

# REAL CORP 2010

15th International Conference on Urban Planning, Regional Development and Information Society

# CITIES FOR EVERYONE

Liveable, Healthy, Prosperous  
Promising Vision or Unrealistic Fantasy?



## PROCEEDINGS TAGUNGSBAND

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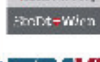
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# **REAL CORP 2010. Cities for Everyone: Liveable, Healthy, Prosperous**

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Edited by

**Manfred SCHRENK, Vasily V. POPOVICH, Peter ZEILE**

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**Table of contents – Inhaltsverzeichnis:**

<b>A Multi-Scale (Multi-Fractal) Approach for a Systemic Planning Strategy from a Regional to an Architectural Scale. ....</b>	<b>17</b>
Claudia Czerkauer-Yamu, Pierre Frankhauser .....	17
<b>4thNature – Ambient Assisted Urban Resources. Wie Green Cities nachhaltig befördert werden können .....</b>	<b>27</b>
Jürgen Pietsch, Sunju Lee .....	27
<b>A diagnosis tool for small and medium sized cities on their way to an InnoCité .....</b>	<b>33</b>
Nadine Schrader-Bölsche, Kirsten Mangels.....	33
<b>Against the great divide between theory and practice: gated communities versus urban liveability.....</b>	<b>45</b>
Islam Ghonimi, Hassan al zamly, mohamed khairy, mohamed soilman .....	45
<b>Albania in Transition: International Assistance for Roads but not Public Transport .....</b>	<b>57</b>
Dorina Pojani .....	57
<b>An Operational Model towards Playful Public Participation.....</b>	<b>65</b>
Viviana Lanza, Lucia Tilio.....	65
<b>Are Cities in Poland Ready for Sustainability? Poznań Case Study.....</b>	<b>75</b>
Adam Radzimski, Michał Beim, Bogusz Modrzewski.....	75
<b>Assessing the quality of life (QOL), its significance in urban planning and the feasibility of establishing a Quality of Life Reporting System (QOLRS) in cities, the historic city of Esfahan as the case example .....</b>	<b>87</b>
Daryoush Moradi .....	87
<b>Baukultur Rheinland-Pfalz im Kontext von Geoweb und Web2.0 mit MACE.....</b>	<b>97</b>
Peter Zeile, Martin Memmel .....	97
<b>Bikability In Metropolitan Lagos: A Conceptualization of Eco Friendly Transportation Alternative.....</b>	<b>107</b>
Tunji Adejumo .....	107
<b>Chongqing at Crossroads: How Urban Planning and Infrastructure can Support Sustainable Industries. ....</b>	<b>115</b>
Debra Lam, Andrea Fernandez.....	115
<b>City environment: Regional development dimension. Baltic case.....</b>	<b>119</b>
Ilze Stokmane.....	119
<b>Confronting the Lagos Informal Land Use: Issues and Challenges.....</b>	<b>131</b>
Oluwafemi Olajide .....	131
<b>Contemporary tools of urban development - orientated on equity? .....</b>	<b>141</b>
Katja Stock, Lidewij Tummers.....	141
<b>Crime prevention through environmental design in residential developments in Tehran.....</b>	<b>155</b>
Nasim Iran manesh, Kouros Etaati .....	155
<b>Delhi towards Carbon Neutrality through Sustainable Mobility .....</b>	<b>163</b>
Sanhita Bandyopadhyay, Papiya Bandyopadhyay, Piyali Bandyopadhyay.....	163
<b>Der Beitrag regionaler Verkehrspolitik zur Realisierung der Vision lebenswerter, gesunder und prosperierender Städte für alle: Beispielfall Burgenland.....</b>	<b>167</b>
Elmar Fürst, Verena Matz .....	167
<b>Der Low-Carbon-Index: Ein Instrument zur Beurteilung der Energieeffizienz städtebaulicher Planungen.....</b>	<b>175</b>
Hannah Baltés, J. Alexander Schmidt .....	175
<b>Die Potenziale aktueller WebGIS- und Web-2.0-Entwicklungen als Planungsinstrumente – der Planer als Eichhörnchen?! 181</b>	<b>181</b>
Rebecca Körnig-Pich, Guido Kebedies, Peter Zeile .....	181
<b>Developing a Typology of Public Participation 2.0 Users: an Example of Nexthamburg.de .....</b>	<b>191</b>
Beate Weninger, Alenka Krek Poplin, Julian Petrin.....	191
<b>Development and environmental protection in the coastal urban area of the municipality of Glyfada (Greece) .....</b>	<b>201</b>
Agisilaos Economou .....	201
<b>Development of municipal System as an instrument of planning approach transition toward integrated sustainable development– case of Serbia.....</b>	<b>207</b>
Ksenija Lalović, Tatjana Mrdjenović .....	207
<b>Die Aktivierende Stadtdiagnose – Vorstellung einer stadtpsychologischen Methode zur Förderung nachhaltiger Stadtentwicklungsprozesse .....</b>	<b>223</b>
Cornelia Ehmayer.....	223
<b>Emergence of suburban employment centres in German metropolitan regions: Impacts on commuter traffic, 1987-2007....</b>	<b>235</b>
Dennis Guth .....	235
<b>EURO 2012 in Poland as a catalyst for change and testing ground for new urban management tools .....</b>	<b>249</b>
Magdalena Rembeza, Lukasz Pancewicz .....	249

