



Katleen Janssen & Joep Crompvoets (eds)

GEOGRAPHIC DATA AND THE LAW

Defining New Challenges

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EDITED BY
KATLEEN JANSSEN AND JOEP CROMPVOETS

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Towards True Interoperable Geographic Data: Developing a Global Standard for Geo-data Licences

Bastiaan van Loenen¹, Katleen Janssen² and Frederika Welle Donker³

Introduction

In the development and diffusion of major technologies and applications, standards provide an essential input, establishing compatibility or interoperability between components in a system⁴. This is also true for the case of the dissemination of geographic data. Not only technical standards are important, but also agreements establishing interoperability on an organisational or legal level. However, while the harmonisation of licensing models and practices is essential for sharing geographic data across borders between public bodies, the private sector and broader society, the focus in the geo-domain still remains mostly on the standardisation of the technical aspects of geographic data. Yet, non-transparent and inconsistent licences have often been identified as a major barrier to the sharing of data across the geospatial community and a clear need for harmonised geo-licences is increasingly being recognised⁵.

Currently, it is very difficult to readily assess and directly access geographic data and geographic information services. A major barrier is the use of non-standard licences that are difficult to understand, both for human beings and computers. This applies to the use and combination of different geographic data and geographic information services within one jurisdiction, but also to cross-border and international use. For example, INSPIRE will promote the technical interoperability of geographic data allowing different data sets across Europe to be smoothly combined in new data sets and/or services⁶. However, without

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⁴ Department of Trade and Industry (2005). *The empirical economics of standards*, www.bis.gov.uk/files/file9655.pdf (accessed on 26/08/2011).

⁵ MICUS (2008). *Assessment of the re-use of public sector information (PSI) in the geographic information, meteorological information and legal information sector. Final report*, http://ec.europa.eu/information_society/policy/psi/docs/pdfs/micus_report_december2008.pdf (accessed on 26/08/2011); N. Groot et al. (2007). "Toegankelijkheid publieke geodata vooral gehinderd door juridische barrières". *VIMatrix* 15(8), 6-8 [in Dutch]; B. van Loenen et al. (2007). *Open toegankelijkheidsbeleid voor geo-informatie vergeleken: het gras leek groener dan het was*. Delft: Delft University of Technology [in Dutch]; National Research Council (2004). *Licensing Geographic Data and Services*. Washington: National Academies Press; Spatial Technologies Industry Association (2001). *Phase 1 report: increase private sector awareness of, and enthusiastic participation in the National Spatial Data Infrastructure (NSDI)*, <http://www.fgdc.gov/library/whitepapers-reports/sponsored-reports/stia/> (accessed on 26/08/2011); RAVI Bedrijvenplatform (2000). *Economische effecten van laagdrempelige beschikkingstelling van overheidsinformatie*. Amersfoort: RAVI Bedrijvenplatform [in Dutch]; H. Meixner and A.U. Frank (1997). *Study on Policy Issues Relating to Geographic Information in Europe*, ftp://ftp.geoinfo.tuwien.ac.at/frank/2184_GIPolicy.pdf (accessed on 26/08/2011).

⁶ See European Parliament and Council (2007). Directive 2007/2/EC of 14 March 2007 establishing an Infrastructure for Spatial Information in the European Community (INSPIRE), *OJL* 108, 1.

standardised licences these new data sets and/or services will either never be developed or be developed with significant delay.

Only recently the development towards a standard for geo-information licences has started to emerge. Examples of promising initiatives aimed at standardising licences are e.g. found in the United States⁷, Europe⁸, Italy⁹, the Netherlands¹⁰, Australia¹¹, and at a global level¹². However, there are increasing calls for licensing models that have a broader reach than just on a national or sector level, possibly based on existing models such as Creative Commons or Open Data Commons¹³.

During its meeting at the GSDI 12 conference in Singapore in October 2010, the Legal and Socio-Economic Working Group of the Global Spatial Data Infrastructure Association (GSDI) felt that the possibilities for such global licensing models for geographic data needed to be examined further. The Group believes that the differences between the national traditions and practices with regard to licensing might actually be smaller than generally assumed, entailing that efforts to harmonise these traditions and practices may be worthwhile. The task of looking for harmonisation of licence models was taken up by a number of academics and practitioners, who aim to take some first steps towards a global approach to licensing.

First, the Working Group collected existing material on (national and international) licensing frameworks, compared the key components thereof and categorized them in a number of 'common denominator' groups. The next step is to develop a framework of several types of licences based on these categories, which can be used globally and will increase transparency of the conditions for obtaining and using geographic data. The intention of the framework is to avoid creating new licensing conditions if this is not necessary, but also to accommodate possible differences between organisations, cultures, and financing models. This paper presents the first stage of the work, i.e. the comparison between several existing licensing models and the definition of common elements that can serve as a basis for a global set of model licences.

⁷ National Research Council (2004). *Licensing Geographic Data and Services*. Washington: National Academies Press.

⁸ INSPIRE Drafting Team Data and Service Sharing (2010). *Guidance on the 'Regulation on access to spatial data sets and services of the Member States by Community institutions and bodies under harmonised conditions*, http://inspire.jrc.ec.europa.eu/documents/Data_and_Service_Sharing/DSSDraftGuidancedocument_v4.1.pdf (accessed on 26/08/2011).

⁹ L. Garretti et al. (2009). "Standard Licences for Geographic Information: the Development and Implementation in Local Government in Italy". In van Loenen, B., Zevenbergen, J.A. and Besemer, J.W.J. (ed.). *SDI Convergence - Research, Emerging Trends, and Critical Assessment*. Delft: NCG, 53-62.

