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D3.3 Customer Cost / Benefit Analysis

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1 Introduction

1.1 Plan4business

Plan4business is a European project running from April 2012 until March 2014 and co-financed by the 7th Framework Programme of the European Commission. The full title is plan4business – a Service Platform for Aggregation, Processing and Analysing of Urban and Regional Planning Data.

Today, urban and regional planning datasets are not aggregated and not easy to use for business issues: planning data users are confronted to fragmented data sets, unable to create comparative analysis, monitoring and analysing urban statistics, or developing urban inquiries and projects. Researchers, geo planners and professionals from the real estate world as well as other disciplines, such as insurance industry, investors, or market-relevant activities related to urban development have a growing stake in such capabilities.

Consequently, the plan4business project develops a service platform for aggregation, processing and analyses of urban and regional planning data in Europe. Harmonised data will be integrated into seamless, homogenous, constantly growing and updated trans-border dataset. The platform will enable spatial analyses across European datasets. The platform should serve not only as a catalogue of planning data but also as their integrator enabling user to search, view, analyse and download spatial planning data on European and regional levels. The main project objectives are the automation of harmonisation processes and possibilities of complex analyses.

1.2 The aim the report

This document describes the plan4business approach for data and services management. As such this report documents the results of Task 2.3: *Data and Services IPR management* of the plan4business DoW:

To ensure that a wide range of data providers will be allowing data inclusion, a license model for the data and services built on it has to be defined. This task will investigate existing data and service licenses as well as means how to enforce them via DRM. It will provide a license model with different levels of usage [...].

As further outlined in the DoW in Section 3.2.4.1, IPR of geodata are generally a complex and critical issue. Many data providers, especially public administrations, feel that their geodata is a treasure with huge value, and often the pricing reflects the production cost for the data sets, and not the provision costs. This had an inhibiting effect on the market surrounding geodata in the past, and in some cases it led to parallel offerings from private companies.

Our goal is to create a participation model for the providers of these data sets, so that the up-front licensing costs for these data sets do not become show stoppers for the platform. Plan4business will employ innovative licensing models to encourage and reward the use and reuse of the data by stakeholders. In this way, organizations from raw data providers to value-added service providers will be able to offer their products for new applications and thus address a wider audience.

The original data will always remain the property of the respective data providers. However, in providing data to the portal, the plan4business portal is granted a non-exclusive license to use and modify data as required to perform the offered services. In addition, a data provider can chose between a defined set of licensing

models for plan4business users when uploading a new data set into the plan4business system. These standard data licensing models vary across several dimensions.

In this report, we provide an overview on license models that are used for geographic data and describe their main characteristics. Further, we have investigated the licensing practice of public administrations for geodata in some European countries. Based on these findings we have derived a license Model for the plan4business platform that will meet the requirements and expectations of data providers and data users. The related questions about how much the users have to pay for the offered data and services is not further elaborated in this report, but is subject of the Deliverable 3.3 “Customer Cost / Benefit Analysis” and will be further detailed in Deliverable 3.4. “Service Licensing”.

1.3 Structure of the report

- Chapter 1 introduces the project and describes the aim of this report.
- Chapter 2 gives an overview on license models in general and existing models for geographic data and services.
- Chapter 3 documents the European landscape of licenses employed for the access and usage of public geodata
- Chapter 4 proposes the set of licensing models to be implemented by plan4business

2 Overview on License Models for Geographic Data and Service

In the following we first give a general introduction to license models (Section 2.1), which is followed by an overview of the most common license models applied in the context for geographic data and services (Section 2.2).

2.1 What is the content of a license model

A license model has to contain different information of how to use the licensed data (McLaughlin & Gartmann 2012). The described parties are the licensor or proprietor who granted the license to another party (licensee). Optional there can be a third party, i.e. customers the licensee sells data to. The five most important components of a license model are listed in this chapter. They include the license description (Section 2.1.1), the terms and conditions (Section 2.1.2), the price models (Section 2.1.3), the access rights (2.1.4) and the configuration options (Section 2.1.5).

