

**INTEGRATED LAND ADMINISTRATION SYSTEM PROJECT  
(IBRD Loan no. 8086-HR)**

**TERMS OF REFERENCE**

**CONSULTING SERVICES FOR THE NATIONAL SPATIAL DATA  
INFRASTRUCTURE (NSDI) STRATEGY**

Zagreb, August 2013

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## **CONSULTING SERVICES FOR THE NATIONAL SPATIAL DATA INFRASTRUCTURE (NSDI) STRATEGY**

### **1. Background information**

Integrated Land Administration System Project (hereinafter referred to as: ILAS Project) is a project of the Government of the Republic of Croatia ratified by the Law on Loan Agreement between the Republic of Croatia and International Bank for Reconstruction and Development for ILAS Project (OG MU 13/2011) and launched to modernize the land administration system in order to improve the state administration services in terms of efficiency, transparency and cost. The Project is managed by the Croatian Ministry of Justice (hereinafter referred to as: MoJ) and the State Geodetic Administration (hereinafter referred to as: SGA) and the two institutions are equally responsible for its implementation. In accordance with the Loan Agreement, the Project Implementation Unit (hereinafter referred to as: PIU) is responsible for procurement, financial management, payments, monitoring and evaluation and it supervises the compliance of safeguards compliance under the ILAS Project.

#### **1.1 Introduction**

The State Geodetic Administration (SGA) is a State administrative organization dealing with administrative and professional tasks from the field of geodesy, cartography, cadastre and photogrammetry. As part of its activity, the SGA also takes care of the computerization of the cadastre, geodetic and spatial system, State official cartography, geodetic and technical documentation, statistics about the real estate cadastre and spatial units and the geodetic works connected with the State border. Pursuant to the Law on State Survey and Real State Cadastre, *Official Gazette* 16/07 (Law), that came into force in February 2007, the SGA has become the Croatian NSDI coordination body. It acts as the Secretariat of the NSDI Council, coordinates all NSDI bodies and provides technical support.

The SGA consists of the Head Office in Zagreb, 20 regional cadastral offices and 112 cadastral branch offices. The total number of employees in the SGA is around 1,000. The Head Office is divided into four sectors: sector for financial affairs, strategic planning, procurement and general affairs, for geoinformation system, for cadastral system, for State survey.

#### **1.2 Current status of the NSDI development**

##### **1.2.1 Legal aspect**

The first legislation concerning the Spatial Data Infrastructure (SDI) in Croatia came into force in February 2007. A separate chapter (Chapter V) defining the SDI was included in the Law on State Survey and Real Estate Cadastre (*Official Gazette* 16/07). The Law gave a definition of the NSDI and metadata, content of the metadata information, services, NSDI data and subjects that are obliged to participate in its establishment and maintenance. Equally

important is that it provided the institutional framework and defined the NSDI bodies and their responsibilities. The SDI part of the Law was harmonized with the INSPIRE Directive whereby the main INSPIRE idea was accepted but the content represented only part of the topics comprised by the INSPIRE Directive.

Croatia as a candidate country for the European Union (EU) was not obliged to implement the INSPIRE Directive until 2009 as member States were, but the Directive was the subject of the accession treaty. The NSDI development in Croatia is conformant to the INSPIRE Directive. In 2009, the INSPIRE Directive was included for the first time in the National Program for the European Union Accession and the transposition of the INSPIRE Directive was monitored.

The Working Group for Metadata has analyzed the Metadata Regulation deriving from the INSPIRE Directive and has prepared a proposal of the metadata specifications based on the INSPIRE metadata regulation to be adopted into the Croatian legislation. The NSDI Committee revised the document and proposed the metadata specifications to the NSDI Council. In August 2010, the Croatian Government adopted the Implementing Rules for Metadata (*Official Gazette* 102/10) as a set of criteria and norms for the data exchange according to Article 90 of the Law.