¹⁰ F. Welle Donker, B. van Loenen and J. Zevenbergen (2010). "Geo Shared licences: a base for better access to public sector geoinformation for value-added resellers in Europe". *Environment and Planning B: Planning and Design* 37, 326-343.

¹¹ A. Fitzgerald (2010). "Legal Issues and Experiences from an Australia Perspective". Presentation at GSDI-12 Conference 'Realising Spatially Enabled Societies'. Singapore, 19-22 October.

¹² H. Onsrud, J. Campbell, and B. van Loenen (2010). "Interoperable Open Access Licenses for the Global Earth Observation System of Systems (GEOSS)". *International Journal of Spatial Data Infrastructures Research* 5, 194-215.

¹³ See Group on Earth Observations (2010). *GEOSS Data Sharing Action Plan*, http://www.earthobservations.org/documents/geo_vii/07_GEOSS%20Data%20Sharing%20Action%20Plan%20Rev2.pdf (accessed on 18/02/2011); European Commission (2011). *Overview of the responses to the consultation on Directive 2003/98/EC on the re-use of public sector information*, http://ec.europa.eu/information_society/policy/psi/docs/consultations/cons2010/responses.xls (accessed on 18/02/2011).

Why standards?

Standards facilitate coordination and reduce complexity¹⁴. Historical studies of technological development (e.g. the triumph of QWERTY keyboards – to avoid letter hammers ‘hanging’ in type writers, and still in use for computers¹⁵ – and the struggle between VHS and Betamax) show that standards sometimes evolve gradually in the interplay between companies, public organisations and ‘standardisers’ on the one hand and more market-driven processes on the other hand¹⁶. The advantages and drawbacks of standards can be summarized as follows.

Table 1: Pros and cons of standards¹⁷

Pro	Con
<ul style="list-style-type: none"> • represent an effective way of transmitting information; • facilitate co-ordination and communication (especially where there is no central authority); • promote compatibility; • reduce complexity & result in simplicity; • bring advantages of large scale production; • provide optimal or at least good solutions, policies, products; • facilitate potential market development and control issues; • increase production and distribution cost efficiencies; • improve potential efficiency in use of products; • allow adapting to a world of increasing interdependence; • provide a comparative advantage (enable to compare); • increase convenience. 	<ul style="list-style-type: none"> • benefits of co-ordination, communication and simplification are also provided by rules in general; • goals can also be achieved – often more effectively – by market processes; • can be a threat to the individual actor’s freedom and right to be different and to innovate; • may impede innovation in general; • put power in the hands of large companies and experts; • drafting process is undemocratic compared to formal legislation; • may lead to poorer solutions and/or leave us with legacy (e.g. qwerty keyboards); • encourage competition for supremacy between ‘standardisers’.

In many fields of technology, one can note a general process of standardisation, moving from organisational standards to global standards via national and/or international standardisation¹⁸. This is demonstrated in Figure 1.

¹⁴ N. Brunsson et al. (2000). *A World of Standards*. Oxford: Oxford University Press; K. Krechmer (2009). “Open standards: A Call for Change”. *IEEE Communications Magazine* (May), 88-94.

¹⁵ P. A. David (1985). “Clio and the economics of QWERTY”. *American Economic Review* 75(2), 332-336.

¹⁶ T.P. Hughes (1987). “The evolution of large technological systems”. In Bijker, W. et al. (ed.). *The Social Construction of Technological Systems*. Cambridge: MIT Press, 51-82; R. Werle (1998). “An Institutional Approach to Technology”. *Science Studies* 11(1), 3-18.

¹⁷ Based on N. Brunsson et al. (2000). *A World of Standards*. Oxford: Oxford University Press.

¹⁸ An example may be the electricity plug. First, every device had its own type of plug and power point. Now, national standards are agreed upon, but an international standard is still lacking. The gap between the different national standards is filled by the private sector, which provides adaptor plugs for frequent travellers. Similar development is seen with the battery charger for mobile phones. Each mobile phone had its own type of charger, not exchangeable with other (types of) mobile phones. Recently the European Union has agreed upon requiring one common charger for all electronic devices.

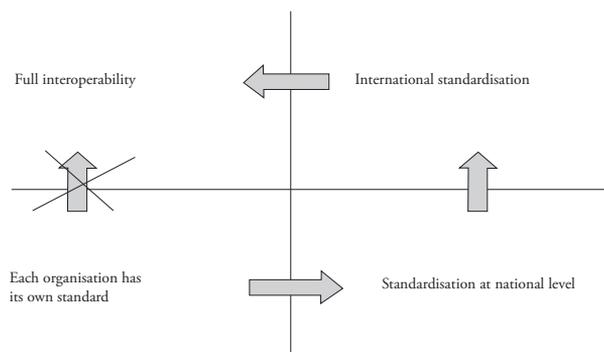


Figure 1: Suggested stages of development of standards

Similar to these standardisation processes, a standard for geo-licences may also emerge. The 'one world' principle of Krechmer might be taken as a leading principle towards further harmonisation of geographic data licences¹⁹. This is the principle of a single world-wide standard for a single purpose, for example to prevent technical barriers to trade. It implies that there is no need for a national or regional standard if a global standard suffices.

Start of licensing standards: Creative Commons

It can be argued that the standardisation of licences at a global scale started with the foundation of the Creative Commons organisation in 2001²⁰. Many licensing initiatives in the geo-sector build on the Creative Commons licensing framework. In this section, we describe the Creative Commons framework, and discuss some of its advantages and drawbacks with regard to the harmonisation of geo-licences.

