

SUNSHINE

D7.2

IPR/licensing policy and SLA

WP7 – Exploitation and sustainability

Task T7.2 – IPR and Licensing Policy

Revision: Final

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Dissemination level	PU (public)
Contributor(s)	UIRS, EPSILON, TNET, GRAPHICA LIGHT, GRAPHITECH, HEPESCO, SET
Reviewer(s)	Federico Prandi (GRAPHITECH)
Editor(s)	Raffaele De Amicis (GRAPHITECH)
Partner in charge(s)	SGIS
Due date	31/10/2014
Submission Date	31/03/2015

REVISION HISTORY AND STATEMENT OF ORIGINALITY

Revision	Date	Author	Description
v.0.1	09/06/2014	SGIS	Document created
V0.2	13/10/2014	UIRS	Comments
V0.3	15/10/2014	EPSILON	Comments
V0.4	15/10/2014	TNET	Comments
V0.5	21/11/2014	SGIS	Major revision based on comments received (0.2, 0.3, 0.4)
V0.6	23/11/2014	SGIS, GRAPHITECH	Added section SLA
V0.7	16/12/2014	EPSILON, GL, HEP, SET	Added licenses
V0.8	17/12/2014	GSYS	Added license

Statement of originality:

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Acronyms

Acronym	Description
AMI	Advanced Metering Infrastructure
CA	Consortium Agreement
CC	Creative Commons
CPL	Common Public License
CRUD	Create Read Update Delete
DB	Data Base
DCMI	Dublin Core Metadata Initiative
DCAT	Data Catalog Vocabulary
EC	European Commission
EP	European Patent
EPL	Eclipse Public License
ETL	Extract Load Transform
EU	European Union
EUPL	European Union Public License
FOSS	Free and Open Source Software
GML	Geography Markup Language
GPL	Gnu Public License
HVAC	Heating Ventilating and Air Conditioning
KML	Keyhole Markup Language
INSPIRE	Infrastructure for Spatial Information in Europe
IPR	Intellectual Property Rights
ISO	International Standard Organisation
OGC	Open Geospatial Consortium
OSL	Open Software License
OWS	OGC Web Service
PSI	Public Sector Information
QoS	Quality of Service
SDK	Software Development Kit
SLA	Service Level Agreement
SLO	Service Level Objective

Acronym	Description
SOS	OGC Sensor Observation Service
SPS	OGC Sensor Planning Service
SWE	OGC Sensor Web Enablement
TAT	Turn Around Time
TSF	Timer Synchronization Function
WFS	OGC Web Feature Service
WMS	OGC Web Map Service
WNS	OGC Web Notification Service
OSS	OGC Open Source Software
SCADA	Supervisory Control And Data Acquisition
SHP	Shapefile
SQL	Structured Query Language

1 Introduction

The scope of the document is to define methodology, approach and tools to exploit the Sunshine project assets, by providing clear definition of IPR and Licensing policies to be applied to all resources used or generated by the project, as well as quality of services and service level agreement parameters.

According to the Description of Work (DoW) *“to ensure most efficient dissemination of SUNSHINE solutions it will be primarily open platform, meaning that interested bodies will be able to use re-use its components. It will be accomplished by mechanisms like open source and also by publication of relevant documents.*

This approach will bring a further advantage to SUNSHINE which will leverage on the Open Source Software (OSS) community in order to exploit the enormous potential of the OSS world in terms of actual software component development and further dissemination. The OSS community channel will amplify the potential adoption of the technology to a broader audience. On other hand, scenario-related IPRs will be more restrictive.

For the software customised or adapted in SUNSHINE IPR strategies will be selected which will include handling of closed-source and also open-source software.”

The objective of this document is to identify each element of the project (hereafter “resource”) that can be under a license and to declare which kind of license must be applied to each.

In particular here we have two main group of resources:

1. The ones used by the project and provided by third parties, like operative systems, hardware, data that generally inherit the license’s conditions set by the original producer. These resources are grouped here as “Background”.
2. The new ones that have been produced by the partners of this project, that are under a license defined and agreed by the partners. These resources are grouped here as “Foreground”.

The first part of the document (**2.Definitions and rules**) describes the purpose of the document and gives some definitions useful for the types of license adopted by the project. Here we also explain why we choose certain types of license.

The second part of the document (section 3.

IPR and licensing policies applied) contains the list of all the resources, produced by the project, to which will be assigned a license. These deliverables can be either software, documents, help materials, etc... For each item, or group of items, is indicated the corresponding license.

2 Definitions and rules

This section defines the general rules to be adopted by partners in terms of IPR and licensing policies.

IPR and licensing policies are based on the declarations and the rules contained in the Grant Agreement document, which has been signed by all the partners at the beginning of the project (see the “Grant Agreement No. 325161” for details).

Both “background” and “foreground” resources are hereafter considered; for “resource” of the project we mean the following types (in alphabetic order):

Table 1 – Types of resources

Types of resources	Examples	Background / Foreground
Data	<ul style="list-style-type: none"> - Input (used for the 3 scenarios) - Output (generated in the 3 scenarios) - Mailing lists contacts - Social media accounts 	B / F
Documents	<ul style="list-style-type: none"> - Literature and reference documents - Scientific papers - Project reports - Project training manuals - Methods and algorithms - Project logos, images, acronym and templates - Project videos, presentations and multimedia - Project newsletters, leaflets and other dissemination material 	B / F
Hardware	<ul style="list-style-type: none"> - Physical servers - Meters / Readers 	F
Software	<ul style="list-style-type: none"> - Sunshine platform <ul style="list-style-type: none"> o Server-side components o Clients-side components - Project web site 	F

All resources (being either background or foreground) shall be described in metadata, possibly conformant to European standards and containing explicit reference to licenses and restrictions, as defined in section 3.

2.1 Background resources

The “Background” resources are regulated on the access rights defined by the original owner of the element. Even when the resource has been modified or elaborated in the project, it’s not possible to overtake the original license constraints.

Although there may be some peculiarities, the following “general” statement may be applied to background resources:

Each partner is to be considered the responsible party of the “background” resources produced by the partner itself (owner), or used by the partner during the project (manager).

All the other partners of the project may ask for freely use all the resources brought and shared from the other partners.

If known and feasible, a licence should be assigned by the responsible partner to all resources owned or managed (see sub-section 2.4).

2.2 Foreground resources

“Foreground” resources mean the results, including information, materials and knowledge, **generated in the project**, whether or not they can be protected.

It includes intellectual property rights (IPR), similar forms of protections (e.g. sui generis right for databases) and unprotected know-how (e.g. confidential material).

According to the Grant Agreement (art. II.12), foreground resulting from the project is owned by the participant that has generated it. When foreground is generated jointly, it will be jointly owned, unless the participants concerned agree on a different solution.¹

Licensing terms are not backed by the international IP treaties, nor by IP law. Use is regulated by the laws of each nation, or proper use may be defined within the license itself.