The Law on National Spatial Data Infrastructure (OG 56/13) which defines the basic principles of establishing NSDI in the Republic of Croatia has been adopted in May 2013. The bylaws are being prepared for adoption. With the accession of the RoC to the EU, the INSPIRE implementation rules have become binding for Republic of Croatia as of 1 July 2013, the date when Croatia became the EU member. The Law on NSDI defines the SGA as a national contact point.

## 1.2.2 Managerial aspect

### Institutional framework

The Law defines the NSDI institutional framework for the NSDI establishment. A three-tier organization has been foreseen and is already established.

The supreme NSDI governing body is the NSDI Council appointed by the Croatian Government in 2008. Croatian Government at its session on 1 August 2013 adopted a resolution on the appointment of members of the National Spatial Data Infrastructure Council. It is the body at the highest, political level. Beside its president, the Council is comprised of 16 members coming from different ministries responsible for the spatial planning, environmental protection, defence, land registry, transport and infrastructure, agriculture, science and education, culture, economy, State survey and real property cadastre (SGA), statistics, Croatian Geodetic Institute, Croatian Employer's Association, as well as the Croatian Chamber of Chartered Engineers of Geodesy.

At the managerial level, there is the NSDI Board consisting of three representatives from the NSDI Council, three from the National contact point (SGA) and heads of working groups appointed by the NSDI Council. NSDI Board is a permanent implementing body for establishing a national infrastructure of spatial data. The NSDI Board carries out tasks described in the Law on National Spatial Data Infrastructure (NN 56/2013), as well as other tasks entrusted to them by the NSDI Council.

At the operational level, there are six working groups (WG) **dealing with specialized tasks**:

- WG for NSDI Data Sharing
- WG for linking the programs of NSDI and e-Government
- WG for NSDI Technical Standards
- WG for NSDI Capacity Building
- WG for Construction of the NSDI Business Model
- WG for NSDI spatial data

The mission, tasks and members of all Working Groups in English is available on web pages: <http://www.nipp.hr/default.aspx?id=140>.

The SGA Sector for Geo-Information Systems performs, acts as the Secretariat of the NSDI Council, coordinates all SDI bodies and provides technical support. The Sector for Geo-Information Systems performs administrative, expert, development and coordination activities related to NSDI, as well as those related to the collection, storing and distribution of spatial data, services and standardised SGA end products, including their archiving. The sector coordinates the work of NSDI bodies, coordinates the implementation of their decisions, serves as the national *Infrastructure for Spatial Information in the Europe* (INSPIRE) contact-point, follows the implementation of the INSPIRE Directive in the EU and commitments arising from it on the national level, coordinates activities by institutions with regard to its implementation in Croatia, supports the preparation of subordinate regulations for its implementation in the national legislation, develops and coordinates the access policy etc.

#### Education and Awareness Campaign

The SGA regularly updates the NSDI webpage ([www.nipp.hr](http://www.nipp.hr)) in both English and Croatian. The third NSDI and INSPIRE Workshop was held on 28 May 2013 in Zagreb.

In cooperation with the Croatian Cartographic Society, the State Geodetic Administration organized in the framework of the cartographic conferences:

- The First Croatian NSDI and INSPIRE day, November 26, 2009 in Varaždin,
- The Second Croatian NSDI and INSPIRE day, November 25, 2010 in Opatija.
- The Third Croatian NSDI and INSPIRE day, September 14-16, 2011 in Split.
- The Fourth Croatian NSDI and INSPIRE day, September 24-29, 2012 in Zagreb.

In July 2012, the SGA launched a new and improved SGA Geoportal as a data browser and server for WMSs for the raster datasets. It now includes the search function so the Central Spatial Units Register (CSUR) is not expressed as an application but is integrated into the browser with other datasets and the search has been enabled (as for the DCM). Types of services supported by the new Geoportal: view, WMS, search and the Permanent Geodetic Dataset Point (PGDP) application.