The Creative Commons framework

Creative Commons (CC) was founded as a non-profit organisation and aims to offer flexible copyright licences for creative works such as text articles, music and graphics²¹. It advocates a system whereby right holders can make works available through the Internet without forfeiting their intellectual property rights (IPR). To facilitate this, CC has developed a system of so-called CC licences, which try to balance between the 'all rights reserved' concept of traditional IPR holders and the 'no rights reserved' concept of the Public Domain, by employing a 'some rights reserved' approach²².

¹⁹ K. Krechmer (2009). "Open standards: A Call for Change". *IEEE Communications Magazine* (May), 88-94.

²⁰ M. Dulong de Rosnay (2010), *Creative Commons Licenses Legal Pitfalls: Incompatibilities and Solutions*, http://www.creativecommons.nl/downloads/101220cc_incompatibilityfinal.pdf (accessed on 26/08/2011).

²¹ See <http://creativecommons.org> (accessed on 26/08/2011).

²² See also S. Dusollier (2006). "The Master's Tools v. The Master's House: Creative Commons v. Copyright". *Columbia Journal of Law & Arts* 29, 271-293; M. Dulong de Rosnay (2010). *Creative Commons Licenses Legal Pitfalls: Incompatibilities and Solutions*, http://www.creativecommons.nl/downloads/101220cc_incompatibilityfinal.pdf (accessed on 26/08/2011).

CC licences are model licences that offer the rightholder a limited choice in imposing certain requirements or allowing certain types of use, with regard to copying and redistribution, commercial and non-commercial use, the creation of derivative products, and the extension of the same licence conditions to derivative products. Apart from a number of standard clauses²³ and the requirement for attribution, the six CC licences offer a choice for the right holder to impose one or more of the following terms:

- The licensee may or may not use the work for commercial purposes;
- The licensee may or may not use the work to make derivative products, and if yes then:
- The licensee is or is not obliged to make the derivative product available to third parties under the same licence agreement terms.

The possible restrictions on the use that can be made of the work are summarised in the table below.

Table 2: Creative commons attributes

Symbol	Layman text
 BY	You let others copy, distribute, display, and perform your copyrighted work – and derivative works based upon it – but only if they give credit the way you request.
 SA	You let others distribute derivative works only under a licence identical to the licence that governs your work.
 NC	You let others copy, distribute, display, and perform your work – and derivative works based upon it – but for non-commercial purposes only.
 ND	You let others copy, distribute, display, and perform only verbatim copies of your work, not derivative works based upon it.

The different possible combinations of the attributes lead to a licensing suite of the following six licences:

- Attribution Non-Commercial No Derivatives (BY-NC-ND);
- Attribution Non-Commercial Share Alike (BY-NC-SA);
- Attribution Non-Commercial (BY-NC);

²³ For an extensive overview of these clauses, see M. Dulong de Rosnay (2010). *Creative Commons Licenses Legal Pitfalls: Incompatibilities and Solutions*, http://www.creativecommons.nl/downloads/101220cc_incompatibilityfinal.pdf (accessed on 26/08/2011).

- Attribution No Derivatives (BY-ND);
- Attribution Share Alike (BY-SA);
- Attribution (BY).

In addition, the Creative Commons Zero (CC0) licence has been introduced, allowing one to waive all copyrights and related or neighbouring rights in one's work, such as moral rights (to the extent that these can be waived), publicity or privacy rights, rights protecting against unfair competition, database rights and rights protecting the extraction, dissemination and re-use of data. Next, the Public Domain Mark enables works that are no longer subject to copyright to be marked as such in a standard and simple way, making them easily discoverable and available to others.

Benefits and drawbacks

The main benefits of using CC licences for disseminating geographic data are that the licences have been meticulously developed and debated by leading legal scholars, they are well known and widely used across the globe, and their legal provisions have been translated into numerous languages. Major web search engines automatically pick up embedded html code indicating that the returned sites contain CC licensed material²⁴. In addition, the validity of the licence has been upheld in various law suits around the world²⁵.

To some, one drawback of using CC licences is that they may not be altered in any way²⁶ (even though others see this as a great benefit)²⁷. Another disadvantage of CC licences is that they cannot be used for some types of works in some jurisdictions. CC licences are intended for 'creative works' that meet the applicable legal standard for 'originality'. As this standard for originality differs between jurisdictions (e.g. in France, an imprint of the author's personality is required, while in the United Kingdom a work is original if it is the result of sufficient skill, judgment or labour²⁸), geographic datasets may for instance be protected in one country, but not in another. Hence, using CC licences in a cross-border context may become complicated. The different national versions that have been created of the CC licences, all applying terminology adapted to their national legal frameworks, may complicate this even further²⁹.

²⁴ H. Onsrud, J. Campbell, and B. van Loenen (2010). "Interoperable Open Access Licenses for the Global Earth Observation System of Systems (GEOSS)". *International Journal of Spatial Data Infrastructures Research* 5, 194-215.

²⁵ See for example District Court Amsterdam, *Curry v Audax Publishing*, 9 March 2006 (the Netherlands); Court of First Instance of Badajoz, *Sociedad General de Autores e Editores*, 17 February 2006 (Spain); Tribunal of Nivelles, *Lichôdmapwa*, 26 October 2010 (Belgium). See also <http://www.edri.org/edriagram/number4.6/jurisprudence-creative-commons-europe> (accessed on 26/08/2011).

²⁶ See J. Farchy (2009). "Are Free Licenses Suitable For Cultural Works?". *European Intellectual Property Review* 31(5), 255-263.

