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# LAPSI

*The European Thematic Network on Legal Aspects of Public Sector Information*  
<http://www.lapsi-project.eu/>

## **LAPSI POSITION PAPER No 4: THE “LICENSING” OF PUBLIC SECTOR INFORMATION**

BY

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### ***INTERMEDIATE VERSION***

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## DISCUSSION PAPER NO 4: THE “LICENSING” OF PUBLIC SECTOR INFORMATION

1. **THE ISSUE TO BE REVIEWED.** The impact assessment exercise under Art. 13(2) of the PSI Directive does not explicitly deal with licensing issue. However, there is no doubt that the licensing policies adopted by public sector information holders (PSIHs) directly affect two of the items expressly mentioned in Art. 13(2): the extent of re-use of public sector information and its increase rate. Moreover the optimization of rules and policies also has a direct link with the “further possibilities of improving the public functioning of the internal market and the development of the European content industry”, which in turn is expressly mentioned in Art. 13(2). Therefore a specific inquiry into this area is entirely consistent, and arguably also indispensable, with the scope of the review and of the impact assessment exercise. In this context, the issue for which LAPSI’s contribution is sought is described as follows:

*“Licensing. Are there licensing issues further facilitating re-use of PSI that could be brought forward by legislative measures, by amending the current provision of Article 8 of the Directive, or other measures? If yes, which could/should they be?”*

Accordingly, the analysis builds on a review of the currently applicable provisions of the Directive which deal with licenses both at the legal and technological level (in § 2); presents an analytical framework to explore the impact of the legal tools under which public sector information is made available, including but not limited to licensing arrangements, on the possibility of merging different PSI data sets and facilitating the emergence of pan European PSI-based services (in § 3); discusses the interplay of these legal tools and of some of the technological determinants of the quantity and quality of reuse (formats; standards and interoperability; searchability) (in § 4); and, finally presents a number of options available in connection with the opportunity of amending current provisions in the area, including Art. 8 of the Directive (in § 5).

2. **THE CONTROLLING PROVISIONS AND THE PRINCIPLES UNDERLYING THEM.** While only one provision of the Directive, Art. 8, is specifically devoted to “licenses”, there is a number of recitals and provisions which directly or indirectly deal with the issue. These may be grouped in three clusters, which will be separately examined hereafter to assess the impact the underlying principles may have on the issue of the optimal design of licensing tools for public sector information.

- a. **THE GOAL OF FOSTERING THE EMERGENCE OF EU-WIDE INFORMATION SERVICES AND THE ROLE OF INTEROPERABILITY.** According to the current text of the Directive, licensing of PSI is to be consistent, among others, with the fundamental and overarching objective of contributing to the establishment of an internal market (Recital 1) and more specifically to “the creation of conditions conducive to the development of Community-wide services” (Recital 5). As “broad cross-border geographical coverage [of the relevant information services] will be essential in this context” (Recital 5), it is to be expected that also licensing policies should give priority to this dimension. While it may be taken for granted that the chance of an emergence of “new aggregated information products and services at pan-European level” (Recital 12) will depend on a variety of factors, including the timeliness with which the information is supplied to the re-users (Art. 4), the transparency of the conditions of re-use (Recital 15, Art. 7), the searchability of the data sets (Recital 23, Art. 5 and

9), it is to be expected that a crucial role will be played by the *openness* and *interoperability* of the conditions under which PSI is made available for re-use.

In this context, *openness* must be understood both as *technological* and *legal* openness. If PSI is made available in formats which disable its linkability to other data sets or on conditions which restrict its re-usability in connection with other data sets, then the very purpose of re-use may be defeated. *New information products and services* as envisaged by Recital 12 can come into existence only on the basis of the understanding that by definition no PSIH (or governmental authority) is in a position to anticipate in a centralized what combination of PSI and other data sets may come up along the value chain which goes from the initial data to the application. In this perspective, freedom to re-use PSI is a necessary precondition to allow market participants and society members to engage in a decentralized way in the very exercise which may bring to fruition the potential value of PSI. Accordingly, the notion of legal openness required for the attainment of the purposes of the Directive specifically links to the notion of *interoperability*. For the present purposes this notion may be derived from the provision of Art. 3(7) of the INSPIRE Directive:<sup>1</sup> interoperability refers to the possibility for data sets to be combined and for services to interact, without repeated manual intervention, in such a way that the result is coherent. In this perspective, the potential of network driven combination of PSI is clearly hampered by conditions which make the interoperability of one data set either impossible or problematic.