<b>European Reference Indicators for Public Facilities and Services. Approach to an Integrated Production in Reference Values for the Basic Social Services Infrastructure .....</b>	<b>257</b>
Maria Lluïsa Marsal Llacuna, Nadia Fava.....	257
<b>Evaluation von Regionalplänen – ein theoriebasierter Ansatz zur Analyse von Instrumenten zur Steuerung der Siedlungsentwicklung .....</b>	<b>267</b>
Klaus Einig, Andrea Jonas, Brigitte Zaspel .....	267
<b>Face to Face with Fantasy: the City of Utopian Places.....</b>	<b>279</b>
Lineu Castello.....	279
<b>Freiburg’s way to sustainability: the role of integrated urban and transport planning .....</b>	<b>287</b>
Michal Beim, Martin Haag .....	287
<b>Functional Regions Defined by Urban Centres of (Inter)National Importance – The Case of Slovenia .....</b>	<b>297</b>
Samo Drobne, Miha Konjar, Anka Liseč, Nataša Pichler Milanović and Alma Zavodnik Lamovšek.....	297
<b>Generative Solar Design. Lichträume, Schattenkörper und dynamische Sonnenstandssimulation mit Open-Source-Software .....</b>	<b>307</b>
Wolfgang Höhl .....	307
<b>GeoFinanzen: Unterstützung kommunaler Entscheidungsprozesse durch kartographische Präsentation von Finanzdaten. 317</b>	<b>317</b>
Anja Matatko .....	317
<b>Googlization Factors of Saudi Eastern Province Virtual Cities. Factors Analysis of Eastern Province Virtual Cities.....</b>	<b>327</b>
Talal A Al-Hairig, Ahmed J Al-Jaralah .....	327
<b>Improving intermodal transport with a focus on long distance: Selected findings from LINK –the European Forum on Intermodal Passenger Travel.....</b>	<b>335</b>
Patrick Hoenninger .....	335
<b>Innenstädte für alle: Visualisierung und Simulation zur Qualifizierung des innerstädtischen Entwurfs.....</b>	<b>343</b>
Henning Stepper, Arne Siegler, Ingo Wietzel.....	343
<b>Innovating Multidimensional Urban Visions .....</b>	<b>353</b>
Ján Lacko, David Behal, Peter Borovsky, Zuzana Cernekova, Andrej Ferko, Martin Florek, Matej Novotny, Martin Samuelcik, Stanislav Stanek, Elena Sidukova .....	353
<b>Instruments for sustainable urban development in Eastern Germany – the example of the “Wächterhäuser” (warden houses) in Leipzig .....</b>	<b>363</b>
Kornelia Ehrlich .....	363
<b>Integrating Socio-Economic Data in Spatial Analysis: An Exposure Analysis Method for Planning Urban Risk Mitigation 369</b>	<b>369</b>
Neysa Setiadi, Hannes Taubenböck, Sonja Raupp, Jörn Birkmann .....	369
<b>Konzepte länderspezifischer Erweiterungen standardisierter Objektmodelle am Beispiel des Standards XPlanung in der Freien und Hansestadt Hamburg .....</b>	<b>377</b>
Joachim Benner, Thomas Eichhorn, Kai-Uwe Krause, Vera Kirchenbauer .....	377
<b>KornetCity: An Operational Model for Belgrade, Serbia .....</b>	<b>385</b>
Maja Dimitrijevic, David C. Prosperi .....	385
<b>Learning from Barcelona: Towards Urban Sustainability .....</b>	<b>397</b>
Nadia Fava Maria Lluïsa Marsal Llacuna .....	397
<b>Liveable and resilient Ho Chi Minh City: Tackling the challenges of climate change, energy security and sustainable urban development .....</b>	<b>403</b>
Harry Storch, Nigel Downes.....	403
<b>Maintainable 3D Models of Cities .....</b>	<b>413</b>
Gerhard Navratil, Rizwan Bulbul, Andrew U. Frank .....	413
<b>Menschen als Messfühler – die Kombination von Geowebmethoden und Sensorik .....</b>	<b>421</b>
Peter Zeile, Jan-Philipp Exner, Stefan Höffken, Bernd Streich .....	421
<b>Mobile Stadtinformationssysteme und Location Based Services – Neue Potentiale für die Touristen- und Bürgerinformation .....</b>	<b>429</b>
Sebastian Althoff, Norman Kratz, Gregor Landwehr, Peter Zeile .....	429
<b>Mobility barriers in urban transport for the sight or hearing impaired: Solutions help all passengers .....</b>	<b>439</b>
Elmar Fürst .....	439
<b>Multi-Criteria Land Use Classification in GIS for Buildings Construction .....</b>	<b>447</b>
Subhija Ponjavic, Elvir Ferhatbegović.....	447
<b>Network Centric City. Computer Science Vision of Urbanization .....</b>	<b>457</b>
Vasily Popovich, Manfred Schrenk, Stanislav Vlasov, Yan Ivakin .....	457
<b>“Neue Kollektive” – eine zentrale Herausforderungen für die zukunftsfähige Stadtplanung .....</b>	<b>465</b>
Tatjana Fischer .....	465

<b>Neue Strategien und eine Datenarchitektur für das Wissensmanagement in der urbanen Pflanzenverwendung.....</b>	<b>475</b>
Marcel Heins, Wolfram Kircher.....	475
<b>New Challenges in the transition of industrial areas within the Vision of Istanbul Metropolitan Plan for 2023.....</b>	<b>485</b>
A. Erdem Erbas, Tansel Erbil.....	485
<b>New Communication Tools and eParticipation: Social Media in Urban Planning.....</b>	<b>495</b>
Stefan Höffken, Chris Haller.....	495
<b>New Prospects for Urban Planning Service Systems with Use of GIS Tools and New Data Sources Linked to Reference Databases.....</b>	<b>511</b>
Jadwiga Brzuchowska.....	511
<b>Nobel Economic Laureates and the “Performance” of Cities.....</b>	<b>517</b>
David C. Prospero.....	517
<b>Old Brownfields, new Parks of Tomorrow. Chances to Improve the Environment of the Cities.....</b>	<b>529</b>
Anne Hoffmann, Dietwald Gruehn, Christiane Ziegler-Hennings.....	529
<b>Perspectives for urban experts in future urban development and mobility practice in Serbia.....</b>	<b>541</b>
Uroš Radosavljević, Ksenija Lalović, Tatjana Mrdenović.....	541
<b>Planning for Health Amelioration: Analyzing Mumbai’s Urbanization Patterns.....</b>	<b>547</b>
Amitabh Verma.....	547
<b>Planning healthy cities - the role of markets in urban life.....</b>	<b>555</b>
Kravalik Zsuzsanna.....	555
<b>Polyrational strategies for sustainable energetic development of space – the example of Leipzig.....</b>	<b>569</b>
Christian Strauß.....	569
<b>Position and Possibility of Large Hungarian Towns in the Hierarchy of the European Towns.....</b>	<b>577</b>
János Rechnitzer, Bálint Filep.....	577
<b>Public transport accessibility in Poznań.....</b>	<b>583</b>
Jędrzej Gadziński, Michał Beim.....	583
<b>Rankings and networks – global cooperation and competition.....</b>	<b>593</b>
Gudrun Haindlmaier, Verena Riedl.....	593
<b>Raumplanung als Alltagsmanagement für ALLE? Herausforderungen des demographischen Wandels – Werkstattbericht DEMOCHANGE.....</b>	<b>601</b>
Heidrun Wankiewicz, Wolfgang Spitzer, Thomas Prinz, Franz Dollinger.....	601
<b>Reduzierung der durch Stadtverkehr verursachten Umweltbelastungen: Integrierte Planungsverfahren sind gefordert! ....</b>	<b>611</b>
Jochen Richard.....	611
<b>Retailing and proximity in a liveable city: the case of Barcelona public markets system.....</b>	<b>621</b>
Manel Guàrdia , Nadia Fava, José Luís Oyon.....	621
<b>Räumliche Risikovorsorge zur Beherrschung der Risiken von Störfällen technischer Anlagen.....</b>	<b>631</b>
Arne Siegler, Martin Rumberg.....	631
<b>Simulation and Visualization of the Behavior of Handicapped People in Virtually Reconstructed Public Buildings.....</b>	<b>639</b>
Martin Brunnhuber, Helmut Schrom-Feiertag, Gerd Hesina, Dietmar Bauer, Werner Purgathofer.....	639
<b>Size of the Patch.....</b>	<b>649</b>
Agnieszka Kowalewska, David C. Prospero.....	649
<b>Social and Aesthetic Camouflage: Case Study of New Belgrade.....</b>	<b>661</b>
Jelena Pantic.....	661
<b>Stadt - Land - Peripherie - Die Zukunft der Stadt liegt (auch) in der Region!? Eine Erkundung des Zukünftigen zwischen Visionen und Realitäten.....</b>	<b>667</b>
Nils Leber.....	667
<b>Strategies for Sustainable Cities: Climate Change as a Generator of Development Planning Policies - Belgrade Example ...</b>	<b>677</b>
Ana Peric, Danilo S. Furundzic.....	677
<b>SUPPORT – A Strategic Planning and Decision Support Instrument for Environmental Urban Planning in Berlin.....</b>	<b>685</b>
Antje Köppen, Michael Förster, Birgit Kleinschmit, Johann Köppel, Johanna Ferretti.....	685
<b>Sustainable Mobility in Cities: Reducing the Carbon Footprint of Transportation in Tübingen.....</b>	<b>693</b>
Andrea Henkel, Martin Haag.....	693
<b>Territorial information systems (TIS) as an instrument for developing social capital in local communities in Serbia.....</b>	<b>703</b>
Tatjana Mrdjenovic, Ksenija Lalovic, Uros Radosavljevic.....	703
<b>The “Green Palisade” Concept: a scenario of waste and wastewater as resources city.....</b>	<b>713</b>
Ova Candra Dewi, Mayrina Firdayati, Ina Koerner, Ralf Otterpohl.....	713
<b>The assessment of traffic livability, including local effects at home, during trips and at the destination, based on the individual activity pattern and trip behaviour.....</b>	<b>723</b>