2.1.1 License description (What is it all about?)

The description of a license declares the target areas and / or the material covered by this license, for example data, services or applications (Städtetag NRW 2008). Once the area and material is defined there might be some other basic information needed, such as definition of technical terms or the relationship with existing license models. In addition, the licensee can be defined by the categorization listed in Table 1.

Table 1: Categorization to further define the type of licensee

Type	Description
private person	For usage with noncommercial intention
company	For usage with direct or indirect commercial intention
government agency	Use to perform administrative tasks
privileged	Licensees with advanced or limited rights besides the other types

In the domain of geodata and services there are at least four different types of material on which a license may apply. These types include geo-documents, geodata, geodata services and geo-websites. They are listed and further characterised in Table 2.

Table 2: Different types of geo-content

Type	Description
Geo-documents	Dashboard-like compressed documents with information of geodata or non-cataloged geodata
Geodata	The classical geo data. There might be space for a breakdown of geodata.
Geodata service	WMS, WFS, W3DS, ...
Geo-websites	WMS-Client (Other map viewer), shop

2.1.2 Terms and conditions (What is allowed? What is not?)

The terms and conditions declare if and how the licensee is permitted to use the licensed material. Multiple ways of condition are possible, listed by the following Table 3. Each permission is based on its predecessor and therefore contains all previous permissions.

Table 3: Different data permission

#	Permission
1	inform
2	print
3	analyze

4	integrate
5	Visible embedding
6	non-visible embedding
7	pass over
8	publish

The license description and the terms and conditions are the must-have components of a license model. The following three optional components are helpful and important but not mandatory to have.

2.1.3 Price models (What do you have to pay?)

A license does not require a price model. The price model as part of a license is often overrated and it raises the complexity of the license model enormous (BESR 2004).

One possibility of implementing a price model into a license is to publish different versions which often lead to a loss of overview. Different data permissions and even license descriptions may cause multiple license documents which all need a price model.

The second possibility of integrating a price model into a license model is to implement all accepted price models into the license. Due to the huge amount of price models the license document will be very extensive which might lead to misunderstandings. Compared to the first option, this way of integrating price models has the advantage that multiple license documents are avoided and users can choose between multiple price models depending on their needs.

Some of the most used price models are the following:

- Pay per use (Keyword: Software as a service)
- Pay per volume (per MB, GB, TB, PB, EB)
- Reseller
- Classic
 - Periodic payment
 - One-time-payment

These price models can be graded by

- Geographical area
- Level of detail

More details on the pricing models for the plan4business platform can be found in Deliverable 3.3 “Customer Cost / Benefit Analysis” and will be further detailed in Deliverable 3.4. “Service Licensing”.

2.1.4 Access rights / Safekeeping (How can you access / store the data?)

If the license model should be valid across national borders, the issue of access rights and safekeeping is very important. There might be inadequate national data privacy laws which have to be compensated with this component, so the licensor can be sure that the licensed material is protected independent of its geographical storage and usage.

The access rights are related to the data privacy laws of each country but also to the conceivabilities of the licensor. There might be encrypted material which should only be accessible in an encrypted way. The access rights have to be defined very accurate to ensure that this rights can be strictly adhered.

2.1.5 Configuration options (Customize your license)

This component is very important because the variation of the different components may lead to many different license texts. With configuration options the licensee can create his own license based on the different options given by the licensor. In this way the licensee can create a license which gives him permission to publish geodata and geo-documents with a specific price model. This will lead to automated calculated costs for the licensee.

Customization puts some overhead on the license process and thus raises the hurdle for inexperienced users to start working with the data and services. However, customization leads to a transparent price models which could also be rated positively by the licensee. From the licensor’s perspective, this could be an disadvantage since the licensee’s price optimization might lead to a commercial loss.

2.2 Existing license models

In the area of open and free geodata there is a movement to openly sharing data: governments, organizations, Web sites, individuals, and devices. Data are being copied and used. This data rarely is subject to an adequate licensing model, which comes with different disadvantages.

