DETAILED SURVEY CONCERNING INSPIRE - COORDINATION, FUNDING AND SHARING MEASURES IN SOUTH-EAST EUROPE

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ABSTRACT

In order to have better information concerning the current status of INSPIRE-implementation and implementation process, a survey was distributed to the National Contact Points in November 2009. The survey aimed to collect information on the transposition of the INSPIRE-directive, the set-up of coordination structures and specific INSPIRE bodies, the way they work and the way tasks are distributed amongst the stakeholders. The survey also collected information on the strategy developed for a smooth implementation of INSPIRE, the measures taken to fund specific aspects related to the set-up of INSPIRE components (e.g. budget for coordination body, for Implementing Rules on Metadata, for harmonising and transforming existing data sets) and the measures taken to improve data and service sharing, including the encountered or expected problems. The survey was based on a questionnaire with open and closed questions. Because some of the questions were open, it is likely that the responses are not compatible as a result. The answers to the questions were received in the months of January – March 2010.

This paper focuses on the survey results concerning the EU-member states Bulgaria, Cyprus, Greece, Hungary, Romania, Slovenia, and EU-candidates Croatia, Macedonia, Turkey of South-East Europe. The survey results are presented in the following way: Transposition status of INSPIRE, Implementation strategy, Coordination and Cooperation, Measures to improve data and service sharing, and Other questions. At the end, the main results are summarised.

Key words: INSPIRE, NSDI, Transposition, Coordination, Data and service sharing

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1. INTRODUCTION

The European Commission launched the INSPIRE initiative in 2001. With this initiative the European Union wants to contribute to the development of a European Spatial Data Infrastructure. The aim of this infrastructure is to allow the public sector users at the European, national and sub-national level to share easily spatial data from a wide range of sources in an interoperable way for the execution of a variety of public tasks. In order to have a common legal basis throughout Europe, the European Commission drafted a proposal for a Directive in 2004: *"Establishing an infrastructure for spatial information in the Community (INSPIRE)"*. After intensive discussions between the Commission, the Parliament and the Council, the final Directive was adopted on 25 April 2007 (European Commission, 2007).

From the very beginning, it was recognised that INSPIRE should build upon the existing components of the emerging SDIs at national and sub-national level. In order to have a better view on the status and development of these SDIs, the Commission launched a study in 2002 which is known as INSPIRE State of Play (Vandenbroucke et al. 2008). The study collects information on NSDIs in EU, EU Candidate en EFTA countries according to the components as described in the GSDI cookbook (Nebert, 2004).

In order to have better information concerning the current status of INSPIRE-implementation and implementation process, a survey was distributed to the National Contact Points in November 2009. The survey aimed to collect information on the transposition of the INSPIRE-directive, the set-up of coordination structures and specific INSPIRE bodies, the way they work and the way tasks are distributed amongst the stakeholders. The survey also collected information on the strategy developed for a smooth implementation of INSPIRE, the measures taken to fund specific aspects related to the set-up of INSPIRE components (e.g. budget for coordination body, for Implementing Rules on Metadata, for harmonising and transforming existing data sets) and the measures taken to improve data and service sharing, including the encountered or expected problems. The survey was based on a questionnaire with open and closed questions. Because some of the questions were open, it is likely that the responses are not compatible as a result. The answers to the questions were received in the months of January – March 2010.

This paper focuses on the survey results concerning the EU-member states Bulgaria (BG), Cyprus (CY), Greece (GR), Hungary (HU), Romania (RO), Slovenia (SI), and EU-candidates Croatia (HR), Macedonia (MK), Turkey (TR) of South-East Europe. The survey results are presented in the following way: Chapter 2. Transposition status of INSPIRE, Chapter 3. Implementation strategy, Chapter 4. Coordination and Cooperation, Chapter 5. Measures to improve data and service sharing, and Chapter 6. Other questions. At the end, the main results are summarised.

