



The Hellenic Cadastre: Use of modern technologies to develop an IT and data infrastructure to facilitate large scale cadastral survey procedures

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Outline



- ◆ Current status of the cadastral surveys and cadastral operation in Greece
- ◆ New approaches adopted for increasing efficiency and effectiveness of developing the cadastre
- ◆ Projects for developing a data and IT infrastructure for Greece
- ◆ Discussion of the experiences obtained so far
- ◆ Conclusions

FIG 2006, Lolonis, "The Hellenic Cadastre..."



Current status of the cadastral surveys and cadastral operation in Greece

Areas surveyed



First round of projects

- ◆ Number of Programs: 3 (Pilot A', Pilot B', 1st Main)
- ◆ Number of municipalities: 340 (6%)
- ◆ Area: 8.400 Km² (6,4%)
- ◆ Rights: 5.800.000 (16,9%)
- ◆ Registry Offices: 97 (24%)

Launching time

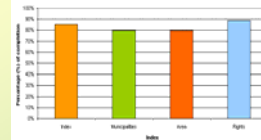
- ◆ Pilot A': 1995
- ◆ Pilot B': 1997
- ◆ 1st Main: 1998

FIG 2006, Lolonis, "The Hellenic Cadastre..."



Current status of the cadastral surveys and cadastral operation in Greece

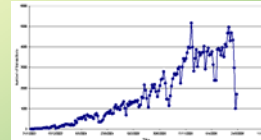
A) Percentages of completion



Progress status

- ◆ Municipalities under cadastral operation: 291 (86%)
- ◆ Area: 6.700 Km² (80%)
- ◆ Rights: 4.600.000 (80%)
- ◆ Offices: 86 (89%)

B) Transactions per week



Statistics of the operation

- ◆ Transactions: 4.500 per week
- ◆ Approved: 92%
- ◆ Rejected: 6%
- ◆ Pending: 2%

FIG 2006, Lolonis, "The Hellenic Cadastre..."



New approaches adopted to increase efficiency and effectiveness

A) Past approach



Problems ascertained in the on-going projects

- ◆ Substantial delays
- ◆ Budget overruns
- ◆ Heterogeneity in the deliverables

FIG 2006, Lolonis, "The Hellenic Cadastre..."



New approaches adopted to increase efficiency and effectiveness

B) New approach



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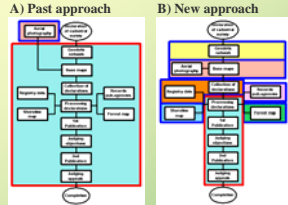
New approach

- ◆ Establish geodetic and base map infrastructure nationwide
- ◆ Collect and computerize available data that are used as evidence in cadastral survey
- ◆ Remove uncertainties due to special categories of public land
- ◆ Establish the necessary IT infrastructure to facilitate dissemination of data and cadastral surveys

FIG 2006, Lolonis, "The Hellenic Cadastre..."



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Increase efficiency and effectiveness

- ◆ Use state of the art technologies
- ◆ Exploit economies of scale
- ◆ Remove risk from the contractors

FIG 2006, Lolonis, "The Hellenic Cadastre..."



Modernization of the geodetic infrastructure Development of HEPOS

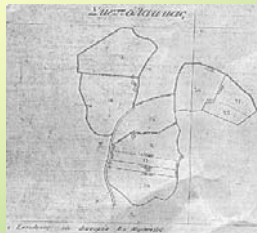


- ◆ Establishment of one Data Processing Center
- ◆ Deployment of ~100 permanent GPS stations
- ◆ The system would enable users to achieve 2-6 cm accuracy measurements in the field using a single GPS receiver
- ◆ Budget: 4,5 million Euros
- ◆ Current status: Evaluation of tender offers
- ◆ Expected completion time: 2007

FIG 2006, Lolonis, "The Hellenic Cadastre..."



Digitization of land consolidation and land distribution data



- ◆ The project involves scanning, digitization and computerization of land consolidation and land distribution data (maps and ownership data) of the Ministry of Food and Rural Development (former Ministry of Agriculture)
- ◆ The maps cover approximately 16.000 sq Kms of rural land (40% of the total rural land or 12% of the country area)
- ◆ Budget: 1,9 million Euros
- ◆ Current status: Pending approval of the managerial authority
- ◆ Expected completion time: 2008

FIG 2006, Lolonis, "The Hellenic Cadastre..."



Development of a digital database of the "active" titles in urban areas



- ◆ The project involves the collection and processing of the "active" titles in the urban areas of Greece.
- ◆ Expected number of property rights that will be collected: 5.400.000
- ◆ Number of urban municipalities that will be included in the project: 107
- ◆ Budget: 35 million Euros
- ◆ Current status: Ready to launch international tender
- ◆ Expected completion time: 2008

FIG 2006, Lolonis, "The Hellenic Cadastre..."



Digitization and computerization of the Dodecanese Cadastre



- ◆ The project aims at the digitization and computerization of the maps and documents of the cadastral offices in Rhodes and Kos.
- ◆ Land parcels: ~280.000
- ◆ Property rights : ~490.000
- ◆ Cadastral books: 785.000 pages
- ◆ Cadastral maps: 600 sheets
- ◆ Cadastral plots: 277.000
- ◆ Deeds: 5.000.000 pages
- ◆ Pending registrations: 35.000
- ◆ Budget: 2,3 million Euros
- ◆ Current status: Evaluation of economic bids
- ◆ Expected completion time: 2008

FIG 2006, Lolonis, "The Hellenic Cadastre..."