Openness and interoperability do not have only a *vertical* dimension (interoperability of data sets of different kinds), but also a *horizontal* one. “Broad cross-border geographical coverage” as envisaged in Recital 5 of the Directive may emerge, only if and to the extent re-use conditions stipulated between PSIH in member State X are compatible with re-use conditions stipulated between PSIH in member State Y. If this is not the case, the downstream product or service created by the re-user/provider may not be supplied to the market (or be made available to society at large) without violating the conditions agreed under at least one of the original arrangements.

This requirement of interoperability, which could be referred to as the **creation of conditions conducive to the emergence of cross-border, EU-wide value added information services**, was originally present at the time of the adoption of the Directive. The case may be made that *legal openness* and *interoperability* considerations are at the basis of a part of the provision of Art. 8(1) of the Directive. This norm indicates that re-use may be subject to conditions, which may be agreed through a license or a different arrangement; in its second sentence, it however provides that “these conditions *shall not unnecessarily restrict possibilities for re-use* and shall not be used to restrict competition”.<sup>2</sup>

This mandate to *legal openness* and *interoperability* has become an even more urgent priority at the current review stage, as the corresponding perspective has been further reinforced by later initiatives and no doubt ranks very high in the priorities list of EU policies, as recently confirmed by the Digital Agenda.<sup>3</sup>

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<sup>1</sup> Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 establishing an Infrastructure for Spatial Information in the European Community (INSPIRE).

<sup>2</sup> *Italics added.*

<sup>3</sup> EUROPEAN COMMISSION, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions *A Digital Agenda for Europe*, Brussels, 19.05.2010 Com (2010) 245, at 5, 9-10, 30-32.

- b. **THE COMPETITIVENESS MANDATE.** Re-use may either be commercial or non commercial. When it is commercial, as it is normally to be expected in connection with the information services referred to in the previous paragraph, a market may emerge which is expected to contribute to wealth maximization to the extent competitive conditions prevail. The current rules take into account this competitive dimension of contractual arrangements and licensing. Thus, Art. 8(1), in dealing with re-use conditions, provides that “these conditions shall not unnecessarily restrict possibilities for re-use and *shall not be used to restrict competition*”. The Directive additionally mandates that conditions for re-use should *not* be *discriminatory* (Recital 19; Art. 10). Exclusivity is in principle banned (Art. 11). It is therefore submitted that already under the original design of the Directive, the principles governing licenses for re-use of public sector information were intended to be consistent with the quest for economic efficiency as embodied in competition law principles; that this duty of consistency can at no time be called in question, and that these principles hold even more true in connection with the currently proposed review of the rules, as compliance with Artt. 101, 102 and 106 TFEU is mandated by directly applicable primary EU law.
- c. **MINIMUM HARMONIZATION AND SUBSIDIARITY.** The regime concerning licenses and other conditions for re-use of public sector information should also take into account a third dimension, which in some respects may point to a direction which is opposite to the one just indicated. The harmonization accomplished through the Directive should not go beyond what is necessary to achieve the various objectives it seeks to accomplish (Recitals 6 and 25); therefore its provisions, including the ones concerning charging, should be in accordance with the principles of Subsidiarity and proportionality as enshrined in Art. 5 of the Treaty. This limitation in the scope of the Directive is clearly spelled out in Art. 1(1).

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As earlier indicated, the rate of openness and interoperability of PSI made available for re-use has both a legal and a technological dimension.<sup>4</sup> We will explore both, spelling out their relationship to the competitiveness mandate and to the principle of Subsidiarity, before looking at the options available in view of possible amendments to the Directive.

3. **OPENNESS AND INTEROPERABILITY IN THE RE-USE OF PSI: A BRIEF REVIEW OF OUTSTANDING LEGAL ISSUES.** A PSIH intending to make PSI available for re-use has a number of delicate and controversial issues to deal with, which have important ramifications in terms of legal openness and interoperability with other data sets. A tentative list is offered hereafter.
- a. **TO LICENSE OR NOT TO LICENSE?** As clearly recognized in the wording of Art. 8(1), licensing is not a necessary precondition for re-use. “Public sector bodies may allow for re-use of documents without conditions or may impose conditions, where appropriate through a license...”. The US experience suggests that in particular no licenses are required, if the PSIH does not hold any copyright or other intellectual property right (IPR) to begin with.<sup>5</sup> In terms of legal openness and interoperability,

<sup>4</sup> Openness and interoperability may also have other dimensions: e.g. in connection with so called “dynamic content” (such as traffic data; meteorological data) any delay in the time frame of the release at any link of the chain is liable to affect at least some of the end-products.