Finally, it is important to mention that the presented figures are directly copied from the answers given by the National Contact Points and no revisions have made.

2. TRANSPOSITION STATUS

The INSPIRE Directive came into operation on 15 May 2007, and member states were given two years from this date to complete the tasks of transposing its provision into national legislation. Related to this issue, the following questions were asked:
- What is the status of the transposition of the INSPIRE Directive? (Table 1)
- What were the main problems to overcome during the transposition phase? (Table 2)
- Which were the articles of the Directive that caused the biggest headaches? (Table 3)

Below the main results of these three questions are presented (Tables 1, 2 and 3).

Table 1a: Status INSPIRE Transposition by country

Country	Status
BG	Final text voted
CY	Final text
GR	Draft text
HR	Partly transposed
HU	Final text voted
MK	Nothing
RO	Final text published
SI	Final text voted
TR	Draft text

Table 1b: Summary of Status INSPIRE Transposition (8)

Nothing	1
Partly transposed	1
Draft text	2
Final text	1
Final text voted	3
Final text published	1

From the figures (in Table 1), it appears that only in one country (RO) a Final text is published regarding the INSPIRE Transposition, a high variety in status of INSPIRE-transposition across South-East Europe exists, and INSPIRE-transposition also a South-East European activity is.

Table 2a: Main problems to overcome during transposition phase by country.

Country	Problems
BG	Coordination + No clear Implementing Rules
CY	Coordination
GR	Coordination + Data sharing policies + Legislation (no legal framework)
HR	
HU	No clear Implementing Rules
MK	
RO	Coordination + Institutionalisation + Transposition law

3

SI	Coordination + No clear Implementing Rules
TR	Coordination

Table 2b: Summary of Main problems to overcome during transposition phase (7)

Coordination	6
Transposition law	1
No clear Implementing Rules	3
Institutionalisation	1
Data sharing policies	1
Legislation (privacy + data protection; security + confidentiality; No Legal framework)	1

From these figures (in Table 2), it appears that the setting up of coordinate structures and related arrangements have caused the main problems. Moreover, it appears that the Implementing Rules have also caused some problems.

Table 3a: Articles of the Directive causing headaches by country

Country	Articles that caused headaches
BG	
CY	Article 7
GR	Article 19 (organisational structure) + Article 17 on data pricing and licencing
HR	
HU	Article 13, 14 and 17
MK	
RO	Unclear definition of public authorities
SI	Article 17
TR	

Table 3b: Summary of Articles of the Directive causing headaches (5)

No response	4
Article 17	3
Article 14	1
Article 19	1
Article 13	1
Article 7	1

From the figures (in Table 3), it appears that Article 17 referring to Data Sharing has caused the biggest headaches. The high No response is remarkable.

Additional comments from the countries related to this Article issues are:
- GR. Article 19: it is very difficult to set up a new organisational structure serving the needs of implementing INSPIRE, because of the high fragmentation of responsibilities and activities throughout the public sector and the non-existence of an operational framework for NSDI.

- HU. Article 13: it was difficult to decide the limiting rules which could be set up in the public access to spatial data sets and services related to paragraph 1, because of collisions with the Hungarian data protection regulation. Article 14: it caused many problems whether the spatial data services referred to in points (b), (c), (d) and (e) of Article 11 may be ensured free of charges or not, since the Hungarian data protection rules are more permissive. Article 17: it was the same problem mentioned referring to Article 14 whether the data-sharing between the public authorities may be ensured free of charges or not.
- RO. Article 3, number 3 ("public authority"): this definition has a different meaning in RO.
- SI. Article 17: a common pricing policy was not regulated.

