

2016

# Transportation Abstracts

Second Annual International  
Conference on Transportation  
6-9 June 2016, Athens, Greece

Edited by Gregory T. Papanikos

THE ATHENS INSTITUTE FOR EDUCATION AND RESEARCH





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2<sup>nd</sup> Annual International  
Conference on Transportation  
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# Preface

This abstract book includes all the abstracts of the papers presented at the 2<sup>nd</sup> *Annual International Conference on Transportation, 6-9 June 2016*, organized by the Athens Institute for Education and Research. In total there were 36 papers and 38 presenters, coming from 21 different countries (Austria, Belgium, Brazil, China, Colombia, Croatia, Czech Republic, Germany, Ghana, Israel, Italy, Poland, Portugal, South Korea, Switzerland, Taiwan, The Netherlands, Turkey, U.K, UAE, USA). The conference was organized into ten sessions. As it is the publication policy of the Institute, the papers presented in this conference will be considered for publication in one of the books and/or journals of ATINER.

The Institute was established in 1995 as an independent academic organization with the mission to become a forum where academics and researchers from all over the world could meet in Athens and exchange ideas on their research and consider the future developments of their fields of study. Our mission is to make ATHENS a place where academics and researchers from all over the world meet to discuss the developments of their discipline and present their work. To serve this purpose, conferences are organized along the lines of well established and well defined scientific disciplines. In addition, interdisciplinary conferences are also organized because they serve the mission statement of the Institute. Since 1995, ATINER has organized more than 150 international conferences and has published over 100 books. Academically, the Institute is organized into four research divisions and nineteen research units. Each research unit organizes at least one annual conference and undertakes various small and large research projects.

I would like to thank all the participants, the members of the organizing and academic committee and most importantly the administration staff of ATINER for putting this conference together.

**Gregory T. Papanikos**  
**President**



**FINAL CONFERENCE PROGRAM**  
**2<sup>nd</sup> Annual International Conference on Transportation**  
**6-9 June 2016, Athens, Greece**

**PROGRAM**

**Conference Venue:** [Titania Hotel](#), 52 Panepistimiou Street, 10678 Athens, Greece

**Monday 6 June 2016**

(all sessions include 10 minutes break)

**08:00-08:30 Registration and Refreshments**

**08:30-09:00 Welcome & Opening Address (ROOM C- Mezzanine Floor)**

- Gregory T. Papanikos, President, ATINER.
- George Poulos, Vice-President of Research, ATINER & Emeritus Professor, University of South Africa, South Africa.

**09:00-10:30 Session I (ROOM B- Mezzanine Floor): Transportation Planning I**

**Chair:** Virginia Sisiopiku, Head, Transportation Engineering Research Unit, ATINER, & Associate Professor, The University of Alabama at Birmingham, USA.

1. \*Johanna Burbano Valente, Director of Psychology Department, Associate Professor, Pontificia Universidad Javeriana, Colombia. The Public Transport in Bogota: A Reading from the Subjectivity.
2. Roman Klementschtz, Senior Scientist, University of Natural Resources and Life Sciences (BOKU), Austria & Juliane Stark, Senior Scientist, University of Natural Resources and Life Sciences (BOKU), Austria. A Sustainable Development Analysis for a Market Penetration Scenario of Electric Vehicles with Range Extenders in the Stuttgart Metropolitan Area.
3. Omar Alotaibi, Ph.D. Candidate, Cardiff University, U.K. Potential Impacts of Introducing Public Transport and Travel Strategies in Riyadh City, Saudi Arabia.
4. Jeffrey Taub, Associate Professor, Maine Maritime Academy, USA. Why is America's Marine Highway Program Failing to Thrive?

**10:30-12:00 Session II (ROOM B- Mezzanine Floor): Operation and Safety**

**Chair:** \*Johanna Burbano Valente, Director of Psychology Department, Associate Professor, Pontificia Universidad Javeriana, Colombia.

1. Essam Radwan, CATSS Director, University of Central Florida, USA & Mohamed Alfawzan, Graduate Student, University of Central Florida, USA. Impact of Lengthening Change and Clearance Intervals at Signalized Intersections on Systems Performance.
2. \*Dietmar P. F. Moeller, Professor, Clausthal University of Technology, Germany, Isabell Alexandra Jehle, Master Student, Clausthal University of Technology, Germany, Valentina Fermanelli, Former Master Student, Università degli Studi di Camerino, Italy & Gulia de Santis, Former Master

Student, Universita degli Studi di Camerino, Italy. International Student Team Project in Modeling and Simulating Airport Transportation Operation.