- If the handling of metadata is not applied correctly by the license the geodata is corrupt if the buyer visualizes the data without given unchanged access to the metadata.
- If the licensing model is not clearly verbalized potential customers are losing interest. A good source of data might get lost.

Due to the movement to openly shared data there is a compact overview on existing open license models without geographic constraints. In Table 4, we have listed the four most prominent open license models that are currently applied (or developed) for geo-content.

Table 4: Prominent license models used for geo-content

Short	License name	Developed by	Type
PGL	Public Geodata License ¹	Free Software Foundation	Abstract text
ODbL	Open Database License ²	Open Data Commons	Abstract text
CCL	Creative commons licenses ³	Creativecommons.org	Variations of text
	GeoLicence ⁴	GIW-Commission Germany	Variations of text

In the following, we provide short descriptions for each of these license models and a preliminary evaluation for the fitness of application in the plan4business platform.

¹ http://en.giswiki.org/wiki/Public_Geodata_License

² <http://opendatacommons.org/licenses/odbl/1.0/>

³ <http://creativecommons.org/licenses/>

⁴ <http://geolizenz.org/index/page.php?p=GL/license>

Public Geodata License (PGL)

The Public Geodata License initiative's goal is to write and diffuse a free license for geographic data. This license provides the same benefits for geodata as the GPL license does for software.

While the license is free to use for everyone, it is prohibited to customize the license text for personal usage.

The key data of this license are the following:

- The license applies to geographical data, attributes, and associated metadata.
- It is allowed to copy and distribute verbatim copies of the data as you receive it as long the copies are marked with the copyright notice.
- Modifying copies of the data, and distribute such modifications. The copyright notice needs to be on the copies.
- Each time the data is redistributed (or any work based on the data), the recipient automatically receives a license from the original licensor to copy, distribute or modify the data subject to these terms and conditions

Due to the fact that this license only covers free geographic data, the PGL itself will not match the requirements of the plan4business license model.

Open Database License (ODbL)

The ODbL applies on the database and its content. It does not apply on database applications or on patents over the database or its content. The license allows...

- to share: To copy, distribute and use the database.
If you publicly use any adapted version of this database, or works produced from an adapted database, you must also offer that adapted database under the ODbL.
- to create: To produce works from the database.
If you redistribute the database, or an adapted version of it, then you may use technological measures that restrict the work as long as you also redistribute a version without such measures.
- to adapt: To modify, transform and build upon the database.
Works produced from the database must be clearly marked to others with the license of the database.

The ODbL only got a small overlapping with the license needed for plan4business. For example, Web Map Services (WMS) using the licensed database are not affected by its license and could therefore define their own license. Moreover, the ODbL has the same issue as the PGL: All data covered by this license has to be free and open and no matter how the data is customized, the developed data has to be under the exact same license. Another disadvantage is the fact that the ODbL only applies on the database directly and not on geo-services or geo-documents.

Creative commons licenses (CCL)

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A Creative Commons license is one of several public copyright licenses that allow the distribution of copyrighted works. A Creative Commons license is used when an author wants to give people the right to share, use, and even build upon a work that they have created.

- Attribution (CC BY)
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Attribution: distribute, remix, tweak, and build upon your work, even commercially, as long as they credit you for the original creation

NoDerivs: This license allows for redistribution, as long as it is passed along unchanged and in whole, with credit to you.

NonCommercial: Basically the same as Attribution but only for non-commercial usage.

ShareAlike: All new works based on yours will carry the same license, so any derivatives will also allow or forbid commercial use.

CC0: This is the "no rights reserved" in Creative Commons licensing - it effectively means releasing work as public domain.

The creative commons licenses are primarily designed for websites; however some of the principles of these licenses could be adapted for Geodata licensing. Licensing with CC faces a similar problem as the ODbL: It is not designed for the licensing of geodata and therefore not ideal for this task.

GeoLicence

The diversity of license conditions for using geographic information of public administrations requires simple and harmonised license models across administrative borders. This is specifically important in a federal state like Germany. Therefore, the TaskForce „GeoLizenz“ of the GIW-Kommission⁵ has developed a simple, „clickable“ license in eight variants that are offered as web application on GeoLizenz.org.

