

Development of Strategic Urban Land Use Analysis Model

Darko Šiško

City office of strategic planning and development, Zagreb

Vlado Ceti

Faculty of geodesy, University of Zagreb

Tihomir Jukić

Faculty of architecture, University of Zagreb



INSPIRE Conference 2016
Barcelona, 26th - 30th September



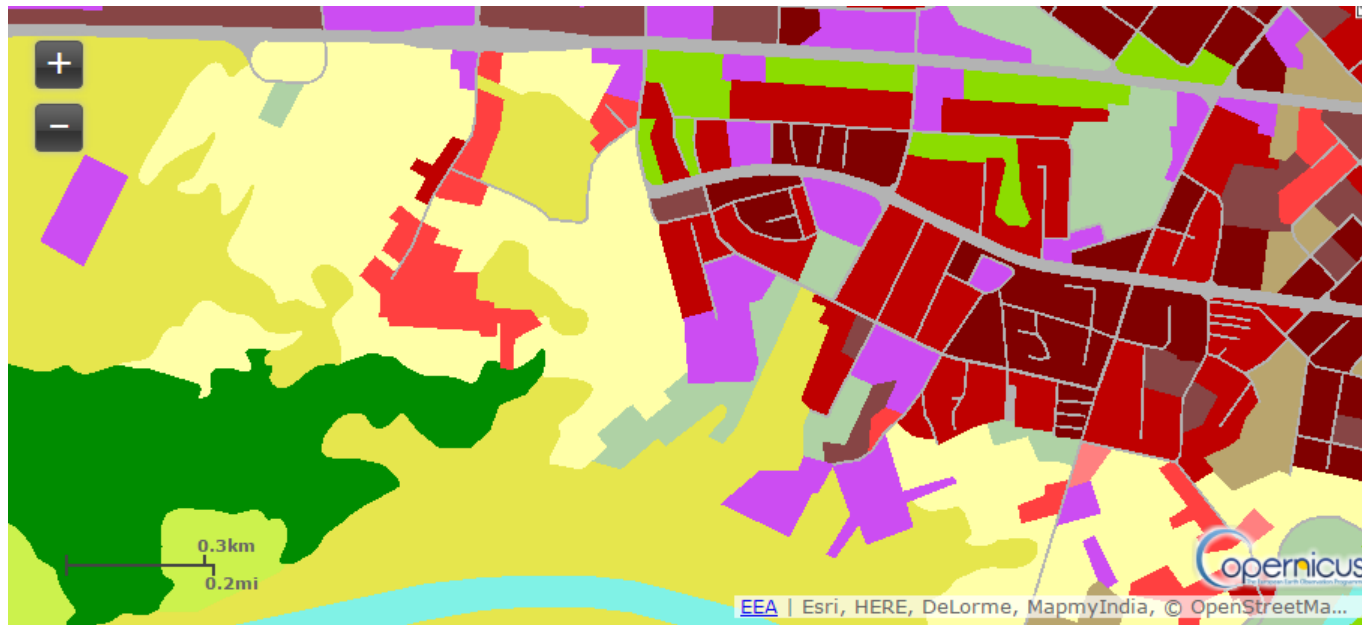
Starting point

- Information on land use is crucial for city planning and management
- Land use is part of both strategic and local (implementational) level of city planning and management
- Land use facts and trends can be achieved by confrontation of existing and planned land use (ELU vs. PLU)
- Existing models are not fully adopted to the intended purpose



INSPIRE Conference 2016
Barcelona, 26th - 30th September





INSPIRE Conference 2016
Barcelona, 26th - 30th September



Research methodology and goals

- Combination of elements from both urban planning and geoinformation science
- Based on analysis of existing land use models on local, regional, national and european level
- Main goal is development of comparable land use analysis model fit for strategic city planning and management
- Testing of developed model in real life conditions in City office of strategic planning and development of the City of Zagreb



