



Spatial Data Infrastructures in Cyprus: State of play Spring 2003

Country report on SDI elaborated in
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Executive summary

Currently some GIS projects operational in Cyprus but no (real) SDI. However, Cyprus is developing a vision to put in place an NSDI. Within the ongoing National Integrated Land Information System project (NILIS), a number of SDI-components are being developed.

A key actor in coordinating the NSDI development efforts is the governmental Department of Lands and Surveys (DLS) which is the national mapping agency, being responsible for preparing maps, all the work associated with land registration, geodesy, topography, mapping, photogrammetry, hydrography, cadastral surveys, land tenure, land consolidation, management of state land, property valuation and the implementation of an integrated national GIS.

With NILIS, the Government of Cyprus and the DLS have embarked on a programme to improve the efficiency and effectiveness of GI-related departmental activities. The general strategic objectives are (1) to establish a fixed-boundary coordinated cadastre system, (2) computerise the land records and cadastral plans, (3) develop a number of computerised systems to support the survey, registration, valuation and land management functions of the department and (4) develop and implement in stages a national land information system where all agencies with land-related activities can share available data for the benefit of the country's economy. NILIS intends to automate the department's procedures and will serve the land information community in Cyprus.

The Cyprus LIS project is an umbrella program covering a whole group of activities, such as to reduce duplication of land administration work among government agencies, and to develop a Digital Cadastral Database, a Survey Database and a Topographical Database, suitable to support an integrated Land Information System

Spatial data maintained by DLS is currently considered as property of DLS and the Government, and is not readily available to the public without official permission. However, DLS is studying different methods to revise the law and better serve the GI-community by providing digital LIS data more efficiently.

Apart from the DLS, other government departments and semi-government organisations maintain their GI in relation to the DLS cadastral plans and maps.

A systematic database of metadata for the reference data and core thematic data has still to be developed.

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Abbreviations and acronyms

CT	Core Thematic Data
DLS	Department of Lands and Survey
FIR	Further Investigation Required
GI	Geographical Information
GIS	Geographical Information System
IHO	International Hydrographic Organization
INSPIRE	INfrastructure for SPatial InfoRmation in Europe
LIS	Land Information System
MBSHC	Mediterranean and Black Seas Hydrographic Commission
NIA	No Information Available
NILIS	National Integrated Land Information System
NSDI	National Spatial Data Infrastructures
PPP	Public-private partnerships
PSI	Policy and legislation on access to public sector information
REF	Reference data
SDI	Spatial Data Infrastructures

1 GENERAL INFORMATION

1.1 *Method*

This report is summarizing the review of SDI in Cyprus, and reflects the degree to which the SDI situation in Cyprus is similar to the ideas set out in the INSPIRE position papers¹.

The report is based on the analysis of various documents, project references and web sites readily accessible in English (full list : see 3.2 List of references for Cyprus). Most resources were gathered from the Internet. Earlier projects and country surveys regarding SDI have been taken into consideration and their findings integrated into this report, including the report about Geographic Information and the Enlargement of the European Union by EUROGI and the European Commission and the SDI surveys published on-line by Harlan Onsrud. However, there is in general not much information published about the development of a Cypriote SDI.

The first version of this country report has not been commented upon by GI-experts from Cyprus.

1.2 *Overview of selected SDI-initiatives*

It is important to differentiate between actual SDI² initiatives and GI- and GIS-based projects. At this time there are some GIS projects operational in Cyprus but no SDI.

However, the – still not clearly elaborated – national SDI vision includes the following components:

- Reference and core thematic data
- Metadata
- Data standards

[14]

The DLS (Department of Lands and Survey) is the national mapping agency, which is responsible for preparing maps, land registration, maintenance of cadastral records and preparation and updating of cadastral plans.

The DLS is a member of the International Hydrographic Organization (IHO), the MBSHC (Mediterranean and Black Seas Hydrographic Commission (MBSHC), EuroGeographics and cooperates with the Institut für Angewandte Geodäsie in Frankfurt, DE).