In the development of this license, the following core principles were followed:

- The „OpenData“-Philosophy, as well as experience with many license models from the national and international domain,

⁵ GIW-Kommission: Committee for Geoinformation Economy of the Federal Ministry for Economy and Technology

- Simple, fast and comprehensive permission of usage rights for geodata, geoservices and metadata,
- Implementation based on principles of e-commerce (click-license),
- Independence of the license model from pricing models
- Additional requirements on regulation (e.g. privacy issues, data quality etc.) are managed externally by means of attribution of the specific product.

The different license texts of GeoLicence cover all eight variations of the following three attributes:

- Commercial use permitted / not permitted
- Processing permitted / not permitted
- Use in publicly accessible networks permitted / not permitted

Furthermore this license defines five different user groups (Economy, Science, Public authorities, Non-governmental organizations, and Private individuals) and a scope of usage rights, which may have to be customized.

The price model and data protection is not processed in the GeoLicence texts and has to be implemented manually but the existing license text covers all conditions for geodata and geoservices. Therefore the GeoLicence model is the nominee base license for further development of the plan4business license model (see Section 4).

3 License policies for public geographic data in Europe

In the following, we provide an overview on the European landscape with respect to license policies for public geographic data. In Section 3.1, some pointers to information sources on the European scale are given. In Section 3.2, we have developed a common structure for collecting the information on public data and related license policies for different countries. With this overview, we give a representative, though only partial account of the current situation in European countries. This overview does not show suitable or not suitable license models. Instead it is just a part of the current situation in Europe which might have an impact on the license model of plan4business in the future.

3.1 Europe wide

Since geodata in Europe is a very heterogeneous matter there are different approaches to solve this problem. In Europe most geodata is collected by national and local government agencies. A centralised National Mapping Agency. Data held under license by government is sold on a "cost-recovery" basis to commercial concerns.

PublicData.eu is a Pan European data portal, providing access to open, freely reusable datasets from local, regional and national public bodies across Europe. Besides it aims to provide licensing information for datasets and metadata about datasets so that data users know what they can and cannot do with the data.

<http://publicdata.eu/>

The current plans, in the course of becoming EU law, are to impose a common cost-recovery, user-payment and proprietary licensing policy for government-generated geographic data.

<http://wiki.okfn.org/OpenEuroData> and http://wiki.okfn.org/Open_Geo_Data

A guidance on the 'Regulation on access to spatial data sets and services of the Member States by Community institutions and bodies under harmonized conditions' has been developed in the scope of the implementation of INSPIRE. A draft version of this guidance document can be found under:

http://inspire.jrc.ec.europa.eu/documents/Data_and_Service_Sharing/DSSDraftGuidancedocument_v4.1.pdf

The European forum for geostatistics as part of Eurostat provides different data sets across European country borders. For now it partial covers France, Norway, Portugal and the Netherlands but it is constantly extended.

<http://www.efgs.info/data>

The primary objectives of ECOMET are to preserve the free and unrestricted exchange of meteorological information between the National Meteorological Services for their operational functions within the framework of World Meteorological Organization regulations and to ensure the widest availability of basic meteorological data and products for commercial applications.

http://www.ecomet.eu/index.php?option=com_content&view=article&id=2&Itemid=3

3.2 Country specific

Table 5 provides the common structure for collecting country-specific information on the license policies for public geodata in Europe. The type of data can be differentiated into

- a) Geographic data (GD): the typical geographic data which is in the responsibility of the public authorities like topographic datasets and cadastral information
- b) Planning data (PD): Data that refers to the task of land management of public authorities including zoning plans, existing and planned land use data, etc.

For both types of data, information about the responsible authority and related license policies are collected.