Dominique Gillis, Dirk Lauwers, Dick Botteldooren, Luc Dekoninck .....	723
<b>The capabilities of remote sensing to derive urban location factors for probability-based spatial growth analysis .....</b>	<b>733</b>
Hannes Taubenböck, Sebastian Clodt, Michael Wurm, Martin Wegmann, Carsten Jürgens.....	733
<b>The construction of the concept of neighbourhood children from the big city .....</b>	<b>743</b>
Nikolaos K. Mitoulas.....	743
<b>The Mediterranean Games of 2013, as a vaulting horse for Sustainable Development for the city of Volos .....</b>	<b>747</b>
Mitoula Roido, Theodoropoulou Eleni, Vambakari Malvina, Efthimiou Theodoros.....	747
<b>The Regeneration of Lagos Lagoon Waterfronts for Recreation and Tourism.....</b>	<b>759</b>
Nnezi Uduma-Olugu, Leke Oduwaye.....	759
<b>The role of civil actors, private sector, and public organizations in the urban life of open spaces (The Cairo Case) .....</b>	<b>765</b>
Manal Abou El-Ela, Ibrahim Sharaf El-Din, Mohamed Khairy Amin .....	765
<b>The u-City Index: Integrated planplementation of future ubiquitous cities .....</b>	<b>773</b>
Andrew Macias-Diaz .....	773
<b>Towards True Underground Infrastructure Surface Documentation .....</b>	<b>785</b>
Thomas Ortner, Gerhard Paar, Gerd Hesina, Robert F. Tobler, Bernhard Nauschnegg.....	785
<b>Überörtliche Verkehrsentflechtung in Zentralkärnten – Realitätsdruck versus Machbarkeitsstudien im Rückblick .....</b>	<b>795</b>
Harald Eicher.....	795
<b>Understanding the city: Local Agendas 21, Territorial Audits and Urban Policies. Instruments and technologies applied in the AL21 of the city of Cuenca, Spain.....</b>	<b>807</b>
Teresa Franchini, María José Lozano de San Cleto, María Asunción Martín Lou .....	807
<b>Urban Design and Lifestyle Changes. Creative Cities by Creative Citizens .....</b>	<b>813</b>
Jose María Yagüe .....	813
<b>Urban Land Use Management in Ljubljana: From Competitiveness to Sustainability - or vice versa? .....</b>	<b>819</b>
Nataša Pichler-Milanović, Alma Zavodnik Lamovšek .....	819
<b>Urban Poverty and Environmental Conditions in Informal Settlements of Ajegunle, Lagos Nigeria.....</b>	<b>829</b>
Oluwafemi Olajide .....	829
<b>Urban Remote Sensing – How Can Earth Observation Support the Sustainable Development of Urban Environments?.....</b>	<b>839</b>
Thomas Esch, Hannes Taubenböck, Wieke Heldens, Michael Thiel, Michael Wurm, Christian Geiss, Stefan Dech .....	839
<b>Urban sprawl + politics + cars = Canberra vs. Compact city + innovative politics + active forms of transport = healthy Canberra .....</b>	<b>851</b>
Gregor H Mews .....	851
<b>Urban Vision Linz. Ganze Stadt – halber Lärm .....</b>	<b>859</b>
Gerhard Lueger, Wolfgang Gratt, Thomas Edtstadler, Axel Gattinger, Helmut Retzl, Rudolf Wenny .....	859
<b>Urban Workshop Plus - Concept of Public-Professional Partnership in Urban Development .....</b>	<b>869</b>
Izabela Mironowicz, Anthony Clerici.....	869
<b>Using remote sensing and GIS for damage assessment after flooding, the case of Muscat, Oman after Gonu tropical cyclone 2007: Urban planning perspective.....</b>	<b>881</b>
Lotfy Kamal Azaz .....	881
<b>Verbesserung der thermischen Behaglichkeit innerhalb dichter Wohnkomplexe am Beispiel einer südkoreanischen Stadt. 891</b>	<b>891</b>
Eva Ringhof, Sascha Henninger .....	891
<b>Vorsorge als Betrachtungsgegenstand der Raumplanung .....</b>	<b>901</b>
Arne Siegler, Henning Stepper, Ingo Wietzel.....	901
<b>Wanderungsströme der Bevölkerung in der Stadtregion Wien.....</b>	<b>911</b>
Peter Görgl, Marco Helbich, Heinz Fassmann, Vanja Gazdek .....	911
<b>Web 2.0 Applications for Collaborative Transport Planning .....</b>	<b>919</b>
Andrew Nash.....	919
<b>Web 2.0 in Lehre und Forschung – Chancen und Potenziale für die räumliche Planung .....</b>	<b>931</b>
Peter Zeile, Jan-Philipp Exner, Stefan Höflken, Bernd Streich .....	931
<b>Wege im Grünen – Modellierung von Wegepräferenzen von Besuchern/-innen Wiener Erholungsgebiete anhand eines diskreten Wahlmodells.....</b>	<b>941</b>
Arne Arnberger, Renate Eder, Thomas Reichhart .....	941
<b>Wie entwickelt sich der Grünraum in Wien? .....</b>	<b>951</b>
Kirsten Müllner, Klaus Kramer .....	951
<b>Zertifizierung von Stadtquartieren .....</b>	<b>963</b>
Jan Hogen .....	963
<b>“Air-City”: Modular pneumatic and bionic architecture for buildings and mobile fairs .....</b>	<b>973</b>
Thomas Herzig, Gerald Härtlein.....	973