3. Maciej Kowal, Assistant at Road and Bridge Chair, Lublin University of Technology, Poland & Slawomir Karas, Head of Road and Bridge Chair, Lublin University of Technology, Poland. Protection against the Animals Intrusion on Expressways in Poland.

**12:00-13:30 Session III (ROOM B- Mezzanine Floor): Urban Processes**

**Chair:** \*Marjan Mahdavi, Ph.D. Student, Politecnico di Milano, Italy.

1. Wenshu Li, Ph.D. Candidate, Wuhan Univeristy, China and Eindhoven University of Technology, The Netherlands, Harry Timmermans, Professor, Eindhoven University of Technology, The Netherlands & Ming Zhang, Associate Professor, University of Texas at Austin, USA. Crowdsourcing Public Participation in Urban Planning and Management for Small Towns.

**13:30-14:30 Lunch**

**14:30-16:00 Session IV (ROOM B- Mezzanine Floor): Transit, Infrastructure and Other Issues**

**Chair:** Youjun Tao, Professor, China University of Mining and Technology, China.

1. \*Slawomir Karas, Head of Road and Bridge Chair, Lublin University of Technology, Poland & Maciej Kowal, Researcher, Road and Bridge Chair, Lublin University of Technology, Poland. Mycenaean Bridges - In Situ Inventory and Static Analysis.
2. Yali Kuang, Professor, China University of Mining and Technology, China, Guangyuan Xie, Professor, China University of Mining and Technology, China & Youjun Tao, Professor, China University of Mining and Technology, China. Synergism of the Curriculum - MPPD and the Graduation Design to Train the Ability Analyzing and Solving Complex Engineering Problems.
3. \*Alexander Kolpakov, Research Associate, Center for Urban Transportation Research, University of South Florida, USA. Idle Reduction Practices of the U.S. Transit Fleet.
4. \*Marjan Mahdavi, Ph.D. Student, Politecnico di Milano, Italy, Sara Perotti, Assistant Professor, Politecnico di Milano, Italy & Angela Tumino, Assistant Professor, Politecnico di Milano, Italy. Antecedents of ITS Adoption in Intermodal Freight Transport Industry.

**16:00-17:30 Session V (ROOM B- Mezzanine Floor): Culture, the City and Education**

**Chair:** \*Slawomir Karas, Head of Road and Bridge Chair, Lublin University of Technology, Poland.

1. Francesca Guerrucci, Architect, University G.D'Annunzio, Italy. Water as Vehicle of Cultural Spread for Mediterranean Identity.

2. Ana Estevens, Researcher, CEG-IGOT, University of Lisbon, Portugal, Leandro Gabriel, Ph.D. Student, CEG-IGOT, University of Lisbon, Portugal & Isabel André, Professor and Researcher, CEG-IGOT, University of Lisbon, Portugal. Sounds of Protest: Music in Deprived Places.
3. Ana Medina, Ph.D. Student, Universidad Politécnica de Madrid - Goldsmiths University of London, U.K. Post-Revolution Urban Landscape. Transformation of Public Spaces after 2011 Revolutions.

**17:30-19:00 Session VI (ROOM B- Mezzanine Floor): History, Application and Management in Spatial Planning - Territorial Planning and Management**

**Chair:** Paul Claval, Emeritus Professor, University of Paris-IV (Paris-Sorbonne), France.

1. \*Sayed Sharaf, Researcher, Abu Dhabi Systems and Information Centre, UAE & Pere Serra, Lecturer, Universitat Autònoma de Barcelona, Spain. Charge Detection in Al-Ain Region.
2. \*Ana Peric, Post-doc Fellow, Swiss Federal Institute of Technology, Switzerland & Bernd Scholl, Professor, Swiss Federal Institute of Technology, Switzerland. Transnational Cooperation in Europe: The Example of Integrated Spatial and Transport Development along the Hamburg-Athens Corridor.
3. Paulo Irineu Barreto Fernandes, Professor, Federal Institute Triângulo Mineiro (Campus Uberlândia, MG), Brazil. Geophilosophy: Is There a Geographical Primacy of Thought?