<sup>5</sup> Even though, also in this case, the question may still remain whether a unilateral declaration, such as a disclaimer, or contractual terms dealing with non-IP issues, might still be in place. See below, § ?.

this clearly is the ideal starting point: by definition there is no problem of incompatible terms or conditions or of conflicting restrictions, if one of the data sets which have to be combined, interfaced or otherwise linked come with no strings attached. This situation would however appear exceptional, if not altogether non-existing, in the EU. May be the data set as such is not protected by IPRs, as it might well be the case if we talk about statistical data; but even though this is the case, the European legal systems have witnessed to such an expansion of IP protection in the last decades that we have reason to seriously consider the possibility that data sets exhibiting no creativity in themselves (e.g. earth aerial surveys) still are copyright protected as a result of the “choices” which accompany their generation; and we can rest assured that even the least creative data sets (including directories) enjoy *sui generis* right protection as provided by Directive 96/9/EC.<sup>6</sup> In this connection we should also be aware that the fact that the data sets are generated, collected and maintained by public sector bodies rather than by private entities does not rule out that they may attract the same protection as the one which would benefit private entities.<sup>7</sup>

Against this background, it is quite easy to understand why across EU Member States resort to some form of license is the rule.<sup>8</sup> Before looking at the different types of licenses from time to time adopted, we should however consider an arrangement which is in some way intermediate between unconditional making available without license and regular licenses: the so called public domain dedication.

- b. **PUBLIC DOMAIN DEDICATION.** Public domain dedication and CC0 appear particularly appropriate when the PSI data set is to a large extent or even mostly unprotected by IPRs; the instrument may then complete the picture by clarifying that, if and to the extent certain components of the data set are protected by an IPR, this IP protection is waived by the PSIH at the time the data set is made available. This approach is well exemplified by Creative Commons Licenses such as CC0. As indicated in a recent document,<sup>9</sup> “CC0 is a universal dedication that may be used by anyone wishing to permanently surrender the copyright and database rights they may have in a work, thereby placing it as nearly as possible into the worldwide public domain. CC0 is a legally robust instrument intended for use with any kind of work restricted by copyright or *sui generis* database rights.” Certain features of public domain dedication still need testing and experimenting; and this is particularly so in connection with legal openness and interoperability. Consider that the language of this instrument provides that “When the dedication function doesn’t work for any reason, CC0 acts as an unconditional, irrevocable, nonexclusive royalty-free license to use the work for any purpose. This fall back public license is similar to the

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<sup>6</sup> Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases, in OJ L 77, 27.3.1996, 20–28.

<sup>7</sup> See in this connection E. DERCLAYE, *Does the Directive on the Re-use of Public Sector Information affect the State’s database sui-generis right?*, in J. Gaster, E. Schweighofer & P. Sint P., *Knowledge Rights – Legal, societal and related technological aspects*, Austrian Computer Society, 2008, 137 ff., at 161 ff.

<sup>8</sup> There may be other reasons as well, which warrant resort to contractual or quasi-contractual arrangements, even though the data sets made available are not IP protected: see below, § #. See however Art. 14(3) of the INSPIRE Directive.

<sup>9</sup> T. VOLLMER-D. PETERS, *Creative Commons and Public Sector Information: Flexible tools to support PSI creators and re-users*, available at [http://www.epsplus.net/topic\\_reports/creative\\_commons\\_and\\_public\\_sector\\_information\\_flexible\\_tools\\_to\\_support\\_psi\\_creators\\_and\\_re\\_users](http://www.epsplus.net/topic_reports/creative_commons_and_public_sector_information_flexible_tools_to_support_psi_creators_and_re_users), last visited February 17, 2011.

Creative Commons Attribution license but with the attribution requirement waived”. In practical terms this means that, to the extent Creative Commons Attribution Licenses (CCBy) entail questions of interoperability, to be examined later in lett. d. below, these may crop up also if CC0 is used, as CCBy is a fall back solution in case of inoperability of CC0.

