

A European Community of SMEs built on Environmental Digital Content and Languages

# D3.3: Best Practice catalogue compiled

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# 1 Document change log

Version	Date	Changed by	Changed Sections	Changes made
1.0	12.04.2014	Zhenya Valcheva (IL)	All	First version
2.0	16.05.2014	Martin Ford (GiSt) Anne Wilson (GiSt) Giacomo Martirano (EIT)	All	Final version





# 2 Glossary and abbreviations used in this document

Term/ Abbreviation	Name
BP	Best Practice
BPC	Best Practice Catalogue
CEN/TR	CEN Technical report (European Standards Body Technical Report)
Data model	model describing the attributes of data that are stored within an application and the associations between them  Note1: conceptual data models show the main abstraction of data by means of entities which have attributes, and associations which have cardinality and, optionally, attributes  Note 2: mind maps show data models in a hierarchical way  Note 3: physical data models show concrete implementation of data models using MySQL Database
Enumeration/ code list/ nomenclature	list of predefined values combined by common category
WP	Work Package





# 3 Introduction

This report describes the results of the populated Best Practices, including statistical and graphical presentation by various classifications (methods, procedures, projects, reasons and objectives, implementations) for geo-ICT SMEs.

The statistics provide the latest data submitted since 15.05.2013 (date of release of the web application for the population of the Best Practice Catalogue) to 15.05.2014.

This document is a statistical report of the usage of the SmeSpire Best Practice Catalogue. The structure and functionalities have been developed under Task 3.1, Task 3.2 and described in deliverables D3.1 - Best Practice Catalogue structure and specification and D3.2 - Best Practice Catalogue guidelines.

The compilation of the Best Practice Catalogue has been made during Task 3.3.





# 4 Catalogue general overview

The catalogue home page is displayed in the figure below:

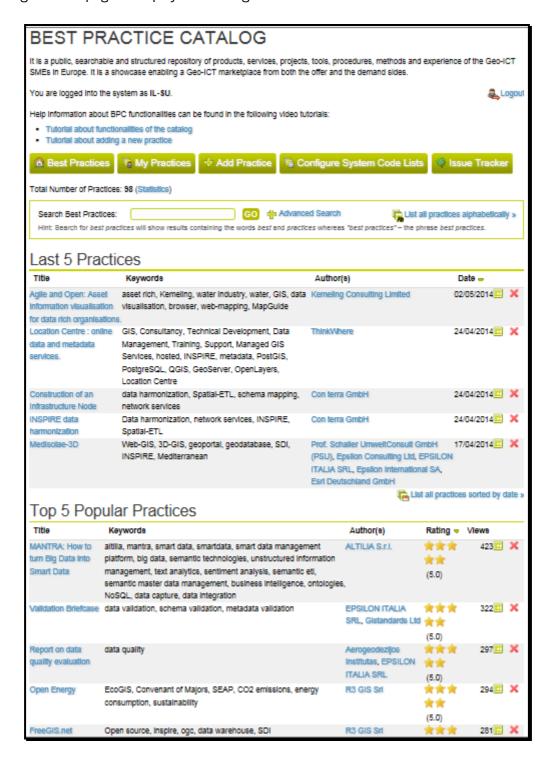


Figure 1 – Best Practice Catalogue

The home page represents statistical outcomes for the five last submitted Best Practices and for the top five popular Best Practices filtered by the number of unique views and ranking.





The BPC is accessible to any anonymous user, however its compilation is restricted to the members of the smeSpire network, who can provide new Best Practices as well as modify their existing Best Practices previously inserted into the Catalogue.

Based on the established interoperability with the smeSpire Database (developed in the frame of Task T4.2) the BPC application is able to disseminate Best Practices and competencies in the geospatial domain across Europe and beyond for registered smeSpire Network members.

The total number of submitted Best Practices is available for all registered users.

The number of Best Practices is automatically updated by the Catalogue application when a new Best Practice is submitted.

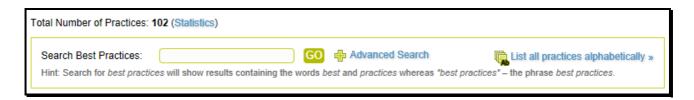


Figure 2 – Number of Best Practices

# 5 Catalogue tools for statistics

BPC software provides statistics about the number of the submitted Best Practices. The latest statistics for the number of practices is displayed on the figures below:

Country	Number of Practices
Slovakia	27
Italy	25
United Kingdom	12
Bulgaria	10
Malta	6
Czech Republic	5
Spain	5
Germany	4
Belgium	3
Lithuania	3
France	
Greece	
	Total Number of Practices: 102