**21:00-23:00 Greek Night and Dinner (Details during registration)**

**Tuesday 7 June 2016**

**08:00-09:30 Session VII (ROOM B- Mezzanine Floor): Urban Places, Transformation and Art**

**Chair:** \*Ana Peric, Post-doc Fellow, Swiss Federal Institute of Technology, Switzerland.

1. Isabel Andre, Professor and Researcher, CEG-IGOT, University of Lisbon, Portugal, Leandro Gabriel, Ph.D. Student, CEG-IGOT, University of Lisbon, Portugal & Ana Estevens, Researcher, CEG-IGOT, University of Lisbon, Portugal. Shadows and Lights in the City. Crisis Effects in Arts and Culture.
2. Olga Skoczylas, Assistant, Lublin University of Technology, Poland. Transformation of City Space and Housing Estates Associated with Changes in Lifestyle of Inhabitants.
3. Leandro Gabriel, Ph.D. Student, CEG-IGOT, University of Lisbon, Portugal, Isabel André, Professor and Researcher, CEG-IGOT, University of Lisbon, Portugal & Ana Estevens, Researcher, CEG-IGOT, University of Lisbon, Portugal. Visual Arts that Change and Challenge the City: Stencils in Lisbon, Portugal.

4. Lenka Zajickova, Ph.D. Candidate, Palacký University Olomouc (UPOL), Czech Republic & Vit Vozenilek, Professor and Head of Department of Geoinformatics, Palacký University Olomouc (UPOL), Czech Republic. Development of Population Mobility in Czechia in the Context of Transformation Processes at the End of the 20<sup>th</sup> Century.

**09:30-11:00 Session VIII (ROOM B- Mezzanine Floor): Freight and Logistics**

**Chair:** Isabel Andre, Professor and Researcher, CEG-IGOT, University of Lisbon, Portugal

1. Nikiforos Stamatiadis, Professor, University of Kentucky, USA & Adam Kirk, Research Engineer, University of Kentucky, USA. Simulation-Based Conflict Analysis for Left-Turn Phasing Choices. (Tuesday 7 June, 2016)
2. Serdjo Kos, Tenure Professor and Dean, Faculty of Maritime Studies, University of Rijeka, Croatia, Sinisa Vilke, Assistant Professor, University of Rijeka, Croatia & David Brcic, Research Fellow, University of Rijeka, Croatia. Redirection of the World Traffic Flow Far East - Europe via the Adriatic Sea.
3. Neven Grubisic, Assistant Professor, University of Rijeka, Croatia & Livia Maglic, Senior Research Assistant, University of Rijeka, Croatia. Optimization Process for Berth and Quay-Crane Assignment in Container Terminals with Separate Piers.
4. Dani Sabalja, Assistant Professor, University of Rijeka, Croatia. A Contribution of Advance Global Vessel Traffic Management System.
5. Pinar Gurol, Research Assistant, Piri Reis University, Turkey & A. Zafer Acar, Associate Professor, Piri Reis University, Turkey. Evaluation and Clustering of Maritime Trader Countries Competitive Power in Logistics.

**11:00-14:00 Educational and Cultural Urban Walk Around Modern and Ancient Athens (Details during registration)**

**14:00-15:00 Lunch**

**15:00-16:30 Session IX (ROOM B- Mezzanine Floor): Urban Places**

**Chair:** Nikiforos Stamatiadis, Professor, University of Kentucky, USA.

1. Nese Yilmaz Bakir, Assistant Professor, Erciyes University, Turkey, Hikmet Eldek, Assistant Professor, Erciyes University, Turkey & Umut Doğan, Assistant Professor, Erciyes University, Turkey. Housing Provision Systems and the Impact on Urban Development, the Case of Kayseri, Turkey.
2. Gustavo Rondon, Ph.D. Student, Université Catholique de Louvain, Belgium. Waterscapes and Cities in the Amazonie of Peru.
3. Yuzyil Nevin Aydin, MSc Student, Istanbul Technical University, Turkey. Place Attachment among Ethnic Minorities in the case of Sisli District.
4. Johnie Nyametso, Lecturer, Central University College, Ghana. Desecration of Public Monuments and Places: The Causes and Solutions.