Datasets of the new Geoportal are: DOP, CBM5, TM25, DCM, Toponyms, generalised 1:1,000,000, CSUR, PGDP application

In May 2008, the SGA issued a publication on the NSDI in the Republic of Croatia that was printed in Croatian with the circulation of 1,000 copies. The production was aided by the EU under the Real Property Registration and Cadastre Project. The intention was to familiarize

the professional audiences directly involved in the NSDI development, be it at the national, regional, local or commercial level, about the NSDI basics as well as to inform the wider audience, i.e. the users. The publication consists of two studies described below:

- Using the European Union grant under the CARDS 2002 Program as part of the Real Property Registration and Cadastre Project, the SGA ordered the production of the “Study on the National Spatial Data Infrastructure in Croatia”. The Study was produced by a group of international and Croatian experts. This study represents a comprehensive effort whereby the information on the current status of the spatial data in Croatia was collected and analyzed in a systematic and very clear way and in the context of the needs of Croatia and the expectations coming from the EU. Based on the analysis, concrete steps were proposed regarding the NSDI establishment in Croatia.
- Before this study was materialized, the SGA – using a grant by the Foreign Office of the Great Britain and Commonwealth in cooperation with international consultant – evaluated the study itself as well as the development of the European spatial data infrastructure which resulted in a second study entitled: “*Croatia: National Spatial Data Infrastructure and INSPIRE*”. This study upheld the conclusions of the first study and extended it with new information related to the adoption of the INSPIRE Directive.

Given the connection between the two studies leaning on each other, one publication encompassed the afore-mentioned studies in order to provide the readers with a more comprehensive overview of the NSDI establishment as well as of the activities in Europe.

Pursuant to the National Spatial Data Infrastructure Act (Official Gazette 56/2013), “NSDI is a set of technologies, measures, standards, implementation rules, services, human resources and other factors enabling efficient integration, management and maintenance of the sharing of spatial data as defined by this Act for the purpose of satisfying needs on both the national and European levels, which will be an integral part of the European Spatial Data Infrastructure defined by the INSPIRE Directive.”

This Act also defines the adoption of NSDI strategy. The NSDI establishment is, among other things, defined by commitments undertaken following the EU accession. NSDI strategy is therefore a key element providing guidelines for NSDI development.

Preparatory activities for the transposition of the INSPIRE Directive into Croatian legislation were carried out in 2011, through the project „Service Provision for the Support to the National Spatial Data Infrastructure Development“, under the Preparation phase of ILAS Project. The Service had three components:

- Support to the INSPIRE Directive transposition:
- NSDI strategy improvement
- Metadata profile definition

The second component „NSDI strategy improvement“, has revised and updated „Study on the NSDI in the Republic of Croatia“ from April 2005, that encompassed the following:

- Vision
- Action areas and corresponding strategic goals
- Activities needed in order to achieve strategic goals
- Timetable for proposed activities, including the description of how the activities shall be carried out (performers, decision makers, etc.)
- Cost estimate for the proposed short-term and mid-term priorities

- Activities related to the NSDI implementation that can be supported under the ILAS Project
- Analysis of the impact of the strategy.

Outputs of the specific activity “NSDI strategy improvement“ were the following:

**D2.1:** Report on requests, regulations and achievements related to the spatial data infrastructure in the EU and Croatia, including recommendations for further NSDI development in Croatia as well as the concrete steps for solving the missing elements or further improvements.

**D2.2** Recommendations and directions for the update of the Croatian NSDI strategy, including the timeline for the completion of the envisaged activities based on the performed Gap Analysis.

These documents will be made available to the consultant.

## 2. Objectives

The main goal of the NSDI strategy project is the preparation of an NSDI strategy for the 2014-2020 period, while the 2014-2016 period should be elaborated more in-depth. The strategy should include defining a vision, producing an analysis of the current situation, defining the subjects, priorities and the time frame. Developing a strategy for NSDI maintenance and further development should be based on national needs and requirements originating from Croatia's accession to the European Union. The strategy itself will include the following components:

- Analysis of current situation
- Defining the NSDI vision and mission
- Organisational framework and its development
- Technical framework for NSDI establishment
- Financial framework
- Time frame for establishment
- SWOT analysis of NSDI establishment
- Cost and benefit analysis of NSDI
- Human resources development.