- c. **LICENSES.** As indicated earlier, Art. 8(1) of the Directive envisages that re-use of PSI is allowed under conditions, including, where appropriate, though a license. Recent years have seen a wide range of experiments in this connection; while license models have been adopted or proposed at the national level,<sup>10</sup> also the desirability of adopting internationally widespread license models, such as the ones provided in the menu of options proposed by Creative Commons, has gained increasing recognition.<sup>11</sup> While the choice between national or international models no doubt has an important impact on interoperability, in the quite obvious sense that international licenses are natural candidates to operate seamlessly across different jurisdictions, it would seem that interoperability issues are sure to crop up also in a certain number of other regards, both under national and international licenses. A few should be mentioned here.
- i. **THE ALTERNATIVE COMMERCIAL/NON COMMERCIAL.** An apparently strong case may be made for choosing a license for PSI content which rules out the possibility of authorizing commercial re-use of the same (e.g. by resorting to a CC NC license). The idea behind this initial reaction might be as follows. Public money has been spent on the generation, collection, maintenance of these data set; now, all is fine and well if this PSI is disseminated as widely as possible to enable study, research, entertainment and the like. But enabling these goals is clearly possible even if the authorization to access and re-use is under a NC license, i.e. limited to non commercial uses. Conversely, it might be argued, it does not make sense that PSI generated with taxpayers’ money is appropriated by profit making entities to build on it a proprietary product and service and sell on the market goods and services based on it. This line of argument is plausible at first glance; is in fact adopted by a great number of well meaning civil servants, who intend “to avoid that public data are ‘resold’ by private businesses”, but probably misguided if we stop to think a bit further and this on at least two accounts.<sup>12</sup>

*First*, we should consider the concept of chain of authorizations. No profit institutions, like Wikipedia and other aggregators of information and cultural content, undoubtedly contribute a great deal to the dissemination of knowledge, information, culture. However, they do so because the content they make available is accessible downstream without restrictions as to the commercial or non commercial nature of re-use; the reason of the great

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<sup>10</sup> [insert quotations: in particular UK, French, Netherlands?]

<sup>11</sup> This ground for considering the costs and benefits of this latter alternative has been prepared by the timely publication of the accurate and groundbreaking work of MIREILLE M.M. VAN EECHOUDE-BRENDA VAN DER WAL, *Creative Commons Licensing for Public Sector Information - Opportunities and Pitfalls*, January 2008), available at SSRN: <http://ssrn.com/abstract=1096564>

<sup>12</sup> For a more complete treatment of the issue see M. RICOLFI, [http://www.epsiplatform.eu/guest\\_blogs/re\\_use\\_licenses\\_commercial\\_or\\_non\\_commercial\\_this\\_is\\_the\\_question](http://www.epsiplatform.eu/guest_blogs/re_use_licenses_commercial_or_non_commercial_this_is_the_question). It should be further considered, however, that Art. 14(3) of the INSPIRE Directive that also the network services for spatial data referred to in lett. b) of Art. 11 of the same Directive, i.e. view services as opposed to download and transformation services, may be restricted to uses for commercial purposes. These services are free of charges.

success of Wikipedia and organizations and projects, such as Project Gutenberg, Open Street Map and the like, is that they make anything they put together available to anybody without strings attached. To do so, however, Wikipedia and its likes have to make sure that the content it incorporates is free to begin with; the flipside of the coin is that Wikipedia cannot incorporate content which would otherwise be splendid in complementing or illustrating its store of knowledge any time the same comes with restrictions as to the commercial nature of the intended re-use.<sup>13</sup> So, if we do not confine our consideration to the first re-users but also to the subsequent ones, we can clearly see that in this specific case NC licenses can greatly restrict dissemination. And if we stop for a moment to think, we realize that when we do not have content on Wikipedia, this means that what is restricted is not only commercial re-use, but availability on Wikipedia for whatever end and purpose. Full stop.

*Second*, we should consider that, once the costs necessary to generate, collect and maintain PSI are incurred, it does not make any difference whether the re-user makes a profit from re-use. No marginal cost is incurred by the PSIH just because there is an additional re-user. If he or she is smart enough to create a business model which enables her or him to combine this input with other inputs and make money out this, nice for her or him. Nothing is taken away from the public. Of course, there would be a disadvantage to the public if the re-user is able to obtain monopoly or even market power through the use of PSI created by public funds. This may indeed happen in a number of ways. This unwanted outcome would result if PSI generated though public money were made available on terms of exclusivity. But this is a good reason to avoid exclusivity, not commercial use.