Table 5: Common structure for collecting country-specific information on the license policies for public geodata

Type ⁶	Country	Name of the country
GD PD	Authority	The authority responsible for issuing the data on state level.
	License model	If any license policy is already applied to public geobasis data and planning data, please name it here or provide a reference
	Data access	If the data can be viewed or accessed, please provide reference here (e.g. URL to geodata shop, WMS Viewer, Download services,...)
	Comments	Please add any further information that might be interesting to know related e.g. to the data scale, the type of data, the data policies or ongoing initiatives
	Subarea	Name of the federal state, municipality or other administrative area
GD PD	Authority	The authority responsible for issuing the data on this administrative level.
	License model	If any license policy is already applied to public geobasis data and planning data, please name it here or provide a reference
	Data access	If the data can be viewed or accessed, please provide reference here (e.g. URL to geodata shop, WMS Viewer, Download services,...)
	Comments	Please add any further information that might be interesting to know related e.g. to the data scale, the type of data, the data policies or ongoing initiatives

⁶ The type of geodata. We differentiate between two types of geodata: geographic data (GD) and planning data (PD). Each block (state – or federal level) can be described twice, one for each type of geodata

Germany

The hierarchical structure in the public sector in Germany includes the following projects⁷:

- GDI-DE (GDI: Geodateninfrastruktur; Geodata infrastructure) on the level of the Federal Republic of Germany
- GDI-state, level of each federal state
- GDI-municipal, level of each local authority area

In the following table the responsibilities for different data on the different administrative levels are exemplary described for the State of Hessian.

Type	Country	Germany
GD	Authority	Bundesamt für Kartografie und Geodäsie, http://www.bkg.bund.de/
	License model	General terms and conditions of business and use: http://www.geodatenzentrum.de/geodaten/gdz_rahmen.gdz_div?gdz_spr=eng&gdz_akt_zeile=4&gdz_anz_zeile=5&gdz_unt_zeile=1&gdz_user_id=0 The different license characteristics are too extensive for this table.
	Data access	Products: http://www.bkg.bund.de/nn_147094/DE/Bundesamt/Produkte/Produkte__node.html_nnn=true Services: https://upd.geodatenzentrum.de
	Comments	
	Subarea	Hessen (Federal State)
GD	Authority	Hessischen Verwaltung für Bodenmanagement und Geoinformation (HVBG)
	License model	Allgemeine Geschäfts- und Lieferbedingungen: http://www.gds.hessen.de/is-bin/INTERSHOP.enfinity/WFS/HLBG-Geodaten-Site/de_DE/-/EUR/ViewTemplate-View;pgid=xCBcS3WoJkBSR0EQoOgQ0Ukm0000k6JUDG5K?Template=content%2Fmain_agb&MenuItem=Nutzungsbedingungen - The passed data has to be the same purpose as the original data or its use is <ul style="list-style-type: none"> • non-commercial • a scientific contribution • for public safety

⁷ Spatial data infrastructure in Germany: <http://www.geoportal.de/DE/GDI-DE/gdi-de.html?lang=de>

		<ul style="list-style-type: none"> • for educational use <p>The use of the data for commercial purpose requests economic use rights. The dissemination of the data is only allowed when there is no data protection issues emerged.</p>
	Data access	http://www.gds.hessen.de/
	Comments	
PD	Authority	Hessisches Ministerium für Wirtschaft, Verkehr und Landesentwicklung (HMWVL)
	License model	requested
	Data access	https://wirtschaft.hessen.de/landesentwicklung Planning Portal of Hessen: http://www.landesplanung-hessen.de/
	Comments	

Czech Republic

Type	Country	Czech Republic
GD	Authority	Czech Office for Surveying, Mapping and Cadastre (COSMC, national mapping authority) http://www.cuzk.cz/Dokument.aspx?PRARESKOD=998&MENUID=10384&AKCE=DOC:10-ENGLISH
	License model	General Terms and the Terms of Trade of the Land Survey Office (part of COSMC): http://geoportal.cuzk.cz/Dokumenty/podminky_EN.html Terms of use - charging the data: http://geoportal.cuzk.cz/Dokumenty/Cenik_EN.pdf
	Data access	All data in digital form can be purchased or accessed via web services on the geoportal available at http://geoportal.cuzk.cz/
	Comments	An overview of data and their parameters provided by COSMC: http://geoportal.cuzk.cz/%28S%28te1czd5510gu5h5532qlghm5%29%29/Default.aspx?head_tab=sekce-02-gp&mode=TextMeta&text=dSady_uvod&menu=20&news=yes
GD	Authority	Czech Environmental Information Agency (CENIA) www.cenia.cz/