[1]

¹ INSPIRE position papers, final versions: RDM, ETC, DPLI, ASF, IST, IAS (latest version).

² Spatial Data Infrastructure (SDI): The relevant base of technologies, policies and institutional arrangements that facilitate the availability of and access to spatial data. Refer to the definition as presented in glossary1_INSPIRE.xls

The Department of Statistics and Research is responsible for maintaining statistical records (in cooperation with DLS).

[\[1\]](#)

[\[14\]](#)

[\[3\]](#)

[\[4\]](#)

[\[5\]](#)

2 Details of NILIS

2.1 General Information

Cyprus has taken an initiative which can be considered as an important step towards the development of an NSDI: the National Integrated Land Information System project (NILIS). The organisation coordinating the NILIS development efforts is the Department of Lands and Surveys (DLS). The DLS is a government department offering services in the areas of land registration, survey, cartography, valuation, state land management, tenure and administration. It is operating under the Cyprus Ministry of the Interior and undertakes all the work associated with land registration, geodesy, topography, mapping, photogrammetry, hydrography, cadastral surveys, land tenure, land consolidation, management of state land, property valuation and the implementation of an integrated national GIS.

With NILIS, the Government of Cyprus and the DLS have embarked on a programme to improve the efficiency and effectiveness of departmental activities. The general strategic objectives are (1) to establish a fixed-boundary coordinated cadastre system, (2) computerise the land records and cadastral plans, (3) develop a number of computerised systems to support the survey, registration, valuation and land management functions of the department and (4) develop and implement in stages a national land information system where all agencies with land-related activities can share available data for the benefit of the country's economy. NILIS is meant to automate the department's data handling and management procedures and to service the land information community in Cyprus.

Spatial information captured and maintained by the DLS constitutes the official database reference on which other government departments, semi-government authorities, local government and other private land related agencies, base or intend to base their local spatial networks. Government and semi-government departments are encouraged to base their data collection programs on DLS spatial databases.

The Cyprus LIS project is an umbrella program covering a whole group of activities, such as to reduce duplication of land administration work among government agencies, and to develop a Digital Cadastral Database, a Survey Database and a Topographical Database, suitable to support an integrated Land Information System. Herewith LIS is defined as a tool for legal, administrative and economic decision-making and as an aid for planning and development. It consists on the one hand of a database containing spatially referenced land-related data for a defined area, and on the other hand of procedures and techniques for the systematic collection, updating, processing and distribution of the data.

2.2 Component 1: Legal framework and funding

[2], [8] - [13]

2.2.1 Legal framework and organizational issues

The Land Information Project is managed by a Land Information Council. The council results from the Council of Ministers Decision no. 41.657 of 1994 and consists of 11 permanent members. It is chaired by the Director General of the Ministry of Interior. The director of DLS has a leading role in the preparation of the strategic plan, data exchange standards, pricing policies etc.

[\[1\]](#)

[\[14\]](#)

The Land Information Council has as SDI related objectives:

- Promotion of policy for wide use and responsibility on management of geo-information for the benefit of the society
- Preparation of standards and specifications for classification, collection, storage, updating and exchange of information
- Development and support of an effective organizational structure which will secure the correct management of information
- Maintenance of quality and completeness of GI of the National Integrated Land Information System (NILIS) to be developed, in a level according to the needs of the users
- Control of access to NILIS databases for national security and personal rights' reasons
- Definition of policy for sharing cost and commercial distribution of NILIS data, in parallel with the obligation to secure the access to data
- Creation and maintenance of metadata for GI
- Organization of awareness programs for best management of GI
- Support of training programs, research and development in management of GI

2.2.2 Public-private partnerships (PPP's)

The Cypriote commercial information market is small and relatively undeveloped.

Private commercial firms are partially involved in the spatial data capture projects through commonly agreed procedures and contracts.

[\[14\]](#)

2.2.3 Policy and legislation on access to public sector information (PSI)

Spatial data maintained by DLS is currently considered as property of DLS and the Government, and is not readily available to the public without official permission. However, DLS is studying different methods to revise the law and better serve the GI-community by providing digital LIS data more efficiently.