Subject Matter	TYPES OF INTELLECTUAL PROPERTY RIGHTS FOR THE PROTECTION OF FOREGROUND					
	Patent	Utility Model	Industrial Design	Copyright	Trade Mark	Confidential Information
Invention (e.g. device, process, method ⁹)	X	X				X
Software	X ¹⁰	X		X		X
Scientific article				X		
Design of a technology			X	X		
Name of a technology					X	
Know-how	X	X				X
Website			X	X	X	X

Figure 1 – Types of IPR for foreground resources²

¹ See also:

<http://www.iprhelphdesk.eu/sites/default/files/newsdocuments/IP%20Management%20in%20CIP.pdf>

² See footnote 1

There are many licenses and probably no one license meets everybody's needs.

For software, licensing decisions can affect which libraries you can use as well as the size and character of the community that gathers around a project. That's why licensing decisions have to be taken and subscribed by the partners all together, considering the context of this project's goals, resources, community and philosophy.

2.3 Declaration of licenses for background and foreground resources

For both background and foreground resources, each partner is in charge to define IPR and licensing policies about the resources used, and provide information about them in a standardised metadata form.

For data (both spatial and not-spatial) on September 2014 a simple spreadsheet has been provided by SGIS to all partners to easily compile metadata conformant to ISO19115 standard as well as INSPIRE Metadata Implementing Rules.

For other types of resources (e.g. documents, videos, software, ...) a similar approach will be undertaken, with metadata conformant to Dublin Core Metadata Initiative (DCMI)³ or Data Catalog Vocabulary (DCAT)⁴, as suggested by the European Commission in the "Guidelines on recommended standard licences, datasets and charging for the re-use of documents" published in July 2014⁵.

2.4 License types

2.4.1 From "No license" to "Copyright"

For the "non-expert", even lawyer, the world of software and data licensing is a jungle.

The statement above as well as the following figure are taken from the European Commission Joinup platform web site⁶.

³ http://en.wikipedia.org/wiki/Dublin_Core

⁴ <http://www.w3.org/TR/vocab-dcat/>

⁵ <http://ec.europa.eu/digital-agenda/en/news/commission-notice-guidelines-recommended-standard-licences-datasets-and-charging-re-use>

⁶ https://joinup.ec.europa.eu/sites/default/files/ckeditor_files/images/EUPL%20banner%2002.png

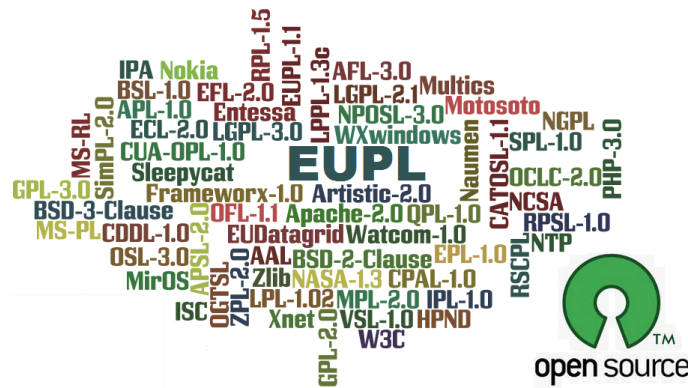


Figure 2 – The licenses cloud

A more synthetic picture representing the “jungle” of possible licenses is the following⁷:

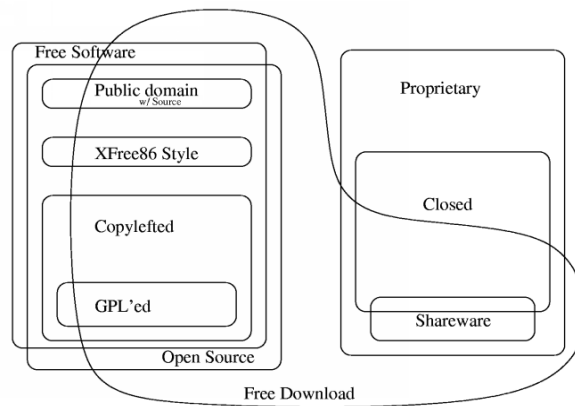


Figure 3 – Free software and proprietary licenses

Both pictures are useful to understand the plethora of possible licenses (and combinations of licenses) to be applied to software components.

We may encounter a similar situation also for data.

It is noteworthy that software (and data) without a license are not free nor may be assumed in public domain: if the license is not specified we have to assume that it is copyright protected⁸.

Copyright is a legal right created by the law of a country, that grants the creator of an original work the exclusive rights to its use and distribution, usually for a limited time, with the intention of enabling the creator to receive compensation for their intellectual effort.⁹

⁷ http://upload.wikimedia.org/wikipedia/commons/2/29/Software_Categories.png

⁸ <http://www.gnu.org/licenses/license-list.en.html#NoLicense>

⁹ <http://en.wikipedia.org/wiki/Copyright>

Copyright is a form of intellectual property (as patents, trademarks and trade secrets are), applicable to any expressible form of an idea or information that is substantive and discrete.

Directive 2006/116/EC of the European Parliament¹⁰ on the term of protection of copyright and certain related rights determined the harmonised duration of copyright 70 years from the death of the author (*post mortem auctoris*).

The directive also accords copyright to the publisher of a public domain work which was previously unpublished, for 25 years after the date of publication.

At the European level the subject matter of copyright is not completely harmonized. This phenomenon concerns public sector works as well¹¹.

The result of the merely partial harmonisation of originality is that not even the same works will be deemed as copyrightable (PSI specific or not). However the respective Directives impose the threshold of originality (“author’s own intellectual protection”) on the databases and software.

2.4.2 Licenses for software and hardware

Software that is copyrighted and licensed under a software license is done under a variety of licensing schemes. For end-users there are various licenses ranging from very restrictive proprietary licenses to open-source licenses¹².

The hallmark of proprietary software licenses is that the software publisher grants the use of one or more copies of software under the End-User License Agreement (EULA)¹³, generally establishing the purchaser's right to use the copy of the software.

On the other hand, licenses for open source solutions grant the recipient of a piece of software extensive rights to modify and redistribute that software. The development of open source solutions is generally done by adapting and integrating multiple existing components. The resulting application (or “solution”) may look as a single program from the user point of view, but is in fact a combined work.

The different components may be covered by different licences¹⁴.

Determining whether the various licences involved are compatible is important when the aim is to redistribute the application to third parties: under what open source licence should it be distributed? Is this always possible?

¹⁰ http://eur-lex.europa.eu/legal-content/EN/ALL;ELX_SESSIONID=hdCFJp6hpJdZDDDFYhQ2Gy49m81D1FmkZ1JrHXNI24xvWW4yHpLP!2139346679?uri=CELEX:32006L0116

¹¹ <http://www.lapsi-project.eu/sites/lapsi-project.eu/files/D3.1BestPracticesIPPO.pdf>

¹² http://en.wikipedia.org/wiki/List_of_software_licenses

¹³ http://en.wikipedia.org/wiki/End-user_license_agreement

¹⁴ https://joinup.ec.europa.eu/software/page/licence_compatibility_and_interoperability%20

The licences for distributing free or open source software (FOSS) are divided in two families: permissive and copyleft.

Permissive licences (BSD, MIT, X11, Apache, Zope) are generally compatible and interoperable with most other licences, tolerating to merge, combine or improve the covered code and to re-distribute it under many licences (including non-free or “proprietary”).