**16:30-18:30 Session X (ROOM B- Mezzanine Floor): Special Topics II**

**Chair:** Serdjo Kos, Tenure Professor and Dean, Faculty of Maritime Studies, University of Rijeka, Croatia.

1. Moshe Barak, Professor, Ben-Gurion University of the Negev, Israel. Teaching Engineering in K-12 Education: The Role of Cognitive Knowledge and Problem-Solving Taxonomies.
2. Melita Milenkovic, Assistant - Chair of Transport Law and Economics, University of Zagreb, Croatia & Goran Vojkovic, Assistant Professor, University of Zagreb, Croatia. The Supervisory Role of the Ministry of Finance in the Process of Awarding of Concessions in the Republic of Croatia.
3. Chen-Yi Wu, Ph.D. Candidate, National Taipei University, Taiwan, Chen-Jai Lee, Professor, National Taipei University, Taiwan & Bo-xiu Jian, Associate Professor, Shih Hsin University Department of Tourism, Taiwan. Creative Tourism and Big Variation of Community.
4. Seong-Woo Woo, Director and Principal Researcher, Korea Testing Co., South Korea. Reliability Design of Residential Sized Refrigerators Subjected to Repetitive Random Vibration Loads during Rail Transport.
5. \*Jesus J. Lara, Associate Professor, The Ohio State University, USA. The Urban Design Studio Pedagogic Approaches to Urban Sustainability: Problem-Based Solutions from the Classroom to the Community.

**21:00-22:30 Dinner (Details during registration)**

**Wednesday 8 June 2016**  
**Cruise: (Details during registration)**

**Thursday 9 June 2016**  
**Delphi Visit: (Details during registration)**





**Omar Alotaibi**

PhD Candidate, Cardiff University, U.K.

## **Potential Impacts of Introducing Public Transport and Travel Strategies in Riyadh City, Saudi Arabia**

City authorities in developing countries now raise attention on sustainable transport systems by enhancing or introducing public transit services and related travel strategies. An example is Riyadh City, Saudi Arabia, which has witnessed a significant growth on car ownership and population. Current efforts to reduce the excess dependence on private cars involve the construction of six metro lines integrated with a bus network; the system will be in operation by 2018(ADA, 2013).

Against this background, this paper investigates the expected effects of the new public transport system and related interventions on Riyadh City including aspects of urban form, economic, environment, social norms and the Saudi culture.

The analysis is based on interviews conducted with transport experts and officials of corresponding authorities in Riyadh City. The results show that with the private car being the dominant travel mode, there exist no direct travel strategies to promote alternative means of transport. Also, results highlight that the city's urban form is perceived by interviewees as having the highest impact on the uptake of public transport. Interviewees also stated that there would be changes in travel demand and population density and more activities around public transport corridors and stations. Moreover, they feel that, the provision of public transport services in Riyadh will improve mobility, decrease travel time, and create more employment opportunities for Saudi society, so it would affect Riyadh City's economy positively and improve the environment. On the other hand, interviewees highlighted that these potential interventions will affect social norms and the Saudi culture in a long term. They added that there will be more social interaction with the introduction of public transport services since daily journeys is a part of the society's life and culture and will result in a qualitative move and closeness among the society culture.

**Isabel Andre**

Professor and Researcher, CEG-IGOT, University of Lisbon, Portugal

**Leandro Gabriel**

PhD Student, CEG-IGOT, University of Lisbon, Portugal

&

**Ana Esteves**

Researcher, CEG-IGOT, University of Lisbon, Portugal

## **Shadows and Lights in the City. Crisis Effects in Arts and Culture**

The present crisis in Southern European countries shows many crossed effects related to cultural and artistic dynamics concerning the transformations of urban culture and arts scenes. Some spaces decline while others resist by changing their paths and profile.

In recent years austerity policies decreased significantly the support to culture and arts and at the same time they contributed to reduce individual and collective demand of cultural goods causing the lifeless of many organizations and institutions. Nevertheless, in adverse situations, a significant number of artistic and cultural entities found new ways to carry on their activities, developing new visions, projects and practices as well as new resources.

Harvey (2010) stated that neoliberalism 'creative destruction' generates resistance and the exploration of possible alternatives. The author affirmed that alternatives "sought thereby to accomplish something akin to a passive revolution within the territorial logic of state power".

