



# Spatial Data Infrastructures in Malta: State of play Autumn 2006

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SPATIAL APPLICATIONS DIVISION  
K.U.LEUVEN RESEARCH & DEVELOPMENT

Celestijnenlaan 200 E, BE-3001 LEUVEN  
TEL.: 32 16 32 97 32 FAX: 32 16 32 97 24  
URL: <http://www.sadl.kuleuven.be>



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<b>Creator</b>	Marco Fritz (SADL) & Peter Beusen (ICRI)
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<b>Contributor</b>	Marco Fritz, Catharina Bamps, Jos Van Orshoven, Danny Vandembroucke (SADL); Peter Beusen, Katleen Janssen (ICRI); Robert Mizzi, Saviour Formosa, Matthew Gatt, Elaine Tabone-Adami (MT)
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## Change matrix 2006 versus 2005

Paragraphs in which information is reported which deviates in a significant way from what was reported in the Spring 2005 version of this country report are listed in the below table. **They are indicated in red.**

<b>Paragraph</b>	<b>Type of change</b>
All	Restructure and reword to bring the report more in line with INSPIRE
1.1	Modify to reflect the 2006 update
2.2	New section on coordination and organizational issues
2.3.3	Modify to reflect the 2006 update

## Executive summary

Based on limited information, we have found that in Malta, production, management and dissemination of (rather large scale) spatial reference and core thematic data is almost the exclusive responsibility of the Malta Environmental and Planning Authority (MEPA) in general and the subordinate National Mapping Agency (NMA) in particular. Other organizations which are producing spatial information and conducting spatial information system projects include the Land Registry, the National Statistics Office and the Local councils. The private sector seems to play an increasing role in data production, besides systems development and consultancies. Utilities are also increasingly looking at GIS as a means to develop and manage their business.

Although MEPA/NMA have no specific mandate to develop an NSDI, they conduct efforts which may provide the basis for a future NSDI:

- Have a legal role to provide mapping data and produce national datasets such as topographic data, thematic data, planning data, environmental protection data, marine habitats data, Posidonia data etc.
- Honor the Planning Mandate
- Honor the Environment Mandate

Participation in EU-funded and other international projects like CLC2000 has clearly contributed to raising awareness for SDI-issues. MEPA has also committed itself to participate in the EuroRegionalMap Project and to implement the ERM on a Geodatabase, a pan-European seamless topographic database at medium scale resolution.

Progress with respect to legal issues is mainly driven by obligations resulting from the Aarhus convention. Malta signed the Convention on Access to Information, Public Participation in Decision Making and Access to justice in Environmental Matters in December 1998 and ratified the convention in April 2002.

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## Abbreviations and acronyms

CLC	Corine Land Cover
CT	Core Thematic Data
EEA	European Environment Agency
ERM	EuroRegionalMap
EIA	Environmental Impact Assessment
FIR	Further Investigation Required
GI	Geographical Information
GIS	Geographical Information System
INSPIRE	INfrastructure for SPatial InfoRmation in Europe
MEDICOZ	Mediterranean Integrated Coastal Zone Directory
MEPA	Maltese Environmental Planning Authority
NIA	No Information Available
NMA	National Mapping Agency
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 aims at summarizing the state of play of SDI in Malta, and at reflecting the degree to which the SDI situation in Malta is similar to the ideas set out in the INSPIRE position papers<sup>1</sup> and the more recent INSPIRE scoping documents.

Since documents, project references could hardly be found, the report is based mainly on the study of the few web sites readily accessible in English (some sites with technical specifications or illustrations also in Maltese).

The report has been completed by integration and consolidation of comments received early 2003 from representatives of the National Statistics Office and the Malta Environment and Planning Authority (MEPA). Early 2004, more comments were received and taken into account, coming from Malta Environment and Planning Authority and from a private GI-company (Datatrak IT services). The comments were provided in written form (e-mail). The update of 2005 was based on input from Ms. Carol Valentino from MEPA. **The update for 2006 is based on various sources, focusing on the legal and organisational elements of the SDI.**

## 1.2 The Maltese GI-/SDI-scene

The main provider of GI in Malta is the National Mapping Agency that forms part of the Malta Environment and Planning Authority. Core data are available at small scale and for 50% of the territory at larger scales. Implementation of metadata by the NMA is planned.