INSPIRE Conference 2016
Barcelona, 26th - 30th September



Strategic land use analysis questions

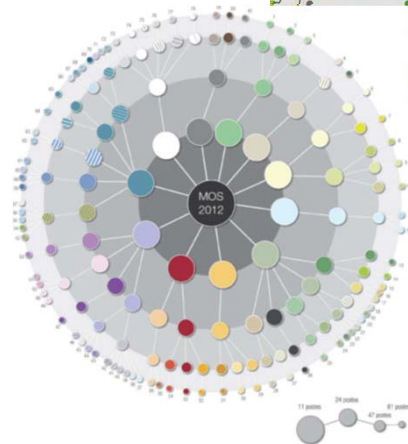
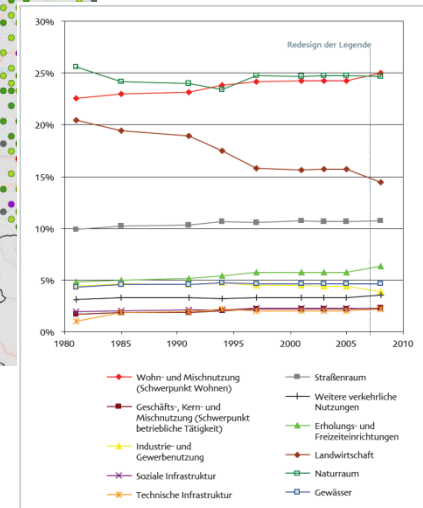
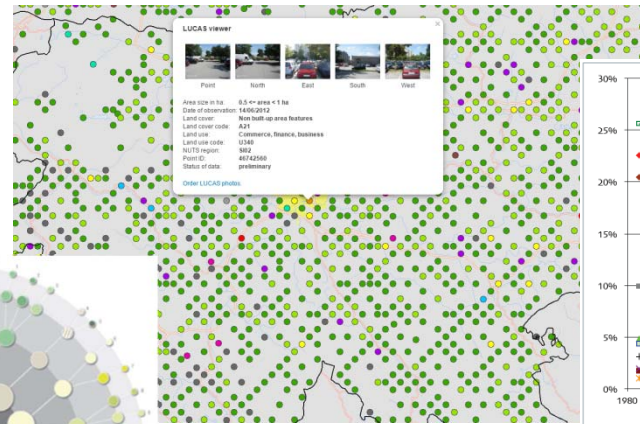
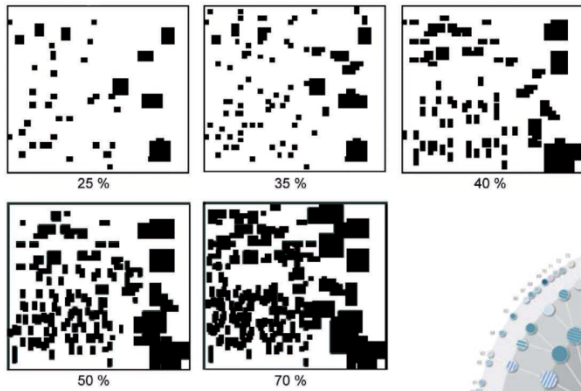
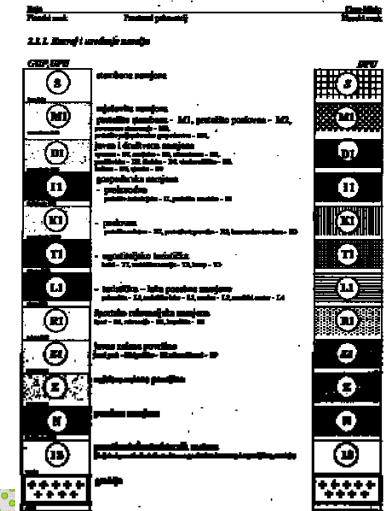
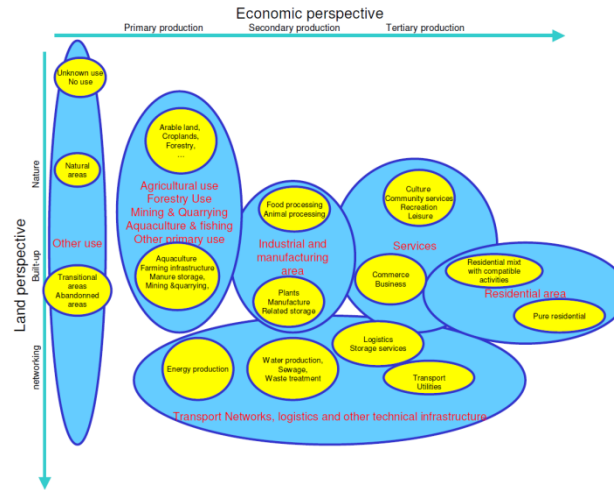
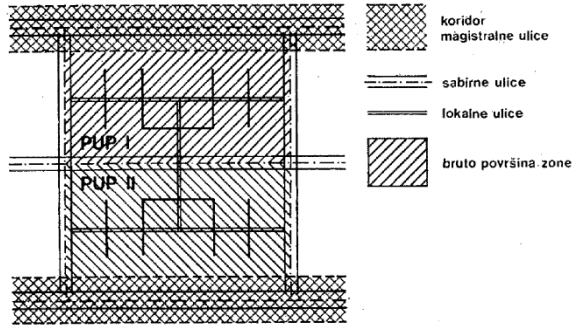
- Planned extent of land use development/transformation in given time? **ELUx vs. PLUx**
- Extent of achieved land use change over given time period? **ELUx vs. ELUy**
- Achievement of planned land use development over given time period? **PLUx vs. ELUy**
- Changes of land use policies over given time period? **PLUx vs. PLUy**