It also is possible that the re-user combines publicly funded PSI with proprietary content; and secures a dominant position on the strength of the combination of the two complementary items. Economists would suggest that, if this is the case, there would be an incentive for new entrants to create and offer competitive complementary data sets; that is, if the publicly funded PSI is made available to all comers, without exclusivity. Of course, it may also happen that a re-user possessing market power controls so many important assets which are complementary to PSI, that the chances of a competitive challenge to such a powerful incumbent are slim. This is a possibility; but it is arguable that this occurrence is an externality which should be taken care by regulation, e.g. by means of antitrust enforcement or by application of the so called doctrine of essential facilities. It is likely that the adoption of licenses preventing commercial re-use of PSI would make the matter worse. Indeed, if PSI data sets were made available only on the condition that they are used non commercially, it might happen that this restriction turns out to be more detrimental to firms intending to enter the market than to an entrenched business leader, who may have the means to generate the data sets it needs by itself. In such a context, NC licenses would make matters worse, not better.

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<sup>13</sup> Incidentally, this is the reason why no pictures are available to showcase a great many Italian monuments and buildings.

- ii. **SHARE ALIKE AND PSI.** Copyleft mechanisms, including the share-alike feature used in Creative Commons Share Alike licenses, make freedom of reproduction conditional on the licensee undertaking a positive obligation to “share alike”, to make her or his contribution available downstream on the same conditions under which licensee has incorporated the original work. There is no doubt that this “viral” feature has greatly contributed to the expansion of the digital commons. It would appear, however, that the purpose of PSI legislation is to allow re-use of PSI rather than “nudging” re-users, who may be civil society members, large businesses as well as start ups, to adopt a certain contractual behavior in connection with their own original contributions they may wish to combine with re-used PSI.
- iii. **PLAIN VANILLA OPEN LICENSES.** Even plain vanilla licenses, such as CCBy, which do not restrict downstream re-use to non commercial acts or activity and do not entail a copyleft feature, may still raise a few questions. In previous versions of CC licenses, questions arose as to the status of licensed works, when elements of the same licensed work attracted the *sui generis* protection characteristic of data base rights or the copyright protection which “creative” data bases could trigger.<sup>14</sup> Generally, CCBy licenses and the like are compatible with a large number of other like minded licenses; it may be questioned whether licensor, who as a rule cannot modify the license text,<sup>15</sup> may add some interpretative language to the effect that the license adopted is compatible with certain other licenses.
- d. **CONTRACTUAL UNDERTAKINGS TO BE GIVEN BY THE RE-USER TO THE PSIH.** Art. 8 of the Directive refers to “conditions” other than the terms of a license as such; and rightly so. It is submitted that these “conditions” may be of contractual nature. In fact, while at least in principle a “license” is to be understood as a unilateral grant of rights from licensor to licensee, and this grant may be made subject to certain conditions,<sup>16</sup> e.g. that licensee gives credit to licensor as to the paternity of her or his work (“attribution”), making available of PSI may require that the re-user gives positive undertakings to the PSIH.<sup>17</sup> It may be necessary to specify which metadata are used to indicate which portion (or portions) of the downstream data sets are attributable to the original activity of the PSIH, as opposed to value added by the downstream user; it may be necessary that the re-user undertakes not to degrade the integrity of the licensed data (or even that it “refreshes” them, linking back to updates which the PSIH may from time to time release).<sup>18</sup> Terms and conditions<sup>19</sup> such as these are perfectly compatible with the provision of Art. 8. They raise however questions of

<sup>14</sup> Reference to the solutions adopted to tackle this problem, which is typical of EU jurisdictions, which provide for data base protection in forms unknown to other legal systems, in a way which seamlessly fits with the treatment of data bases in jurisdictions which do not recognize a similar or corresponding protection to data base, *see #*.

<sup>15</sup> Which normally is incorporated by means of a reference to an URL.

<sup>16</sup> For this understanding of the notion of license *see* I.V. HEFFAN, *Copyleft: Licensing Collaborative Works in the Digital Age*, in 49 *Stanford Law Rev.* 1997, 1487 ff., at #.