Figure 3 – Number of Best Practices by country





Title	Main Author	Number of Views
MANTRA: How to turn Big Data into Smart Data	ALTILIA S.r.I.	424
GetLOD: an open and reusable solution to publish geospatial data on the Web as Linked Open Data	Planetek Italia S.r.l.	333
Validation Briefcase	EPSILON ITALIA SRL	322
Report on data quality evaluation	Aerogeodezijos Institutas	297
Open Energy	R3 GIS Srl	294
FreeGIS.net reference implementation	R3 GIS SrI	281
WorldDroid*	Trilogis	272
Cross-border, multi-lingual and harmonized access to the Member States' territoria data	ll Planetek Italia S.r.l.	268
Easy management of maps, geolocated data, and images / Maps: web, tablets, an mobile	d Geographica	254
3D CityGML renderer web Applet	Fondazione Graphitech	241
Territorial Business Intelligence to aid in decision making tasks	Geographica	226
R3 TREES, management of green areas	R3 GIS Srl	221
High quality real time environments reconstruction App for mobile tourism support	Fondazione Graphitech	215
Results assessment report	Aerogeodezijos Institutas	197
Communication tools	Lacosa Srl	193
Video of Mantra platform to process big-data	Lacosa Srl	188
SITR-IDT REgione Sardegna	SINERGIS SRL	188
SIGMA TER	SINERGIS SRL	185
Architectural Barriers Crowdsourcing App	Fondazione Graphitech	184
GeoBrowser@A22	Fondazione Graphitech	183 181
Thesaurus service using GEMET REST API	Info-Logica Slovenská Agentůra zivotného	176
INSPIRE Biodiversity Mashup	Prostredia	
EasySDI	Depth France	167
RAE – SDI in accordance to the INSPIRE Directive INSPIRE compliant metadata containing both discovery MD and MD for interoperability	GET Ltd EPSILON ITALIA SRL	184 181
Spatio-temporal data management and interactive visualisation.	Fondazione Graphitech	156
Intelligent Transportation System for Urban Environments	Fondazione Graphitech	151
Analysis and forecast of potential applications	Aerogeodezijos Institutas	141
How to encode a raster dataset in accordance to INSPIRE "D2.8.II.2 Data  Specification on Land Cover – Technical Guidelines"	EPSILON ITALIA SRL	129
S-JTSK SRS definition in open source libraries	Slovenská Agentůra zivotněho Prostredia	100
How to assess the degree of conformity to the requirements specified by Commission Regulation (EU) No 1089/2010 relevant to a dataset belonging to INSPIRE Annex II/III data themes	EPSILON ITALIA SRL	9
Geomajas, a free and open source GIS framework	KU Leuven - SADL	91
Luciad - software solutions for building Situational Awareness systems	KU Leuven - SADL	96
Implementation of INSPIRE in Navarre	TRACASA	91
3D model s.r.o.	3Dmodelsro	80

Figure 4 – Number of views per Best Practice

This statistical tool generates data for a selected period of time and provides the functionality to export it to an Excel format.





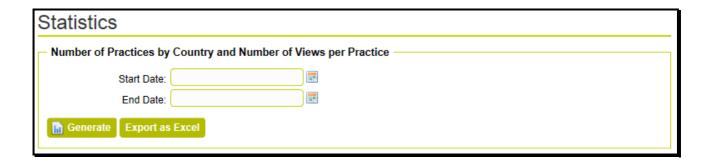


Figure 5 – BPC statistics for the number of best practices per country and views

The BPC tool provides functionalities for both simple and advanced search options.

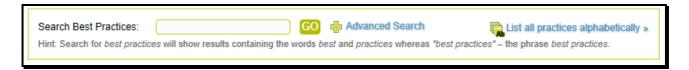


Figure 6 - BPC search tool

Simple search enables "wildcard" search ability. The results are statistics of all the occurrences of the requested free text:



Figure 7 - Simple search

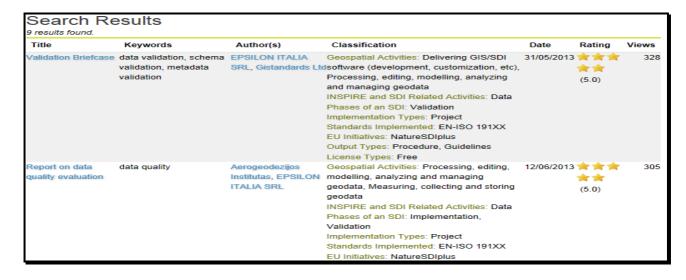


Figure 8 - Result of a simple search





Advance search provides statistics by the combination of "free text" searching and filtering criteria for the defined BPC code lists:

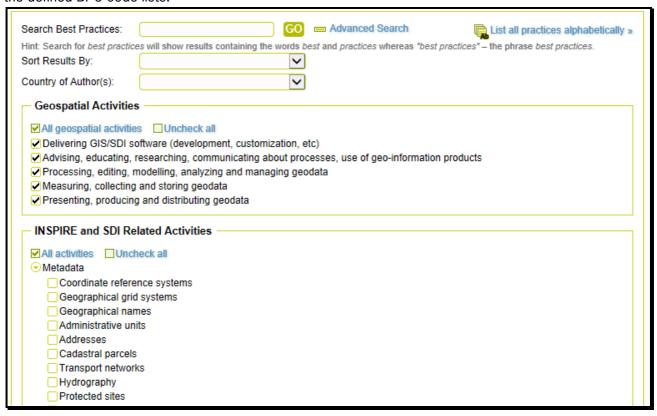


Figure 9 - BPC advanced search

Users have the option to search specific text or search in all Best Practices. Additionally the options "All BPC code lists" or "Uncheck all" functions facilitate the selection of criteria allowing users to check or uncheck all the classifications for a selected code list or to select only the desired item.

Note: BPC code list means one of the code lists as defined in BPC.





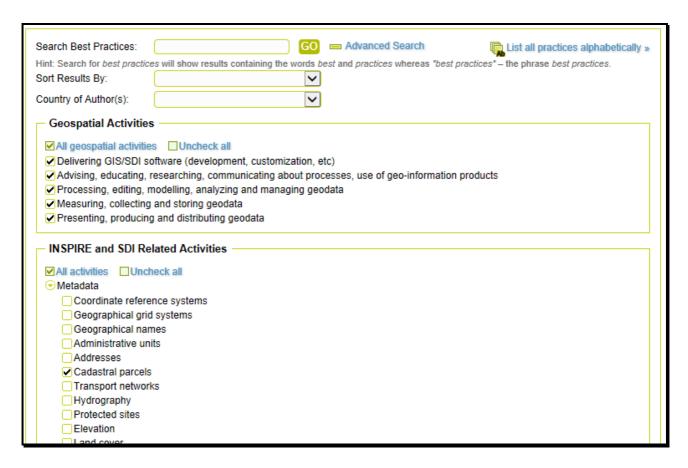


Figure 10 - BPC filtering criteria

BPC search tool allows the opportunity to sort results by different criteria as shown below:

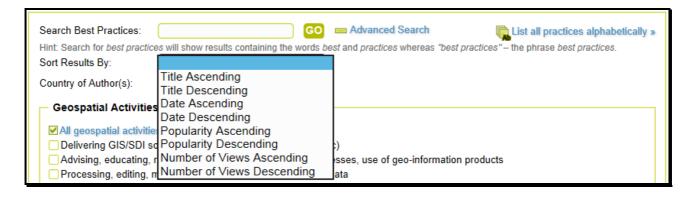


Figure 11 – BPC sort criteria

# 6 BPC compilation of outcomes

#### 6.1 Best Practice general statistics

The BPC is fully interoperable with the smeSpire Database (developed in the frame of Task T4.2) and represents an effective tool for geo-ICT SMEs wishing to disseminate their Best Practices and competencies in the geospatial domain across Europe and beyond.



This sub-clause presents statistics and results calculated on a cross-database data, collected from Best Practice Catalogue applications and smeSpire database applications.

The figure below shows statistics about the Best Practices provided by the organizations registered in the smeSpire database based on their country of origin.

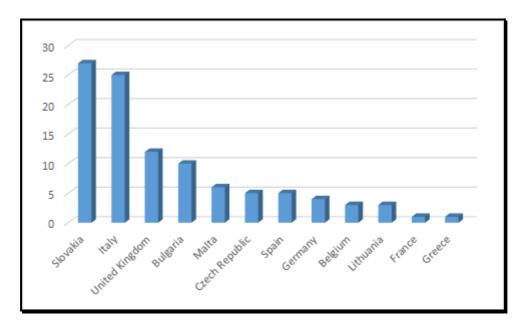


Figure 12 – Best Practices by country

The next figure shows the number of Best Practices submitted by the types of organizations listed below and the number of Best Practices submitted by the smeSpire project partners:

- SME
- LE
- Public body
- Research & Education members of the network
- smeSpire partners
- non-SME





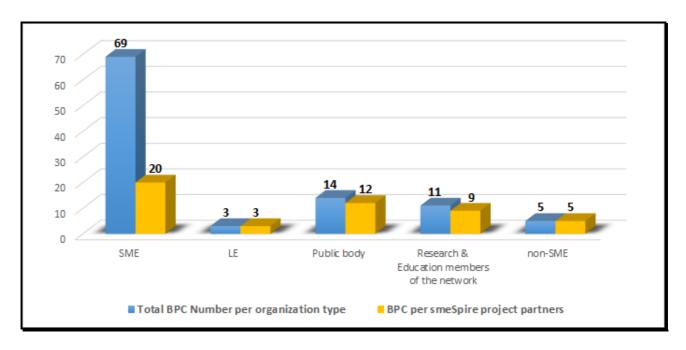


Figure 13 – Best Practices per type of organization

The primary geospatial activities identified within the smeSpire database are as follows:

- delivering GIS/SDI software (for example development and customisation),
- advising, educating, researching, communicating about processes, use of geo-information products,
- processing, editing, modeling, analyzing and managing geodata,
- measuring, collecting and storing geodata and
- presenting, producing and distributing geodata.