<b>AmauroMap – Interactive Online City Map for Blind and Visually Impaired People .....</b>	<b>981</b>
Wolfgang Wasserburger, Julia Neuschmid, Manfred Schrenk .....	981
<b>AnachB.at – das neue Echtzeit-Verkehrsinfoservice für die Vienna Region .....</b>	<b>985</b>
Nicole Prikoszovits .....	985
<b>aspersn Die Seestadt Wiens – nachhaltige Stadtentwicklung .....</b>	<b>991</b>
Hageneder Christiana, Hinterkömer Peter .....	991
<b>Assessing the implementation of Rawalpindi’s Guided Development Plan through GIS and Remote Sensing .....</b>	<b>997</b>
Muhammad Adeel .....	997
<b>Assessment and Simulation Methods for Green Building Planning .....</b>	<b>1005</b>
Thomas Leitner, Andreas Schiffleitner, Bernhard Lipp .....	1005
<b>Assessment of Governance Strategies for Climate Adaptation in Flanders/Belgium .....</b>	<b>1009</b>
Björn R. M. Verhofstede, Hans Leinfelder, Georges Allaert .....	1009
<b>Bridging the Physical and the Virtual: Creating a Social Network via Media-Enhanced Street Furniture .....</b>	<b>1015</b>
Sung Ah Kim, Yunjung Cho .....	1015
<b>Bus Stop 3.0 – Bus Stop of the Future – Multifunctional Centers for Regional Development .....</b>	<b>1021</b>
Manfred Schrenk, Josef Benedikt, Tanja Egger, Christian Eizinger, Andor Farkas .....	1021
<b>CentropeMAP and CentropeSTATISTICS – Cross-Border Geodata Infrastructure with User-Defined Thematic Maps ...</b>	<b>1029</b>
Clemens Beyer, Walter Pozarek, Manfred Schrenk .....	1029
<b>Chancengleichheit beim Zugang zu Mobilität. Analyse der Verkehrsbefragung „Mobilität in Deutschland (MiD) 2002“ unter ausgewählten Gender-Aspekten – am Beispiel der Region Hannover (Niedersachsen, Deutschland) .....</b>	<b>1035</b>
Ingrid Heineking .....	1035
<b>Cohering the spatial and strategic planning in the Czech Republic .....</b>	<b>1043</b>
Jiřina Bergatt Jackson .....	1043
<b>Comprehensive Urban Renewal: More than Building Regeneration: a Case Study in Vienna .....</b>	<b>1049</b>
Betül Bretschneider .....	1049
<b>Das Klimaschutzprogramm der Stadt Wien – ein Beitrag zu mehr Lebensqualität in Wien .....</b>	<b>1055</b>
Marianne Steiner .....	1055
<b>Das Wissen Wiens – innovative urbane Technologien und Strategien als Garant der Wiener Lebensqualität .....</b>	<b>1061</b>
Alexandra Vogl .....	1061
<b>Design Considerations and Sustainable Low Cost Housing Provision for the Urban Poor in Addis Ababa, Ethiopia .....</b>	<b>1067</b>
Emaculate Ingwani, Tendayi Gondo, Trynos Gumbo, Elias Mazhindu .....	1067
<b>Die Nutzung der Wiener Lebensqualitätsforschung als Instrument einer an den Bedürfnissen der Bevölkerung orientierten Stadtentwicklung .....</b>	<b>1071</b>
Rainer Hauswirth .....	1071
<b>Die Regionalen in Nordrhein-Westfalen: Impulse für den Strukturwandel. Beispielhafte Erneuerungsstrategie der Regionale 2010 im Rheinland .....</b>	<b>1077</b>
Anne Katrin Bohle .....	1077
<b>„Einfach-Mehrfach“, ein partizipativ angelegtes Erfolgsmodell der Stadt Wien .....</b>	<b>1079</b>
Jutta Kleedorfer .....	1079
<b>Environmental Justice in Berlin: GIS-based method determining an aggregated index for urban planning .....</b>	<b>1085</b>
Gesa Geißler, Birgit Kleinschmit, Robert Ahrberg, Battugs Erdenetsogt, Yvonne Heimann, Lisa Heinsch, Laura Hensel, Thomas Herff, Josephine Janke, Philipp Kaufmann, Miriam Kothe, Hendrikje Leutloff, Anja Manzke, Anke Rehhausen, Sebastian Schramm, Stefanie Töpfer, Sebastian Unger, Bartłomiej Wisniewski .....	1085
<b>Ermittlung von Energiekennzahlen für Haushalte und Stadtstrukturtypen in Ho Chi Minh City .....</b>	<b>1091</b>
Nguyen Xuan Thinh, Katrin Scharte, Doreen Rahe .....	1091
<b>FlexiCount: Eine flexible Personenzählmatte für den mobilen Indoor und Outdoor Einsatz .....</b>	<b>1097</b>
Martin Horauer, Markus Ray, Andreas Augustin und Gregor Novak .....	1097
<b>Graz Reininghaus: Vielfalt ermöglichen – für die Wiedergeburt des Urbanen .....</b>	<b>1103</b>
Andreas Kleboth .....	1103
<b>Green Buildings for sustainable cities .....</b>	<b>1109</b>
Bernd Stampfl .....	1109
<b>Gesunde Stadt? Eine interdisziplinäre Perspektive auf gesundheitliche Einflüsse in Essener Stadtteilen .....</b>	<b>1111</b>
Minh-Chau Tran, Susanne Moebus, J. Alexander Schmidt, Fabian Kessl .....	1111
<b>Heritageescape, Urban Planning and Strategies: Studies from India .....</b>	<b>1117</b>
Rana P. B. Singh .....	1117
<b>Integration and Transformation of Post-Apartheid South African City Fabric .....</b>	<b>1129</b>