²⁷ H. Onsrud, J. Campbell, and B. van Loenen (2010). "Interoperable Open Access Licenses for the Global Earth Observation System of Systems (GEOSS)". *International Journal of Spatial Data Infrastructures Research* 5, 194-215; M. Dulong de Rosnay (2010). *Creative Commons Licenses Legal Pitfalls: Incompatibilities and Solutions*, http://www.creativecommons.nl/downloads/101220cc_incompatibilityfinal.pdf (accessed on 26/08/2011); S. Dusollier (2006). "The Master's Tools v. The Master's House: Creative Commons v. Copyright". *Columbia Journal of Law & Arts* 29, 271-293.

²⁸ K. Janssen and J. Dumortier (2007). "The protection of maps and spatial databases in Europe and the United States by Copyright and the Sui Generis Right". *John Marshall Journal of Computer and Information Law* 24, 195- 225.

²⁹ M. Dulong de Rosnay (2010). *Creative Commons Licenses Legal Pitfalls: Incompatibilities and Solutions*, http://www.creativecommons.nl/downloads/101220cc_incompatibilityfinal.pdf (accessed on 26/08/2011).

In addition, problems of interpretation may occur for some of the CC licences, e.g. for the licence that only allows non-commercial use. What exactly constitutes ‘commercial use’? What about a company representative visiting a client using a car navigation system: does this constitute commercial use? The vagueness of the term ‘non-commercial’ has been criticised by several authors³⁰, and while on a national level some consensus may be reached on the exact scope of the term ‘commercial’, on a cross-border or international level this will be much more difficult.

Moreover, the use of only a non-commercial CC licence may be a problem for geographic data stemming from the public sector in particular jurisdictions, e.g. in the European Union, where both non-commercial and commercial use of such geographic data should be allowed under the Directive on the re-use of public sector information³¹. A separate licence would still be possible for commercial use, but this would limit the harmonising potential of the CC licence.

Next, the CC licence concepts of ‘no derivatives’ and ‘share alike’ may also pose a problem if the aim is to make datasets available for added-value products. If information (including geographic data) is only to be used without the possibility to produce derivatives, then it will only be suitable for internal business processes or for end users, and the addition of value by other users is not possible. Moreover, in a creative environment the concept of sharing works, adapting them, and making the derivatives available under similar conditions, as required by the share alike condition, might be important to control potential free-riders who want to redistribute the work and its derivative works under a more strict licence³². However, when geographic data are made available for the purpose of value adding, the requirement of making the added-value services and products available under the same open conditions would be counterproductive to the business model of many value-adders.

Licensing frameworks in the geo-domain

Even though the calls for standardisation of licensing conditions are increasing, many public bodies providing geographic data are still reticent to move away from their existing licensing policy and their national legislation³³. Concerns remain about the validity of international

³⁰ M. Dulong de Rosnay (2010). *Creative Commons Licenses Legal Pitfalls: Incompatibilities and Solutions*, http://www.creativecommons.nl/downloads/101220cc_incompatibilityfinal.pdf (accessed on 26/08/2011); F. Welle Donker, B. van Loenen and J. Zevenbergen (2010). “Geo Shared licences: a base for better access to public sector geoinformation for value-added resellers in Europe”. *Environment and Planning B: Planning and Design* 37, 326-343; S. Dusollier (2006). “The Master’s Tools v. The Master’s House: Creative Commons v. Copyright”. *Columbia Journal of Law & Arts* 29, 271-293; V. Rutledge (2008). *Fair Comment: Towards a Better Understanding of NC Licenses*, <http://www.col.org/news/Connections/2008feb/Pages/fairComment.aspx> (accessed on 26/08/2011).

³¹ M. van Eechoud and B. van der Wal (2007). *Creative commons licensing for public sector information. Opportunities and pitfalls*, http://www.ivir.nl/publications/eechoud/CC_PublicSectorInformation_report_v3.pdf (accessed on 17/04/2011); K. Janssen (2010). *The Availability of Spatial and Environmental Data in the European Union. At the Crossroads between Public and Economic Interests*. Alphen a/d Rijn: Kluwer Law International.

³² J. Lerner and J. Tirole (2005). “The scope of open source licensing”. *Journal of Law, Economics and Organisation* 21(1), 20-56. See also K. Stewart et al. (2006). “Impacts of Licence Choice and Organizational Sponsorship on User Interest and Development Activity in Open Source Software Projects”. *Information Systems Research* 17(2), 126-144, noting that restrictive licences, including viral open source licences, have a negative effect on user interest.

³³ K. Janssen, B. van Loenen and G. Remetey-Fulopp (2011). “Harmonising Licences on a Global Level: Mission Impossible or Piece of Cake?”. *Proceedings of the INSPIRE conference, Edinburgh*, http://inspire.jrc.ec.europa.eu/events/conferences/inspire_2011/abstracts/240.doc (accessed on 26/08/2011).

licensing models, and the applicability of these licences to particular national or sectorial situations.

However, recently several initiatives have been taken aimed at harmonising licences for public sector (geographic) data. In this section we describe three of these initiatives: Geo Shared in the Netherlands, the Government Information Licencing Framework (GILF) in Queensland (Australia), and the INSPIRE basic and specific licence in the European Union. Many more initiatives are currently under development. For an overview of some of these we refer to the INSPIRE Good Practice Guide³⁴.

Geo Shared (Netherlands)

The Dutch Geo Shared licensing framework is embedded in the more general policy of the Dutch government to make public sector information available free of charge and without any (re-) use conditions (see Table 3)³⁵. This policy applies to all information held by national government organisations and is endorsed by the Dutch provinces and water authorities. Most public sector information is envisioned to be available under a Creative Commons Public Domain Mark³⁶. If a PDM is not possible, a CC0 declaration is advised.