The project's main result will be the development of an NSDI strategy that will harmonise NSDI development with Croatian commitments with regard to the establishment of INSPIRE and the INSPIRE time frame, and defining NSDI development with regard to Croatian specifics and national development goals.

### **3. Tasks**

#### **3.1 Specific activities**

The strategy should include the following themes, to be analysed in-depth, also constituting this project's thematic work packages:

1. NSDI development cost and benefit analysis
2. NSDI vision and development goals
3. Analysis of RoC obligations towards the EU
4. Current NSDI development status overview
5. NSDI institutional framework
6. NSDI technological frameworks
7. NSDI legislative framework
8. NSDI financial framework
9. NSDI spatial data resources
10. NSDI subjects
11. NSDI development priorities
12. NSDI development time frame
13. Strategy implementation

#### ***WP1: NSDI development cost and benefit analysis***

The goal of this work package is a cost and benefit analysis of the NSDI development in Croatia. Meeting EU INSPIRE obligations and development with regard to Croatian specifics. Goals with regard to specifics of economic development of Croatia.

#### ***WP2: NSDI vision and development goals***

Defining an NSDI vision, mission and goals in Croatia, to include EU INSPIRE visions and goals, as well as national specifics of development of the Croatian society as a whole.

#### ***WP3: Analysis of RoC obligations towards the EU***

After accessing the EU, Croatia must follow a time frame for the establishment of INSPIRE. This work package should define the commitments undertaken by Croatia following its EU accession and define ways for their resolution.

#### ***WP4: Current NSDI development status overview***

The goal of this work package is an analysis of the current state of NSDI establishment, maintenance and development in Croatia. An overview of the activities implemented so far. Within these activities, an overview of strategic national-level documents referring to NSDI will be made.

#### ***WP5: NSDI institutional framework***

The goal of this work package is analysis of the NSDI institutional framework in Croatia. An analysis of necessary administrative organisational units. Human resources and knowledge and skills necessary for NSDI development.

### ***WP6: NSDI technological framework***

The goal of this work package is an analysis of development of the NSDI technological frameworks, without specifying any technological solutions. In doing this, EU INSPIRE Directive requirements must be taken into consideration, as well as existing standards, which must be in line with the INSPIRE development roadmap by 2020, and any new technological trends that may affect NSDI development.

### ***WP7: NSDI legislative framework***

The goal of this work package is an analysis of the Croatian and EU legislative frameworks related to NSDI development, and the needs to implement EU legislative documents into the Croatian legislative framework. An analysis of the need to adopt new documents.

### ***WP8: NSDI financial framework***

The goal of this work package is an analysis of the financial-economic framework for NSDI development. Within this package, basic principles and guidelines of the business model must be given, with a particular emphasis on NSDI financing (analyse different financing possibilities through NSDI development phases, such as EU funds etc., policy of charging for the use of NSDI data, licensing etc.

### ***WP9: NSDI spatial data resources***

The goal of this work package is an analysis of spatial data and services on the territory of Croatia. Analysis of data quality, analysis of existing documentation defining spatial data resources, and unification of spatial data resource documenting. Transformation of national spatial data resources into a INSPIRE data model and analysis of solution for this problem

### ***WP10: NSDI subjects***

The goal of this work package is an analysis of NSDI subjects and their capacity to meet the obligations from the NSDI Act.

### ***WP11: NSDI development priorities***

The goal of this work package is an analysis of NSDI development priorities. Defining priorities with regard to EU INSPIRE commitments, particularly the national specifics of development of the Croatian society as a whole.

### ***WP12: NSDI development time frame***

The goal of this work package is an analysis of the time frame of NSDI development according to the following activities. A summary of this work package shall contain activities ranked and grouped in the following two periods:

- Short-term (2014-2016)
- Mid-term (2017-2020).

Short-term activities should be elaborated in more detail.