At the contrary, the “copyleft” licences impose the use of the same licence as soon the distributed work is a derivative of the covered work. To avoid software appropriation by third parties, a majority of open source projects have adopted copyleft licensing terms: e.g. the Gnu GPLs and the EUPL are “copyleft”.

According to the gnu.org website "free software" definition, we refer to four levels of freedom¹⁵:

0. The freedom to run the program, for any purpose (freedom 0).
1. The freedom to study how the program works, and change it so it does your computing as you wish (freedom 1). Access to the source code is a precondition for this.
2. The freedom to redistribute copies so you can help your neighbor (freedom 2).
3. The freedom to distribute copies of your modified versions to others (freedom 3). By doing this you can give the whole community a chance to benefit from your changes. Access to the source code is a precondition for this.

Possible Free and Open Source Software (FOSS) copyleft licenses are:

- European Union Public License (EUPL) v1.1¹⁶
- GNU General Public License (GPL) v. 2¹⁷
- Open Software License (OSL) v. 2.1, v. 3.0¹⁸
- Common Public License (CPL) v. 1.0¹⁹
- Eclipse Public License v. 1.0²⁰
- CEA CNRS INRIA Logiciel Libre (CeCILL) v. 2.0²¹

Other possible licenses are available on the Open Source Initiative web site²².

¹⁵ <http://www.gnu.org/philosophy/free-sw.en.html>

¹⁶ <https://joinup.ec.europa.eu/software/page/eupl/licence-eupl>

¹⁷ http://en.wikipedia.org/wiki/GNU_General_Public_License

¹⁸ http://en.wikipedia.org/wiki/Open_Software_License

¹⁹ http://en.wikipedia.org/wiki/Common_Public_License

²⁰ http://en.wikipedia.org/wiki/Eclipse_Public_License

²¹ <http://en.wikipedia.org/wiki/CeCILL>

²² <http://opensource.org/licenses/category>

Similarly to open source software, some of the licenses mentioned above may also be applied to “open source hardware” (e.g. GPL).

Nevertheless, hardware licenses are usually different as they typically rely more heavily on patent law than on copyright law²³:

- copyright license may control the distribution of the source code or design documents
- patent license may control the use and manufacturing of the physical device built from the design documents

²³ http://en.wikipedia.org/wiki/Open_source_hardware

2.4.3 Licenses for datasets, documents and other types of resources

An explicit reference to the conditions under which re-use is allowed should appear prominently at the point of display of, or accompanying, the other types of resources used or created in the Sunshine project:

- Datasets
- Documents
- Other media-types

The recent European Commission Notice “Guidelines on recommended standard licences, datasets and charging for the reuse of documents”²⁴ refers to Public Sector Information (PSI) Directive (2013/37/EU) recommends licensing provisions to “*proactively promote the re-use of the licenced material, it is advisable that the licensor grants worldwide (to the extent allowed under national law), perpetual, royalty-free, irrevocable (to the extent allowed under national law) and non-exclusive rights to use the information covered by the licence*”.

In the case of Sunshine project, dataset used have been extensively provided by Public Sector bodies (e.g. governmental authorities at national and local levels, public utility companies, ...). These datasets, as well as the derivative datasets created using the Sunshine platform, shall be licensed, possibly applying open standard licences, like the most recent Creative Commons (CC) licences (version 4.0), that allows the re-use of PSI without the need to develop and update custom-made licences at national or sub-national level²⁵.

Possible licenses conformant to the Open Knowledge Definition²⁶ are:

- Creative Commons CCZero (CC0)²⁷
- Creative Commons Attribution (CC BY)²⁸
- Creative Commons Attribution-ShareAlike (CC BY-SA)²⁹
- Creative Commons Attribution-NoDerivates (CC BY-ND)³⁰
- Creative Commons Attribution-NonCommercial (CC BY-NC)³¹
- Creative Commons Attribution-NonCommercial-ShareAlike (CC BY-NC-SA)³²

²⁴ <http://ec.europa.eu/digital-agenda/en/news/commission-notice-guidelines-recommended-standard-licences-datasets-and-charging-re-use>

²⁵ See note above

²⁶ <http://opendefinition.org/od/>

²⁷ <http://creativecommons.org/publicdomain/zero/1.0/>

²⁸ <http://creativecommons.org/licenses/by/4.0/>

²⁹ <http://opendefinition.org/licenses/cc-by-sa>

³⁰ <http://creativecommons.org/licenses/by-nd/4.0/>

³¹ <http://creativecommons.org/licenses/by-nc/4.0/>

³² <http://creativecommons.org/licenses/by-nc-sa/4.0/>

- Creative Commons Attribution-NonCommercial-NoDerivates (CC BY-NC-ND)³³
- Open Data Commons Attribution Licence (ODC-BY)³⁴
- Open Data Commons Open Database License (ODbL)³⁵
- Open Data Commons Public Domain Dedication and License (PDDL)³⁶

As an example, the licenses to be applied to “foreground” resources related to the scenario 1 of Sunshine project may be the following:

Types of resources	Foreground resource	Possible licenses
Data	<ul style="list-style-type: none"> - Spatial data (buildings) enriched by information collected from external sources (energy certificates, consumption, ...) as well as from on-the-field quality checks; data available as: <ul style="list-style-type: none"> o WMS service o WFS service o SHP o KML o CityGML 	CC-BY
Software	<ul style="list-style-type: none"> - Sunshine server-side components <ul style="list-style-type: none"> o Building efficiency pre-certification service - Sunshine client-side components <ul style="list-style-type: none"> o 3D web client 	© <owner>, <year> Licensed under the EUPL V.1.1
Documents and other media-types	<ul style="list-style-type: none"> - Scientific papers - Project training manuals - Methods and algorithms - Videos - Presentations 	CC-BY-NC

³³ <http://creativecommons.org/licenses/by-nc-nd/4.0/>

³⁴ <http://opendatacommons.org/licenses/by/summary/>

³⁵ <http://opendatacommons.org/licenses/odbl/summary/>

³⁶ <http://opendatacommons.org/licenses/pddl/>

3 IPR and licensing policies applied

Based on the definitions and rules aforementioned, the following paragraphs depict the application of IPR and licensing policies in the context of Sunshine project.

The list of resources provided, used or created within the project is created by each single pilot partner and contains:

- Scenario (context where the resource has been used or created)
- Resource (name of the resource)
- License (licensing policies applied to the resource)
- Metadata ID (to identify the metadata univocally)

In particular, the SUNSHINE scenarios are:

1. **Energy Maps:** Automatic large-scale assessment of building energy behaviour based on data available from public services (e.g. cadastre, planning data etc.). The information on energy performances will be used to automatically create urban-scale “energy maps” (or “ecomaps”) to be used for planning activities and large-scale energy pre-certification purposes.
2. **Pilot Buildings Energy Performance Management:** Localised weather forecasts available through interoperable web-services will be used to ensure optimisation of energy consumption of heating/cooling systems at “pilot buildings” level, through automatic alerts that will be sent to both the SUNSHINE App installed on the smartphone of the final users and centralised systems adopted by firms in order to manage adequate energy efficiency policies.
3. **Remote Public Lighting Management:** Lastly, SUNSHINE will ensure interoperable control of public illumination systems based on Automatic Meter Reading (AMR) facilities remotely accessible, via interoperable standards, from a web-based client as well as from an App for smartphones or tablets.