Table 3: Recommended policy for Dutch public sector information

	PDM: Work is in the public domain
	CC0: Work is donated to the public domain

However, in some instances public bodies are still required to apply use conditions and/or charges, for example due to legal obligations, or because of costs that need to be recovered. For the situations where such use conditions are required for the dissemination of geographic data, the Geo Shared (Dutch: Geogedeeld) licensing framework was developed as part of the Dutch INSPIRE programme, in close cooperation with the geographic data sector in the Netherlands. The framework builds on the CC concept, including symbols representing the various use conditions, a layman’s text and a legal text. The data providers can choose the use conditions they want to apply to the dissemination of their geographic data from a limited list, shown in Table 4. The symbols representing the conditions of use are published in the Dutch national geo-register³⁷. In addition to the licensing framework,

³⁴ INSPIRE Drafting Team on Data and Service Sharing (2010). *Good practice in data and service sharing*, http://inspire.jrc.ec.europa.eu/documents/Data_and_Service_Sharing/GoodPractice_%20DataService%20Sharing_v1.1.pdf (accessed on 26/08/2011).
³⁵ See van R. Van Boxtel (2000). *Naar optimale beschikbaarheid van overheidsinformatie*. Minister voor Grote Steden- en Integratiebeleid. Tweede Kamer, vergaderjaar 1999-2000, 26 387, nr. 7, <https://zoek.officielebekendmakingen.nl/kst-26387-7.pdf> (accessed on 18/10/2011) [in Dutch].
³⁶ See http://creativecommons.org/licenses/publicdomain/deed.en_US (accessed on 26/08/2011).
³⁷ See <http://www.nationaalgeoregister.nl/geonetwork/srv/en/main.home> (accessed on 26/08/2011).

a licence generator³⁸ was developed. On 21 September 2010, the framework was accepted by the GI Council, the Dutch advisory council on geographic data. In the course of 2011, it is being implemented by the public sector data providers.

Table 4 presents the standard use conditions that can be selected in the Geo Shared licensing framework.

Table 4: The Geo Shared licensing framework³⁹

	Attribution: Work can be used and re-used if name of copyright holder and/or the date of the creation of the Work is mentioned.
	Derivative works only if: the Work can only be part of a Derivative Work if the Work is not selectable from the Derivative Work.
	No redistribution: No redistribution of the Work is allowed.
	Time limitation: The licence is valid for a limited period.
	Fee required: Use of the Work requires a monetary payment.
	Purpose limitation: The Work can only be used for the purpose(s) specified in the licence.
	Additional conditions: Other restrictions than the above apply.

³⁸ The licence generator provides an overview of the possible use restrictions. After one has chosen the restrictions that apply, the licence generator automatically processes a standard licence based on the selected use restrictions (see <http://geogedeeld.geonovum.nl> [accessed on 26/08/2011]).

³⁹ See B. Van Loenen and D.W. van Barneveld (2010). "Implementing INSPIRE: the process towards the harmonization of licenses for public sector geographic information in the Netherlands". *Proceedings of the INSPIRE conference, Krakow*, http://inspire.jrc.ec.europa.eu/events/conferences/inspire_2010/abstracts/118.doc (accessed on 26/08/2011); B. van Loenen and F. Welle Donker (2010). "Towards a framework of standard licenses for geo-information?!" Presentation at the GSDI-12 Conference. Realising Spatially Enabled Societies. Singapore, www.gsdi.org/gsdiconf/gsd12/slides/1.3a.pdf (accessed on 18/10/2011).

Government Information Licensing Framework (Queensland, Australia)

The Government Information Licensing Framework (GILF) of Queensland is the result of a project initiated by the Queensland Spatial Information Council (Australia)⁴⁰. Its objective is to enable public sector information users to understand the rights of use associated with the material they want to use. GILF comprises a licensing framework containing the six CC licences and one GILF Restrictive Licence⁴¹. Originally only used in Queensland, it has now been taken up by the other Australian States and territories under the name of AUSGOAL, Australian Governments Open Access and Licensing Framework⁴².

Under GILF/AUSGOAL, the six CC licences are the preferred method for licensing government IPR. However, the restrictive licence template can be used if the public bodies want to impose additional conditions. It has been developed specifically for material that contains personal or other confidential data, but it may also be used for other reasons, including for material that is licensed with limiting or restrictive conditions.

Like the CC licences, the GILF/AUSGOAL restrictive licence includes an icon, layman text and a full licence. The licence contains 30 articles with 16 additional options to specify the generic licence provisions⁴³. In principle, the data obtained under this licence can be used in Australia for the own internal purposes of the user. Restrictions include prohibitions to copy the data, to make them available, to transmit them electronically or to perform any act that is not explicitly allowed under the licence. The licence provides an appendix in which these standard restrictions can be overturned, and the making of copies, the online distribution, the electronic transmission, the distribution of hard copies or anything else can be allowed. Further, the GILF licence has an article on payment and in an appendix information on the licence fee and payment terms can be provided. As already indicated, the restrictive licence also pays explicit attention to the situation where confidential and/or personal data is made available to the user. It allows for specific use conditions that can take into account the specific needs for protection of these types of data.

INSPIRE Drafting Team Basic and Specific licences (EU)

In 2005, the INSPIRE Drafting Team on Data and Service Sharing was set up to prepare the Commission Regulation implementing Article 17.8 of the INSPIRE Directive on access under harmonised conditions by the bodies and institutions of the European Community (now European Union) to spatial data sets and services from the Member States.

The Drafting Team provided a guidance document for the Member States and public authorities on how to share spatial data sets and services with the Community institutions and bodies⁴⁴. In this guidance document, the Member States are encouraged to make

⁴⁰ See www.qsic.qld.gov.au/initiatives/gilf.html (accessed on 26/08/2011). See also the contribution of Anne Fitzgerald further on in this book on the Australian experiences in opening up access to geographic data.