We argue that in Lisbon these apparently contradictory circumstances – crisis as a drawback and also as stimulus to newness – can produce new urbanities (Borja 2011) polarized not only by recognized institutions (as national museums), but also by the 3rd sector (as neighbourhood cultural associations) and the private sector (as arts galleries). Critical thinking supports the emergence of above mentioned new urbanities aiming to find alternatives and mobilizing imagination in order to recognize and implement novel forms of spatial transformation and appropriation. Nevertheless imagination it is not the only driving force of change. As referred by McDonnell and Tepper (2015) culture and arts recent dynamics combine different and often conflicting trends such as "competition from other forms of entertainment and media, technological change, shifting demographics, economic recession, decreased government funding, shifts in philanthropy, overbuilt facilities with high overhead costs, and the rising cost of artistic labour". If those factors are not taken into account

the process of spatial transformation and appropriation cannot be understood in its diversity.

Assuming those premises this paper mobilizes instrumental methodologies that put in evidence and discuss two categories of data: (i) the evolution of initiatives, publics and resources of museums and galleries from the public, private and non-profit sector; (ii) the programs of these entities during 2014. The analysis is focused in the metropolis of Lisbon. The main analytical goal is to find signs of change, namely the rise of new initiatives and their impacts. The exploratory work already done suggests a hypothesis to explore: the alternative side of culture and arts is becoming incorporated by cultural entities losing eventually their original significance but strengthen the attractiveness and democracy of institutions and organizations that some years ago were elitist spaces.



**Moshe Barak**

Professor, Ben-Gurion University of the Negev, Israel

## **Teaching Engineering in K-12 Education: The Role of Cognitive Knowledge and Problem-Solving Taxonomies**

This paper explores the content and methods of teaching engineering in K-12 education through the lens of educational taxonomies such as Bloom's taxonomy in the cognitive domain, the types of knowledge taxonomy, and the engineering problem-solving taxonomy. The term engineering deals with using mathematics and science for the design of artefacts and systems that answer human needs and volitions. Engineering is also strongly associated with problem solving and creativity. However, teaching engineering is a relatively new area in K-12 education, and exploring this school subject from the perspective of educational taxonomies could help in clarifying the objectives, methods and difficulties in teaching this subject to children. For example, an analysis of the literature and research findings shows that fostering students' higher-order capabilities such as design and problem solving in engineering and technology cannot take place in isolation from specific knowledge. Instruction should strive to develop a certain degree of factual, procedural, conceptual and meta-cognitive knowledge by engaging learners in assignments of increasing cognitive levels, from simple to complex ones. These conclusions could contribute to the efforts of making engineering and technology a core component in the overall curriculum.

**Johanna Burbano Valente**

Director of Psychology Department, Associate Professor, Pontificia  
Universidad Javeriana, Colombia

**The Public Transport in Bogota:  
A Reading from the Subjectivity**

In Bogota, Colombia, since 1995 a series of the public transport interventions such we BRT systems and cycle-paths among others have been taken place. The main aim of these interventions has been related to the improvement of city's mobility and the citizens' quality of life. Several studies have been carried out analyzing changes in logics, perspectives and behavior as result of these interventions. An interdisciplinary research team composed by historians, psychologists, lawyers and engineers has developed a comprehensive approach to the problems that commuters confront in their daily life in a city in continuous transformation. As a result, a model, which comprises three levels of analysis, has been developed. This paper presents the model proposed and its characteristics. The macro level considers, for instance, the public policy as regards the transport sector and the features of the transport system adopted by the city planners. The meso-level is concerned with the organizational logics of transport companies that are part of the transport system. Finally the micro level analyses the interaction of particular social actors in organizational scenarios. Samples of the application of the model to the transport system in Bogota will be presented to illustrate the explanatory potential of the proposal.

**Ana Estevens**

Researcher, CEG-IGOT, University of Lisbon, Portugal

**Leandro Gabriel**

Ph.D. Student, CEG-IGOT, University of Lisbon, Portugal

&

**Isabel André**

Professor and Researcher, CEG-IGOT, University of Lisbon, Portugal

## **Sounds of Protest: Music in Deprived Places**

In the contemporary cities, arts play an important role in deepening processes of social cohesion, including dialogue enablement and the strengthen of bridging capital among diasporas. Furthermore it has been considered especially relevant for the promotion of individual and collective self-esteem, to the (re)construction of local and social identities and to strengthening the sense of place belonging. Artistic activities can become a means to counter or reverse the reproduction of inequality and disadvantage, constituting a stimulus to increasing personal and collective confidence, collective learning and critical thinking and contributing towards the elimination of the negative connotations associated with certain communities and places. In deprived areas of the city, where poor immigrants are overrepresented, the artistic production has the potential to help build bridges and to facilitate encounters between different populations sharing the same urban space.