INSPIRE Conference 2016
Barcelona, 26th - 30th September



Existing models



INSPIRE Conference 2016
Barcelona, 26th - 30th September



Analysis of existing models

Comparison of existing land use models, systems and theories on local, regional, national and european levels:

- Land use theory in urban planning
- INSPIRE land use
- European Urban Atlas
- Land use/ land cover statistics – EUROSTAT
- National planning model of Croatia
- Mode d'Occupation du Sol (MOS) - Île-de-France
- Realnutzung - Vienna



INSPIRE Conference 2016
Barcelona, 26th - 30th September



Analysis of existing models

Quest for the best theories and practices in several elements important for development of land use analysis model:

- Purpose and type of model or system
- Coverage, spatial and temporal resolution
- Land use classification and nomenclature
- Delineation of land use zones
- Geoinformation modeling elements
- Data sources
- Applications



INSPIRE Conference 2016
Barcelona, 26th - 30th September



Table overview

	Theory of land use in urbanism, Marinković-Uzelac	INSPIRE Land Use	Urban Atlas	LUCAS	National planning model of Croatia	MOS	Realnutzung
Purpose	Urbanism	Environment, harmonisation	Regional planning	Statistics	Spatial and urban planning	Regional and city planning	City planning
Type	theory	standard	system	system	standard	system	system
Level	national	EU	EU	EU	national	regional	city
Existing land use	no	yes	yes	yes	no	yes	yes
Planned land use	yes	yes	no	no	yes	no	no
Scale 1: (x1000)	5-10	-	10	-	0.5-100	5	10
Updating	According to needs	According to changes in original data	6 y	3 y	According to adoption of plans	4-5 y	2 y
No. of classification levels	2	3	3	3	2	4	3
No of most detail level classes	30	76	19	33	35	81	32
Rules of delineation	yes	Ne	Da	Da	Ne	Da	Da
MMU	-	-	2500 m2	-	-	625 m2	2000 m2
Geoinformation elements	no	yes	yes	yes	yes	yes	yes
Data sources	Existing spatial plans	Existing digital data	Satellite and aerial images	Field measurement	Base maps, existing plans	Orthoimages	Orthoimages, topo bases



INSPIRE Conference 2016
Barcelona, 26th - 30th September



Purpose of a new model

Strategic Urban Land Use Analysis Model should serve to several purposes:

- Development planning of urban areas;
- Management of urban areas;
- Harmonization and comparison of urban data from local to international level;
- Optimization of usage of existing sources of spatial data;
- Further scientific research in the field of urban planning and geoinformation;
- Development of regulations in the field of urban planning.



INSPIRE Conference 2016
Barcelona, 26th - 30th September



Basic conceptual rules of a new model (1)

- Model includes both ELU and PLU with equal importance
- ELU and PLU have to be harmonized in classification and delineation of zones
- PLU is based on official land use plans
- ELU is based on several data sources, official and unofficial



INSPIRE Conference 2016
Barcelona, 26th - 30th September





INSPIRE Conference 2016
Barcelona, 26th - 30th September



Basic conceptual rules of a new model (2)

