

The Hellenic National Cadastre:
An elemental institution for nurturing
and
promoting innovation in 3D geospatial data

Professor Byron Nakos
President

NATIONAL CADASTRE AND MAPPING AGENCY SA (NCMA SA)
288 Mesogion Ave, 155 62 Holargos – Athens, GREECE,
Tel. +30 210 6505695

E-mail: bnakos@ktimatologio.gr



National Cadastre & Mapping Agency SA

- Year of establishment: ~1995
- Mission:
 - Establish and support the operation of the cadastre
 - Compile, maintain, and update the basic geodetic and cartographic infrastructure of the country
 - Manage and disseminate geodetic, mapping, and cadastral data to users

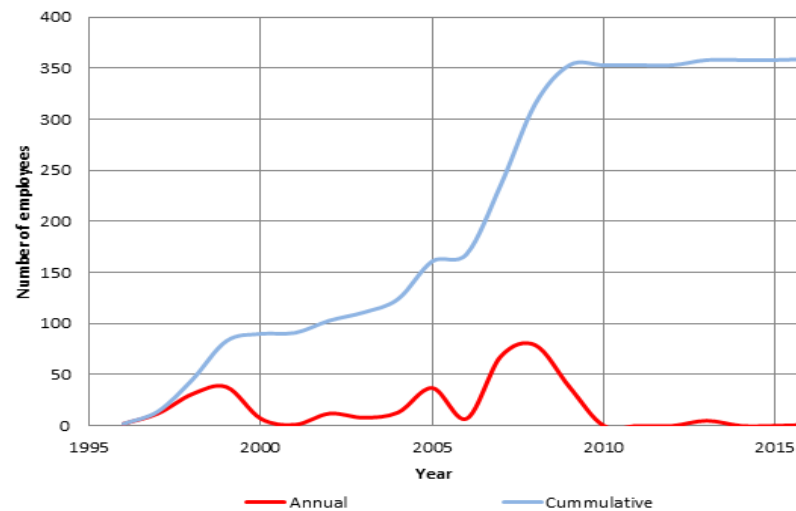


NCMA Headquarters



National Cadastre & Mapping Agency SA

- Personnel (August 2016): 359
- Offices:
 - In Athens (Headquarters)
 - In Thessaloniki (Regional Office)
- Total office space: 5,100 m²
- Total capital investment (1995-2015): ~1.1 billion Euros (~50 million Euros annually)