<sup>17</sup> This may be the case both in the situations envisaged in lett. **b.** and **c.**

<sup>18</sup> The case is often made that the re-user may contribute to the completeness and reliability of the data set by giving feedback to the PSIH. However, this feature may raise a number of questions, including concerns where the feedback entails a license from the re-user to the PSIH (*see* in this connection E. DERCLAYE, *Does the Directive on the Re-use of Public Sector Information affect the State’s database sui-generis right?*, above at note #, #). Moreover, it may be questioned whether an obligation on part of the re-user would be compatible with the overall goal of the directive, on the basis of the same reasoning as the one advanced in connection with copyleft clauses.

<sup>19</sup> In the specific meaning of “contractual” (as opposed to “unilateral”) conditions

interoperability with other sets of conditions stipulated by other PSIHs. There are obvious reasons to wish to avoid that, even when data sets are released under compatible deeds of the kind considered above in letts. **b.** and **c.** above, their combination still may be prevented by a conflict between the additional contractual arrangements which may accompany them.<sup>20</sup>

- e. **“MIND THE GAP”**: A HIDDEN THREAT TO INTEROPERABILITY. In the last fifteen years or so the question of freeing content (including data sets, which are of special interest in connection with PSI) to make it available over digital networks has concentrated on the output side. We asked what has to be done to contractually open up content, so that it may be freely accessed, reproduced and combined with other content. It is quite obvious that this is not an easy task to begin with. The points made above indicate that even more delicate interoperability questions crop up when the issue is to free data sets coming from multiple sources.

It should be considered that, even assuming that all these issues may in some way or other be taken care of, this still is only a part of the job. Indeed, we should also look also at the input side of the job (or, more specifically, we should have looked at this side from day one). PSI data sets are complex products, which normally consist in the digitized data, plus metadata concerning them, plus the software which collects them, runs them, enables their retrieval. Typically several of these items may attract copyright or data base protection. How are all these various items obtained by the PSIH? One possibility is that the job is done by employees of the PSIH. Also outside consultants may be called in for this purpose. It is also possible that the job is outsourced, that this that an outside contractor digitizes, creates the metadata, writes the program to make the content and the ancillary information available and so forth. A final possibility is that a private partner in a PPP project takes care of the creation of metadata and possibly additionally contributes IP protected “foreground” to the venture, that is intellectual property, from trade secrets, algorithms, indexation technology and the like, which it may well possess independently from the digitization project.

Of course, a public institution involved in the generation of PSI does not want to find out that, after spending taxpayer money, it ends up being unable to grant access and enable re-use of all the data sets only because it has failed to secure advance authorization in connection with metadata or other IP protected components which go into the PSI (*see* in this connection Art. 1(2)(b) of the Directive). There is a number of means to avoid this situation; and these may consist of contractual authorizations (waivers) or legal rules, including default rules attributing derivative ownership to the PSIH. Whatever the solution may be, the important thing is that the problem is identified in advance and taken care of in a timely and adequate way. A failure to do so would mean that even PSI which is made available under

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<sup>20</sup> The interface between PSI provisions and data protection legislation may raise an additional – and apparently intractable – issue: it may be necessary for the PSIH to declare the purpose for which the data protection relevant data it makes available have been treated and held by the PSIH, to make sure that only re-uses compatible with the original purpose are undertaken by the re-user (*see* Art. 1(3) of the Directive). While at the current stage there is reason to believe that compliance by the re-user should be based on legal norms rather than by a contractual arrangements between the re-user and the PSIH, this first step does not solve the questions of compatibility which are at the heart of this paper: what would happen when the purpose stated in connection with the data set originating in member State X does not dovetail the purpose stated in connection with the data sets originating in member States Y and Z. Of course, cloud computing is liable to make things even more complicated: *quaere* what would happen if the cloud where the combined information is located in a non-member State country which does not offer comparable data protection warranties?

(apparently) compatible licenses may at any time turn out to incorporate third party IP, which would prevent it from being re-usable.

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The inventory just sketched out indicates that legal openness and interoperability are by no means an easy task; rather the different alternatives indicate difficulties which must be carefully negotiated in a cooperative spirit between all the players on the ground, to avoid that rich and diverse data sets generated from PSI are in the end unable to coalesce and merge into novel information service, as they are supposed to under the European PSI design.

4. **INTEROPERABILITY IN THE RE-USE OF PSI: A VERY BRIEF REVIEW OF OUTSTANDING TECHNOLOGICAL ISSUES.** Several provisions of the Directive deal with issues which impact with the interoperability of PSI data sets across different fields and member States.