The figure below shows the outcomes for the Best Practices provided by the organizations according to the geospatial activities to which they belong:

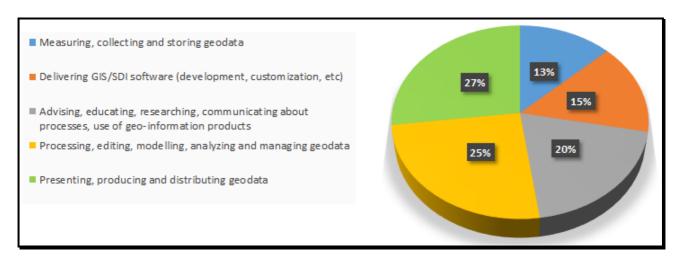


Figure 14 – Best Practices by geospatial activities

The outcomes provided as a result of various initiatives on a European level are as follows:





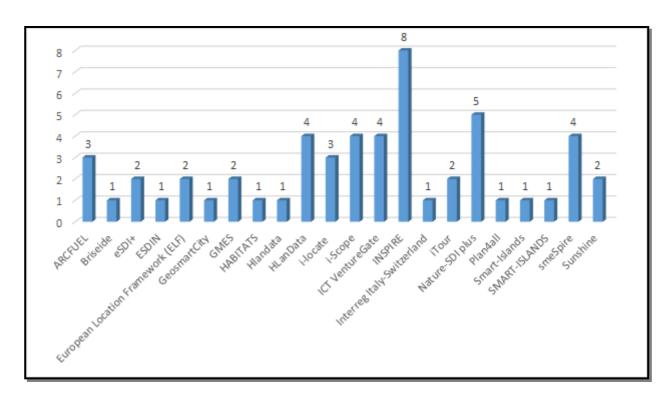


Figure 15 – Best Practices by EU initiative

The next figure shows the statistical data about co-authors of submitted Best Practices and their distribution across the smeSpire Network:

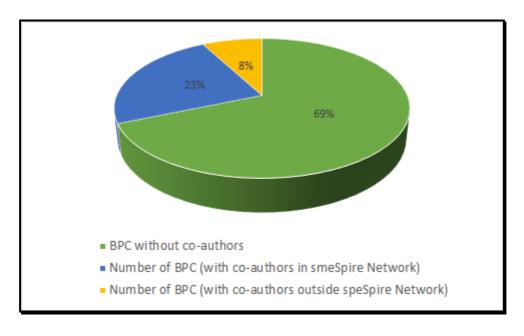


Figure 16 - BPC distribution by the smeSpire Network members and co-authors





The following two figures give an overview of the timeline and the trend for the submission of Best Practices for the period since May 2013 to May 2014:

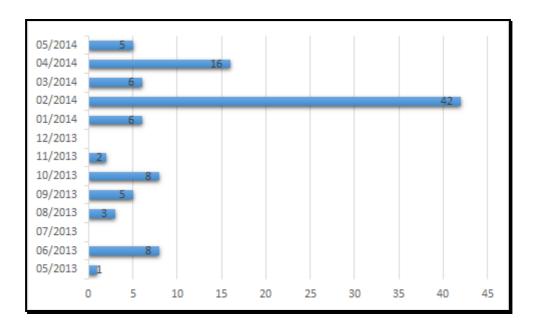


Figure 17 – Best Practices submission per month and year

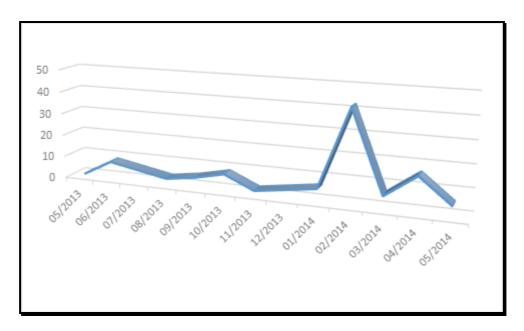


Figure 18 – Graphic trend of Best Practice submission

The trend for the Best Practices per month and year for the period since May 2013 to May 2014 is displayed in the figure below:





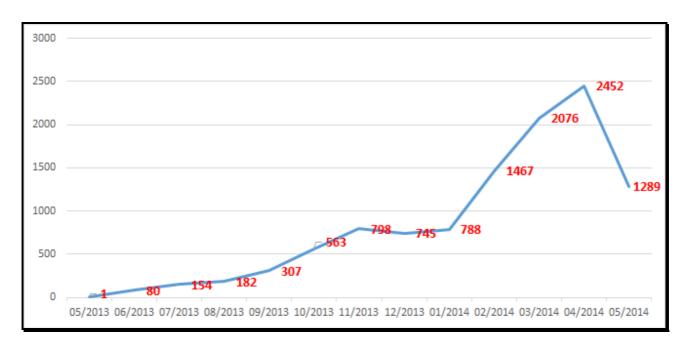


Figure 19 – Best Practices by number of views

# 6.2 Best Practice statistics by BPC code lists

In the BPC application several groups of code lists and subgroups for classifications of submitted Best Practices have been identified as displayed:

# **Practices Related Code Lists**

Architecture Reference Model Services Customer Types Implementation Types INSPIRE and SDI Related Activities INSPIRE Themes License Types Output Types Phases of an SDI Standards Implemented	Title	
Implementation Types INSPIRE and SDI Related Activities INSPIRE Themes License Types Output Types Phases of an SDI	Architecture Reference Model Services	
INSPIRE and SDI Related Activities INSPIRE Themes License Types Output Types Phases of an SDI	Customer Types	
INSPIRE Themes License Types Output Types Phases of an SDI	Implementation Types	
License Types Output Types Phases of an SDI	INSPIRE and SDI Related Activities	
Output Types Phases of an SDI	INSPIRE Themes	
Phases of an SDI	License Types	
	Output Types	
Standards Implemented	Phases of an SDI	
Standards Implemented	Standards Implemented	

Figure 20 - BPC code list

This clause presents statistical data processed from the BPC database, referring to the BPC groups of code lists and subgroups.





#### 6.2.1 BPC Architectural Reference Model Services

The classification under the "Architecture Reference Model Services" is identified in accordance with CEN/TR 15449.

The classification "Architecture Reference Model Services" is divided into the categories presented in Figure 21:

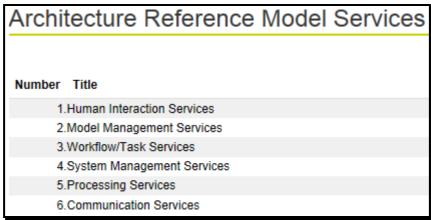


Figure 21 - Architectural Reference Model Services

The result of Best Practices provided for the different classifications of "Architectural Reference Model Services" is represented by the figure below:

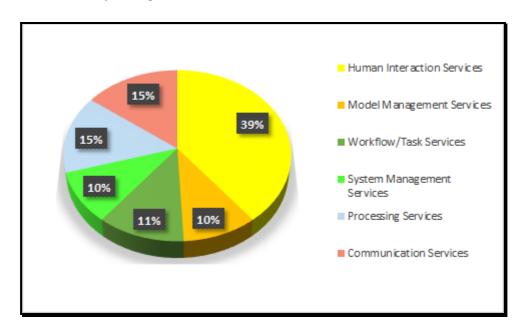


Figure 22 - Percentage of Best Practices by Architecture Reference Model Services



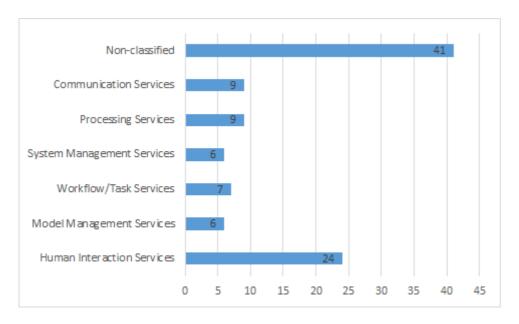


Figure 23 - Number of Best Practices by Architecture Reference Model Services

# 6.2.2 **BPC Customer Types**

The codelist "Customer Types" is classified within the following groups:

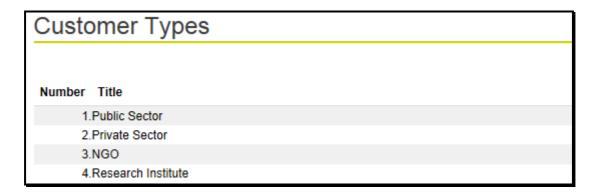


Figure 24 – Customer Types

The distribution of the Best Practices under the BPC "Customer Types" and its classification groups and subgroups are displayed in the figure below:





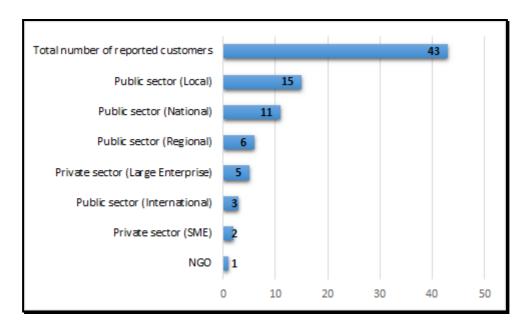


Figure 25 - Number of Best Practices by customer types

Figure 26 presents the results of the submitted Best Practices by customer use:

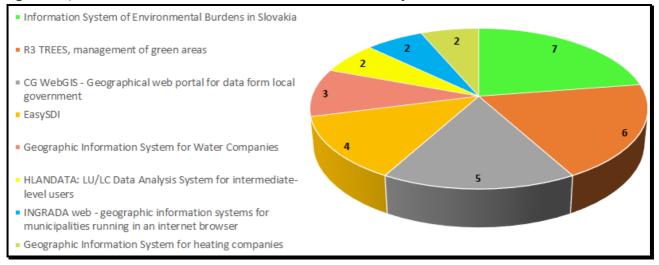


Figure 26 - Number of customers using the same Best Practice

## 6.2.3 BPC implementation types

Code list "Implementation types" in the BPC have been identified by the following categories:





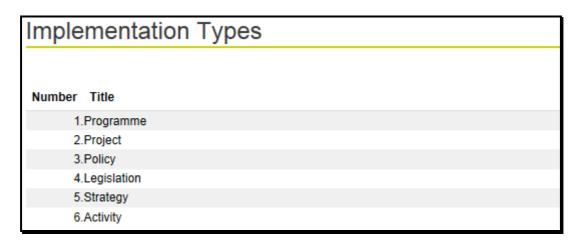


Figure 27 – Implementation Types

A summary of the Best Practices by different categories under "Implementation types" is displayed below:

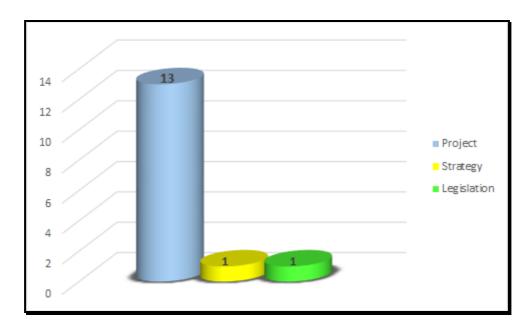


Figure 28 - Number of Best Practices per Implementation type

#### 6.2.4 INSPIRE and SDI related activities

The classification "INSPIRE and SDI related activities" is divided into several categories. Some of the main categories include child elements as shown in the figure below:





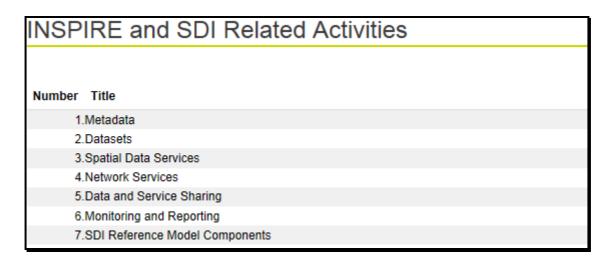


Figure 29 - INSPIRE and SDI Related Activities

The distribution of the best practices between the main categories of "INSPIRE and SDI Related Activities" is presented on the figure below:

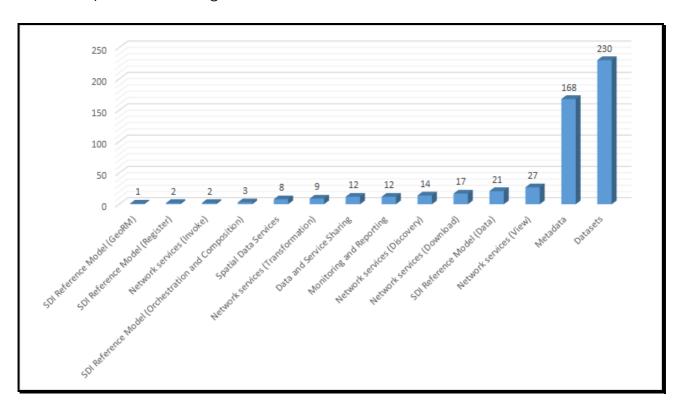


Figure 30 - Number of Best Practices by INSPIRE and SDI Related activities

Figure 31 shows statistics about the number of Best Practices for the main category "Metadata" and "Datasets" assigned to different INSPIRE themes.



