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# FIG WORKING WEEK 2015

17-21 MAY SOFIA BULGARIA

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# FIG WORKING WEEK 2015



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Hrvoje MATIJEVIĆ, Miodrag ROIĆ, Hrvoje TOMIĆ, Croatia

## Development of Multipurpose Land Administration Systems

  Faculty of Geodesy, University of Zagreb  
Chair of Spatial Information Management

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## Contents

- Introduction – Institution, previous research
- Project DEMLAS
- Idea, goals and objectives
- Costs
- Test location: Island of Hvar
- Transformation methodology: LAS to MLAS
- Project phases and participants
- Conclusion



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## Chair of Spatial Information Management

- MZOS project: Cadastre, foundation of spatial data infrastructure
- PhD: Matijević, Cetl, Tomić, Blagonić, Kuburić, Mader, Stančić
- Weaknesses of Registers: Content, Redundancy, Models, Data, Services



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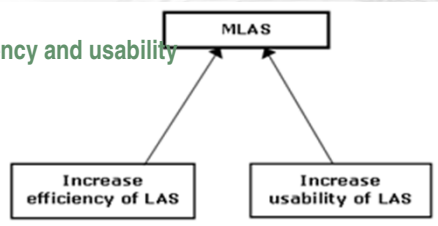


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## Introduction

- The primary purpose of land administration system is the support for processes of recording and disseminating information about the ownership, value and use of land and its associated resources (UNECE 1996).
- LAS to MLAS: improvement of efficiency and usability



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## DEMLAS project

- Development of Multipurpose Land Administration Systems



- September 2014 - September 2018



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### Project costs

- Equipment: GPS RTK, „small” devices (testing of VGI)
- Field measurements
- Project meetings/Workshops: 2x Year (Island of Hvar / Zagreb)
- Dissemination: Scientific papers publication, Conferences, PhD scholarship



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### Intranet - Moodle

The screenshot shows a Moodle course page for 'DEMLAS - Project management'. The browser address bar shows 'demlas.geof.unizg.hr/course/view.php?id=3'. The user is logged in as 'Hvoje Tomić'. The page content includes:

- NAVIGATION:** Home, My home, Site pages, My profile, Current course, DPM (Participants, Badges, General, Project schedule, Application, Workshops, Meetings, Field work, My courses).
- ADMINISTRATION:** Course administration (Turn editing on, Edit settings), Users, Unenrol me from DPM, Filters, Reports, Grades, Badges.
- Project schedule:** 7714 - DEMLAS: timetable
- Application:** HRZZ - call, DEMLAS proposal documents, DEMLAS final documents for contract, DEMLAS contract.
- Workshops:** First Workshop 10.9.2014. (Kirk Off meeting)
- SEARCH FORUMS:** News forum, GLINA.
- LATEST NEWS:** Add a new topic..., Island of Hvar workshop questionnaire (28 Apr, 12:04 Hvoje Tomić), EDF2015 Call for Contributions (10 Apr, 08:11 Vlado Cetl), IV working meeting: Wednesday, 11th February 2015 (6 Feb, 09:46 Hvoje Tomić), III working meeting: Monday, 8th December 2014 (2 Dec, 12:06 Hvoje Tomić), 2. radni sastanak: 27. 10. 2014 (23 Oct, 12:39 Hvoje Tomić), Older topics...
- UPCOMING:** (Empty section)



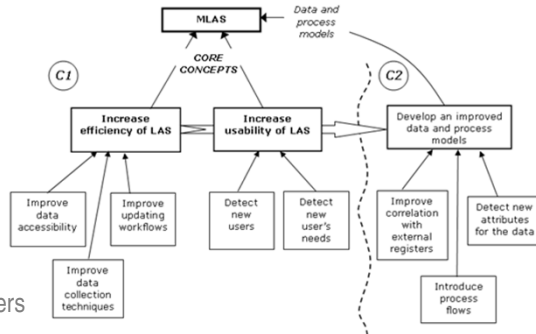


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### Goal and objectives

- **Improve LAS:**
  - Develop testing DEMLAS Warehouse
  - Connect to other warehouses
  - Consider data acquisition and organization
  - Cooperation of producers and users
  - Develop new products and services