Certain city neighbourhoods, like Cova da Moura in Amadora municipality, experience systematic disadvantages. Despite the social and cultural inequalities that beset this social domain, arts remains one of the main pathways to promoting social and urban cohesion, particularly via the development of competences related to creativity, citizenship and interculturality. In the context of Cova da Moura, the music, especially de migrant music from Cape Vert can also be looked at from a political significance point of view, as an expression of cultural activism, contestation and resistance. Departing from this framework, we will discuss and explore how music making, performance and consumption take shape within urban dynamics influenced. For that purpose, it will explore how Cova da Moura residents use diverse musical practices to express meaningful messages to the wider society and to contest the conditions of their inclusion (or lack thereof). Some key questions should be answered such as: what are the main messages of the musical pieces? Who are the authors? What kind of musical competencies do they have? And links with other musicians in the neighbourhood, in Portugal or abroad? What means

this musical scene to the residents? Information for this purpose come from interviews and focus groups sessions.



**Paulo Irineu Barreto Fernandes**

Professor, Federal Institute Triângulo Mineiro (Campus Uberlândia,  
MG), Brazil

### **Geophilosophy: Is There a Geographical Primacy of Thought?**

This paper presents results of studies on the concept “Geophilosophy” introduced by Deleuze and Guattari, in the text “geophilosophy”, in the book “What is Philosophy?”. With this term, the authors highlight the immanent character of philosophy, drawing attention to the geographical elements that have influenced and influence the construction of thought, as the relationship of humans with the territory, with the ground, with the place, and with Earth. Deleuze and Guattari say that the first philosophers created their own approach to nature, treating it by concepts and not by figures, as does, for example, the myth. The concept is a “bridge” between the relative and the absolute, and the thought is not a direct link between subject and object, but is done in relation with the territory, with the place. For Deleuze and Guattari the creator of the term “geophilosophy” was Nietzsche, when he sought to enumerate some common social aspects in different countries. Thus, philosophy would be, first of all, a geophilosophy, and the thought was born in the relationship between the thinking subject and the geographic features: the place, the territory, the landscape, and Earth. However, the term “geophilosophy” took on multiple meanings, among which are: the concept of valorization of the planet Earth, as highlighted by Caterina Resta (Italy), criticism of globalization, made by Milton Santos (Brazil) and the notion of geophilosophy as an investigative method, as presented in the “geophilosophical” notes of the prologue to poem “On Nature”, by Parmenides of Eleia, drafted by Gabriele Cornelli, which this study discusses more broadly.

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## **Visual Arts that Change and Challenge the City: Stencils in Lisbon, Portugal**

Visual urban art have largely dominated western cities throughout history. While these images express a certain idea of domination on the context in which they arise (evolving from prehistoric times to the Renaissance), today they combined new skills and knowledge of contemporary art movements with a more proactive attitude of social-political awareness and persistent challenge of city order. Thus, visual artists have been changing and transforming some public spaces in living canvases as they spray of an aerosol can using stencil templates. This artistic technique appears as an alternative, simple and direct form of communication, because it's easy to replicate and have a global circulation, as an example of the real democratization of artistic expression, as noted by its acceptance within the art market and artistic institutions. Nowadays, in this process, the international mobility of artists continues to play an important role in the exchange of imaginary, techniques and experiences on how visual art can effectively change and challenge urbanity.

Like other cities affected by political austerity due to the recent global crisis, Lisbon (Portugal) has been collecting several examples of this visual urban art mainly related to social and political tensions. The city walls are filled with important messages that, on one hand, enhance the fight against the shrinking of the welfare state or decline of social rights and, on the other hand, point out important issues and flaws related to planning and urban regeneration, and also stands out as an important alternative medium of mass communication, for example related to the consumption of some public goods.