Detailed information about each resource (e.g. description, author, owner, contact point, etc.) is provided within the correspondent metadata record available on the Sunshine metadata catalogue³⁷. Attached to this deliverable, “**D7.2 Annex – Links to Metadata Catalogue**” contains the list of metadata available on GeoNetwork catalogue. This annex will be updated throughout all the piloting phase and periodic updated will be submitted.

As already stated above if the license is not specified we have to assume that it is **copyright** protected (see paragraph 2.4.1, footnote 8).

³⁷ <http://sunshine.sinergis.it/geonetwork/>

3.1 Background resources

3.1.1 Data

Scenario	Resource	Pilot city (partner)	Licence	Metadata ID
1,2	Buildings footprints and general properties	Ferrara (SGIS)	Copyright	Back.Dat.01
		Lamia (EPS)	Copyright, restricted	Back.Dat.02
		Cles (InfoTN)	Copyright	Back.Dat.03
		Trento (InfoTN)	Copyright	Back.Dat.04
		Paola (GSYS)	Copyright	Back.Dat.05
		Zagreb (HEP)	Copyright, restricted	Back.Dat.06
2	Shelter footprints and general properties	Trentino (TNNET)	Copyright	Back.Dat.07
1,2	Energy certificates of buildings or building units, and properties on HVAC, distribution of energy, energy performance of elements	Ferrara (SGIS)	Copyright	Back.Dat.08
		Lamia (EPS)	Copyright, restricted	Back.Dat.09
		Cles (InfoTN)	Copyright	Back.Dat.10
		Trento (InfoTN)	Copyright	Back.Dat.11
		Paola (GSYS)	Copyright	Back.Dat.12
		Zagreb (HEP)	Copyright, restricted	Back.Dat.13
		Split (HEP)	Copyright, restricted	Back.Dat.14
		Varadzin (HEP)	Copyright, restricted	Back.Dat.15
1	Energy consumption of buildings (from energy companies)	Ferrara (SGIS)	Copyright, restricted	Back.Dat.16
		Lamia (EPS)	Copyright, restricted	Back.Dat.17
		Cles (InfoTN)	Copyright, restricted	Back.Dat.18
		Trento (InfoTN)	Copyright, restricted	Back.Dat.19
		Paola (GSYS)	Copyright, restricted	Back.Dat.20
		Zagreb (HEP)	Copyright, restricted	Back.Dat.21
		Bassano (GL)	Copyright, restricted	Back.Dat.22
1	Orthoimages	Zagreb (HEP)	Copyright	Back.Dat.23
		Lamia (EPS)	Copyright, restricted	Back.Dat.24
		Cles (InfoTN)	Copyright	Back.Dat.25

Scenario	Resource	Pilot city (partner)	Licence	Metadata ID
		Trento (InfoTN)	Copyright	Back.Dat.26
		Paola (GSYS)	Copyright	Back.Dat.27
1	Digital Terrain Model / Digital Surface Model	Ferrara (SGIS)	Copyright	Back.Dat.28
		Lamia (EPS)	Copyright, restricted	Back.Dat.29
		Cles (InfoTN)	Copyright	Back.Dat.30
		Trento (InfoTN)	Copyright	Back.Dat.31
		Paola (GSYS)	Copyright	Back.Dat.32
		Zagreb (HEP)	Copyright	Back.Dat.33
1	TABULA Database	All	Copyright	Back.Dat.34
2,3	Energy consumption measured by meters (pilot buildings and public lights)	Ferrara (SGIS)	Copyright	Back.Dat.35
		Paola (GSYS)	Copyright	Back.Dat.36
		Lamia (EPS)	Our intention is to provide this data as open data, but we have to wait for the Technical Institute of Lamia to formally agree.	Back.Dat.37
		Zagreb (HEP)	Copyright	Back.Dat.38
		Split (HEP)	Copyright	Back.Dat.39
		Varaždin (HEP)	Copyright	Back.Dat.40
		Trentino (TNNET)	Copyright	Back.Dat.41
		Cles (InfoTN)	Copyright	Back.Dat.42
		Bassano (GL)	Copyright, restricted	Back.Dat.43
		Rovereto (SET)	Copyright, restricted	Back.Dat.44
2	Weather observations	All	Copyright	Back.Dat.45
2	Weather forecasts	All	Copyright	Back.Dat.46
3	Location of lamps and lines and generic properties	Rovereto (SET)	Copyright, restricted	Back.Dat.47
		Bassano (GL)	Copyright, restricted	Back.Dat.48

Scenario	Resource	Pilot city (partner)	Licence	Metadata ID
3	Status data of lamps and lines	Rovereto (SET)	Copyright, restricted	Back.Dat.49
		Bassano (GL)	Copyright, restricted	Back.Dat.50
2	Indoor pilot buildings temperature	Zagreb (HEP)	Copyright	Back.Dat.51
		Split (HEP)	Copyright	Back.Dat.52
		Varaždin (HEP)	Copyright	Back.Dat.53
		Trentino (TNNET)	Copyright	Back.Dat.54

3.1.2 Documents

Scenario	Resource	Pilot city (partner)	Licence	Metadata ID
1	TABULA reports and papers	All	Copyright	Back.Doc.01
1	Energy performance calculation algorithms	All	Copyright	Back.Doc.02
2	Thermal models for buildings and network shelters	All	Copyright	Back.Doc.03
1,2,3	OGC standards	All	Copyright	Back.Doc.04
1,2,3	ISO / CEN standards	All	Copyright, EULA	Back.Doc.05
2	Green Button Data		Copyright	Back.Doc.06
1,2	INSPIRE Technical Guidelines	All	Copyright	Back.Doc.07

3.1.3 Hardware

Scenario	Resource	Pilot city (partner)	Licence	Metadata ID
1,2,3	Sunshine server	All	GPL	Back.Hdw.01
2	AMI, smart meters digital meter readers and other sensors	Ferrara (SGIS)	European Patent (EP) 1596164 http://www.xemtec.com/files/patent_3_languages.pdf	Back.Hdw.02
		Lamia (EPS)	N/A yet	Back.Hdw.03
		Cles (InfoTN)	N/A yet	Back.Hdw.04
		Trento (InfoTN)	N/A yet	Back.Hdw.05
		Paola (GSYS)	http://worldwide.espacenet.com/publicationDetails/originalDocument?CC=WO&NR=2010103332A1&KC=A1&FT=D&ND=4&date=20100916&DB=worldwide.espacenet.com&locale=en_EP	Back.Hdw.06
		Zagreb (HEP)	N/A yet	Back.Hdw.07
		Split (HEP)	N/A yet	Back.Hdw.08
		Varaždin (HEP)	N/A yet	Back.Hdw.09
3	Lamps and control infrastructures (SCADA)	Bassano (GL)	Currently the Hardware is owned by GL; at the end of the project will be transferred to the municipal administration in procedures to be determined (free or settlement)	Back.Hdw.10
		Rovereto (SET)	N/A yet	Back.Hdw.11

3.1.4 Software

Scenario	Resource	Pilot city (partner)	Licence	Metadata ID
1,2,3	GeoServer	All	GPL	Back.Sfw.01