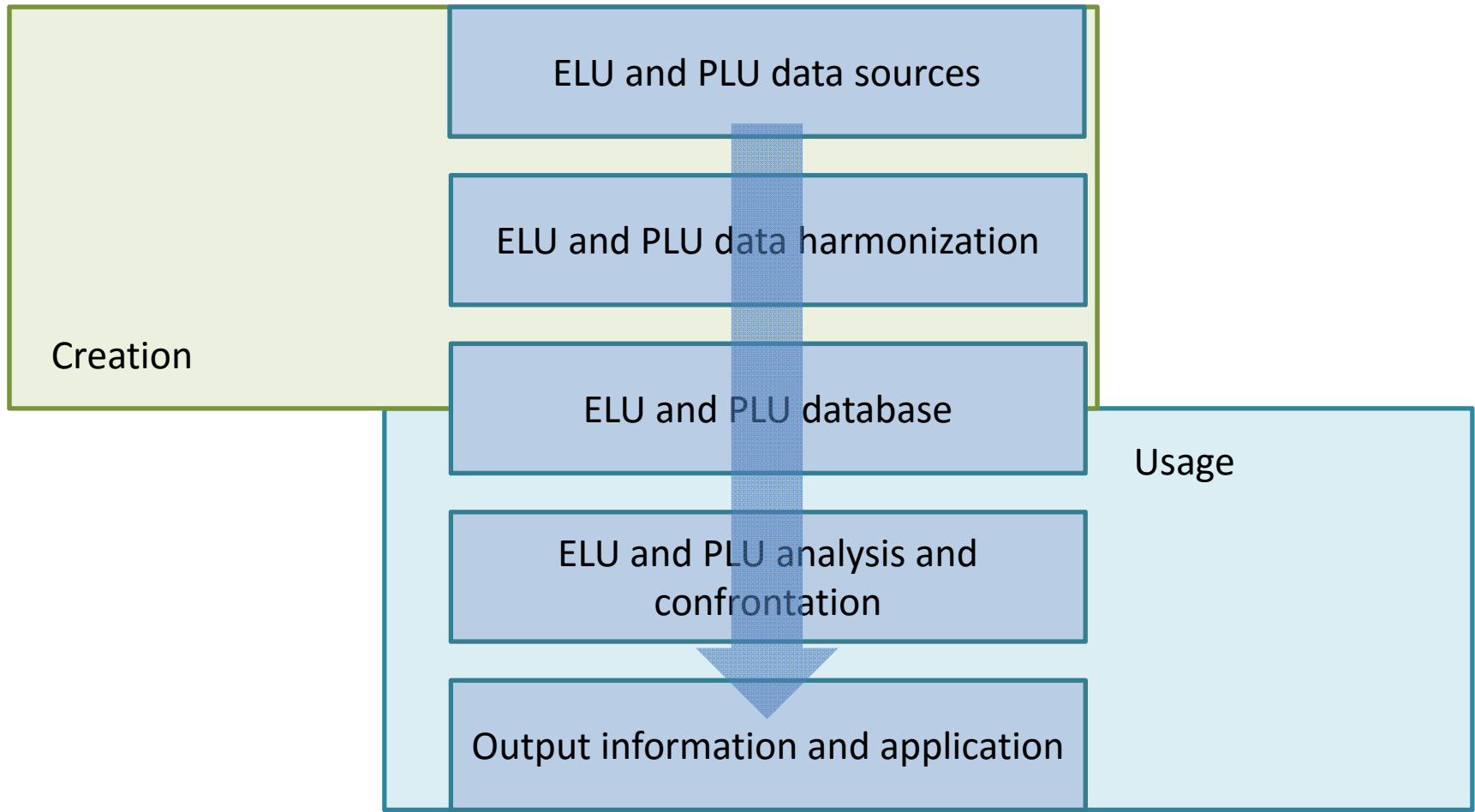
- Data scale is fitted to character of urban area and to the least detailed data source
- Classification of use and land use is in line with local conditions and international standards
- Data are updated according to changes in official land use plans and changes in real world
- Answers to strategic issues are result of confrontation of ELU and PLU in different time periods



INSPIRE Conference 2016
Barcelona, 26th - 30th September



Concept



Future development

- Defining of urbanistic elements (in progress)
- Defining of geoinformation elements
- Testing the model – pilot area in Zagreb
- Using and upgrading



INSPIRE Conference 2016
Barcelona, 26th - 30th September



Development of Strategic Urban Land Use Analysis Model

Thank you!

darko.sisko@zagreb.hr



MLAS



INSPIRE Conference 2016
Barcelona, 26th - 30th September