Very large scale true ortho-imagery for urban areas



- ◆ The project will produce very high resolution and accuracy color ortho-imagery for urban areas.
- ◆ Area to be covered: ~6.000 Km²
- ◆ Ground sampling distance : 20cm
- ◆ Budget: 3,2 million Euros
- ◆ Current status: Evaluation of tender bids
- ◆ Expected completion time: 2008

FIG 2006, Lolonis, "The Hellenic Cadastre..."



1:5.000 scale ortho-photomaps for the entire country



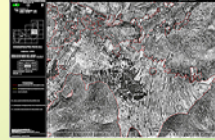
- ◆ The project will produce 1:5.000 scale color ortho-photomaps for the entire country.
- ◆ Area to be covered: ~132.000 Km²
- ◆ Ground sampling distance : 50cm
- ◆ Budget: 6,3 million Euros
- ◆ Current status: Evaluation of tender bids
- ◆ Expected completion time: 2008

FIG 2006, Lolonis, "The Hellenic Cadastre..."

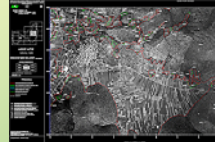


Delineation of forests and forest lands in Greece

A) 1945 ortho-photomap



B) Recent ortho-photomap



- ◆ The project will produce a preliminary delineation of forest lands in Greece.
- ◆ The preliminary delineation will be used as evidence in the cadastral survey procedure for registering public land.
- ◆ Budget: 8,3 million Euros
- ◆ Expected completion time: 2008

FIG 2006, Lolonis, "The Hellenic Cadastre..."



Base maps for delineating the Greek shore

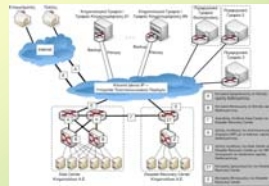


- ◆ The project will produce high resolution color-NIR ortho-photomaps for the delineation of the Greek shore and the shore along the banks of the "large" lakes and the "navigable" rivers
- ◆ GSD: 25 cm
- ◆ Estimated length of the shore: 16.000 Km
- ◆ Width of the zone to be mapped: 300 m
- ◆ DTM grid size: 1m
- ◆ Budget: 3,4 million Euros
- ◆ Current status: Evaluation of tender bids
- ◆ Expected completion time: 2008

FIG 2006, Lolonis, "The Hellenic Cadastre..."



Modernization of the IT infrastructure of the Hellenic Cadastre



- ◆ The project includes:
 - Establishment of a data center and disaster recovery facility
 - Establishment of the telecommunications network between cadastral offices and the headquarters
 - Development of an MIS for Ktimatologio S.A.
- ◆ Budget: 10,3 million Euros
- ◆ Current status: Evaluation of tender bids
- ◆ Expected completion time: 2008

FIG 2006, Lolonis, "The Hellenic Cadastre..."



Development of Web services for the dissemination of data



- ◆ The project includes the development of Web services that would enable Ktimatologio S.A. to disseminate its data to users
- ◆ Budget: 1,07 million Euros
- ◆ Current status: Evaluation of tender bids
- ◆ Expected completion time: 2008

FIG 2006, Lolonis, "The Hellenic Cadastre..."



Development of Web services for the support of future cadastral surveys



- ◆ The project includes the development of Web services that would enable Ktimatologio S.A. to carry-out effectively large scale cadastral surveys
- ◆ The services would support:
 - Submission of electronic declarations
 - Dissemination of information about the progress of a cadastral survey
 - Dissemination of the outcomes of objections
 - Monitoring the cadastral survey works
 - Quality control procedures
- ◆ Budget: 3,4 million Euros
- ◆ Current status: Evaluation of tender bids
- ◆ Expected completion time: 2008

FIG 2006, Lolonis, "The Hellenic Cadastre..."



Discussion

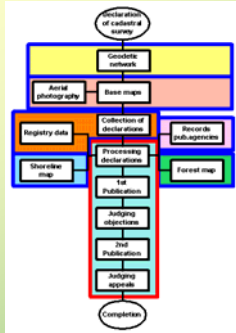


FIG 2006, Lolonis, "The Hellenic Cadastre..."

Issues faced in the implementation of the Operational Plan

- ◆ The procedure to obtain the necessary approvals for the Operational plan was lengthy and bureaucratic
- ◆ The stand of the professional societies
- ◆ The attitude of involved State agencies
- ◆ Complications in the tender procedures

Impact of the Operational Plan

- ◆ Redefinition of the Hellenic Geodetic Reference System
- ◆ Drafting of a new law about the delineation of the shore using photogrammetric procedures



Conclusions



FIG 2006, Lolonis, "The Hellenic Cadastre..."

- ◆ The new managerial approach that has been adopted for the development of the Hellenic Cadastre has the potential to improve the effectiveness of the project and the reduction of the costs involved in its development.

- ◆ The issues encountered in the design and implementation stages have played an important role in the progress of the implementation of the projects.