Organizations which are developing spatial information systems include the Land Registry, the National Statistics Office and the Local councils. The utilities and the private sector are also increasingly looking at GIS as a support to or the subject of their business. DataTrack IT-services Ltd is a major company in the GI-sector dealing with digital and hard copy mapping, orthophoto production, land surveying, distribution and processing of satellite imagery, web-GIS-solutions etc. It offers data products covering the whole island and beyond.

No NSDI-policy framework is in place. Nevertheless mainly the planning agency is increasing the use of GIS across several areas.

Currently, access to digital information is not easy. In addition there is:

- A lack of updated reference data such as addresses and postcodes;
- Embryonic metadata and a lack of culture of data documentation, though this is now gaining ground;

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



- Non transparent practices such as data hoarding, high pricing limiting access and overprotection of some key datasets;
- Lack of resources to convert digital data.

There are plans to create a socio-economic and reference database and to provide data such as environmental data via the web to the public, including 3D mapping applications. This already exists in a full blown web-GIS developed for the MEPA through which users have access to an e-government site on all development planning applications.

[1]

Malta does not have a national GI association. At present Maltese GI-professionals are members of the Association for Geographic Information in the UK. The set up of a national GI association is however planned in 2005 and following points of attention have been mentioned (Wolfkamp, 2003):

- The setting-up of a spatial infrastructure around a Web-GIS, through which the benefits of GIS are highlighted for public participation. A system already exists (<http://www.mepa.org.mt/Planning/index.htm?MapServer.htm&1>) as developed by the MEPA (Malta Environment and Planning Authority) which covers the planning development database, and environmental and archaeology data, amongst others. Users can extract information from aerial imagery, base maps and print reports and data;
- The initiation of laws regarding information and access to the same information;
- The spreading of GI knowledge across major interested parties and development of GI in such areas as crime, cadastral layers, utilities and environmental areas;
- Involvement of the private sector, which is however restricted by the limitations of a very small market though this may develop into a Mediterranean-wide initiative.

Following initiatives are mentioned as they may provide a basis for initiation and development of a NSDI in Malta.

- The Maltese authorities were partners in the Mediterranean Integrated Coastal Zone Directory (MEDICOZ) project, where they assisted in the identification of national datasets; the setting-up of a metadata directory; provision of expertise on data manipulation and transfer to various GIS data formats and development and design of hard copy and digital maps at both national or Mediterranean levels, as well as providing expertise on web-mapping technology and development of Web-GIS interfaces and interactive systems. The CLC 2000 project will enable the Maltese to integrate land use

information into a GIS, provide a metadata directory, create web-mapping solutions for specialist and public users, facilitate the analysis of coastal zone datasets and provide cross-sector analysis tools and will provide a focal point for future data creation and GIS tools based on the OpenGis methodological framework.

[1]

- Via INTERREG III, Maltese Authorities are seeking cooperation with countries of the Western Mediterranean and Archimed transnational coordination programs to identify methods for the application for GIS and remote sensing for monitoring and preparing land use planning policies;
- Via EEA and EC Environmental data requirements, data is being compiled in a GIS format for eventual internet-dissemination purposes

[1]

## **2 Details of NSDI-like activities of MEPA/NMA**

### **2.1 General Information**

Considering the Maltese GI/SDI-scene, it can be concluded that the two major (potential) public SDI players are the National Mapping Agency and the National Office of Statistics. Currently both are mainly in charge of building up and maintaining GI-databases.

[5], [9]

The National Mapping Agency is to be considered as the main potential driver for the implementation of GIS in Malta. The Agency forms part of the Malta Environment and Planning Authority, which has already enabled greater integration of GIS in different areas and applications, away from the purely physical and land-based issues into the socio-economic domain (population change, employment, crime mapping).