Art. 5 of the Directive indicates that the availability of PSI in electronic formats is preferred, but not mandated. This certainly is a radical limitation to interoperability. It would however seem that under the current conditions there is not much to do about it. Art. 3 of the Directive implies that the decision as to whether to allow re-use of PSI held by PSIHs or not is currently left to member States, which, in turn, may refer the choice to the same PSIH. In such a context, any provision mandating formats (e.g. machine readable formats, which are a prerequisite of interoperability), might backfire. Member States and PSIH empowered by them might simply decide not to allow re-use of all the PSI which does not already come in machine readable format. As a result, the pool of data sets candidate to being merged would shrink rather than expand. Openness and interoperability of software formats is also encouraged (Recital 13); but again the corresponding choice is left in the hands of member States and of the PSIH falling under their jurisdiction.

Art. 9 of the Directive, concerning “practical arrangements”, takes for granted the limitations in formats of the underlying documents just referred to. It however builds provisions concerning two kinds of facilities which may contribute to interoperability.

The first concerns tools “that facilitate the search for documents available for re-use, such as asset lists, accessible preferably on line, of main documents” (see also Recitals 15 and 23).

The second concerns “portal sites that are linked to decentralized assets lists” (see also Recitals 15 and 23).

While member States are under an obligation to take action in both regards, the extent of the obligation is quite limited. Asset list may not be accessible on line; they need not to be complete, but only include “main documents”. Limitations in availability of asset lists reflect on the effectiveness of portals.

5. **WHERE DO WE GO FROM HERE?** An interim assessment indicates that openness and interoperability still is a long way, both from a legal and from a technological viewpoint. Solutions are not around the corner. At the level of legal analysis, a survey of best practices in licensing in view of interoperability still is required before the issues raised in § 3 may approach the stage of workable solutions; empirical evidence, including through case studies, still is required. It would appear that also at the technological level a lot of work still is required, even though it would seem that operational initiatives are coalescing under the umbrella of the Digital Agenda.<sup>21</sup>

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<sup>21</sup> For a more complete treatment of these issues, references should be made here to the work undertaken by the share-PSI.EU group.

This does not mean that the question presented at the beginning should not receive a reply even at the current stage. As far as the legislative or other normative measures which may at this stage be considered, it would seem that currently there are four options available.

**5.1. DOING NOTHING.** Even though we are aware of the limits to our knowledge, we must also build on the idea that important amounts of valuable PSI are coming to fruition. It does not make sense that inaction reduces the potential coming from the possibility that the various data sets are merged and combined into pan-European cross-border information services. This would also entail refraining from harnessing the competitive potential of novel markets in a moment in which innovation clearly is essential to counter the negative impact of the current financial and economic crisis.

**5.2. LEAVING THE TASK TO SPONTANEOUS MARKET MECHANISMS.** This second option may be seen as different from the previous one. Indeed, this option may build on the idea that it is indeed inefficient that re-use is encouraged across the EU, if then the different pieces of the jigsaw, while generated at not insubstantial costs, in the end do not fit; however, the argument could run, the markets are in a position to take care of the inefficiency by letting the players (PSIHs as well as information services providers, as well as final users) to create incentives to overcome the inefficiency. Indeed, in principle it can be expected that a competitive market will create sufficient incentives for making optimal use of resources and, hence, that no additional state intervention is needed which goes beyond measures that are designed to promote competition or protect competition against restrictions.

It is doubtful that the argument, sound as it is in its general theoretical foundation, may apply to the situation we are considering here. Indeed, when we are discussing interoperability among PSI data sets, we are talking about the provision of a global public good.<sup>22</sup> Generally public goods are supplied as a result of market failures; therefore it is not to be expected that market mechanisms may contribute to avoid them to begin with. Even though failure to achieve interoperability may lead to inefficient results, this does not mean that market mechanism are supposed to correct them. After all, PSIHs are public sector bodies operating on the side of supply of PSI; any efficiency loss is likely to be found on the demand side and PSIHs do not have specific market incentives to correct them. It is therefore submitted that leaving the task to spontaneous market mechanisms is not going to contribute to positive outcomes.

**5.3. TOP-DOWN ACTION.** A third option consists in imagining that the EU sets itself the task of identifying optimal contractual and technological means to deal with the issue of interoperability.