### ***WP13: NSDI strategy implementation***

The goal of this work package is an analysis of the implementation of strategic goals and tasks defined by the NSDI strategy. Analysis of who, what time frame, financial funds, and other factor necessary for the implementation of this NSDI strategy,

## **4. Expected outputs**

### 4.1. Outputs of the Specific Activities

- Inception Report on the manner of current status of transposing the INSPIRE Directive in Croatia. The main output of the Inception Report is the Work plan. Deadline for the report is 2 weeks from the contract commencement day.
- Hold a meeting with the representatives of the Purchaser (SGA) and members of NSDI bodies and produce the reports on the meeting held.
- Draft Croatian NSDI Strategy, including above mentioned 13 working packages (WP).

The reports and other documents related to this component shall be in English

## **5. Planned duration of the Consultant's engagement and reporting timeline**

The Consultant is planned to be engaged in the period between October 2013 and December 2013. The total estimated number of working days is 24 working days, out of which approx. maximum 3 working days should be spent in Croatia initially, and then maximum 5 working days to finalize the study with Client's NSDI team and finally presenting findings to the Client. Thus, out of 24 days, up to 8 days could be spent in Croatia i.e. two field visits to SGA, Zagreb.

The Submission of Reports and Other Deliverables:

- Within the first two weeks after commencing the service, the Consultant shall submit the Inception Report
- Three weeks before finishing the Project, the Consultant shall submit a Draft proposal of the Croatian NSDI strategy
- At the end of the work, the Consultant shall submit the Final proposal of the Croatian NSDI strategy

The Inception Report and the Proposal of the NSDI strategy shall be in English. Three copies of the Final proposal of the Croatian NSDI strategy shall be submitted in hardcopy and also on CD in open format.

## **6. Client's support**

The Client shall provide the Consultant with the following:

- Contact person at the SGA:  
Željko Hećimović, sector head  
Gruška 20, 10000 Zagreb  
phone: 01/6166 536  
e-mail: [Zeljko.Hecimovic@dgu.hr](mailto:Zeljko.Hecimovic@dgu.hr)

- All the existing SGA documents related to the current NSDI development status in Croatian or English, depending on the availability.
- The Law on National Spatial data infrastructure (translated in English)
- Liaise between the NSDI bodies and subjects, if necessary.
- Ensure premises at the SGA for holding the appropriate meetings.

## 7. Criteria/Minimum Requirements

The Consultant shall be a firm or association of consultants in the form of a joint venture or sub consultancy with following qualifications:

- Proven experience in Spatial Data Infrastructure for the last 5 years
- Proven experience in making strategy of National Spatial Data Infrastructure
- Proven experience in performing tasks related to Spatial Data Infrastructure
- Proven familiarity with Croatian NSDI and transfer of INSPIRE directive into the Croatian legislature is considered as an advantage.

The Consultant can have one or two NSDI experts where each shall have the following profile:

- University degree in geodesy, geoinformatics, law or similar
- At least 5 years of experience in the field of geographic information
- Minimum of 2 assignments involving the SDI and the INSPIRE Directive, carried out within the last 5 years and lasting no less than 2 weeks each.
- Minimum of 2 assignments in the field of EU legal requirements, particularly the INSPIRE Directive carried out within the past 5 years and lasting no less than 2 weeks each.
- Minimum of 1 assignment involving the SDI strategy drafting, carried out within the past 5 years and lasting no less than 4 weeks.
- Good written and oral proficiency in English and good communication skills.

If there are two (2) experts, one of them should be the Team Leader and take the responsibility for the coordination of all activities.

The advantage of the Consultant is proven familiarity with Croatian NSDI and transfer of INSPIRE directive into the Croatian legislature.

The Consultant may submit CVs of proposed experts, for information only.

It is expected that the Consultant submits information on their organizational capacity in their Expression of Interest.

The credibility of mentioned experience shall be presented in a list of at least 2 project references within last 10 years with description of services provided (including information on contract value, contracting entity/client, project location/country, duration, assignment budget, percentage carried out by consultant in case of association of firms or subcontracting and main activities).