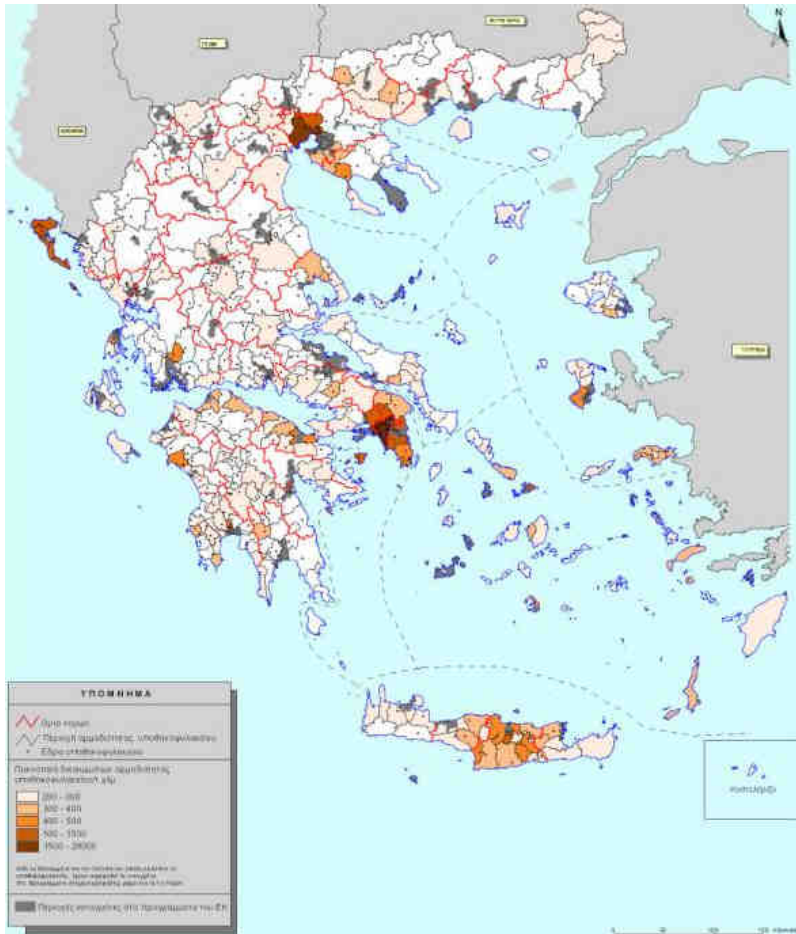


NCMA personnel by year



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Background statistics



*Densities of property rights in Greece
(Source: Hellenic National Cadaster)*

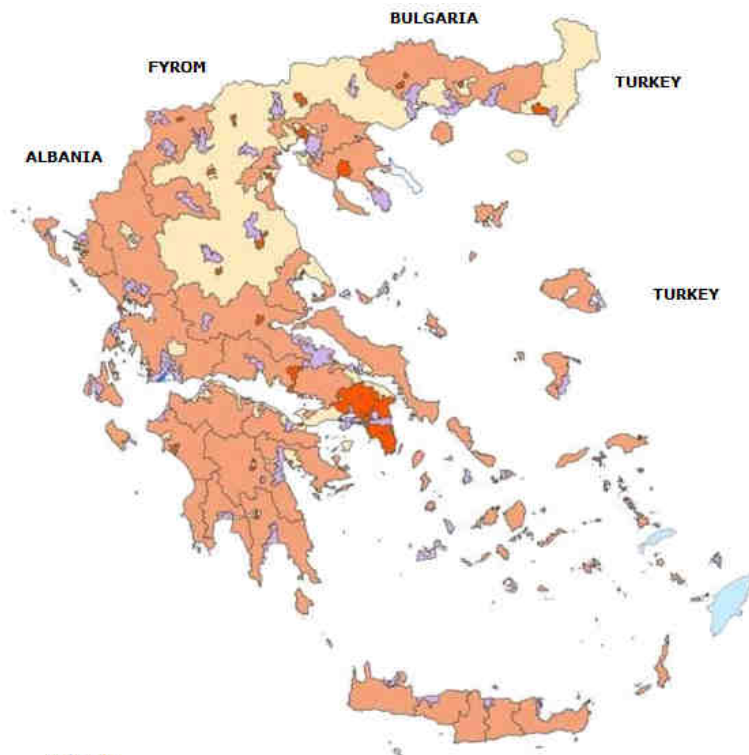
Nation-wide statistics

- Area: ~132 Km²
- Population (2011): 10,816,000
- Households: 3,664,071
- Municipalities: 5,775
- Residencies: 5,475,400
- Land parcels: ~12-15 million
- Properties: ~20 million
- Property rights: ~37-39 million
- Property owners : ~7.4 million
- Value of privately owned land: ~€750 billion



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Generations of cadastral surveying projects



LEGEND

- 1st Generation of Cadastral Surveying Projects (Pilot A, Pilot B, 1st Main Programs)
- 2nd Generation of Cadastral Surveying Projects (Urban centers and Parnitha Mountain)
- 3rd Generation of Cadastral Surveying Projects (Urban sprawl areas and land consolidation areas)
- 4th Generation of Cadastral Surveying Projects ("Rest of the country")
- Special Cases (Dodecanese Cadastre, Cadastre of Kallithea & Palaio Faliro)

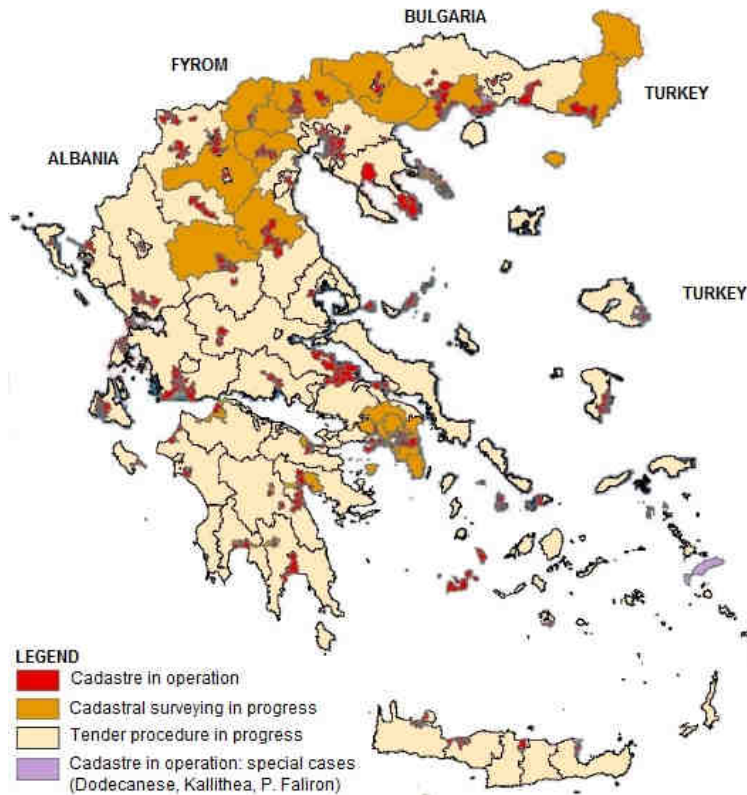
Generations of cadastral surveying projects