The MEPA is the authority charged with the implementation of the Environment Protection Act as well as Spatial Planning through the Development Planning Act (92).

[10]

### **2.2 Component 1: Coordination and organizational issues**

The coordination with respect to production, management and distribution of GI between those organizations is limited.

### **2.3 Component 2: Legal framework and funding**

[3], [4]

#### **2.3.1 Legal framework**

No legal initiatives for a national GI-strategy or SDI-framework have been taken until now.

[1]

However, the Development Planning Act specifies as one of the Authority's main activities, the maintenance of a National Mapbase to facilitate its operations. [10]

#### **2.3.2 Public-private partnerships (PPP's)**

No information has been found.

### **2.3.3 Policy and legislation on access to public sector information (PSI)**

Malta does not have encompassing Freedom of Information or access legislation yet. It has transposed directive 2003/4 on access to environmental information in the Freedom of Access to Information on the Environment Regulations 2001. There is other sectoral legislation, e.g. for archives and registries. Directive 2003/98 on the re-use of PSI has been transposed into Maltese law by Circular No. 31/2006 of the office of the Prime Minister on re use of PSI.

### **2.3.4 Legal protection of GI by intellectual property rights**

The 2000 Copyright Act “to make new provision in respect of copyright and neighbouring rights and certain “sui generis” intellectual property rights in substitution of the provisions of the Copyright Act, Cap. 196” was amended in 2001 and 2003. It explicitly protects maps, plans, diagrams and three-dimensional works relative to geography, science or topography.

Article 25 of the Copyright Act provides for a sui generis right in respect to databases.

Regarding the copyright works of government and international bodies, article 6 of the Copyright Act stipulates that copyright shall be conferred by this article on every work which is eligible for copyright and which is made by or under the direction or control of the Government of Malta and also such governments of other States, international bodies or other intergovernmental organisations as may be prescribed by the Minister responsible for the Industrial Property Office.

The 2001 Directive on copyright in the information society was included in the Copyright act by the amendments of 2003.

### **2.3.5 Restricted access to GI further to the legal protection of privacy**

The Maltese Data Protection Act of 2001 came into force on 22 March 2002 and was amended in July 2003. It includes the rules prescribed by Directive 95/46 on the processing of personal data, and the 2001 Directive on privacy and electronic communications.

### **2.3.6 Licensing framework**

Licenses are issued for certain data and services. No more information has been found nor provided.

### **2.3.7 Funding model for SDI and pricing policy**

With regard to topographic mapping, the MEPA maintains a partial cost recovery approach through which major users of map data are charged for use of the data. All

minor distribution is charged at marginal cost levels. Government contributes additional funds to complete the costs recovered from sales and distribution.

Production and maintenance of thematic datasets are largely funded directly from Government, particularly where national coverage is required.

A sustainable funding model remains a key challenge.

[10]

## **2.4 Component 3: Data for themes of the INSPIRE annexes**

### **2.4.1 Scale and resolution: European, National, Regional, Local, Other**

Data is available with the NMA at 1:25.000, 1:10.000, 1:2.500 and 1:1.000, i.e. the so-called local scale range. Given the small size of the island of Malta, smaller scales are not useful.

[2], [8]

The main reference datasets with coverage over all Malta comprise :

- Vertical and Horizontal Geodetic reference points;
- Large Scale Digital Topographic Mapping (1:2.500, 1:1.000);
- Colour Orthophotos at 0.15 m ground pixel;
- Medium Scale Digital Topographic Mapping (1:50.000, 1:25.000);

[10]

### **2.4.2 Data by resolution or scale range for the INSPIRE themes**

Thematic datasets include

- Statutory protection zones under Planning and Environment Protection legislation;
- Habitats and land cover, generally focusing on natural habitats;
- Archeology and other major cultural assets;
- Marine Posidonia Habitats ;

- EEA datasets.