Ambrose A. Adebayo, Godfrey G. Musvoto .....	1129
<b>Is Junik unique? Devising planning policy documents “in-house”</b> .....	<b>1135</b>
Ferdone Tofaj, Lumnije Gashi, Teuta Jaha, Enes Toska, Dukagjin Bakija.....	1135
<b>Konfliktsituationen in der (offenen) Planung: Lösungen und Anforderungen an die Städte</b> .....	<b>1141</b>
Bettina Riedmann, Hans Kordina .....	1141
<b>Linz Charter – Guideline for Urban Development: Architecture, Traffic and Urban Planning have become “Deaf” Disciplines in which Acoustic Consequences are Treated Without Concern</b> .....	<b>1147</b>
Peter Androsch .....	1147
<b>MARIA – Mobile Assistance for Barrier Free Mobility in Public Transportation</b> .....	<b>1153</b>
Lucas Paletta, Reinhard Sefelin, Joachim Ortner, Jutta Manninger, Regina Wallner, Marianne Hammani-Birnstingl, Verena Radoczky, Patrick Luley, Walter Scheitz, Otto Rath, Manfred Tscheligi, Burkhard Moser, Katrin Amlacher, Alexander Almer... ..	1153
<b>Mikrosimulation von Mischverkehr – Konzept MiMiSim und Ausblick auf MixME</b> .....	<b>1159</b>
Robert Schönauer, Helmut Schrom-Feiertag .....	1159
<b>Mobi-Kid – Kindgerechte Information für die sichere und nachhaltige Nutzung des ÖV</b> .....	<b>1165</b>
Alexander Chloupek, Kathrin Morawetz .....	1165
<b>Mobility survey based on intelligent technologies (MOBIFIT)</b> .....	<b>1173</b>
Max Herry, Gerd Sammer, Rupert Tomschy, Michael Meschik.....	1173
<b>Neoliberalism and public participation in urban regeneration in Portugal</b> .....	<b>1179</b>
Luís Mendes .....	1179
<b>Personal transport information, mobility behaviour and attitudes towards technology: target groups for advanced traveller information systems</b> .....	<b>1189</b>
Sebastian Seebauer, Martin Berger.....	1189
<b>Pilotprojekt „Zu Fuß im St.-Andrä-Viertel“ Qualitäten für Fußgänger/-innen - Fußgängeraudit für einen ganzen Stadtteil; Salzburg (Austria)</b> .....	<b>1199</b>
Dieter Schwab .....	1199
<b>Plan4all – State of the Art in the Harmonisation of Spatial Planning Data</b> .....	<b>1203</b>
Julia Neuschmid, Clemens Beyer, Christian Eizinger, Manfred Schrenk, Wolfgang Wasserburger .....	1203
<b>Public Private Partnership as an urban regeneration tool for the inner city, large-scale public space projects in Poland</b> ...	<b>1209</b>
Magdalena Rembeza, Lukasz Pancewicz .....	1209
<b>Public Space Design as a Stimulator for Movement of Pedestrians. Case Study: Municipality of Vracar, City of Belgrade</b>	<b>1213</b>
Milena Vukmirović.....	1213
<b>“Revision of urban spaces to make it accessible for disabled people in order to achieve the aim of “city for all “</b> .....	<b>1219</b>
Anahita Mahmoudi, Kamyar Fanaei.....	1219
<b>ROdEM: Modellierung einer optimalen Raumnutzungsverteilung zur Minimierung von Kfz-Emissionen</b> .....	<b>1225</b>
Georg Kriebernegg, Stefan Hausberger, Martin Rexeis, Christian Schiller.....	1225
<b>Russian Urban Planning: modern ideas (Legislative Base, Spatial Planning, Transport and Ecology, GIS Technology) ....</b>	<b>1231</b>
Anna Beregovskih, Irina Grishechkina, Dghamilia Shalakhina, Sergey Miller, Mikhail Petrovich .....	1231
<b>SDI of the Free and Hanseatic City of Hamburg and the Hamburg Metropolitan Region in the context of the Community programme eContentplus co-funded project Plan4all and in the context of INSPIRE</b> .....	<b>1239</b>
Winfried Hawerk, Kai-Uwe KRAUSE.....	1239
<b>Seeking the Best Urban Form</b> .....	<b>1245</b>
Tsouderos Ioannis, Dimelli Despina.....	1245
<b>Senior Social Platform – An application aimed to reduce the social and digital isolation of seniors</b> .....	<b>1249</b>
Paul Andor Farkas .....	1249
<b>Smart Grid and E-Mobility</b> .....	<b>1255</b>
Peter Tschulik.....	1255
<b>Smart growth and integrated planning in Gdansk and Dublin urban changes</b> .....	<b>1261</b>
Joanna Bach Głowińska, Tomasz Budziszewski, Bogdan Grechuta, Beata Ochmańska, Barbara Pujdak, Justyna Przeworska, Karolina Rospek Aszyk, Agnieszka Różga Micewicz.....	1261
<b>SmartCountplus – Towards Automated Counting and Modelling of Non -Motorised Traffic with a Stand-Alone Sensor Device</b> .....	<b>1263</b>
Norbert Brändle, Ahme Nabil Belbachir, Stephan Schraml.....	1263
<b>Spatial Analysis of Municipal Water Supply in Abeokuta Metropolis, South Western Nigeria</b> .....	<b>1269</b>
G. C. Ufoegbune, J. A. Oyedepo, Awomeso, A. O. Eruola .....	1269
<b>Stadtentwicklung versus Lifestyle – zur steigenden Prosperität des Brunnenviertels in Wien Ottakring</b> .....	<b>1277</b>
<b>Kurt Smetana</b> .....	<b>1277</b>
(Kurt Smetana, Gebietsbetreuung Stadterneuerung im 16. Bezirk, Haberlgasse 76, 1160 Wien, kurt.smetana@kaisme.at).....	1277

<b>Sustainable Cities .....</b>	<b>1285</b>
Stefan Denig.....	1285
<b>Sustainable Urbanism with Green Roofs – Natural Stormwater Management .....</b>	<b>1293</b>
Wolfgang Ansel, Alfred Diem .....	1293
<b>SZENAMO. Szenarien zukünftiger Mobilität älterer Personen .....</b>	<b>1299</b>
Andreas Friedwagner, Ralf Risser, Isabella Braguti, Doris Wunsch, Manuel Oberlader, Elisabeth Füssl, Daniel Bell .....	1299
<b>Territorial indicator system as a tool for evaluating territorial strategies .....</b>	<b>1305</b>
Aldert de Vries, Xabier Velasco.....	1305
<b>The Austrian Sustainable Building Certificate for buildings and city districts .....</b>	<b>1313</b>
Clemens Rainer.....	1313
<b>The City Planning Cadastre System of the city of Moscow as a tool for sustainable urban development.....</b>	<b>1317</b>
Alexander Pereslegin.....	1317
<b>The Impact of the Modal Split on accessibility in urban areas.....</b>	<b>1319</b>
Wolfgang Rauh .....	1319
<b>The Mobility Pass for Residential Real Estate – an Instrument to Calculate Mid- and Long-Term Mobility Costs of Real Estate Decisions .....</b>	<b>1323</b>
Manfred Schrenk, Tanja Egger, Christian Eizinger.....	1323
<b>The Potsdam Housing Market: A GIS-based Spatial Analysis using FOS.....</b>	<b>1327</b>
Harald Scherthanner, Hartmut Asche.....	1327
<b>The theme of the Catastrophe in the Information Society .....</b>	<b>1333</b>
Olivier Lefebvre.....	1333
<b>Toward Sustainable Development in Cities: A Case for New Spatial Decision Support Methods in Urban Planning.....</b>	<b>1339</b>
Anna Kaczorowska-Fudala .....	1339
<b>VeGIS – Tool for the connectivity between traffic models and geographic information systems.....</b>	<b>1345</b>
Steve Grössl, Ursula Witzmann .....	1345
<b>Visions of Liveable Cities? Der UNESCO-Weltkulturerbestatus als Potenzial für nachhaltige Stadtentwicklung.....</b>	<b>1349</b>
Carola Silvia Neugebauer.....	1349
<b>Ways4all: Indoor navigation for visually impaired and blind people.....</b>	<b>1355</b>
Martijn Kiers, Tina Sovec .....	1355
<b>What happens to the East-West Cornucopia? Regional development opportunities in Schwechat revisited.....</b>	<b>1361</b>
Judith Ryser.....	1361
<b>Wien – vom Rand des Eisernen Vorhangs zu einem zentralen Knotenpunkt der EU-Makroregion Donaauraum.....</b>	<b>1373</b>
Thomas Madreiter .....	1373
<b>Innovative Fördermechanismen für den Radverkehr .....</b>	<b>1381</b>
Martin Eder .....	1381

## **Territorial information systems (TIS) as an instrument for developing social capital in local communities in Serbia**

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### **1 ABSTRACT**

The broad problem that will be elaborated in the research is efficiency and effectiveness of traditional approach in Urban planning, currently still present in Serbia. Urban planning in Serbia is challenged by transitional trends such as decentralization, participation, collaboration and building partnerships to tackle spatial problems in relation with new socio-economic space. The main problem elaborated in the paper lack of common understanding for the need of building partnerships among institutions and local communities to tackle spatial problems. Therefore, research questions arising from the problem framework are: How to build partnerships, collaboration and social capital in the closed spaces within local communities such as Local Authorities, Public Companies, Civil society? Can Territorial information system be an instrument for building social capital? If it is so, how it can break barriers and build trust and collaboration?