- Launched in 1995
- Four generations of cadastral surveying projects
 - 1st Generation: 1995-1998
 - Pilot A' 1995
 - Pilot B' 1997
 - 1st Main 1998
 - 2nd Generation: 2008
 - 3rd Generation: 2011
 - 4th Generation: 2016
- Expected year of completion: 2020
- Total number of contracts: 183
- Total budget: ~ €1.4 billion



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Current status of the system's development



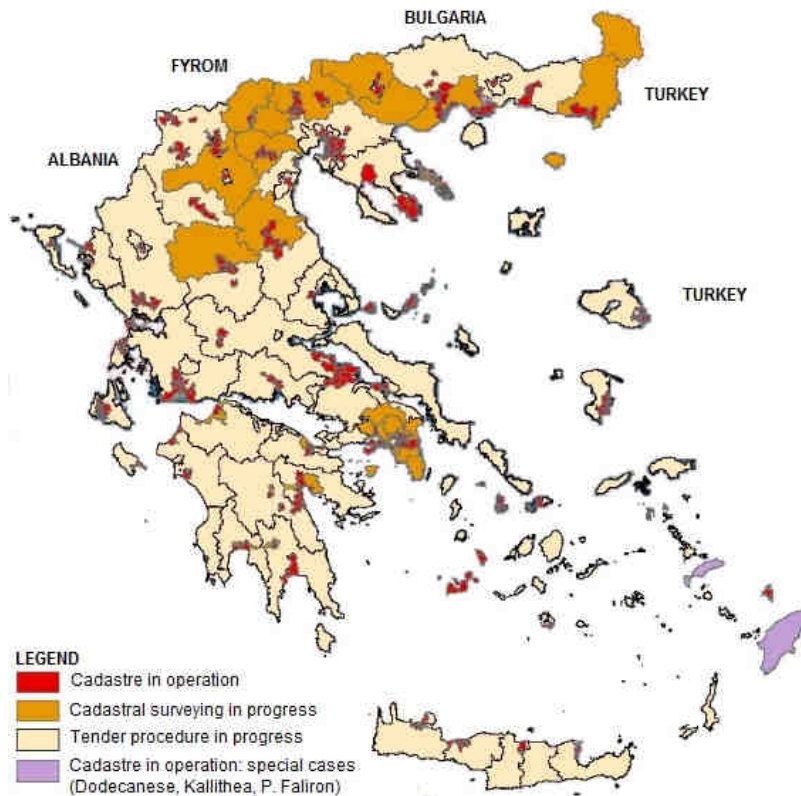
Current status in the development of the Hellenic National Cadaster

- *Cadaster in operation:*
 - Municipalities: 425 (7%)
 - Area: 11.624 (9%)
 - Rights: 10,299,259 (26%)
- *Cadastral surveying works in progress:*
 - Municipalities: 969 (17%)
 - Area: 27.825 (21%)
 - Rights: 8,001,261 (21%)
- *Cadastral surveying contracts in procurement:*
 - Municipalities: 4,381 (76%)
 - Area: 92.493 (70%)
 - Rights: 20,716,681 (53%)



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Future plans



Current status in the development of the Hellenic National Cadaster

- Keep the operation of the cadastre in the areas that have been incorporated in the system (425 municipalities)
- Finish the on-going cadastral surveying contracts (969 municipalities)
- Carry-out the procurement procedure and implement the cadastral surveying contracts for the remainder of the country (4.381 municipalities)
- Establish the regional structure of the Hellenic National Cadastre (the Permanent *Cadastral Offices*)
- Compile the “forest map” of the country
- Establish the National Spatial Data Infrastructure
- All these tasks, as well as, those that have been completed so far, rely heavily on IT and require a comprehensive knowledge of the appropriate methods and techniques.