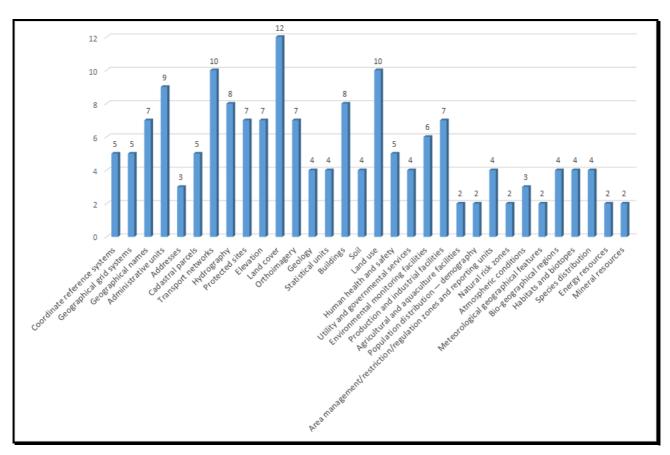


Figure 31 – Number of Best Practices for metadata by INSPIRE themes

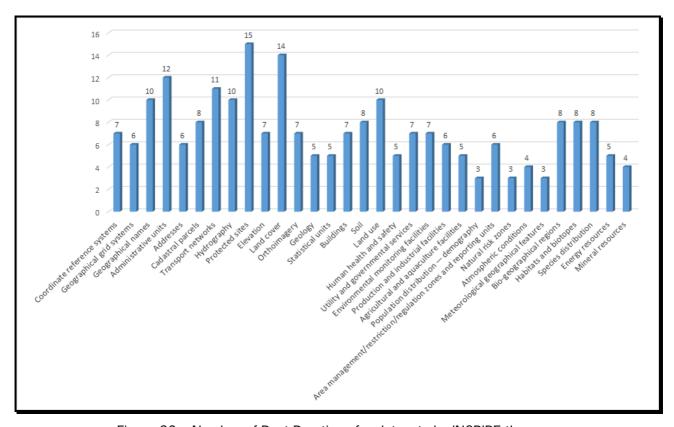


Figure 32 – Number of Best Practices for datasets by INSPIRE themes





## 6.2.5 BPC License Types

The classification of "BPC License Types" code list is defined by the following categories as presented in Figure 33:

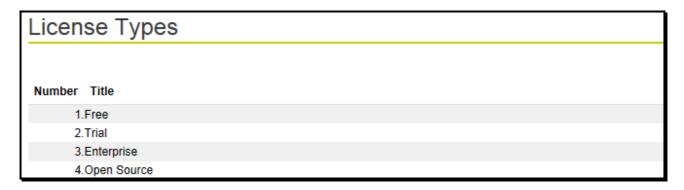


Figure 33 – License Types

Statistics displaying distribution of Best Practices by different license types is as follows:

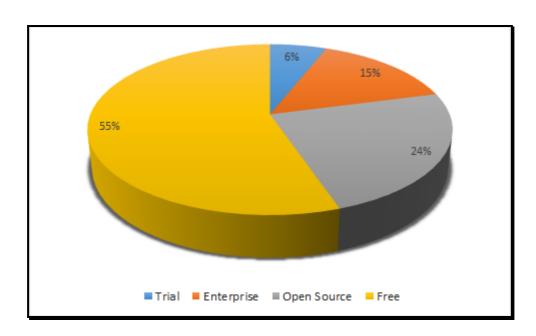


Figure 34 – Best Practices by license types

# 6.2.6 BPC Output Types

The classification of "BPC Output Types" code list relates to the following identified categories:



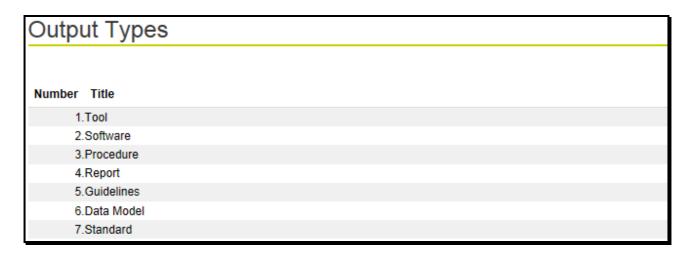


Figure 35 – Output Types

Figure 36 displays distribution of the submitted Best Practices by output types:

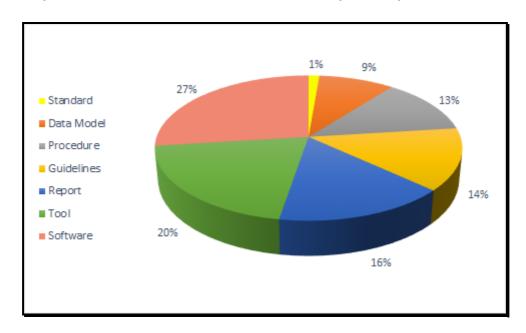


Figure 36 – Best Practices by output types

#### 6.2.7 BPC Phases of an SDI

The classification, under the "Phases of an SDI", is identified in accordance with CEN/TR 15449. The results, provided for the different classifications of "Phases of an SDI", are presented below:



# Phases of an SDI Number Title 1.Concept and Design 2.Implementation 3.Validation

Figure 37 - Phases of an SDI

Figure 38 presents statistics regarding the submitted Best Practices by phases of an SDI:

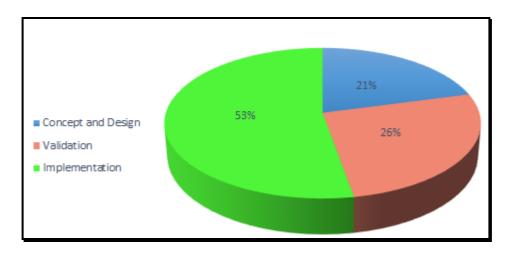


Figure 38 – Best Practices phases of an SDI

## 6.2.8 BPC Standards implemented

The classification of "BPC Standards implemented" code list is defined by the following categories:

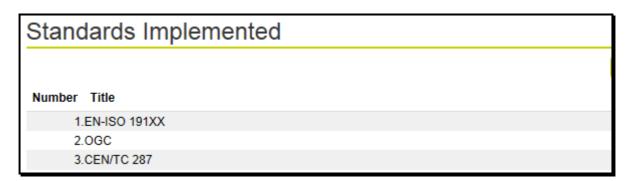


Figure 39 - Standards implemented

Figure 40 presents statistical data about Best Practices by Standards implementations:



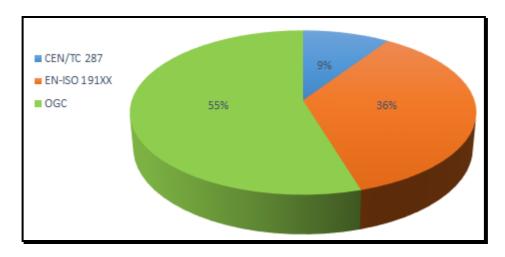


Figure 40 – Best Practices per Standards implemented

# 7 Conclusions

This report shows that:

- The target performance indicator of the Number of Best Practices present in the Best Practice Catalogue of 50 as presented in the DoW has been exceeded with the current number of best practices standing at 102 (i.e. exceeded by more than 100%). (see Figure 2)
- The contributors and users of the BPC relate to a wide range of types of organizations, this is apparent in the complexity and range of contributors to the BPC (see figures 12 and 13 and figure 15 identifying the source of BPC contributions);
- The submitted Best Practices cover the whole range of the identified activities across the geospatial domain in Europe.
- Best Practices show a rich diversity, and the variety of activities is too great to discuss at length.
- The analysis of timelines and trends show two main points of note:
  - The numbers of visits to the BPC increased over time, peaking in April 2014. Many partners held extremely successful smeSpire days during this month, and this may have generated significant interest as delegates interrogated the BPC following attendance at these events, for example at the Edinburgh smeSpire day the BPC was given positive feedback, resulting in enhanced usage. This is also probably why the usage level increased in April, as people attended the meetings and then went back to base to use the catalogue although this is interpretation of the data and not given in direct text of any submissions;
  - o There is a clear correlation between the number of visits to the BPC and the submission rate of BPs as shown in figures 18 and 19
- The numbers of Best Practices by INSPIRE and SDI Related activities mainly related to INSPIRE
  metadata and datasets., "Monitoring and reporting", "Network services", "Data and Service
  Sharing", "Spatial Data Services", "SDI Reference Model Components" continue to gather
  momentum as shown in figure 14;





- The submitted Best Practices addressed most of the INSPIRE spatial data themes as shown in figure 22;
- The links with CEN/TC 287 Geographic information were key in enabling the implementation of CEN/TR 15449 Geographic information – Spatial Data Infrastructure in the BPC code lists such as "Architecture Reference Model Services", "Phases of an SDI". Additionally the BPC provides a way forward for collecting information about the Standards under which Best Practices are implemented.

The ability to access this database of knowledge and information must be seen as a positive opportunity for smeSpire members to learn from their peers. Furthermore the proven success of the Best Practice Catalogue as indicated in the foregoing report, and in the recognised utility that corresponds with the public demonstration in the smeSpire workshops, will ensure that smeSpire partners and members of the smeSpire Network will continue to utilize and contribute to the BPC, ensuring that the Catalogue lives beyond the end of the project.

There is significant variation in the content of each submitted best practice and for this reason it is primarily the meta-data that has been analysed. Further analysis of the content of the submissions may identify a preferred template for a submission but it is stressed that the role of meta data to describe the best practice and allow its classification has been of great value. From the analysis presented in this report it can be seen that some meta data should be added to give greater awareness of the footprint of the INSPIRE penetration and to be able to highlight areas that may require greater attention in the future.