Scenario	Resource	Pilot city (partner)	Licence	Metadata ID
1,2,3	Geonetwork	All	GPL	Back.Sfw.02
1,2,3	PostgreSQL	All	PostgreSQL license	Back.Sfw.03
1,2,3	PostGIS	All	GPL	Back.Sfw.04
1	Load-SIATEL	Ferrara (SGIS)	Copyright EULA	Back.Sfw.05
		Trento (SGIS)		Back.Sfw.06
		Cles (SGIS)		Back.Sfw.07
1	3DCityDB	All	GPL	Back.Sfw.08
2	GreenButton SDK	All	MIT	Back.Sfw.09
2	OAuth	All	GPL	Back.Sfw.10
1,2,3	WSO2 Identity Server	All	GPL	Back.Sfw.11
1,2,3	WSO2 API Manager	All	GPL	Back.Sfw.12
2,3	52°N implementation of OGC SOS	All	GPL	Back.Sfw.13
2,3	52°N implementation of OGC SPS	All	GPL	Back.Sfw.14
2,3	52°N implementation of OGC WNS	All	GPL	Back.Sfw.15
3	Reverberi DB	All	Copyright EULA	Back.Sfw.16

3.2 Foreground resources

In this section we will deepen only the foreground items that needs further specification and details.

3.2.1 Data

Scenario	Resource	Pilot city (partner)	Licence	Metadata ID
1	Energy performance estimated and properties of buildings	All	CC-BY	Fore.Dat.01
1	Energy consumption SQL structured (LoadSIATEL)	Ferrara (SGIS)	CC-BY-NC-ND	Fore.Dat.02
		Trento (SGIS)	CC-BY-NC-ND	Fore.Dat.03
		Val di Non (SGIS)	CC-BY-NC-ND	Fore.Dat.04
1,2	Pseudo-INSPIRE SHP and SQL structure	All	CC-BY-NC	Fore.Dat.05
1	TABULA SQL structure (subset)	All	CC-BY-NC	Fore.Dat.06
1	TABULA upgrade for buildings pre-1900 and Greece stereotypes	All	CC-BY-NC	Fore.Dat.07
2	Energy management suggestions to users	All	CC-BY-NC	Fore.Dat.08
2	Energy management feedback from users	All	CC-BY-NC	Fore.Dat.09
2,3	Re-sampled and aggregated consumption data	All	CC-BY-NC	Fore.Dat.10
3	Location, scheduling and grouping of lamps	All	Copyright, restricted	Fore.Dat.11

3.2.2 Document

Scenario	Resource	Pilot(s)	Licence	Metadata ID
1,2,3	Newsletters	All	CC-BY	Fore.Doc.01
1,2,3	Presentation (technical meetings, review meetings, dissemination events, etc.)	All	CC-BY	Fore.Doc.02
1,2,3	Meetings minutes and internal documents (e.g. technical documents not deliverables, ...)	All	CC-BY-SA-NC	Fore.Doc.03
1,2,3	Public project report and deliverables	All	CC-BY	Fore.Doc.04

1,2,3	Papers	All	CC-BY	Fore.Doc.05
1,2,3	Visual identity material	All		Fore.Doc.06
1,2,3	Leaflets	All	CC-BY	Fore.Doc.07
1,2,3	Dissemination videos	All	CC-BY	Fore.Doc.08
1,2,3	Training videos	All	CC-BY	Fore.Doc.09
1,2,3	Training material	All	CC-BY	Fore.Doc.10

3.2.3 Hardware

Scenario	Resource	Pilot(s)	Licence	Metadata ID
2,3	Head-end infrastructures at pilot locations	All	GPL	Fore.Hdw.01

3.2.4 Software

Scenario	Resource	Pilot(s)	Licence	Metadata ID
1,2,3	Sunshine project website	All	EUPL	Fore.Stw.01
1,2,3	Sunshine Energy portal	All	EUPL	Fore.Stw.02
1	ETL4SHP (script to import SHP into database)	All	EUPL	Fore.Stw.03
1	ETL4App (script to align database tables for Map4Data)	All	EUPL	Fore.Stw.04
1	Map4Data editing app	All	EUPL	Fore.Stw.05
1	Energy performance estimation processing service	All	EUPL	Fore.Stw.06
1	CityGML ADE Energy script	All	EUPL	Fore.Stw.07
1	KML Energy script	All	EUPL	Fore.Stw.08
1,2	ETL4CityGML (FME workspace)	All	FME Software licence agreement	Fore.Stw.09
2	SOS automation scripts	All	Apache 2	Fore.Stw.10
2	Xemtec to GreenButton db (script/sync to import data from Xemtec)	Ferrara	EUPL	Fore.Stw.11
	GreenButton to SOS db (script to align ...)	Ferrara	EUPL	Fore.Stw.12

Scenario	Resource	Pilot(s)	Licence	Metadata ID
2	Each pilot to write name of sw resource implemented at local head-end	All other pilots	EUPL	Fore.Stw.13
		All other pilots	EUPL	Fore.Stw.14
3	POConnector	Rovereto	Copyright, restricted	Fore.Stw.15
2	Script to import Holmes data which is eventually uploaded to ftp	Paola (GSYS)	tbd	Fore.Stw.16
2	FTP to SOS db (script to store data from FTP into SOS database)	All	Apache 2	Fore.Stw.17
2	WFS weather to SOS (script to load data from WFS to SOS db)	All	Apache 2	Fore.Stw.18
2	Energy awareness for buildings (service)	All	EUPL	Fore.Stw.19
2	Energy awareness for shelter (service)	All	EUPL	Fore.Stw.20
2	Energy awareness app	All	EUPL	Fore.Stw.21
3	Lighting network app	All	EUPL	Fore.Stw.22
3	SPS plugin	Bassano	EUPL	Fore.Stw.23
		Rovereto	Copyright, restricted	Fore.Stw.24
3	SOS to Reverberi plugin	Bassano	Apache 2	Fore.Stw.25
3	Grouping and scheduling of lamps (service)	All	EUPL	Fore.Stw.26
3	CRUD service for lamps	All	EUPL	Fore.Stw.27

4 Service Level Agreement

The purpose of this section is to provide guidelines for the definition of the performance criteria to be included in the services implemented as “foreground” by the Sunshine project (software, as defined in paragraph 3.2.4).

The Service Level Agreement (SLA) is a contract between parties, specified hereafter, that specifies what services the Network Services provider will provide and the minimum Quality of Service (QoS) indicators, that the Services Provider have to satisfy for its services.

This documents is based on the official **INSPIRE Network Services Performance Guidelines**³⁸.

4.1 Parties

In this paragraph, the parties involved and their respective roles in this Service Level Agreement will be identified for each service/software:

Name of the Service Provider (SP)	Name of the Customer (C)	Roles	
e.g. (Sunshine Consortium)	e.g. Municipality of Trento	SP	
		C	

Additional Notes:

³⁸

http://inspire.ec.europa.eu/reports/ImplementingRules/network/Network_Services_Performance_Guidelines_%20v1.0.pdf

4.2 Validity Period

The Validity period defines the temporal time period covered by the Service Level Agreement reported in this paragraph.

Each involved part shall ensure to fulfil all the terms reported in this contract for the following time period.