The Hellenic National Cadastre

Areas of advanced work at the NCMA

A) Development of the National Cadastral Information System (NCIS):

- A comprehensive hardware and software system that supports the development and operation of the cadastre

Of particular importance are the in-house developed applications

Those applications have received several awards and commendations by external reviewers

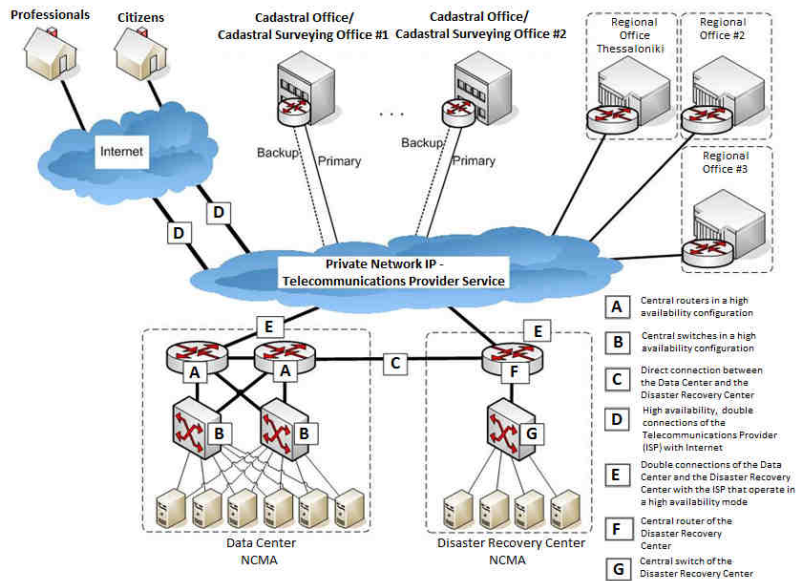
Nominated for the “WITSA 2012 Public Sector ICT Excellence Awards”, Montreal, Canada, on October 23, 2012

“The Special achievement in GIS” award by ESRI (USA) in 2011

“Business IT Excellence Award” by Netweek Magazine, Greece, in 2012)

The system has received very positive commendations from external reviewers (e.g. the EU panel of Independent Experts in its final report for the EU co-financed Project “Data and IT Infrastructure for a Modern Cadaster” in 2009)

Presentation by George Mourafetis, Director of the NCMA Digital Systems, Services, Products Promotion Department (2nd Presentation)



Schematic architecture of the NCMA IT System



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Areas of advanced work at the NCMA



B) Dealing with real property objects:

- “Over-ground-properties” (“Anogeia”)
- “Under-the-ground-properties” (“Hyposkafa”)
- This issue came-up in the very early stages of the development of the Hellenic National Cadastre, as well as, of the 3D Cadastres literature
- The NCMA was involved in dealing with this issue early on:
 - Rokos, D., (2001). “Conceptual Modelling of Real Property Objects for the Hellenic Cadastre. Proceedings of the International Workshop on “3D Cadastres”, Registration of properties in strata, Delft, The Netherlands

*Presentation by Dr. Vagelis Dimas
(3rd Presentation)*

*“Over-the-ground” (“Anogeia”) properties registered
in the Hellenic National Cadastre (Rokos, 2001)*



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Areas of advanced work at the NCMA



*“Under-the-ground” (“Hyposkafa”)
properties, Santorini, GREECE
(Photo adopted from
<http://www.greekarchitects.gr>,
Architect's Eye View, June 06, 2014)*

C) Exploring the nature and relationships of 3D cadastral objects:

- The development of effective 3D cadastral systems requires, first of all, a crisp understanding of the nature of the physical objects that must be modeled and managed within the scope of a computer-based cadastral system
- Also, it requires knowledge of the spatial relationships that are defined among those objects
- The nature of those objects, as well as, their relationships, currently, are not universal but differ from country to country and from society to society

*In this session, some aspects of this topic
will be presented with respect to the
Greek situation (4th Presentation by Dr.
Panos Lolonis)*



Thank you !