	License model	<p>Different licenses apply for every product available through the geoportal.</p> <p>Web services can be used for non-commercial purposes.</p> <p>Data can be acquired by contacting data custodians.</p> <p>General Terms and Conditions: http://geoportal.gov.cz/c/document_library/get_file?uuid=2098e848-44f1-4e9e-82ca-ffc21ba6c26a&groupId=10138</p>
	Data access	<p>The Czech National Geoportal (INSPIRE) available at: http://geoportal.gov.cz/web/guest/home</p>
	Comments	
PD	Authority	<p>Institute for Spatial Development (UUR) http://www.uur.cz/?id=948</p>
	License model	Not applicable.
	Data access	<p>No direct access to planning data, only an overview of planning documents on regional and municipality level. http://portal.uur.cz/</p>
	Comments	
	Subarea	Regional level – Pilsen Region
PD	Authority	Pilsen Region
	License model	<p>The license is given by the Building Act available at http://www.mmr.cz/getmedia/9a941cf5-268b-4243-9880-d1b169fb33d6/SZ_angl.pdf</p>
	Data access	<p>The graphical and textual parts of the Development Principles of Pilsen Region can be accessed at: http://www.plzensky-kraj.cz/en/clanek/zasady-uzemniho-rozvoje-plzenskeho-kraje</p> <p>Note: the graphical part can be viewed in the geoportal at http://mapy.kr-plzensky.cz/arcims/ZUR/viewer.htm?Layers=11000100000</p>
	Comments	
	Subarea	Municipality level – municipalities in Pilsen Region
PD	Authority	municipalities with extended competence

	License model	The license is given by the Building Act available at http://www.mmr.cz/getmedia/9a941cf5-268b-4243-9880-d1b169fb33d6/SZ_angl.pdf
	Data access	Spatial plans can be viewed through the geoportal containing data in raster format: http://mapy.kr-plzensky.cz/upd/seznam_uzemni_plany_obci.html WMS access: http://mapy.kr-plzensky.cz/wmsconnector/com.esri.wms.Esrimap?ServiceName=UPD_obce
	Comments	

Poland

Spatial data in Poland are in general protected by copyright, maintaining all ownership and rights of data.

Through the Polish SDI – Geoportal.gov.pl – public entities have access and right to free use of all published spatial data in form of WMS. For private sector spatial data use is restricted and subject to pricing.

Type	Country	Poland
GD PD	Authority	GD - Główny Urząd Geodezji i Kartografii (GUGiK - The Head Office of Geodesy and Cartography) PD – Ministry of Spatial Development and Ministry of Transport, Construction and Maritime Economy
	License model	GD - For public and private but non-commercial use web services (WMS) published by GUGiK is free. For commercial use, license for data use can be purchased, through entity controlled by GUGiK: Centralny Ośrodek Dokumentacji Geodezyjnej i Kartograficznej (CODGiK – Central Documentation Center for Geodesy and Cartography) http://www.codgik.gov.pl/ . Different licensing models, based on type of data, usage, area. PD – free access to planning documents
	Data access	GD- WMS server is established and run by GUGiK: http://mapy.geoportal.gov.pl/imap/ . There are only a few test WFS services already published. Access to source data is possible, after purchasing licenses with use of FTP

		servers or CD-R. PD- Published in the Internet
	Comments	GD - National archive is described here: http://www.codgik.gov.pl/zasob.html
	Subarea	GD - voivodships and poviats PD – voivodships and municipalites
GD PD	Authority	Marshal of voivodship Governor of powiat Mayer of municipality
	License model	GD - For commercial use, license for data use can be purchased, through Wojewódzkie Ośrodki Dokumentacji Geodezyjnej i Kartograficznej (WODGiKs – Voivodship Documentation Center for Geodesy and Cartography), and Powiatowe Ośrodki Dokumentacji Geodezyjnej i Kartograficznej (PODGiKs – Powiat Documentation Center for Geodesy and Cartography). Different licensing models, based on type of data, usage, area. PD – conditions of access to data are different in different admin. units
	Data access	GD - Situation differs in all Poland, data are published mainly as WMS. User interested in an access to data is forced to direct contact. PD – Graphical attachments to spatial plans in form of PDFs, JPG, are published over the Internet, vector formats mainly for internal use, not published.
	Comments	GP - base map in scales 1:1000 and 1:5000. PD – different scales form 1:1000 to 1:10000