⁴¹ A. Fitzgerald (2010). "Legal Issues and Experiences from an Australia Perspective". Presentation at GSDI-12 Conference 'Realising Spatially Enabled Societies'. Singapore, 19-22 October.

⁴² See <http://www.ausgoal.gov.au/> (accessed on 26/08/2011).

⁴³ See <http://www.ausgoal.gov.au/restrictive-licence-template> (accessed on 26/08/2011).

⁴⁴ INSPIRE Drafting Team Data and Service Sharing (2010). *Guidance on the Regulation on access to spatial data sets and services of the Member States by Community institutions and bodies under harmonised conditions*, http://inspire.jrc.ec.europa.eu/documents/Data_and_Service_Sharing/DSSDraftGuidancedocument_v4.1.pdf (accessed on 26/08/2011).

upstream framework INSPIRE agreements on data sharing between multiple organisations and for multiple datasets, in this way preventing the need for a separate licence for each request for data. However, if such agreements are not available, the Member States are encouraged to use a Basic or Specific INSPIRE licence⁴⁵. While these licences were created specifically for the dissemination of spatial data and services towards the EU institutions and bodies, their broader relevance for any exchange of spatial data was also kept in mind.

The Basic INSPIRE Licence applies when spatial data sets or services can be used under INSPIRE conditions without significant further restrictions, and the use is free of charge. These INSPIRE conditions hold that the data or service can be used for the performance of public tasks that may have an impact on the environment by the institutions and bodies of the Community, and by contractors on their behalf. The institutions and bodies can allow public access to the data or service, but they should avoid unnecessary duplication of the original data set or service from the data provider, or any data or service derived from it⁴⁶. The licence also contains standard provisions on warranties and security measures, liability, access and delivery methods, personal data, assignment and sub-licensing, conflict resolution and termination.

Towards the development of cross-border and global standard geo-licences

The initiatives mentioned above show that we are starting to move from ad hoc licences created by individual organisations towards nationally or sectorially coordinated harmonised licences (see figure 2). The motivation behind these evolving developments is to improve the legal interoperability of geographic data and geographic information services. However, while these initiatives should be applauded, they still do not provide a solution for users intending to combine data from different sectors and across borders. The GSDI Legal and Socio-Economic Working Group aims to remedy this by proposing a global licensing model for geographic data.

The process of comparing and categorising licence terms

In order to create such a global model, the Working Group started with the collection of existing material on (national and international) licensing frameworks. The key components thereof were compared and categorized in a number of 'common denominator' groups. Based on these common denominators, a framework of several types of licences will be developed that can be used globally to increase the transparency of the conditions for obtaining and using geographic data. Throughout the process, the intention is to avoid creating unnecessary new licensing conditions, but also to accommodate possible differences between organisations, cultures, and financing models. An overview of the material that was compared is given in Table 5.

⁴⁵ Ibid.

⁴⁶ Ibid.

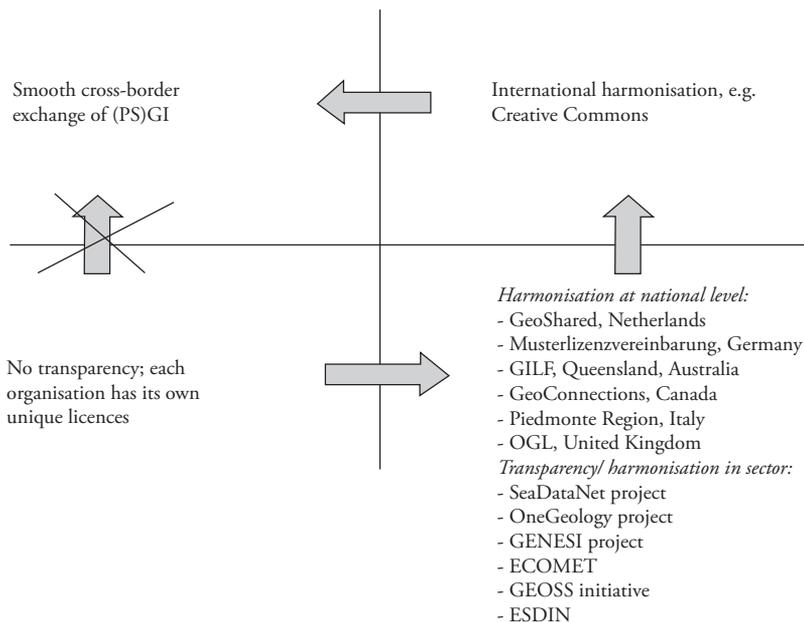


Figure 2: Suggested stages of development of a standard for geo-licences

In the review of the different licences and licensing frameworks, it was found that almost all of them contained provisions for the same topics. At first sight, this might mean that these licences could be harmonised easily, as they all discuss the same matters and the users come across the same elements in each licence. However, even though the topics might be the same, this does not mean that the content of the provisions is comparable. Hence, although agreement on general harmonisation of these categories would already be a step forward, this would only provide a small benefit to the user. Further harmonisation is needed at two levels. First, standard formulations should be available for each provision in the licence agreements. This would entail that while the organisations applying the licensing framework would still be able to determine their own requirements and conditions for the use of their data, these requirements and conditions would need to be selected from a list of standard requirements and conditions, formulated in standard clauses with harmonised wording. On a second level, not only the formulation of the conditions and requirements would be harmonised, but the types of conditions that can be imposed would be limited, in this way encouraging the greater exchange of geographic data. This second level depends on many different legal, cultural and institutional factors and appears to be very difficult to achieve. Therefore, the objective of the Working Group is set somewhere in between: a licensing framework that provides a number of model licences built from standard clauses, but that still allows data providers to choose the conditions they want to apply.