The hypothesis relevant to the problem is that level of social capital is in relation with data and information sharing among actors in local community. Level of social capital in local communities in Serbia vary, but it rarely goes beyond egocentric concept where different stakeholders (individuals, institutions, organizations) use data and information to gain their personal interests, having low level of awareness of added value information sharing can bring and broaden framework of action and gain common interests as well as personal. In line with this spatial organization and development is not managed properly, public interest is not fully recognized and physical space is dominated by individual interests, producing negative externalities to environmental and equity issues.

Therefore, the aim of the research is to identify forms of social capital that can be built through the implementation of Territorial information Systems in local communities. The forms of social capital, formal and informal such as institutional arrangements, building trust, networking and cooperation will be elaborated through analysis of TIS pilot projects case studies implemented in six municipalities in Serbia in the period of 2005-08. The results of the research should show what level of social capital is needed as a precondition for data and information sharing, and what kind of social capital with positive externalities can be developed through implementation of TIS.

### **2 INTRODUCTION**

Integrated planning and design for sustainable development where it integrates different planning sectors, different social arenas, horizontal and vertical levels of government is challenged in Serbia by transitional process. Integration of previously mentioned elements is strongly connected with level of existing social capital in the community, its cognitive and structural elements, such as trust, collaboration, reciprocity, and institutional framework, such as laws, organizations, protocols, etc. that provide the development of social networks. The paper will elaborate the possibilities for development different dimensions of social capital in the process of data and information sharing in the six communities in Serbia through implementing pilot Territorial Information Systems.

The first chapter will elaborate the relation between spatial dimensions and dimensions of social capital, emphasising their interconnectivity, following Lefebvre's idea that physical space represents its social dimensions. Therefore, integration of activities to tackle spatial problems in sustainable manner is connected with the level of social capital present in the community. The result of the chapter will be the Tool for measuring development of the socio-spatial dimensions towards integrative collective action.

The second chapter will describe the process of developing social capital in communities in Serbia through implementation of TIS pilot projects relevant for the specific issue in each community. It will discuss possibilities and preconditions for integrative collective action through information and data sharing. The preconditions will be on cognitive and on structural level of social capital and will be defined as the conclusions from the comparative method of observing the process of TIS and social capital development.

spatial development AND social capital

Space dimensions and dimensions of social capital

Talking about the space following Lefebvre's thought we are dealing with space integration (acc to: Lefebvre, 1991) in the discourse of the central and marginal spaces (see: Semprini, 2004), their boundaries and the process of the content flow between them. Therefore, sustainable spaces integrate its different dimensions and transform it to physical space through communicative action (see: Habermas, 1990). Planning traditions, through history of planning, deal with different socio-economic space form economic, physical, and environmental to sustainable concept of development (Baker, 2006). In line with this, physical space mirrors social, economic and mental spaces in the process of its production.

Each tradition forms and reflects the social capital it is built on or the capital that is built through the process of spatial development. Therefore, we are talking of the exclusive and inclusive attributes of spatial development. Each of them reflects social arenas in which they are conceptualized, developed and implemented. The concept of sustainable development integrates different dimensions of its production; we can say it builds up different dimensions of social capital and transform them into physical multidimensional, inclusive, integrated space (see: Elin, 2004). We can say that spatial development reflects dimensions of social capital built through the process of its creation.

Development of the social capital concept goes from egocentric to sociocentric. From Bourdieu to Woolcock the concept was developed through its cognitive and structural dimensions, in relation with its positive and negative externalities, focusing either on the human development, either on social towards collective action. The contemporary concept is strongly related to poverty reduction, and both on cognitive elements, such as local and global values, trust, solidarity, and on structural, developing institutions, laws, policies, etc. As Castells says we have to add value to instrumental networks the global information society has formed. „When the world becomes too large to be controlled, social actors aim to shrink it back to their size and reach” (Castells, *The Power of Identity*, 2004)

The paper will follow the concept defined mostly by Fukuyama and Woolcock where it has developmental attribute on each level: building trust, collaboration, information flow, partnership, collective action with positive externalities and inclusive attribute. Woolcock talks of bounding, bridging and linking, as developmental characteristics (Woolcock Michael, 1999). On the other hand Fukuyama calls upon circles of trust, their enlargement and intersections (Fukuyama, 2000). However, the crucial question is on which issue to start developing social capital towards building partnerships, collaboration, and integration of different spaces?

Collective action's glue can be in the area of Castells urban aims that each community can have: „urban demands on living conditions and collective consumption; the affirmation of local cultural identity, the conquest of local political autonomy and citizen participation“ (Castells, *The Power of Identity*, 2004). Following his thought we can say that building up cognitive and structural elements of social capital can start on the common issue in the community, transforming the community's local practice and memory. Therefore, if we want developmental spaces the issue to start should have transformative power and should integrate different spaces, carrying partnership dimension. But, who to impose the issues with transformative power? Can it emerge from inside or should it be imposed from the outside?

Following social capital theory the transformative power comes from the membership of different areas of trust, through its enlargement, as well as from linking dimension where local communities develop their relations with meso and macro level. The assumption is that if we want to develop trust, collaboration and partnerships that have developmental dimension, not just reproducing existing social relations, it should be managed, facilitated and mediated by the 'agents' and 'agencies' on higher structural and cognitive level. Therefore, the assumption is that it can shift existing social capital by not controlling it; the transformative issue should come or be fully accepted in the community and mediated and facilitated by regional, national or international level. As Healey says it should develop both 'soft' and 'hard' institutional infrastructure (Healey, 1997).

In relation with space dimension the process should create inclusive spaces that integrate different values and builds platform for consensus building reflecting global and local values. Therefore, we are focusing on the process of its creation as well as on the process and on the process outcomes. Another assumption is that, as social capital development is iterative process, the first cycle of its initiating is crucial for its closure or

further development. In line with this the quality of the outcomes of the first cycle, both cognitive and structural, are the crucial point in the social capital development. The question is how to measure the quality of the social capital development process towards space integration?

## 2.1 Tool for measuring development of the socio-spatial dimensions

When we talk about urban planning practice we are dealing both with the quality of its process and product. The quality of the process and development of the future spatial dimensions, can be valued through the dimensions of social capital developed in it. The quality of the product such as strategic document, data base, policy, etc. can be valued through its sensitivity to initiate new developmental processes of social capital and the ways to measure it. Therefore, in this chapter we will formulate a tool for measuring the quality of the process dealing with common issues towards developing multidimensional social capital.