Start-Date	e.g. (2015-01-01)
End-Date	e.g. (2017-12-31)

Penalties for un-compliant part will be defined.

Additional Notes:

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4.3 Scope

The aim of this paragraph is to define the services involved and considered in the Service Level Agreement. In the next Chapter, the Quality of Service protocol, applied to each web service reported in this section, will be applied.

The following table will be used to fill in all the services involved, describing for each one:

- Name: name of the service (refer to the list of foreground software at paragraph 3.2.4)
- Service type: type of the service (ref. ISO19119 taxonomy)³⁹
- Description: a brief description of the reported service.

Service Name	Service Type	Description
Sunshine Energy Portal	Geographic human interaction	Web client that allow the interaction between the users and the some middleware services exposed by SUNSHINE platform.
Energy performance estimation processing service (web)	Geographic human interaction	Web client that allow the visualization of the energy map information and the simulation of energy performance changing some parameters.
SOS client	Geographic human interaction	Web client that allow the access to SOS services
SPS client	Geographic human interaction	Web client that allow the access to SPS services
Grouping client	Geographic human interaction	Web client that allow the access to grouping APIs
SUNSHINE App	Geographic human interaction	Mobile application that allow the interaction between the users and the some middleware

³⁹ For the ISO19119 taxonomy, please refer to the document "COMMISSION REGULATION (EC) No 1205/2008 of 3 December 2008 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards metadata" - <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32008R1205&from=EN> (p.19)

		services exposed by SUNSHINE platform.
Energy performance estimation processing service (web)	Geographic human interaction	Mobile application components that allow the visualization of the energy map information and the simulation of energy performance changing some parameters.
SOS mobile client	Geographic human interaction	Mobile client component that allow the access to SOS services
SPS mobile client	Geographic human interaction	Mobile client component that allow the access to SPS services
Grouping mobile client	Geographic human interaction	Mobile client component that allow the access to grouping APIs
ETL4SHP	Ingestion Service	Automatic ETL procedures for transforming geographic data provided by partners
ETL4App	Ingestion Service	Automatic ETL procedures for transforming geographic data provided by partners
ETL4CityGML	Ingestion Service	Automatic ETL procedures for transforming geographic data provided by partners
FTP Ingestion service	Ingestion Service	Automatic procedures for store consumption data provided by partners via FTP. It is a process that, with an FTP pull, retrieves the CSV files and then processes them and finally loads them into the repository
Green Button Ingestion service	Ingestion Service	Automatic procedures for store consumption data provided by partners via green button

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http://ec.europa.eu/ict_psp).



		endpoint. It's a Green Button feed consumer that reads the data exposed by the pilots using this technology and then, passing through the CSV loader, loads the data in the SOS database.
Lamp state data ingestion services	Ingestion Service	OGC SOS-T services, for writing sensor reading
Weather data Ingestion service	Ingestion Service	It is a WFS consumer that is scheduled every day. It makes a call to two separate WFS weather services (one for observations, the other for forecasts), parses the result and loads the data into the SOS database.
GeoNetwork Catalogue service	Catalogue service	Services to expose the metatada catalogue
OGC Sensor Observation Service (SOS).	View/Download Services	Services to expose all the sensors data (Consumption, weather, lamps status etc.)
Geoserver map server	View/Download Services	Services to expose all the geographic data (energy maps, pilot buildings, lamps and weather station location etc.)
Processing service for building pre-certification	Processing service	To estimate energy performances of buildings at urban scale, using geographical, physical and thermal properties of building geodata (attributes) together with other parameters related to the geographical context (e.g. climate zone, urban pattern, ...).

Processing service for energy behaviour of pilot buildings.	Processing service	To estimate the thermal profile of the pilot buildings based on the weather cforecast.
Service for citizen alert management	Notification services	Services that provide to the users the results of the processing service for energy behaviour of pilot buildings with suggestion for the energy use.
Sensor Planning Service (SPS)	Notification services	Sends operation instruction to the remote controllers that modify the state of the lamps (dimming level, switching on and off).
Grouping services API	Managing services	Allow users to group together single lamps in order to schedule SPS notification to group of lamps.
Identity management Services	Security and privileges	To enforce a number of interwoven access control systems.

Additional Notes:

4.4 Service-Level Objectives

A service level objective (SLO) is a key element of a service level agreement (SLA) between a service provider and a customer.

SLOs are agreed as a means of measuring the performance of the Service Provider and are outlined as a way of avoiding disputes between the two parties based on misunderstanding.

There is often confusion in the use of SLA and SLO. The SLA is the entire agreement that specifies what service is to be provided. SLOs are specific measurable characteristics of the SLA such as availability, throughput, frequency, response time, or quality.

The SLO may be composed of one or more quality-of-service measurements that are combined to produce the SLO achievement value. As an example, an availability SLO may depend on multiple components, each of that may have a QOS availability measurement. The combination of Quality of Service (QOS) measures into an SLO achievement value will depend on the nature and architecture of the service.

Quality of Service Attribute for INSPIRE Network Services are:

- Performance
- Reliability
- Capacity
- Availability
- Security
- Regulatory
- Interoperability

4.5 Performance

The performance of a web service represents how fast a service request can be completed. There are several parameters to take into consideration that are reported in the following subsections.

4.5.1 Throughput

Throughput, also called Timer Synchronization Function (TSF), is the number of web service requests served in a given time interval.

Parameter	Estimated Value
Throughput	(10/s)

4.5.2 Response Time

Response time is the time required to complete a web service request.

Parameter	Estimated Value
Response Time	(<100ms)

4.5.3 Latency

Latency is the turn around time, TAT, between sending a request and receiving the response.

Parameter	Estimated Value
Latency	(<100ms)

4.5.4 Execution Time

Execution time is the time taken by a web service to process its sequence of activities.

Parameter	Estimated Value
Execution Time	(<1s)

4.5.5 Transaction Time

Transaction time represents the time that passes while the web service is completing one complete transaction. This transaction time may depend on the definition of web service transaction.

Parameter	Estimated Value
Transaction Time	(<1s)

4.6 Reliability

Reliability represents the ability of a web service to perform its required functions under stated conditions for a specified time interval. The reliability is the overall measure of a web service to maintain its service quality.

Parameter	Estimated Value
Reliability	(>99.99%)

4.7 Capacity

Capacity is the limit of the number of simultaneous requests which should be provided with guaranteed performance.

Parameter	Estimated Value
Capacity	(20/s)

4.8 Availability

The web service should be ready for immediate consumption. This availability is the probability (percentage) that the system is up.

Parameter	Estimated Value
Availability	(>99%)

4.9 Security

Security is the quality aspect of the Web service of providing confidentiality and non-repudiation by authenticating the parties involved, encrypting messages, and providing access control.

Security can be assessed through a set of different characteristics:

4.9.1 Authentication

Users (or other services) who can access service and data should be authenticated (if required).

Parameter	Estimated Value
Authentication	e.g. (Not required)

4.9.2 Authorization

Users (or other services) should be authorised so that they only can access the protected services (if required).

Parameter	Estimated Value
Authorization	e.g. (Not required)

4.9.3 Confidentiality

Data should be treated properly so that only authorised users (or other services) can access or modify the data (if required).

Parameter	Estimated Value
Confidentiality	e.g. (Not required)

4.9.4 Accountability

The supplier can be held accountable for their services.

