

Josip Križanović, PhD in Technical Sciences

Josip Križanović was born on 15 July 1993, in Split, Croatia. In his hometown he attended and finished elementary school and in 2008 enrolled in the Marko Marulić IV Gymnasium which he successfully completed in 2012. From 2012 to 2017 he studied at the undergraduate study of geodesy and geoinformatics and at the graduate study of geodesy at the Faculty of Geodesy, University of Zagreb. In 2017 he successfully defended his master thesis entitled *Land Reallocation Based on User Preferences in Land Consolidation* which was supervised by Prof. PhD. Siniša Mastelić Ivić, earning the title Master of Engineering in Geodesy and Geoinformatics.

Since 1 January 2018, he has been employed as university assistant at the Chair of Spatial Data Management, Department of Applied Geodesy at the Faculty of Geodesy, University of Zagreb, where he assists in teaching several undergraduate and graduate courses, including Cadastre, Land Information Services, Support for Land Administration, Land Consolidation, Land Management, Geoinformation Infrastructure and Franciscan Cadastre. He has successfully guided several students in preparing their master theses. So far, as author or co-author, he has published several scientific articles in international journals and in proceedings of domestic and international conferences.

His doctoral dissertation contains 147 pages in A4 format, the title, summary and keywords in English and Croatian, list of abbreviations, list of figures, list of tables and biography of the author.

The dissertation is divided into six basic chapters:

1. Introduction
2. Review of Land Administration Data Dissemination Practices: Case Study on Four Different Land Administration System Types
3. Modelling Land Administration Data Dissemination Processes: A Case Study in Croatia
4. Development of a Methodology and a Model for Land Administration Data Dissemination Processes
5. Joint Discussion
6. Conclusion

In the Introduction, the research scope and objectives are described, along with a detailed overview of previous research. The introductory part of the dissertation also describes the need for the research, the goals and purpose of the research, methodology and the organization of the dissertation.

On 16 June 2023, Josip Križanović defended his doctoral dissertation entitled *Modelling land administration data dissemination processes* at the Faculty of Geodesy, University of Zagreb. The supervisor was Prof. PhD. Miodrag Roić from the Faculty of Geodesy, University of Zagreb. The members of the assessment board and defence committee were Prof. PhD. Siniša Mastelić Ivić, Assoc. Prof. PhD. Hrvoje Tomić from the Faculty of Geodesy, University of Zagreb and PhD. Mario Mader from the State Geodetic Administration.

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Josip Križanović, doktor tehničkih znanosti

Josip Križanović rođen je 15. srpnja 1993. u Splitu. U rodnome gradu pohađao je i završio osnovnu školu te IV. Gimnaziju Marko Marulić. Sveučilišni preddiplomski studij Geodezije i geoinformatike na Geodetskom fakultetu Sveučilišta u Zagrebu upisao je 2012. godine. Završni ispit položio je 2015. godine te je stekao zvanje sveučilišni prvostupnik inženjer geodezije i geoinformatike. Sveučilišni diplomski studij Geodezije i geoinformatike, usmjerenje Geodezija upisuje 2015. godine. Diplomski rad pod naslovom *Komasacijska realokacija čestica s preferencijama učesnika* pod mentorstvom prof. dr. sc. Siniše Mastelića-Ivića, obranio je 2017. godine te stekao zvanje magistar inženjer geodezije i geoinformatike.

Od 1. siječnja 2018. godine zaposlen je na radnom mjestu asistenta na Katedri za upravljanje prostornim informacijama, Zavoda za primijenjenu geodeziju na Geodetskom fakultetu Sveučilišta u Zagrebu, gdje održava vježbe iz nekoliko kolegija preddiplomskog i diplomskog studija, što uključuje kolegije Katastar, Zemljišni informacijski servisi, Podrška upravljanju prostorom, Komasaacije, Uređenje zemljišta, Geoinformacijska infrastruktura i Franciskanski katastar. Uspješno je vodio više studenata tijekom izrade diplomskih radova. Do sada je kao autor ili u koautorstvu objavio više znanstvenih članaka u stranim časopisima te zbornicima domaćih i međunarodnih znanstvenih skupova.

Doktorska disertacija sadrži 147 stranica formata A4, naslov, sažetak i ključne riječi na engleskom i hrvatskom jeziku, popis kratica, popis slika, popis tablica i životopis autora.

Rad je podijeljen u šest osnovnih poglavlja:

1. Uvod
2. Review of Land Administration Data Dissemination Practices: Case Study on Four Different Land Administration System Types
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5. Zajednička diskusija
6. Zaključak

U uvodu je opisana problematika koja se istražuje u doktorskoj disertaciji uz detaljan prikaz dosadašnjih istraživanja. Također u uvodnom dijelu disertacije opisani su povod za istraživanje, ciljevi i svrha istraživanja, metodologija istraživanja i organizacija disertacije.