Norway

Spatial data in Norway are in general protected by copyright, maintaining all ownership and rights of data. Norwegian spatial data can be divided into three main categories, these are identified in the table below.

Through the Norwegian SDI – Norway digital – more or less all public entities have access and right to free use of all spatial data in Norway. For private sector, some few datasets are defined as open, however, most use is restricted and subject to pricing.

Type	Country	Norway
GD PD	Authority	Norwegian Mapping Authority (www.statkart.no)
		There are also a comprehensive set of thematic spatial data available from various public entities, most for free. Ref. www.geonorge.no .

	License model	<p>For public use, data is licensed through Norwegian SDI (www.norgedigitalt.no)</p> <p>For private non-commercial use, limited use of defined web services (WMS) for viewing is free.</p> <p>For commercial use, license for access and license for use can be purchased, through a defined group of vendors (http://kartverket.no/Bestille/Bestille-kartdata/). Different models exist, based on usage, area and number of features.</p>
	Data access	A comprehensive metadata-overview over Norwegian spatial data is available on www.geonorge.no
	Comments	<p>Data from Norwegian Mapping Authority;</p> <ul style="list-style-type: none"> • Topographic data (from scale 1:5000 and less) • Orthophoto, 100% coverage • Cadastre (shared ownership with local municipalities) <p>Thematic spatial data; responsibility and ownership belongs to the relevant public entity, e.g. Road Department, Coastal Administration, Ministry of Environment, etc.</p> <p>The Norwegian standard for spatial data – SOSI (http://www.statkart.no/Standarder/SOSI/), and a set of product definitions defines quality, content and structure of Norwegian spatial data in general.</p>
	Subarea	Municipality
GD PD	Authority	Each municipality is responsible for data related to his area. Local topographic data is normally collected through a partnership between different multiple public entities, in which the municipalities has the largest share (http://www.statkart.no/om-kartverket/samarbeid/geovekst/)
	License model	<p>For public use, data is licensed through Norwegian SDI (www.norgedigitalt.no)</p> <p>For private non-commercial use, limited use of defined web services (WMS) for viewing is free.</p> <p>For commercial use, license for access and license for use can be purchased, through a defined group of vendors (http://kartverket.no/Bestille/Bestille-kartdata/). Different models exist, based on usage, area and number of features. Data may also be provided directly from each municipality.</p>
	Data access	A comprehensive metadata-overview over Norwegian spatial data is available on www.geonorge.no
	Comments	<p>Detailed topographic data (scale 1:1000 or 1:500)</p> <p>Cadastre data (shared ownership with National Mapping Authority)</p> <p>Planning data – both detailed land use plans and municipal plans (local and regional plans).</p> <p>The Norwegian standard for spatial data – SOSI</p>

		(http://www.statkart.no/Standarder/SOSI/), and a set of product definitions defines quality, content and structure of Norwegian spatial data in general.
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Netherlands

The government of Netherlands has decided to choose between three different license models:

- CC0 – A special license model of creative commons, described in Section 2.2.
- PDM – The license model Public Domain Mark, also based on creative commons, is for non-copyright protected data.
- Shared geo – Geodata which cannot be licensed with one of the two license models above can be licensed with the customizable license *shared geo*⁸.