3. IMPLEMENTATION STRATEGY

The next questions deal with the strategies developed for a smooth implementation of INSPIRE:
- Is there a strategy document regarding the INSPIRE implementation? On organizational issues? On technological aspects? Is there an implementation plan (different from the strategic document(s)) that describes the implementation steps? (Table 4)
- Who has been involved in developing this strategy? (Table 5)
- Is the funding policy defined for INSPIRE-implementation? (Table 6)
- Is the funding for the coordinating body.structure, metadata creation, data harmonisation/transformation, service development, setting-up registers? (Table 7)
- What are the sources of the funding? (Table 8)

Below the main results of these five questions are presented (Tables 4 – 8).

Table 4a: Strategy documents & Implementation plan by country

	Strategy document		Implementation plan
	Organisational	**Technological**	
BG	Yes	Yes	Yes
CY	No	Partly	No
GR	No	No	Yes
HR	Partly	Partly	Partly
HU	No	No	No
MK	No	No	No
RO	No	No	No
SI	No	No	No
TR	Yes	Yes	Yes

Table 4b: Summary of Strategy documents & Implementation plan (9)

Strategy document (Organisational)	
Yes	2
No	6
Partly	1

Strategy document (Technological)	
Yes	2
No	5
Partly	2
Implementation plan	
Yes	3
No	5
Partly	1

From the figures (in Table 4), it appears that most countries have any Strategy documents or Implementation plans regarding INSPIRE (except BG, HR, TR). In GR, only an Implementation plan has been written.

Additional comments from the countries related to these strategy documents and implementation plans are:
-   CY. A new strategy is promoted. A new project covers the strategic upgrade of the currently applied Integrated Land Information System into a National Land Information System providing the Cyprian NSDI. A pilot project using "real live" data will be implemented, and a total of 5 land related agencies will be linked together for sharing and exchanging spatial data. Special provisions will ensure that the whole project will be implemented according to INSPIRE.
-   RO. The Contact Point for INSPIRE is setting up a project financed by EU Structure Funds in order to develop a RO INSPIRE strategy.

Table 5a: Involved in developing strategy by country

	EU	National government	State	Local	Utility	Universities	Institutes	Commercial & professional users
BG	X	X				X	X	
CY		X		X				
GR								
HR	X	X	X		X	X	X	X
HU								
MK								
RO		X						
SI		X					X	X
TR		X						

Table 5b: Summary of Involved in developing strategy (6)

EU	2
National government	6
State	1
Local	1
Utilities	1
Universities	2
Institutes (public & private)	3

Commercial & professional users	2

From the figures (in Table 5), it appears that the National governments are the main organisations in the region that are involved in developing strategies. (Public & private) institutes, Universities, and commercial & Professional users are also involved. In two countries, the EU is involved (BG, HR).

Table 6a: Funding policy for INSPIRE Implementation by country

	Funding policy
BG	No
CY	No
GR	No
HR	Partly
HU	Yes
MK	No
RO	No
SI	No
TR	Yes

Table 6b: Summary of Funding policy for INSPIRE Implementation (9)

Yes	2
Partly	1
No	6

From the figures (in the Table 6), it appears that most countries have no Funding policy (except HU, HR and TR).

Additional comments from HU related to these funding policies are:

- Since there are a number of INSPIRE data themes that do not have data specifications and the directive does not clarify the scale of the data that has to be included in the services, this makes it almost impossible to determine who are the stakeholders and which datasets are involved. Thus cost calculation is very uncertain. It is difficult to start implementing such a work without a proper cost-benefit analysis, so the HUNAGI (Hungarian Association for Geo Information) was asked to perform this analysis. The result of this analysis is that the full implementation of the INSPIRE directive will cost around HUF 9,140,329,000 (± €34,000,000).

Table 7a: Funding for … (by country)

	Coordinating body/structure	**Metadata Creation**	**Data harmonisation**	**Service development**	**Setting-up registers**
BG					
CY	X		X	X	X
GR					
HR	X				

HU	X	X	X	X	
MK					
RO					
SI					
TR	X	X	X	X	X

Table 7b: Summary Funding for … (5)

Coordinating body/structure	4
Metadata creation	2
Data harmonisation	3
Service development	3
Setting up registers	2

From the figures (in the Table 7), it appeared that funding is mainly needed for Coordinating body/structure. Funding is sometimes also needed for Metadata creation, Data harmonisation, Service development and Setting up registers. In addition, finding multiple activities is common practice.