[\[14\]](#)

Spatial data can be accessed by officially applying to DLS Director. Since the Land Information System is currently in its early implementation stages there is no other mechanism available.

[\[14\]](#)

Inter-Interdepartmental technical committees have been set up in the framework of the implementation of the Cyprus Land Information system.

[\[1\]](#)

2.2.4 Legal protection of GI by intellectual property rights

Copyright in Cyprus is governed by Laws 59/96 and 63/77. These were amended several times (e.g. in 1994). Cyprus Copyright law does not yet fully comply with the EU database protection requirements. Full compliance is expected to be achieved by the end of 2003.

2.2.5 Restricted access to GI further to the legal protection of privacy

Law 138(I) of 23 November 2001 on the Protection of Personal Data was based on the Data Protection Directive of the EU.

The National Land Information System was designed in such a way to provide several security levels and to provide access to several groups of authorized users. Confidential information is kept only for internal DLS use and access is restricted.

[\[14\]](#)

2.2.6 Licencing framework

No information found

2.2.7 Funding model for SDI and pricing policy

Funds have been specifically budgeted and acquired for a number of NSDI activities, such as Cadastral Map Digitization, Re-survey Project - field survey, Hardware and software installation for the National LIS and Photogrammetry data capture.

[\[14\]](#)

Pricing policies for spatial data are expected to become available soon after the official implementation of the National LIS.

[\[14\]](#)

2.3 Component 2: Reference data and core thematic data

2.3.1 Scale and resolution: European, National, Regional, Local, Other

The DLS offers its data layers at scale level 1:100.000 (50 m accuracy).

[\[7\]](#)

The Cyprus Land Information System contains data at a local scale (basic register). Scale and resolution are unknown.

[\[1\]](#)

2.3.2 Reference data and core thematic data by resolution or scale range

(see table next page)

REF = Reference data, CT = Core Thematic Data

Geographical location	Type	Inspire priority	European	National	Regional	Local	Other (indicate scale)
Geodetic reference system	REF	H				Y ²	
Geographical names	REF	H				Y ¹	
Geographical grid	CT	H					
Administrative units							
Official administrative units	REF	H		Y		Y ¹²	
Blocks and census districts	REF	M				Y ¹²	
Properties, buildings and addresses							
Properties	REF	L				Y ¹	
Buildings	REF	L				Y ²	
Addresses	REF	H				Y ¹ (in progress)	
Elevation							
Elevation	REF	H				Y	
Bathymetry	REF	H					
Coastline	REF	H		Y		Y ¹²	
Hydrography							
Hydrography, river, lake....	REF	H				Y ²	
Land surface							
Ortho-images	REF	H					
Unclassified satellite images	CT	M					
Natural resource							
Water catchments	CT	H					
Groundwater bodies	CT	H					
Soil	CT	H					
Bedrock geology	CT	L					
Climatic regions/data	CT	L					
Bio-ecological regions	CT	M					
Vegetation	CT	L					
Land Cover	CT	H					
Transport							
Transport networks	REF	H				Y ¹² (in progress)	

Transport facilities	REF	L					
Facilities		M					
Location of facilities	CT	M					
Location of utilities	CT	M					
Land use regulation							
Protected areas	CT	H					
Land regulation/Land use plans	CT	H				Y ¹	
Demography							
Demographic attribute data	CT	H					
Village boundaries, city locations				Y			

¹ = no scale known [1]

² = Spatial information maintained by DLS include the following: geodetic control network, cadastral boundaries, buildings, topographical features (such as contours, rivers, roads), survey measurements, administrative boundaries, map index etc. [14]

[7] (1999)

2.3.3 Geodetic reference systems and projections

No information could be found about the spatial referencing of the data.