This is a difficult task to begin with. The survey presented in §§ 3-4 indicates how many issues still are resolved; and indicates that a large amount of empirical work still is needed before truly acceptable solutions in the critical areas are worked out. Apart from this, the very idea of having top-down measures adopted at the EU level to be implemented by member States and by the PSIHs under their jurisdiction is objectionable from the viewpoint of the respect of the principle of Subsidiarity. This does not rule out that a different mechanism may be explored which may combine EU guidance and respect of the prerogatives of the member States and of the players on the ground.

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<sup>22</sup> In accordance with the terminology adopted by K.E. MASKUS-J.E. REICHMAN, *The Globalization of Private Knowledge Goods and the Privatization of Global Public Goods*, in *Journal of International Economic Law* 2004, 279-320.

**5.4. AN INTEROPERABILITY-FOSTERING MECHANISM.** Indeed, a fourth options seems possible which avoids the pitfalls of inaction which would follow from options 5.1 and 5.2 and at the same time stay clear of encroachment on member States' prerogatives.

The components of the mechanism may be described as follows. From the *legal* side:

5.4.1.1. As a result of a survey of best practices and empirical evidence, a set of guidelines and principles should be prepared at the EU level to provide guidance on issues of legal and technical openness and interoperability;

5.4.1.2. these guidelines should deal with a number of priority issues, such as:

- choice between public domain dedication and licenses;
- rationale for accepting licenses also for commercial uses; list of possible exceptions thereto;
- guidance on share-alike clauses;
- guidance on employment and procurement clauses to secure PSIH ownership with all IPRs incidental to PSI generation;

The Guidelines should take into specific account the competitive dimension which the different alternatives entail; by way of example, competitive concerns should guide the choice in favor of licenses which do not restrict commercial re-use, to the extent the argument presented in § 3.c.i is accepted.

5.4.1.3 the guidelines should not apply as default rules; rather they would provide a frame of reference;

5.4.1.4. PSIH would be encouraged to follow the guidelines, unless they have reasonable grounds to do otherwise (comply or explain);

5.4.1.5. member States would be advised to set up audit mechanisms, whereby the decisions by PSIHs in the above areas are monitored, with particular regard to the comply or explain mechanism;

5.4.1.6. PSIH should be encouraged (or possibly mandated) to register the conditions under which PSI is made available in a central registrar; this registrar would enable comments by the general public, including the users; the material accumulated in the registrar would in turn enable updating of surveys of current practices and adaptation of the Guidelines.

From the *technological* side: technological interoperability may be enhanced in three ways.

5.4.2.1. Clear priorities could be established, by stressing that what is required is "raw data now", in machine readable and open formats. In accordance with the engineering principle of separating data from interaction,<sup>23</sup> public sector bodies should avoid seeking the best tools and leave to the market – and to market-based technologies – the optimization of the presentation of the data. What is required is reusable data, not fancy web sites.

5.4.2.2. The details of asset lists may be prescribed in some form of lower level technical document (e.g. by mean of a standards or interoperability document or Regulations setting these standards, issued at the EU level and having direct application in the Member States).

5.4.2.3. In connection with portals there is need for at least some general principles of openness to be technically expressed. These should include (i) permanent URIs for the relevant documents; (ii) interoperability and standardization between indexing and search services within a single jurisdiction and between the member States; (iii) obligation of the Member States to put in place the relevant bodies responsible for setting the standards for

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<sup>23</sup> D. ROBINSON, H. YU, W.P. ZELLER- E.W. FELTEN, *Government Data And The Invisible Hand*, in 11 *Yale J.L. & Tech.* 2009, 160 ff.

storing, indexing and disseminating PSI as well as for publishing the relevant web services and standards in a common European portal.<sup>24</sup>

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In terms of *measures* connected to the ongoing review process, the third option would require extensive rewriting of Artt. 8 and 9 of the Directive. The fourth option would entail a much lighter approach: all what would be required would be:

- (i) A provision indicating that guidelines and principles may be issued by the Commission in the areas of Artt. 8 and 9; and that the same guidelines are to provide for a review mechanism both at the member State and EU level; and
- (ii) A provision indicating that the goals indicated in Art. 9 are to be pursued in conformity to a standards and interoperability technical document (in the form of an Annex to the Directive).

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<sup>24</sup> The model offered by the Inspire geo-portal under Art. 15 of the INSPIRE Directive might offer inspiration.