Table 8a: Funding sources by country

	International governments	National governm.	State governm.	Provincial	Agencies	Funds/Grant (Inter)national	Private sector donations
BG							
CY		X			X		
GR							
HR		X	X			X	
HU		X				X	
MK							
RO		X			X		
SI		X					
TR		X				X	

Table 8b: Summary Funding sources (9)

International governments	0
National governments	6
State governments	1
Provincial	0
Agencies	2
Fund/grant (inter)national	3
Private sector donations	0

From the figures (in the Table 8), it appears that National government is the main source of funding, National funds/grants are sometimes used for funding the INSPIRE-implementation funding, and many countries have multiple sources to fund the

INSPIRE-implementation. In TR, a publicly owned / privately operated company (Turksat Corp. Inc.) is the main source of funding.

4. COORDINATION AND COOPERATION

The next questions deal with the coordination and cooperation issues related to the implementation of the INSPIRE-directive:
- What is the name of the specific coordinating structure/body established to implement INSPIRE? (Table 9)
- Is an existing organisation appointed to take the lead or act as coordinating body? (Table 10)
- How many stakeholders are involved in the coordination? (Table 11)
- Which levels of authority are involved in the coordination? (Table 12)
- Which organisations are the most active in complying with INSPIRE? (Table 13)
- Are there organisations (both public and private) that changed their internal structures in order to cope with INSPIRE? (Table 14)

Below the main results related to six questions are presented (Tables 9 – 14).

Table 9: Name INSPIRE coordination body by country

	Name
BG	
CY	INSPIRE Management Board
GR	
HR	National SDI Council, NSDI Board, NSDI Workgroups
HU	National Coordinating Committee for environmental spatial information
MK	
RO	Council for National Infrastructure for Spatial Information
SI	National Contact Point
TR	

From the figures (in the Table 9), it appears that a high diversiy of names exist referring to same type of body. It is unknown what the names of the coordination bodies (if they exist) are in BG, GR, MK and TR).

Table 10a: Existing organisation appointed to take the lead by country

BG	Ministry of Transport, Information Technology and Communications
CY	Ministry of Interior
GR	
HR	State Geodetic Administration
HU	Ministry of Environment and Water
MK	
RO	National Agency for Cadastre and Land Registration

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SI	Ministry of Environment and spatial planning
TR	General Directorate for Land Registry & Cadastre within Ministry of Development & Housing

Table 10b: Summary of Existing organisation appointed to take the lead (7)

Mapping agencies	2
Ministries	5

From the figures (in the Table 10), it appears that ministries and mapping agencies are the organisations appointed to take the lead in the implementation of INSPIRE. In two countries (GR, MK), the organisations appointed to take the lead are unknown. In two other countries, the Ministries of Environment are appointed to take the lead (HU, SI).

Table 11: Number of stakeholders involved by country

	# Stakeholders
BG	
CY	7
GR	14
HR	16
HU	
MK	
RO	20
SI	
TR	32

Table 11b: Summary of Number of stakeholders involved (5)

Minimum	7
Maximum	32
Median	16

From the figures (in the Table 11), it appears that the number of stakeholders involved ranges from 7 to 32 organisations, and that several countries are not able to provide the number.

Table 12a: Involved levels in coordination by country

	National	Regional	Local
BG	X		
CY	X		
GR			
HR	X	X	X
HU	X		
MK	X		
RO	X		X
SI	X		
TR	X		X

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Table 12b: Summary of Involved levels in coordination (8)

National	8
Regional	1
Local	3

From the figures (in the Table 12), it appears that the National level is the dominant level in coordination. GR is the only EU member state where the national government is (still) not involved. In 5 countries, only the national level is involved (BG, CY, HU, MK, SI).