TOOL FOR MEASURING SOCIAL CAPITAL DEVELOPMENT IN THE PROCESS OF DEALING WITH THE PUBLIC ISSUE*									
Public issue?			Dealing with the spatial issue						Type of collective action
Dimension	Elements	Process			Product				
		Phases	Type of social arena	Tools /techniques	Structure	Content	Tools /techniques		
Social capital: Development processes	Bounding/bridging/linking	cognitive	Local-global values?	Closed/open; exclusive/inclusive?	SWOT/force field Stakeholder analysis?	Flexibility of the structure?	Prescriptive or instructive?	Graphs	Reactive/interactive/proactive
	Micro/meso/macro level		Owning the issue?	Arena's actors?	List of problems, objectives, priorities	Does it mirror the process?	Thematic grouping?	Diagrams	
			Consciousness of present and future image?	Facilitation and mediation of the process?	vision ICT		Facts or possibilities?	Matrix	
			Owning the problems and objectives?		Techniques of intrapersonal communication			Images	
		structural	Iterative process? Incremental process?	Institutionalisation of social arenas?	Web		Openness of the content?	Analog, Digital	
			Inclusion into regional networks?	Rules of communication?			Interactive content?		
			Policies/ laws	Initiatives on regional/national level?					
				Integral local/regional projects?					

\*The tool is developed on the professional experience as well on the sources (UN-Habitat, 2003) (Fisher, Building Bridges Through Participatory Planning, 2005) (Fisher, Building Bridges Through Managing Conflict and Differences, 2006) (Cultural Planning Toolkit: A Partnership between 2010 legacies now and Creative City Network of Canada, 2010). The conceptual framework for the tool is: The forms and dimensions of social capital (Grootaert Christian, Thierry van Bastelar 2002) (Fig. 1) and dimensions of social capital (Woolcock 2003) (Fig. 2)



Fig. 1: The forms and dimensions of social capital (Grootaert Christian, Thierry van Bastelar 2002)

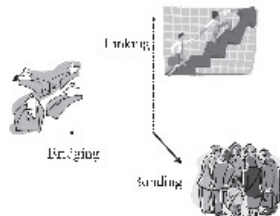


Fig. 2: The dimensions of social capital (Woolcock 2003)

### 3 USING TIS TO DEVELOP DIFFERENT DIMENSIONS OF SOCIAL CAPITAL

As it was said before the different dimensions of social capital in the local community can be developed if the issue has developmental and integrative characteristics. Therefore, we will elaborate the process of data and information integration among institutions and organizations in the local community as the issue to start developing cognitive and structural elements of social capital towards collective action. Territorial information system will be elaborated as an instrument in the process of cognitive and structural integration, as well as horizontal and vertical.

The attribute territorial gives to this info system the socio-spatial dimension, as the territory is seen as the space bounded by common interests. So, territory is the space that integrates different spatial dimensions that are relevant for the urban or spatial issue, and we can say it is a platform where the spaces of interest should be linked and integrated towards common interests. In line with this the territory is not something which is given by nature; it is a phenomenon that is created by people, their interests, networks, trust, and collaboration. We can say that richness of the territory is reflected by the richness of social capital developed in the process of dealing with the issue.

In line with this Territorial information system in contrast with GIS is the instrument that uses GIS to integrate data to produce new information that carries developmental arrow to social capital. Therefore, the cognitive and structural elements of TIS go beyond the boundaries of one institution or organization, and initiate integrative processes of building trust, partnerships, collaboration and collective action. The question is how to start, manage the process towards horizontal and vertical integration? The following text will elaborate the process of implementation of six TIS pilot projects in Serbia in the framework of UN-Habitat Settlement Integration Refugees Programme.

#### 3.1 Process of cognitive and structural development in the municipalities

The situation in Serbia when the process of TIS implementation has started was that selected local communities had awareness of using GIS and some of them has started implementation of it inside the boundaries of one institution, digital data and data bases existed in different public companies, departments, institutions. Therefore, the approach was to start with implementation of TIS pilot projects that should integrate minimum three institutions in local community. The period of implementation was one year.

The structural elements of TIS development during the period of implementation was in the constitution of two groups in local communities that was relevant for implementation of TIS. The first was coordination body, on the level of decision making which task was to bring political support to TIS development. The members of coordination body were managers of public companies, local representatives, directors of LA departments, etc. The second one was the working group, which had technical task to work on TIS

development. The members of working groups came from the different institutions relevant to the common issue. Both of the groups were appointed by the authority in the municipality.

Before the constitution of any structural elements the first cycle of raising awareness of TIS was implemented in the municipalities in the form of interactive trainings delivered to beneficiaries of interest. The aim of the trainings was to establish common understanding of data and information sharing can bring to the win-win solutions in the local community as well as on the raising knowledge on TIS concept, structure and implementation. The mission of the trainings was to promote benefits TIS can bring to the community.

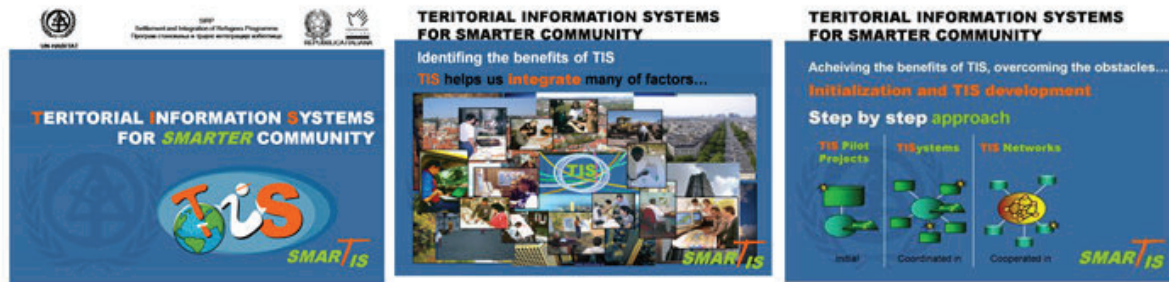


Fig. 3, 4, 5: TIS basic training: SMARTIS – TIS for Smarter communities (iterative, step by step approach)

This structural element on local level was the frame for cognitive development of social capital, as well as future structural development in the form of institutionalizing TIS after the pilot project is finished. The first element of cognitive development was the TIS Pilot Project document which was done by the members of working groups in consultation with coordination body. The Project document consisted around the selected issue that will be dealt with in the process.

The issue was elaborated on the workshops where the members of both structural elements from each municipality was present. The workshop was aimed to develop acceptance of the issue among the people in the TIS team. Methods and techniques used in the workshop were brainstorming, nominal group technique, problem tree, active listening. As an outcome from the workshop each municipality selected a common issue to be dealt, defined objectives and results that will be achieved during the implementation of TIS. The issues were: Tourism development, Rural Development, Land management, Development of industrial zone.

After the acceptance of the TIS Pilot Project the series of trainings on how to use TIS software was organized for the members of the working groups when they gain knowledge and skills how to model data base, fill it with data, create and traduce maps, reports, diagrams. The trainings delivered technical knowledge to the people, members of the working groups in each municipality.