Type	Country	Netherlands
GD PD	Authority	Government of the Netherlands (Nederlandse Overheid) https://data.overheid.nl/
	License model	3 license models: - Publiek Domein Mark: http://creativecommons.org/publicdomain/mark/1.0/deed.nl . - Creative Commons Zero: http://creativecommons.org/publicdomain/zero/1.0/deed.nl . - Geo Gedeeld: http://geogedeeld.geonovum.nl/
	Data access	All registered data can be viewed and downloaded: http://www.nationaalgeoregister.nl/geonetwork/srv/nl/main.home
	Comments	Number of published metadata of datasets in the National Georegistry: 5791 Number of published metadata of services in the National Georegistry: 243 All data is centralized accessible from the following levels of information: Government, Provinces, Municipalities, Water Boards, Private companies, Education and Research, and Other

Additional notes

Italy: Most geodata in Italy is licensed by ODbL because ODbL is the license used by OpenStreetMap. Only a few regions in Italy provide geodata autonomic, some only as WMS service. A concrete license text is only available in northern regions⁹. Overall the geodata situation in Italy is very opaquely.

Denmark: In January 2013 the Danish government decided to give free access to all geographic basic data, i.e. cadastral map, Danish elevation model and map data including watercourses.¹⁰ Unfortunately the Danish

⁸ <http://geogedeeld.geonovum.nl/>

⁹ <http://de.slideshare.net/napo/disaster20-are-weready>

government does not mention the data's license.

<http://epsiplatform.eu/content/danish-geodata-free-charge>

Spain: Most of the Spanish geodata is licensed by some license models similar to CC-NC-SA. The geodata can be used noncommercial and has to be shared under the same license.

<http://www.geodata.es/>

<http://www.maps.data-spain.com/>

Ireland: The Government of Ireland and Ordnance Survey Ireland (OSi) have intellectual property rights in the OSi map and imagery data provided by the MyPlan site.

<http://www.myplan.ie/>

Planning information presented by the Department on this Website is considered public information, copyright of the Government of Ireland and may be distributed or copied. Planning information from this site may be used for commercial purposes; however data may not be further copyrighted without agreement with the Department. Use of appropriate by-line credits is requested.

This chapter gave a small insight on the heterogeneous status on geo data within Europe. Most governments are using free and / or open license models but there is no comprehensive solution.

¹⁰ <http://download.kortforsyningen.dk/>

4 License Model for plan4business

As in Section 2.2 described the recommended license model is GeoLicence¹¹. The other three license models (PGL, ODbL and CCL) got slight disadvantages which could get substantial depending on the trend of plan4business. These disadvantages can be found in Section 2.2. In contrast GeoLicence has been created for licensing geographic data and therefore fits very well on this projects needs.

In this chapter the main attributes of the GeoLicence are summarized. GeoLicence is subdivided in eight different license texts to cover all variation of the three data usage restrictions:

- Commercial use permitted / not permitted
- Processing permitted / not permitted
- Use in publicly accessible networks permitted / not permitted

Therefore the different base license model texts are very similar and only differ in the scope of the usage rights and the condition of usage.

The usage rights using the example of no restrictions are:

1. Copy, print, present;
2. Process, change and adapt;
3. Combine with your own data and that of third parties;
4. Integrate it into your internal business¹² processes, products and applications;
5. Import it and render it viewable in your business processes, products and applications aimed at third parties as well as in applications in publicly accessible networks¹³;
6. Import it and render it viewable in your business processes, products and applications in networks which are not publicly accessible.

Under the terms and conditions of the license the licensee is permitted to use the spatial information services as provided for, for commercial or non-commercial purposes (depending on the used license text), to

1. Integrate it into your internal business processes and applications;
2. Import it and render it viewable in your business processes, products and applications aimed at third parties as well as in applications in publicly accessible networks¹⁴,
3. Import it and render it viewable in your business processes, products and applications in networks which are not publicly accessible.

Besides these changes the license text where processing of data is permitted contains a right of revocation for licensees.

¹¹Different GeoLicence texts: http://geolizenz.org/index/page.php?p=GL%2Flicense&langlic=en_EN

¹² Business processes in all points will be replaced by operational processes in the non-commercial version

¹³ Not contained if use in publicly networks is prohibited

¹⁴ Not contained if use in publicly networks is prohibited

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