Table 13a: Most active organisations by country

BG	Environment
CY	Mapping agencies, Ministries, Environment, Statistics, Geology, Post, Utilities
GR	Mapping agencies
HR	Mapping agencies, Ministries, Private sector companies
HU	Mapping agencies, Ministries, Regions
MK	
RO	Mapping agencies, Ministries
SI	Mapping agencies, Ministries, Environment, Statistics
TR	Ministries, publicly owned/privately operating company

Table 13b: Summary of Most active organisations (8)

Mapping agencies	7
Ministries	5
Regions	1
Environment	3
Statistics	2
Geology	1
Post	1
Utilities	1
Private sector companies	1
Publicly owned / privately operating companies	1

From the figures (in the Table 13), it appears that the Mapping agencies are the most active organisations in the region, but Ministries and Environmental protection agencies are also active. In addition, the long list of active organisation types is remarkable.

Table 14a: Internal structure change within organisations in order to cope with INSPIRE by country

BG	No, too early
CY	No
GR	No

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HR	Yes
HU	Yes
MK	
RO	Yes
SI	No
TR	Yes

Table 14b: Summary of Internal structure change within organisations in order to cope with INSPIRE (8)

No, too early	1
No	3
Yes	4

From the figures (in the Table 13), it appears that several countries have experienced internal structure change within organisations in order to cope with INSPIRE. The most internal structure changes happen at the mapping agencies (HR, HU, RO, TR). For example, the HR mapping agency State Geodetic Administration has changed its organizational structure, and a NSDI-section is introduced. In addition, the TR General Directorate for Land Registry & Cadastre within Ministry of Development & Housing has also experienced some changes

5. MEASURES TO IMPROVE DATA AND SERVICE SHARING

In order to improve the data and service sharing, specific measures have been taken. The following two questions deal with these measures:\
- How is access to spatial data sets falling under one of the 34 INSPIRE theme regulated? (Table 15)
- Are any of the reasons that can be invoked - according to the Directive – to limit public access to certain data sets currently applied? (Table 16)

It is important to remark that the results are not dataset specific, but cover all the relevant data sets together. In this way, the results have to be only interpreted as an indication regarding the application of the access regulations across Europe, and the existing reasons for limited public data access across Europe.

Below the main results related to the two questions are presented (Tables 15 – 16).

Table 15a: Access regulation by country

	Unrestricted public access	Unavailable for external use	Selective/limited by policy	Ad hoc/ by individual request
BG				
CY			X	
GR			X	
HR	X		X	X
HU	X	X		X
MK				

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RO				
SI	X			X
TR		X	X	

Table 15b: Summary Access regulation (6)

Unrestricted public access	3
Unavailable for external use	2
Selective /limited by policy	4
Ad hoc / by individual request	3

From the figures (in the Table 15), it appears that the "Selective/limited by policy" is the most frequently used access regulation, and that "Unavailable for external use" is the least frequently used access regulation. Moreover, it appears that in many countries multiple access regulation types are applied.

Additional comment from HR related to Access regulation is:
- Several datasets (alphanumerical cadastral and land registry data, agricultural land subsidy system data) are available via web-browsers free of charge to any user (www.katastar.hr , www.pravosudjel.hr, www.arkod.hr). In accordance to the respective laws and by-laws for some datasets a fee is charged (like topographical maps etc.). These datasets are all available without restrictions, but a fee has to be paid.