Table 5: Overview of existing national or sectoral geo-licence harmonisation efforts provided to the GSDI Legal and Socio-Economic Working Group

Name/ organisation	Location/Region	URL
APIE	France	https://www.apiefrance.fr/sections/actualites/des-conditions-generales-pour-la-reutilisation-des-informations-publiques/view
CC	World	http://creativecommons.org
ECOMET	Europe	http://www.ecomet.eu/index.php?option=com_content&view=article&cid=2&Itemid=3
ESDIN	European Union	http://www.esdin.eu/project/summary-esdin-project-public-deliverables#Licence
GeoConnections	Canada	http://www.geoconnections.org/publications/Best_practices_guide/Guide_to_Best_Practices_Summer_2008_Final_EN.pdf
Geo Shared	Netherlands	http://www.geonovum.nl/diensten/gebruiksvoorwaarden
GILF	Queensland, Australia	http://www.gilf.gov.au/
INSPIRE basic & specific licence	European Union	http://inspire.jrc.ec.europa.eu/documents/Data_and_Service_Sharing/DSSDraftGuidancedocument_v4.1.pdf
Ministry of Justice	France	http://www.rip.justice.fr/1932-simplified-licence-%C2%AB-conditions-of-the-reuse-of-public-information-that-is-freely-reusable
OneGeology-Europe	European Union	http://www.law.kuleuven.be/icri/deliverables/2071G-E_WP7_D7.pdf?where=
Open database licence	World	http://www.opendatacommons.org/licenses/odbl/
Open licence	Montevideo (Uruguay)	http://monolitos.montevideo.gub.uy/resoluci.nsf/de053405568724cf832575ae004f046777adaf8ec8d70033b832576d60041760f
Ordnance Survey (Open Government Licence)	United Kingdom	http://www.ordnancesurvey.co.uk/oswebsite/business/licences/agreements.html
SeaDataNet	Europe	http://www.seadatanet.org/content/download/3899/29604/version/2/file/SeaDataNet+Data+Policy+.pdf

Overview of the categories of licence terms

Table 6 provides an overview of the categories of terms used in the licensing frameworks that were analysed. The categories found in almost all of the licences and licensing frameworks were: definitions, grant of licence, obligations, allowed use, use restrictions, term and termination, disclaimers (limitation on liability/warranties/indemnification), dispute resolution, governing law, jurisdiction, and form and effect of the agreement.

Review of some particular categories

For many of the categories of terms identified in the review, the objective and content are the same. However, sometimes different licensing frameworks use the same categories, but with

Table 6: Matching categories of licensing terms with existing licensing frameworks

Licensing framework/ Licence component	GILF (AU)	Geo-Shared (NL)	INSPIRE Basic (EU)	INSPIRE Specific (EU)	Geo Gratis (CA)	Open Government Licence (UK)	RIP (FR)	ECOMET	Geoconnections (CA)	APIE (FR)	Seadatanet
Definitions	X	X	X	X	X	X		X	X		X
Grant of Licence	X	X	X	X	X	X	X	X	X	X	X
Restrictions on Use/ Allowed use	X	X	X	X	X	X	X	X	X	X	X
Term and Termination	X	X	X	X	X	X	X	X	X	X	
Disclaimers	X	X	X	X	X	X	X	X	X	X	X
Dispute resolution	X	X	X	X	X	X	X	X	X		
Governing Law	X	X	X	X	X	X	X	X	X	X	
Choice of Jurisdiction	X	X	X	X	X	X	X	X	X		
Form and Effect of Agreement	X	X	X	X	X	X	X	X	X		
Payment	X	X	X	X	N/A	N/A	N/A	X	X	N/A	X
Security			X	X							
Access and Delivery			X	X				X			
Personal data processing	X		X	X		X				X	
Assignment and sub-contracting	X	X	X	X			X	X	X		
Confidential data processing	X							X			
Use by contractors	X		X	X		X		X	X		

different content (different wording, different options/subcategories within the category of terms). While ideally these options or subcategories would be limited to a minimum, a big step in the harmonisation process would already be to ensure transparency about these

different terms and conditions, and to create some uniformity in their formulation. In this way the user knows what to expect when he or she wants to use geographic data.

In this section, we take a closer look at four of the categories for which several options or subcategories were defined in the model licences: grant of licence, allowed use, obligations of the user, and use restrictions.

GRANT OF LICENCE

While all licences that were examined provide the user with a non-exclusive grant of rights to use the geographic data, some differences were found relating to either the territory for which the licence was valid, or the necessity of payment for the use. For instance, some of the licences of Queensland's GILF only allow the geographic data to be used within Australia. Some licences explicitly request payment, such as the French APIE's (Agence du patrimoine immatériel de l'État) licences, while others are free of charge (e.g. INSPIRE basic licence, CC). Many of the licensing frameworks that include multiple licences include both free of charge and charging licence templates.

Harmonisation of these licensing frameworks would in first instance have to include options for limitation of the grant to a specific area and the inclusion of charges. However, if the licensing framework would be applied worldwide, the area limitation would of course no longer be possible. In order to increase the use of geographic data, the standard licence would ideally also be free of charge, but this would require a considerable change in the culture and business model of many public sector providers of geographic data.

ALLOWED USE

One of the central elements of any licence is the use the licensee is allowed to make of the data that he or she has obtained under the licence. Therefore, it is not surprising that the model licences and the licensing frameworks studied in this project contain many different variations of allowed use, adapted to the specific needs of each framework and/or data provider. These variations also include many different wordings, but can in general be reduced to a number of different types of use, mainly involving:

- Accessing;
- Viewing;
- Downloading;
- Copying;
- Distributing;
- Making derivative works.

