable to choose licences that were limited to those types of use, to non-profit purposes, or to particular sectors of users. If such restrictions were accepted then licences may need to be extended, replaced or re-negotiated to allow different classes of use, such as those involving private sector partners. This may involve an increase in the licence fee.

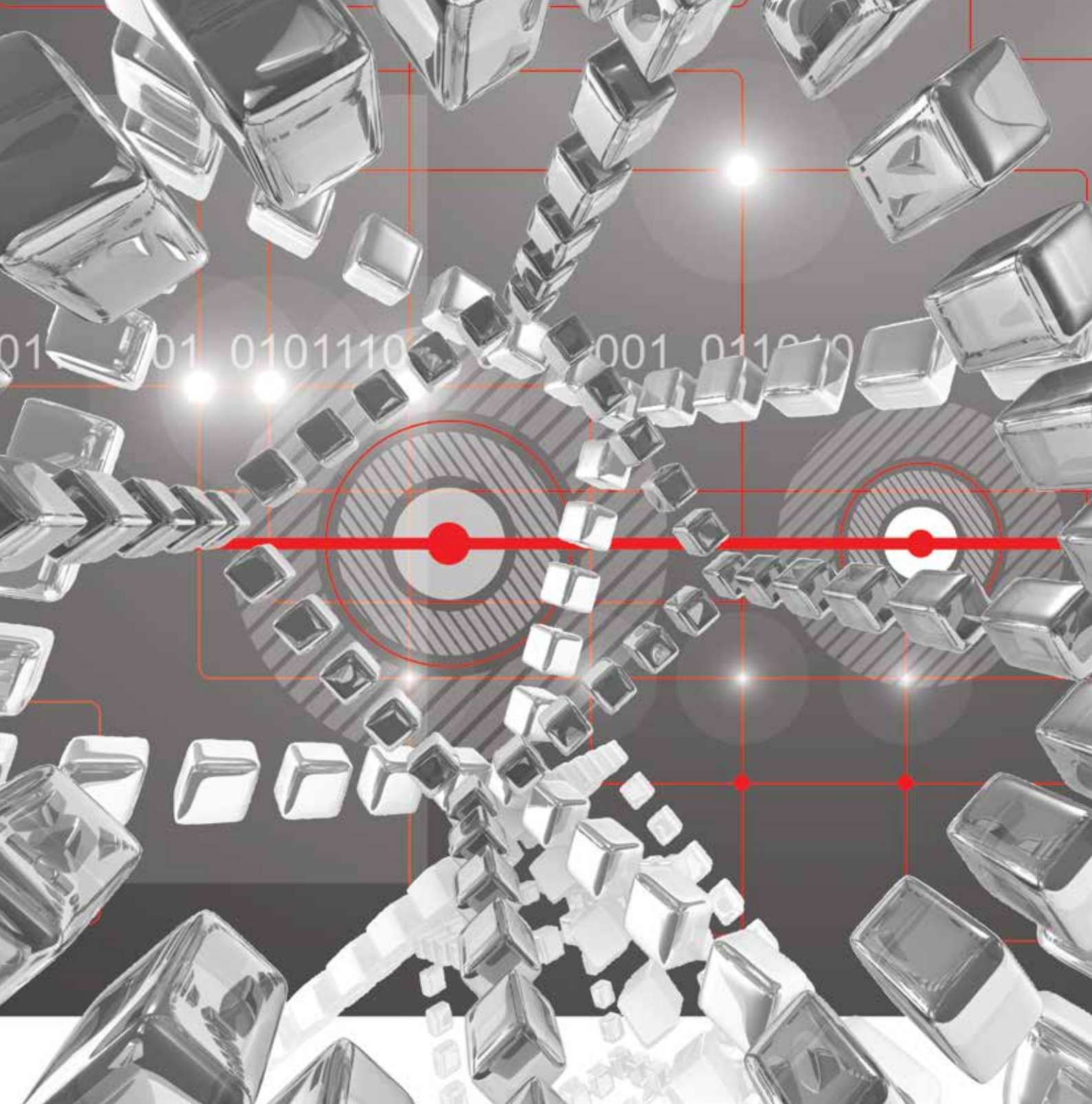
For custom (or customised) software the problem may be more complex and harder to resolve. Where software is written for a specific project then its licence terms are likely to have been chosen (if they were expressly stated at all) to match the requirements of that project rather than with a view to the software having wider use. In a number of subject areas, software is typically developed by a succession of consortia (e.g. EU projects) which may result in a situation where it is unclear either what the licence permits or who holds the intellectual property rights and is entitled to authorise any licence changes that may be required. Unless all projects have stated in advance that contributions are subject to unrestricted licences (in particular, allowing both commercial and non-commercial use) then it may be impossible to be legally certain what use of the resulting e-Infrastructure is permitted. Worse, the only way to resolve the uncertainty may be to obtain individual agreement from every developer (or their employers, depending on the terms of employment). For large software projects developed over a number of years this may be impractical.

Where software is developed using state funds reusing it may raise State Aid issues. Unrestricted licences should be considered for any software that may be reused, to avoid future problems of discriminatory provision to economic undertakings.

### 10.3 Conclusion

Non-state-funded use of an e-Infrastructure may conflict with existing software licences. For standard software it should be possible to extend licences; custom software may have sufficiently diverse IPR ownership that this is impractical. Greater use of standard licences when developing software would improve this situation.





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