Table 16a: Reasons for limited public data access by country

	Confidentiality of the proceedings of public authorities	International relations, public security or national defence	Course of justice	Confidentiality of commercial or industrial information	Intellectual property rights	Confidentiality of personal data	Protection of information provided on a voluntary basis	Protection of the environment
BG								
CY				X		X		
GR	X	X			X			
HR		X		X	X	X		
HU		X						X
MK								
RO								
SI						X		
TR								

Table 16b: Summary of Reasons for limited public data access (5)

Confidentiality of the proceedings of public authorities	1
International relations, public security or national defence	3
Course of justice	0
Confidentiality of commercial or industrial information	2
Intellectual property rights	2

Confidentiality of personal data	3
Protection of information provided on a voluntary basis	0
Protection of the environment	1

From the figures (in the Table 16), it appears that many reasons are applicable for limited public data access, and the key reasons for limited public data access are International relations, public security or national defence, and Confidentiality of personal data (privacy). Other important reasons for limited public data access are Confidentiality of commercial or industrial information, and Intellectual property rights. Finally, it is remarkable that three countries ticked none of the presented reasons (BG, MK, TR).

6. OTHER QUESTIONS

The last remaining questions deal with the establishment of the National Geo-portal and the INSPIRE. The corresponding questions are:
- Is a National Geo-portal established, in the sense of a single entry point to data and services, for INSPIRE? (Table 17)
- What is the main success that INSPIRE has achieved so far? (Table 18)

Below the main results related to these two questions are presented (Tables 17 – 18).

Table 17a: Establishment of National Geo-portal by country

BG	No
CY	No
GR	No
HR	No
HU	No
MK	No
RO	No
SI	Yes
TR	No

Table 17b: Summary of Establishment of National Geo-portal (9)

Yes	1
No	8

From the figures (in the Table 17), it appears clearly that not many countries have established a National Geo-portal. Only SI established a National Geoportal. The Number of datasets discovered, Number of datasets viewed, and Number of datasets downloaded are respectively, 30, 30 and 15.

Table 18a: Main INSPIRE Success by country

BG	Spatial data awareness, Capacity building
CY	New law for data sharing/access
GR	

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HR	
HU	Spatial data awareness, NSDI-awareness
MK	
RO	
SI	Harmonisation, Process coordination between data providers and users
TR	Spatial data awareness, Feasibility study

Table 18b: Summary of Main INSPIRE Success(5)

Spatial data awareness	3
(N)SDI-awareness	1
Harmonisation data providers/users	1
SDI-Capacity building	1
Legislation for data sharing	1
Spatial data harmonisation	1
Feasibility study	1

From the figures (in the Table 18), it appears that the list of INSPIRE successes is (still) rather short, and that the increase of the awareness of the strengths of spatial data use is the main success of INSPIRE in the region. It also appears that most successes are non-technological. Finally, it is remarkable that four countries were not able to mention any INSPIRE success (GR, HR, MK, RO).

7. SUMMARY

Having a look to the results, the current status of the INSPIRE-implementation in South-East Europe, in particular concerning the INSPIRE-coordination, funding and sharing measures, can be characterised as follows:
- Transposition of INSPIRE is not completed in most countries
- Coordination structures and related arrangements appear to be problematic
- Most countries have any Strategy document or Implementation plans regarding INSPIRE-implementation
- National governments are the organisations involved in developing strategies
- Most countries have no Funding policy for INSPIRE-implementation
- Funding is mainly used for financing the Coordination bodies/structures
- The Funding source is the National government
- Ministries and mapping agencies are the organisations appointed to take the lead in the INSPRE implementation process
- A significant number of Stakeholders are involved in the coordination
- The National level is the level involved in the coordination
- Most active organisations are the Mapping agencies
- 'Selective/Limited by policy' is the most commonly applied measure for Access Regulation
- Security and Privacy issues are the main reasons for limited public access
- Not many National Geo-portals have been established in the region
- The main INSPIRE success so far is the increase of the awareness of the strengths of spatial data use

In order to interpret the meaning of the survey results for the future INSPIRE-implementation in the region of South-East Europe, it is necessary to analyse the results in more detail. Therefore, more research to analyse the results is strongly needed.

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