Once again, the harmonised licensing framework will need to allow the data providers to choose from these different options, as they may need to differentiate between the possible types of use for determining their conditions, procedures and, most of all, their pricing models. However, the GSDI harmonised licensing framework can provide a considerable contribution to transparency and user friendliness of the dissemination of geographic data by harmonising the many different formulations into a limited number of standard categories.

USE RESTRICTIONS

Next to the allowed use, an important part of each licence for geographic data are the acts that the licensee is *not* allowed to perform with the geographic data he or she has

obtained. In the review of the model licences and licensing frameworks, a wide variety of use restrictions was found. The licensing frameworks consisting of multiple model licences generally included different combinations of these restrictions in each model, offering from very open to very restrictive licences for the data providers to choose from. Possible restrictions can be divided into a number of types:

- No sublicensing;
- No direct marketing;
- Viral clause: share-alike obligation;
- No distribution or disclosure to third parties;
- Only internal use for legal persons or private use for natural persons;
- No derivative works, only non-copy derivative works, no changes or adaptations to the original information;
- Limitation on number of copies, number of views, number of users/computers;
- Only use for a particular activity, or for a particular purpose;
- Only use by a particular group of users.

The different types of use restrictions can have a varying impact on the possibilities of the licensees to use the geographic data for the purposes for which they need it. For instance, while a prohibition to sublicense only limits the user from acting as a licensor of the data, the data can still be made public. Next, not being allowed to redistribute the data does not preclude the user from creating added value products and disseminating those, while a restriction to internal use would also prevent the latter. Another example where the extent of the use restriction can make a great difference is the purpose: a licence forbidding a particular type of use (e.g. no direct marketing) has much less impact than a licence only allowing one type of use (e.g. only for education).

As is the case for allowed use, any harmonised licensing framework will have to provide multiple options to accommodate the use restrictions that are required by the data providers. However, it deserves a more in-depth examination whether the options mentioned above usually appear in a licence in a particular combination. This could limit the options needed in the harmonised licensing framework. Yet, even if this is not the case, a benefit of the harmonised licensing framework could already be that the use restrictions are formulated in standard clauses, so that the users can easily determine what they can do with the geographic data, without having to interpret each restriction separately.

OBLIGATIONS OF THE USER

The fourth category of licence terms for which a number of different provisions and options were found is the obligations of the user. In the reviewed licensing frameworks the following obligations were found:

- No misuse of the data or misrepresentation of the data provider;
- No use of any identifiers/ trademarks of the supplier;
- Attribution;
- Notification of any misuse of the data or any infringements of the licence that were noticed by the user;
- Notifications of errors found in the data.

Again, as these subcategories were not found in all frameworks, they should be included as options in a harmonised framework, and provided under a standard wording, in order to offer more legal certainty to the users.

DISCUSSION

Harmonising the subcategories of licence terms discussed in the previous sections might seem straightforward. However, respecting the existing licences (thus supporting all or at least most currently existing provisions) implies a considerable need for flexibility in the harmonised licensing system. For most restrictions a standard licence may be introduced, for instance an end user licence that only allows private use and prohibits (third party) disclosure of the work. For two use restrictions, 'only use for a particular activity, or for a particular purpose' and 'only use by a particular group of users' a standard option may be problematic. Distinguishing between predefined activities or use types has similar problems as the ones discussed with regard to the CC licences⁴⁷: what is commercial use, non-commercial use, personal use, end-use? How can one delineate a sharp boundary between these different types? A similar discussion arises for user group categories: e.g. what is government use, private sector use, or non-profit use? This question is amplified when a user wants to combine different datasets. Hence, interoperable electronic licensing remains problematic in these situations. Even in a 'paper environment', challenges remain: how can a data provider make transparent what a user can or cannot do, if the criteria on which the decision is based are not defined clearly? An example of licensing models that try to tackle this is the Seadatanet project⁴⁸. Seadatanet assigns four different predefined roles to its users. Based on these roles a user profile dictates the conditions of access to the datasets. Depending on the type of user, for some datasets access is free without any restrictions, for other datasets it is not. The applicability of this approach to other licensing frameworks needs further investigation to determine whether it meets the full interoperability requirements.

Conclusions

We believe that a global framework of standard geo-licences is a prerequisite for stimulating cross-jurisdictional use of geographic data and for successfully moving towards a service-oriented SDI in which multiple services can be integrated into new services without delay. The first step to reach this objective is to move across national and sector borders towards an international standard for licences for geographic data.

The review of existing licensing frameworks by the GSDI Working Group shows that they have many elements in common, at least at the generic level of categories. Even the more detailed subcategories show possibilities for harmonisation in most instances. The most troublesome from a harmonisation perspective, are those licences with conditions per user type, per activity and/or specifying the purposes for which a data set can be used. For these licences, transparency of terms and full, automatic interoperability will be a real

⁴⁷ F. Welle Donker, B. van Loenen and J. Zevenbergen (2010). "Geo Shared licences: a base for better access to public sector geoinformation for value-added resellers in Europe". *Environment and Planning B: Planning and Design* 37, 326-343.

⁴⁸ See www.seadatanet.org (accessed on 20/10/2011).

challenge. For all the other licences, we have only one message: start working on embedding harmonised use conditions in your licences.

We believe that the commonalities in the studied licences are such that agreement on an international framework of geographic data licences is a feasible goal that can be reached in the short term. In this chapter, we identified the commonalities between these harmonising national and sector efforts and categorised their terms. In the next phase of the work, based on these categories, a framework will be developed of several model licences that could be used worldwide and increase transparency of the conditions for obtaining and using geographic data.