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Source: Starogradsko-polje.net

**Test site – Island of Hvar, Croatia**





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## Stari Grad Plain: UNESCO World Heritage List

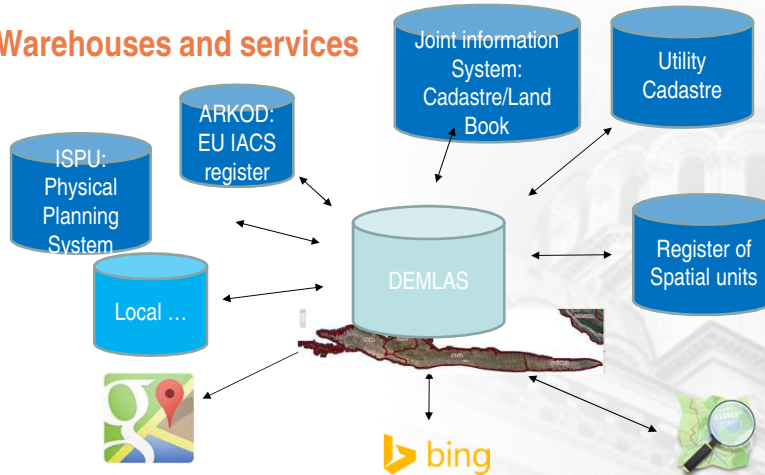
- "Agricultural colonisation was undertaken alongside the construction of the fortified town. It was based on subdivision into regular rectangular parcels (chora). The plain consists of 75 main parcels of around 16 hectares, subdivided in turn into square lots."
- **Criterion (ii):** The land parcel system, dating from the 4th century BC, of Stari Grad Plain bears witness to the dissemination of the Greek geometrical model for the dividing up of agricultural land in the Mediterranean world.
- **Criterion (iii):** The agricultural plain of Stari Grad has remained in continuous use, with the same initial crops being produced, for 2400 years. This bears witness to its permanency and sustainability down the centuries.
- **Criterion (v):** The agricultural plain of Stari Grad and its environment are an example of very ancient traditional human settlement, which is today under threat from modern economic development, particularly from rural depopulation and the abandonment of traditional farming practices.



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## Warehouses and services





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## Participants and roles

- **Complex/interdisciplinary project, a wide team of experts is involved**
- **Four groups of participants:**
  - Land administration experts (LA)
  - Land management experts (LM)
  - Data and technology experts (DT)
  - End users (EU).



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## Increase efficiency

- **Measurable through two aspects:**
  - the overall time needed to execute land administration and land management processes
  - the accessibility and availability of the services that the system exposes to its users
- **Increasing efficiency:**
  - Design/redesign LAS and land management processes – make them outsourceable (all aspects should be considered: from field data collection to actual data update)



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### Increase usability

- Integration of RRR aspect (LADM) with land use/land valuation on most important land administration processes:
  - Fair and efficient mass real estate valuation
  - Increasing the agricultural productivity of the land
  - Sustainable urban/rural planning



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### Project phases

1. Theoretical research, definition of high level concepts and conceptual data model
  - Analysis of possibilities of extending/improving the LAS
  - Conceptual data model
  - Definition of the data collection and updating procedures
2. Investigation of best practices in physical modelling and the pilot implementation
  - Logical data model / pilot implementation
  - WebGIS application – Open Source? (loosely coupled subsystems, communicating based on SOA concepts)
3. Testing of outputs and refinement of findings on the pilot
  - Further improvement based on analyses of results from the second phase



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### Instead of conclusion

- Project in first phase (2014 – 2018)
- Results should also improve the overall accessibility of various services provided by MLAS and decrease its overall cost of maintenance
- This work has been fully supported by Croatian Science foundation under the number 7714



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**Thank you for your  
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