Parameter	Estimated Value
Accountability	e.g. (Required)

4.9.5 Traceability and Auditability

It should be possible to trace the history of a service when a request was serviced.

Parameter	Estimated Value
Traceability and Auditability	e.g. (Required)

4.9.6 Data Encryption

Data should be encrypted (if required).

Data Encryption	e.g. (Not required)
Non-Repudiation	e.g. (Required)

4.9.7 Non-Repudiation

A user cannot deny requesting a service or data after the fact.

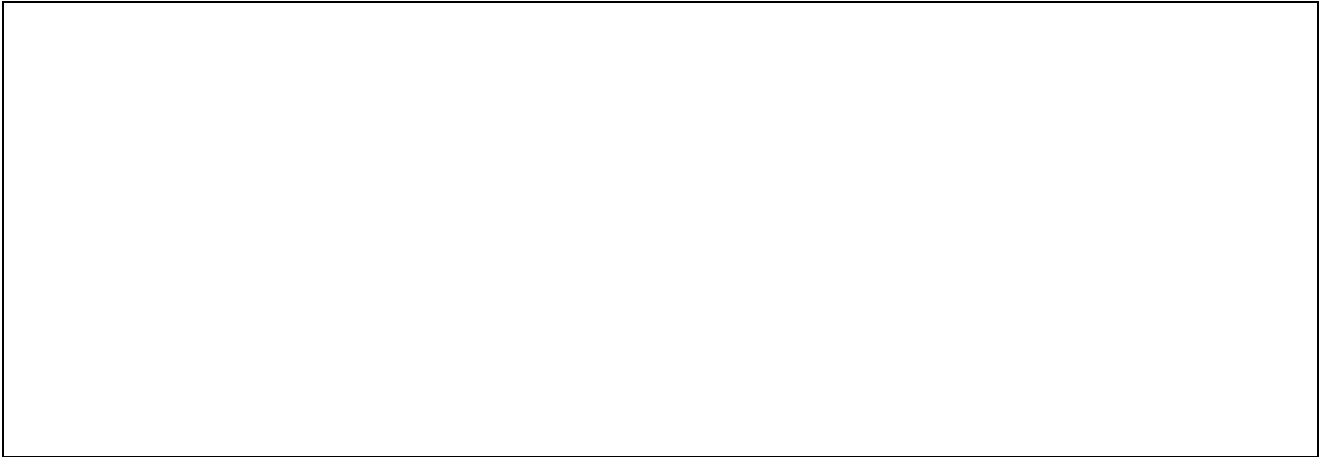
Parameter	Estimated Value
Non-Repudiation	e.g. (Required)

Additional Notes:

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4.10 Penalties

Penalties define what happens in case the service provider under-performs and is unable to meet the objectives in the SLA. If the agreement is with an external service provider, the option of terminating the contract in light of unacceptable service levels should be built in.



Annex I – Examples of metadata

The following paragraphs are provided to present practical examples of “resources” metadata containing information about IPR and licensing policies applied to them.

Metadata have been compiled using the XLS spreadsheet (updated) available at:

http://www.sinergis.it/download/metadati/GSC-XLS4Metadata_INSPIRE+DCAT_ENG.xls

This version of the XLS spreadsheet also contains functionality to export DCAT RDF/XML (see footnote 4 above), to be tested with support of JRC-IES in early December 2014⁴⁰.

4.11 Data

Element	Value
<i>Date of metadata (format YYYY-MM-DD)</i>	2014-11-20
<i>Coordinate reference system</i>	http://www.opengis.net/def/crs/EPSSG/0/4326
<i>Title of the resource</i>	Estimated energy performance of cadastral buildings
<i>Date of the resource (format YYYY-MM-DD)</i>	2014-09-15
<i>Organisation responsible for the management of resource</i>	Comune di Ferrara - Servizio Sistemi Informativi e Territoriali
<i>Telephone</i>	+39.0532.419365
<i>Email</i>	f.deluigi@comune.fe.it
<i>Web site</i>	http://www.comune.fe.it
<i>Abstract</i>	Official cadastral buildings (footprints) enriched with information about physical and

⁴⁰ https://ies-svn.jrc.ec.europa.eu/projects/metadata/wiki/Alignment_of_INSPIRE_metadata_with_DCAT-AP

	thermal properties, energy performance certificates from regional SACE register, gas and electricity consumption from SIATEL service.
<i>Free keyword</i>	cadastral buildings, energy certificate, energy consumption
<i>INSPIRE keyword</i>	Buildings
<i>Limitation on the use of the resource</i>	http://creativecommons.org/licenses/by/3.0/it/
<i>Access restrictions</i>	license
<i>Use restrictions</i>	license
<i>Restrictions applied to the resource</i>	No additional restrictions — Users may not apply legal terms or technological measures that legally restrict others from doing anything the license permits.
<i>Equivalent scale</i>	1000
<i>Topic category</i>	location
<i>Bounding box - West</i>	10.41
<i>Bounding box - East</i>	11.97
<i>Bounding box - South</i>	45.60
<i>Bounding box - North</i>	46.60
<i>Distribution format</i>	application/vnd.google-earth.kml+xml
<i>Access point (URL) to the resource</i>	https://www.dropbox.com/s/jap94qkq2401084/ecomap_energy_consumption.kml?dl=0
<i>Function</i>	download
<i>Lineage statement</i>	Footprints of cadastral buildings are provided to the Municipality of Ferrara by the Agenzia delle Entrate, through the Sigmater platform. For Sunshine project, a number of attributes are calculated using other datasets: through Sigmater, the number of building units (and their physical properties like area and height; or the annual consumption of gas and electricity taken from SIATEL service, also provided by Agenzia delle Entrate; or the age of construction from local databases implemented by the Faculty of Architecture). Energy performance has been calculated for each residential building, using TABULA project stereotypes and physical/thermal properties of buildings.

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The INSPIRE validation report of metadata above is available at:

http://inspire-geoportal.ec.europa.eu/resources/sandbox/INSPIRE-63a602f1-70d0-11e4-8b38-52540004b857_20141120-171505/datasets/1/

The XML representation of this metadata can be obtained from the same link or from the Sunshine GeoNetwork link:

<http://sunshine.sinergis.it/geonetwork/srv/eng/metadata.show?id=3&currTab=simple>

4.12 Documents

Element	Value
<i>Metadata file identifier</i>	56940
<i>Metadata language</i>	eng
<i>Hierarchical level</i>	nonGeographicDataset
<i>Responsible party for metadata</i>	Sinergis
<i>Telephone</i>	+39.051.237832
<i>Email</i>	luca.giovannini@sinergis.it
<i>Web site</i>	http://www.sinergis.it
<i>Date of metadata (format YYYY-MM-DD)</i>	2015-03-30
<i>Metadata standard</i>	ISO19115
<i>Version of metadata standard</i>	2003/Cor.1:2006
<i>Title of the resource</i>	D2.8.III.2 INSPIRE Data Specification on Buildings – Technical Guidelines
<i>Date of the resource (format YYYY-MM-DD)</i>	2013-12-10
<i>Identifier of the resource</i>	7505
<i>Author of the document</i>	INSPIRE Thematic Working Group Buildings