The first cycle of TIS implementation was aimed to data integration and resulted in the integrated geodatabase model - conceptual and physical. The integrated data was from different sources and on cognitive level it established cooperation between institutions, departments and public companies, managed by coordination body. On structural level it resulted in metadata as well as in model diagram and personal geodata base. The results of each municipality was presented, discussed and evaluated on the workshop. The techniques for evaluation in order to improve quality of geo-data base model were a form of group questionnaire when each team should answer and give suggestions in the group discussion. After the group elaboration the proposals for improvement were presented and discussed between WG from each municipality.

The second cycle of implementation was aimed to develop thematic maps that will emphasize benefits of data integration through its visualization. Besides factographic maps showing territorial resources, the thematic maps had developmental attribute, providing integrated 'new' information that will enable smarter decisions in managing the territory. On cognitive level it promotes partnerships to tackle common territorial problems that go beyond boundaries. The thematic maps was created in the process of on the job training in each municipality where members of TIS working groups using technique of brainstorming, nominal group technique, elaborated themes that will be relevant to the issue as well as additional data needed for their creation, together with alpha-numeric reports, charts and diagrams. Two neighboring municipalities with the same issue started to collaborate and exchange experiences in the process of developing territorial data base.





Fig. 6, 7, 8: TIS on the job training: Developing thematic maps through participatory process

The results of the second cycle of implementation were presented on the conference where besides the members of coordination body, working group from each municipality the representatives of relevant ministries, regional associations and other municipalities that started working on data integration was present. The conference was aimed to open dialogue on the achieved results so far and to initiate systematic work on TIS development in Serbia. The conference initiated linking dimension of social capital development, in the form of dialogue, workshops on topic of institutional and technical arrangements that should be developed in the form of norms, rules, procedures, policies and laws.



Fig. 9 - 14: Cities in Dialogue - Cities developing integrated territorial information systems TIS

The third cycle of implementation was to finalize the projects and to publish thematic maps and territorial data base in interactive manner on DVD, web and in the form of the brochure. In each form of publishing the results emphasized the benefits TIS and integration of data, visualization, and reports can bring to the community. Also, through publishing the dissemination of the concept of TIS to the public has been done. Furthermore, some of the municipalities have presented their results in the form of workshop inside the community, emphasizing benefits of TIS.



Fig. 15, 16, 17: Presenting results in open arenas, awarded with first prize on International salon of urbanism



Fig. 18 - 23: Publishing results, process and outcomes CDs and brochures

### 3.2 Mediating and facilitating the process, cognitive and structural elements

The developmental dimension of social capital in the process of developing TIS was in the space dimension of its mediation and facilitation. The period of this process lasted much longer than its implementation, actually two years before the start of implementation and one year along of its process. The mediating and facilitating space was managed under the umbrella of UN-Habitat and in partnership with consultant team from the Faculty of Architecture University of Belgrade. The whole process of designing the approach for the implementation and developing different dimensions of social capital was prepared and tailored to the conditions in Serbia both on cognitive and structural level.



Fig. 24, 25, 26: TIS study tour in Prato and Modena, Italy

Each workshop, conference and training was fully prepared and tailored to the specific conditions in each municipality. On cognitive level the process was mediated and facilitated through communicative action using methods and techniques most appropriate to the existing level of social capital in each municipality. Each form of dialogue was designed towards its outcomes and inputs for the second phase of developing TIS. The facilitating and mediating team was constantly trained by UN-Habitat on the subject during the whole process. So the team was educated on cognitive techniques such as improved communication, conflict management, participatory planning, good governance.

On structural level the process was designed in the form that it was supported along the development of TIS. The development was constantly followed and guided in the communication process by consultants. Therefore, it was possible to monitor the development towards expected results. Further more, the break points in the form of workshops, conferences, trainings were designed and positioned in time to reinforce developmental dimensions of social capital in form of better collaboration, integration, communication and partnerships. Trainings were on the different level from basic to advanced and on the job. They had developmental characteristics in building human capital as well as social through interaction, bounding the team.

Beside the structural elements for each break point and social arena, the structural elements were developed to follow in line process of TIS development in the municipalities. Structural elements along the process were rules of communication, tools designed by consultants, intranet and forum. Each structural element reflected cognitive values to be achieved, such as transparency, information flow, accessibility, inclusiveness.



Fig. 27, 28, 29: TIS intranet - instructions for use

The tools were designed as a support to the step-by-step elaboration of results and to follow the incremental cycles of implementation of the TIS development process. Each tool carries its cognitive elements such as purpose of the tool, how to use it, which steps to follow and related techniques to be applied, which equipment/materials are necessary, how to document achieved results. The set of TIS tools included: conceptual database model table; matrix of data sources, users and typology of data; data sharing protocol; database model diagram; rules of acquisition, digitalization, and storing of data; rules for the elaboration of maps and layouts; metadata structure. The tools focus on roles each member of the team had and support interaction, participation, team-work throughout the process of implementation.



Fig. 30, 31, 32: TIS tools – encouraging participatory approach in developing TIS elements

Intranet provided accessibility to the relevant documents and materials during the process of implementation. Each member of the working team had its own accessibility with different permissions. The intranet provided structural platform for sharing support materials provided by consultants, documents produced by municipality working groups, etc. On the other hand forum was designed to share experiences between TIS municipality working groups on different topics during the implementation period. As a support in using the platforms TIS consultants developed guidelines how to use it.

#### 4 CONCLUSION

According to the presented cases and using the designed tool for measuring social capital development we can say that structural dimension was constant in all municipalities designed by mediating team and accepted by the municipality. The structural elements, according to the tool, covered all social capital dimensions: bounding, partnerships and linking, providing 'soft' infrastructure for the development of cognitive elements. Therefore, we can say that all municipalities had the same preconditions to develop cognitive glue in the process of data and information sharing through building trust, collaboration and collective action.

However, the process outcomes say different story. In the situations when cognitive holes showed up (such as lack of trust and collaboration) they were 'glued' by the authority figures on national and international level (UN – Habitat, Faculty, Ministries). Therefore, each municipality in the process which was mediated has achieved expected results, defined in the Project document. However, not all of them continued to work on TIS activities in municipality. The cases where this process continued showed high level of cognitive glue in the process which was mediated. The first was strong acceptance of the 'issue' for data and information sharing; the second was strong bonding dimension among the team during the previous process. The third was strong leadership from authority figure inside the municipality and the fourth high level of promotion of TIS activities in the municipality, on international fairs, etc. We can conclude that in this municipality the collective action developed from reactive to proactive and social capital was developed in all dimensions in different percentage.

Therefore, we can say that data and information sharing can be the platform for developing social capital if there is strong cognitive glue for this process. If we consider discussion in the previous chapters, Territorial information systems carries the cognitive element in its concept of the territory and if the process of its development is mediated from the top and strongly accepted on the bottom level it can be an instrument for developing social capital in municipality. The first precondition is that structural elements of social capital on all dimensions must be provided by the mediating authority. The second is that cognitive elements must be developed during the process inside the municipality such as building trust, collaboration and partnership also by mediating team through workshops, trainings, and support material.

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