(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					
Geographical names	REF	H				Y	
Geographical grid	CT	H					
<b>Administrative units</b>							
Official administrative units	REF	H				Y	
Blocks and census districts	REF	M					
<b>Properties, buildings and addresses</b>							
Properties	REF	L				Y	
Buildings	REF	L				Y	
Addresses	REF	H					
<b>Elevation</b>							
Elevation	REF	H				Y	
Bathymetry	REF	H					
Coastline	REF	H				Y	
<b>Hydrography</b>							
Hydrography, river, lake....	REF	H				Y	
<b>Land surface</b>							
Ortho-images	REF	H				Y	
Unclassified satellite images	CT	M					
<b>Natural resource</b>							
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					
<b>Transport</b>							
Transport networks	REF	H				Y	

Transport facilities	REF	L					
Facilities		M					
Location of facilities	CT	M					
Location of utilities	CT	M					
Land use regulation							
Protected areas	CT	H				Y	
Land regulation/Land use plans	CT	H				Y	
Demography							
Demographic attribute data	CT	H					

[2]

[8]

Basically Data Thematic/Reference Data that is available locally is also available nationally. Administrative Boundaries are available at a European level, as part of the EuroRegionalMap project.



### **2.4.3 Geodetic reference systems and projections**

Maps and geodatasets are produced according to ED50 and European Datum 50 and European ETRS89 at a European Level.

### **2.4.4 Quality of the data**

Data is cross-checked. For CLC2000 cross-checking will be done with EEA.

### **2.4.5 Interoperability**

Full interoperability is the target.

### **2.4.6 Language and culture**

English and Maltese

## ***2.5 Component 4: Metadata***

### **2.5.1 Availability of metadata for the reference data**

No evidence could be found regarding the availability of metadata at more or less significant basis. A culture of data documentation seems to be absent. However, a metadata service is planned by MEPA.

[1]

### **2.5.2 Metadata catalogues availability + standard**

Such a catalogue could not be identified.

### **2.5.3 Dublin core metadata standards for GI-discovery**

Not applicable.

## ***2.6 Component 5: Network Services***

### **2.6.1 On-line access service for metadata: discovery services**

No details could be found about the metadata service which is planned by MEPA.

### **2.6.2 On-line access service for data: download services**

Not available.

### **2.6.3 Inter-linkages of on-line access services for metadata and data**

Not applicable.

### **2.6.4 OpenSource software and access services**

Not applicable.

### **2.6.5 Availability of viewing services**

A development Web-GIS server is available at <http://www.mepa.org.mt/Planning/index.htm?MapServer.htm> . It provides mainly spatial information on planning issues.

Also, in the project 'Mediterranean Integrated Coastal Zone Directory (MEDICOZ)' in which Malta participated, attention was paid to web-mapping technology and development of Web-GIS interfaces

### **2.6.6 Availability of catalogue services to regulate access**

According to the private company DITSL, the Maltese government recently acquired an electronic registration and authentication system. It is however not clear whether this is in connection with spatial data services.

### **2.6.7 Availability of catalogue services that perform payment operations**

NIA.

### **2.6.8 Availability of catalogue services to extract and send data to a user application**

NIA.

### **2.6.9 SDI user applications**

NIA.

### **2.6.10 Availability of geo-processing services**

NIA.

## **2.7 Standards**

With regard to data standardization, the general approach has been to adopt a simple data structure which can be adequately distributed to clients using simple industry formats, particularly:

- ESRI shapefiles and dbf;
- Mapinfo MIF/MID;
- Autodesk DXF.

MEPA is considering neutral formats such as GML but currently remain driven by what is most appropriate for their market. They have a prototype WMS site and are considering the migration to this technology.

A key challenge/development : Quick Win data and platform models for organisations coming together in a federated approach to the development of a SDI.

[10]

## **2.8 Component 6: Thematic environmental data**

MEPA (Maltese Environmental Planning Authority) presents on its website an Environmental Impact Assessment procedure and an overview of cases. Overview maps can be accessed by mouse click but not modified.