2.3.4 Quality of the reference data & core thematic data

NIA

2.3.5 Interoperability

The following GIS software is used by the NLS

ESRI, Oracle

[\[1\]](#)

AutoCad R12 (1999)

[\[7\]](#)

2.3.6 Language and culture

NIA

2.3.7 Data Content

NIA

2.3.8 Geographical names

NIA

2.3.9 Character sets

NIA

2.4 Component 3: Metadata for reference data and core thematic data

2.4.1 Availability

It is unclear as to what extent geodatasets have been documented through systematic metadata.

2.4.2 Metadata catalogues availability + standard

A systematic database of metadata for the reference data and core thematic data has still to be developed.

[1]

2.4.3 Dublin core metadata standards for GI-discovery

Not Applicable at this stage

2.4.4 Metadata implementation

NIA

2.5 Component 4: Access and other services for reference data, core thematic data and their metadata

No information could be found. Presumably such access services are not available.

2.6 Component 5: Standards

Preparatory work for agreements on standards for data exchange has started in Cyprus.

[1]

2.7 Component 6: Thematic environmental data

No information could be found on the the organizations responsible for environmental data collection and management and on the relationships with the NILIS-project.

3 Annexes

3.1 List of SDI addresses / contacts for Cyprus

Table: SDI contact list			
	Web address	Organisational mailing address	Over-all contact person: tel./fax/e-mail
National			
Statistical Service of Cyprus	Web: http://www.pio.gov.cy/dsr	13 and 15 Andreas Araouzou Street CY-1444 Nicosia	Contact: Mr. George Chr. Georgiou Phone: +357 22 309368 Fax: +357 22 374830 Email: cydsr@cytanet.com.cy
Department of Lands and Surveys		H/A, 29 Michalakopoulou street 1455 Nicosia, Cyprus phone: +357 230 2929 Fax: +357 236 6171	E-mail: dlslic@cytanet.com.cy Telephone Number: 357 2 304919 Fax Number: 357 2 766056 Emilios Makrides (director) Contact: Mr Christos Zenonos

3.2 List of references for Cyprus

Table: list of references used to compile the Country Report	
Web sites:	<p>http://egeols222.egeo.sai.jrc.it/Workshops/7ec-gis/papers/pdf/dallemand.pdf</p> <p>http://www.spatial.maine.edu/~onsrud/gsdi/Cyprus.html</p> <p>http://www.ylatis.com.cy/HTML_Pages/LIS.html#introduction</p> <p>http://www.eurogeographics.org/AboutUs/Members/nma_info/Nma_Cyprus.html [3]</p> <p>http://www.cerco.org/OUR_MEMBERS/NMA_INFO/Nma_Cyprus.html [4]</p> <p>http://www.megrin.org/gddd/orgs/os_18.htm [5]</p> <p>http://www.pio.gov.cy/dsr [6]</p> <p>http://gmes.jrc.it/Map%20providers/Department%20of%20Lands%20and%20Surveys%20-%20Cyprus.htm [7]</p> <p>http://www.ylatis.com.cy/HTML_Pages/LIS.html#introduction [8]</p> <p>http://www.bev.gv.at/service/publikationen/un_englisch/cyprus_2f_main.htm [9]</p> <p>http://www.itc.nl/news_events/projects/cyprus.asp [10]</p> <p>http://www.ofj.admin.ch/themen/ri-ir/CJ-IT-colloquy/reports/cyprus-e.pdf [11]</p> <p>http://www.cyprus-eu.org.cy/eng/09_position_papers/chapter_05.htm [12]</p> <p>http://www.sclaw.com.cy/copyright.htm [13]</p>

Publications :	Onrud, H., Department of Spatial Information Science and Engineering, University of Maine, Orono, Maine. GSDI - Survey of National and Regional Spatial Data Infrastructure Activities Around the Globe, Part I – National Spatial Data Infrastructure Initiatives. http://www.spatial.maine.edu/~onsrud/gsd/Cyprus.html [14]
	M. Craglia and J. F. Dallemand: Geographic Information and the Enlargement of the European Union. EUROGI-European Commission Workshop. Brussels, 16-17/11/2000. Technical Report. EUR 19824 EN http://www.ec-gis.org:8080/wecgis/docs/F22346/IMPAGINATO.PDF [1]