Josip Križanović obranio je 16. lipnja 2023. na Geodetskom fakultetu Sveučilišta u Zagrebu doktorsku disertaciju pod naslovom *Modeliranje procesa diseminacije podataka sustava upravljanja zemljištem* (eng. *Modelling land administration system data dissemination processes*). Mentor je bio prof. dr. sc. Miodrag Roić s Geodetskog fakulteta Sveučilišta u Zagrebu. Doktorska disertacija obranjena je pred povjerenstvom u sastavu prof. dr. sc. Siniša Mastelić-Ivić, izv. prof. dr. sc. Hrvoje Tomić s Geodetskog fakulteta Sveučilišta u Zagrebu i dr. sc. Mario Mader iz Državne geodetske uprave. Povjerenstvo za ocjenu doktorske disertacije bilo je u istom sastavu.

Modeliranje procesa diseminacije podataka sustava upravljanja zemljištem

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The second chapter contains an overview of land data dissemination practices and certificates in four different types of land administration systems. This chapter also provides the results of the analysis of similarities and differences between the examined jurisdictions. As a result of the research in this part of the dissertation, a proposal for a unified view of the land administration data was developed.

The third chapter describes two of the most common use cases for data dissemination processes of the Croatian land administration system. The use cases are formalized with activity diagrams to describe the current state of the process workflows. Furthermore, the formalized processes are broken down into individual elements for further analysis. Moreover, the identified process elements were matched with classes of the ISO 19152 Land Administration Domain Model (LADM) standard. This procedure resulted in the identification of process elements which are not yet covered by the current version of LADM. Basic phases and activities of the data dissemination processes in land administration systems are defined and described as well.

The fourth chapter describes the development of a generic methodology and model for land administration system data dissemination processes. The developed methodology is aligned with the principles of business process management, business process reengineering and LADM, and consists of five steps. The methodology is tested on a conceptual use case to prove its viability. Along with the methodology, a

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model is developed to describe the dissemination processes and linked to the existing LADM classes.

The fifth chapter contains a joint discussion for each of the previous chapters that make up this dissertation. The scientific contributions of each chapter of the research are explained, as well as the joint contributions of all three chapters together.

The sixth chapter contains the conclusions, overview of scientific contributions and recommendations for future research in the domain of modelling land administration processes.

At the end of the dissertation, there are lists of references, tables, figures, abbreviations and the biography of the author.

Miodrag Roić ■

Drugo poglavlje na engleskom jeziku sadrži pregled praksa diseminacije podataka o zemljištu i izvadcima u četiri različita sustava upravljanja zemljištem. To poglavlje sadrži i rezultate analize sličnosti i razlika među ispitanim upravnim područjima. Kao rezultat istraživanja u ovom dijelu disertacije izrađen je prijedlog objedinjenog pogleda podataka sustava upravljanja zemljištem.

Treće poglavlje na engleskom jeziku opisuje dva najčešća slučaja upotrebe za procese diseminacije podataka sustava upravljanja zemljištem na primjeru upravnog područja Hrvatske. Slučajevi upotrebe formalizirani su dijagramima aktivnosti, a potom raščlanjeni na pojedine elemente procesa. Elementi procesa su analizirani i pridruženi postojećim klasama standarda HR EN ISO 19152 Model područja upravljanja zemljištem (eng. *Land Administration Domain Model - LADM*). Tim postupkom prepoznati su elementi procesa koji nisu obuhvaćeni trenutnom verzijom standarda. U tom poglavlju su definirane i opisane osnovne faze i aktivnosti procesa diseminacije podataka sustava upravljanja zemljištem.

U četvrtom poglavlju na engleskom jeziku opisan je razvoj generičke metodologije i modela za procese diseminacije podataka sustava upravljanja zemljištem. Razvijena metodologija usklađena je s principima upravljanja poslovnim procesima, preustrojem poslovnih procesa i LADM-a, a sastoji se od pet koraka. Metodologija je ispitana na konceptijskom slučaju upotrebe kako bi se dokazala njena održivost. Uz metodologiju razvijen je i model za

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opisivanje procesa diseminacije, a koji je povezan s postojećim klasama LADM-a.

Peto poglavlje sadrži zajedničku diskusiju za svaki od objavljenih radova koji čine ovu disertaciju. Objavljen je doprinos svakog rada znanstvenom doprinosu istraživanja, ali i zajednički doprinos svih triju znanstvenih radova. Šesto poglavlje sadrži zaključke, znanstvene doprinose i prijedlog za buduća istraživanja u području modeliranja procesa sustava upravljanja zemljištem.

Na kraju disertacije nalaze se popisi literature, tablica, slika, kratice i životopis autora.

Miodrag Roić ■