All pending EIA applications can be accessed through the Active Maps button as well as through the GIS Maps Image-Mapping buttons. This is the result of an exercise aimed at integrating Geographical Information Systems (GIS) with the Internet medium enabling wider dissemination of environmental information.

[2]

### 3 Annexes

#### 3.1 List of SDI addresses / contacts for Malta

Table: SDI contact list			
SDI Name (full)	Web address	Organisational mailing address	Over-all contact person: tel./fax/e-mail
National Statistics office	<a href="http://www.gov.mt/fra me.asp?l=2&amp;url=http://www.nso.gov.mt/">http://www.gov.mt/fra me.asp?l=2&amp;url=http://www.nso.gov.mt/</a>	Lascaris Valletta CMR02 MALTA	Mr Robert Mizzi Manager Information Services Library & Information Unit Telephone: (+356) 21223221-5 Fax: (+356) 21248483, (+356) 21249841 email: <a href="mailto:nso@gov.mt">nso@gov.mt</a>
National Mapping Agency Malta Planning Authority  [9]	<a href="http://www.mepa.org.mt">http://www.mepa.org.mt</a>  <a href="http://www.mepa.org.mt/index.htm">http://www.mepa.org.mt/index.htm</a>	Mapping Unit, St Francis Ravelin, Floriana, PO Box 200, Valletta CMR 01	Tel: +356 240 976 Fax:+356 224 846 e-mail: <a href="mailto:mapserver@mepa.org.mt">mapserver@mepa.org.mt</a>
The Malta Environment and Planning Authority	<a href="http://www.mepa.org.mt/">http://www.mepa.org.mt/</a>	P.O. Box 200, Valletta CMR 01, Malta	Mr. Saviour Formosa Tel. +356 2290 1620 Ms. Carol Valentino Tel: +356 22901329 Mr Matthew Gatt
	<a href="http://www.datatrak.ws">http://www.datatrak.ws</a>	F26 Mosta Technopark Mosta MST13 Malta	Dr. Elaine Tabone-Adami datatrak IT services ltd Tel: +356 233 18 500 Fax: +356 21 435 603 <a href="mailto:elaine.tabone.adami@datatrak.com.mt">elaine.tabone.adami@datatrak.com.mt</a>

#### 3.2 List of references for Malta

Table: list of references used to compile the Country Report	
Web sites:	<a href="http://www.eia-malta.org/index.htm">http://www.eia-malta.org/index.htm</a> [2] <a href="http://www.privireal.org/countries/malta.htm">http://www.privireal.org/countries/malta.htm</a> [3]

	<a href="http://justice.gov.mt/dir2-laws/toppage.asp">http://justice.gov.mt/dir2-laws/toppage.asp</a> [4] <a href="http://www.gov.mt/frame.asp?l=2&amp;url=http://www.nso.gov.mt/">http://www.gov.mt/frame.asp?l=2&amp;url=http://www.nso.gov.mt/</a> [5] <a href="http://www.mepa.org.mt">http://www.mepa.org.mt</a> [6] <a href="http://www.mepa.org.mt/index.htm">http://www.mepa.org.mt/index.htm</a> [7] <a href="http://www.mepa.org.mt/Environment/index.htm">http://www.mepa.org.mt/Environment/index.htm</a> [8] <a href="http://whc.unesco.org/map-agencies.htm">http://whc.unesco.org/map-agencies.htm</a> [9]
Publications :	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 <a href="http://www.ec-gis.org:8080/wecgis/docs/F22346/IMPAGINATO.PDF">http://www.ec-gis.org:8080/wecgis/docs/F22346/IMPAGINATO.PDF</a> [1] Wolkamp A., (16 February 2003) Survey of National Geographic Information Associations in Europe, GINIE D3.1.1, Network in Europe, IST-2000-29493 Gatt Matthew, 'Malta : Overview of SDI ( PowerpointPresentation), PECO workshop 13,14 May 2004 JRC Ispra [10]