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<i>Telephone</i>	+39-0332-7865052
<i>Email</i>	vanda.lima@jrc.ec.europa.eu
<i>Web site</i>	http://inspire.ec.europa.eu/
<i>Role</i>	author
<i>Abstract</i>	This document describes the INSPIRE Data Specification for the spatial data theme Buildings
<i>Presentation form</i>	documentDigital
<i>Point of contact for the resource</i>	European Commission Joint Research Centre - Digital Earth and Reference Data
<i>Telephone</i>	+39-0332-7865052
<i>Email</i>	vanda.lima@jrc.ec.europa.eu
<i>Web site</i>	http://inspire.ec.europa.eu/
<i>Free keyword</i>	data specifications
<i>INSPIRE keyword</i>	Buildings
<i>Thesaurus</i>	GEMET - INSPIRE themes, version 1.0
<i>Date of publication of the thesaurus</i>	2010-01-19
<i>Limitation on the use of the resource</i>	Public
<i>Access restrictions</i>	otherRestrictions
<i>Use restrictions</i>	otherRestrictions
<i>Restrictions applied to the resource</i>	No limitations
<i>Security restrictions</i>	unclassified
<i>Topic category</i>	imageryBaseMapsEarthCover
<i>Bounding box - West</i>	-26.40
<i>Bounding box - East</i>	41.70
<i>Bounding box - South</i>	36.20
<i>Bounding box - North</i>	70.80
<i>Distribution format</i>	application/pdf
<i>Version of the format</i>	n.a.

"This project is partially funded under the ICT Policy Support Programme (ICT PSP) as part of the Competitiveness and Innovation Framework Programme by the European Community" (http://ec.europa.eu/ict_psp).



<i>Organisation responsible for distribution of the resource</i>	European Commission Joint Research Centre
<i>Telephone</i>	+39-0332-7865052
<i>Email</i>	vanda.lima@jrc.ec.europa.eu
<i>Web site</i>	http://inspire.ec.europa.eu/
<i>Access point (URL) to the resource</i>	http://www.comune.fe.it

4.13 Hardware

Element	value
<i>Metadata file identifier</i>	24515
<i>Metadata language</i>	eng
<i>Hierarchical level</i>	hardwareCollection
<i>Responsible party for metadata</i>	Sinergis
<i>Telephone</i>	+39.051.237832
<i>Email</i>	luca.giovannini@sinergis.it
<i>Web site</i>	http://www.sinergis.it
<i>Date of metadata (format YYYY-MM-DD)</i>	2015-03-30
<i>Metadata standard</i>	ISO19115
<i>Version of metadata standard</i>	2003/Cor.1:2006
<i>Title of the resource</i>	Sunshine servers
<i>Date of the resource (format YYYY-MM-DD)</i>	2014-01-01
<i>Identifier of the resource</i>	11111
<i>Owner of the resource</i>	Sinergis
<i>Telephone</i>	+39.051.237832
<i>Email</i>	luca.giovannini@sinergis.it
<i>Web site</i>	http://www.sinergis.it
<i>Role</i>	owner

"This project is partially funded under the ICT Policy Support Programme (ICT PSP) as part of the Competitiveness and Innovation Framework Programme by the European Community" (http://ec.europa.eu/ict_psp).



<i>Abstract</i>	The servers hosted at Sinergis premises holding the data pertaining to the project and running the central services.
<i>Point of contact for information about the resource</i>	
<i>Telephone</i>	+39.051.237832
<i>Email</i>	luca.giovannini@sinergis.it
<i>Web site</i>	http://www.sinergis.it
<i>Free keyword</i>	
<i>INSPIRE keyword</i>	Buildings
<i>Thesaurus</i>	GEMET - INSPIRE themes, version 1.0
<i>Date of publication of the thesaurus</i>	2010-01-19
<i>Limitation on the use of the resource</i>	Public
<i>Access restrictions</i>	patent
<i>Use restrictions</i>	patent
<i>Restrictions applied to the resource</i>	Restrictions apply
<i>Security restrictions</i>	restricted
<i>Topic category</i>	utilitiesCommunication
<i>Bounding box - West</i>	-26.40
<i>Bounding box - East</i>	41.70
<i>Bounding box - South</i>	36.20
<i>Bounding box - North</i>	70.80
<i>Organisation responsible for distribution of the resource</i>	Sinergis
<i>Telephone</i>	+39.051.237832
<i>Email</i>	luca.giovannini@sinergis.it
<i>Web site</i>	http://www.sinergis.it
<i>Access point (URL) to the resource</i>	http://www.comune.fe.it
<i>Function</i>	information

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4.14 Software

Element	Value
<i>Metadata file identifier</i>	71148
<i>Metadata language</i>	eng
<i>Hierarchical level</i>	software
<i>Responsible party for metadata</i>	Sinergis
<i>Telephone</i>	+39.051.237832
<i>Email</i>	luca.giovannini@sinergis.it
<i>Web site</i>	http://www.sinergis.it
<i>Date of metadata (format YYYY-MM-DD)</i>	2015-03-30
<i>Metadata standard</i>	ISO19115
<i>Version of metadata standard</i>	2003/Cor.1:2006
<i>Title of the resource</i>	Load-SIATEL
<i>Date of the resource (format YYYY-MM-DD)</i>	2014-01-01
<i>Identifier of the resource</i>	21827
<i>Author of the resource</i>	Sinergis
<i>Telephone</i>	+39.051.237832
<i>Email</i>	luca.giovannini@sinergis.it
<i>Web site</i>	http://www.sinergis.it
<i>Role</i>	author
<i>Abstract</i>	The software is capable of transforming addresses written in a non-standard format into standard format, provided that a list of standard address is provided to the software.
<i>Point of contact for information about the resource</i>	Sinergis
<i>Telephone</i>	+39.051.237832
<i>Email</i>	luca.giovannini@sinergis.it
<i>Web site</i>	http://www.sinergis.it

"This project is partially funded under the ICT Policy Support Programme (ICT PSP) as part of the Competitiveness and Innovation Framework Programme by the European Community" (http://ec.europa.eu/ict_psp).



<i>Free keyword</i>	addresses, cadastre, normalization
<i>INSPIRE keyword</i>	Buildings
<i>Thesaurus</i>	GEMET - INSPIRE themes, version 1.0
<i>Date of publication of the thesaurus</i>	2010-01-19
<i>Limitation on the use of the resource</i>	Public
<i>Access restrictions</i>	license
<i>Use restrictions</i>	license
<i>Restrictions applied to the resource</i>	Copyright EULA
<i>Security restrictions</i>	unclassified
<i>Topic category</i>	imageryBaseMapsEarthCover
<i>Bounding box - West</i>	-26.40
<i>Bounding box - East</i>	41.70
<i>Bounding box - South</i>	36.20
<i>Bounding box - North</i>	70.80
<i>Distribution format</i>	application
<i>Version of the format</i>	n.a.
<i>Organisation responsible for distribution of the resource</i>	Sinergis
<i>Telephone</i>	+39.051.237832
<i>Email</i>	luca.giovannini@sinergis.it
<i>Web site</i>	http://www.sinergis.it
<i>Access point (URL) to the resource</i>	-
<i>Function</i>	information

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