This research intends to provide insights of a collection of stencils urban art in Lisbon, using detailed content analysis applied to a large database we have prepared, based on photographic inventory. The topics for analysis includes location in the city and in the neighborhood, the image meaning, words, colors, size, etc. Based on this information, the main focus concerns its role in urban transformations in contemporary cities, namely the discussion of key questions as: What are the relationship between these street artists and most active social

movements? How municipal authorities are dealing with this urban art? What are the most listed themes in these stencils and what is the impact that they have in real Lisbon transformation?

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## **Optimization Process for Berth and Quay-Crane Assignment in Container Terminals with Separate Piers**

The objective of research is container terminals with two separated piers within the same port basin. The main problem is how to optimize the berth and crane allocation to minimize overall service time for vessels and to improve utilization of terminal assets.

Optimization of sea-side subsystem of container terminals combines three typical operational problems: ship-to-berth allocation, quay-crane to ship assignment and quay-crane scheduling. Due to their characteristics, they have high correlation and should be considered together. The problem become even more complex in Container terminals with different layout where quays and berths are not placed in the line or where berths are situated in different piers.

In this paper a specific methodology is presented with focus on optimization process. This process consists of tri stages namely: 1. initialization, 2. allocation, 3. harmonization. The core of the problem solutions in the stage 1 is execution of crane scheduling problem according to cargo volume and container distribution on the vessel. The result at the end of this stage is three operational scenarios that set out two key variables: duration of the handling process and the number of cranes required.

According to the results from stage 1, ship-to-berth assignment and allocation of cranes are executed. The practical approach implemented here, targets to high prediction, reliability and efficiency of the operational plans to satisfy the requirements of the shipping companies. This approach requires fixed number of quay-cranes during the handling operations and high utilization rate of the cranes. There is no preference involved in the berth or pier choice. Therefore, throughout the optimization process this philosophy is followed.

The results of the overall optimization have been shown on the few examples with different terminal layout and number of resources.

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## **Water as Vehicle of Cultural Spread for Mediterranean Identity**

In the Mediterranean, the barriers break down and the stories are mixed. Instead of the land where the journey, migration, the passage is prevented by continuous borders, the sea shows that the notion of identity is a concept that does not understand the boundaries, but lets the differences and allows the meeting. The Mediterranean has historical, cultural and economic identity resulted from substantial and almost continuous contamination of all the countries bordering on its shores. In this large lake, in more than three thousand years of history, knowledge and cultures, techniques and traditions, trades and political arrangements met and clashed so much that the comparative reading of the territories that surround it leads to constant references. Ports and harbors were, for centuries, the witnesses of the birth, proliferation and vitality that the people of this area have always shown. The ports have been the point of contact land-sea, as well as the common denominator between the protection of the essential differences and promotion of identity factors unifying. Currently the tracks of the land have supplanted sea routes and the ports, places of exchange and contamination of mergers, were excluded from the fundamental role they had in the past. The earth and the water are removed. There should be a stable dialogue, constructive and planning among all countries bordering the Mediterranean and promote actions that call into play land and water, ports and cities of the Mediterranean to tackle the empty silence that currently imposes. The identity is not given once and for all, but is the subject of becoming: it builds in the meeting and may be able to exceed the purely economic logic of alliances. From the sea and the sea you can build a new future.

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## **Evaluation and Clustering of Maritime Trader Countries Competitive Power in Logistics**

International trade and logistics are two important factors that define the countries economy's growth rate and wealth. Continuous evolution of production processes at an international level, the globalization of markets and ever-greater competitiveness requires effective management of supply and distribution chains (Tsamboulas and Tatsi, 2010), and at that point logistics services become an important part for gaining strategic competitive power.

One of these logistics services is transportation, and maritime transport is most preferred transportation mode in global trade, which provides cheaper transport, and high volume cargo transportation. Approximately 55% of world trade (value based) is transferring through maritime transportation. According to literature, ports, which are an important complementary of international trade and global supply chain (Robinson, 2002), are integral part of maritime transport due to the services that they provide.

The World Bank evaluated countries quality of port infrastructure according to business executives' perception of their country's port facilities, and also World Bank evaluated countries logistics performance based on efficiency of customs clearance process, quality of trade- and transport-related infrastructure, ease of arranging competitively priced shipments, quality of logistics services, ability to track and trace consignments, and frequency with which shipments reach the consignee within the scheduled time.

At that point, gaining competitive power for countries in global trade requires the knowledge of which qualifications needed to become a global actor. Our aim is clustering countries according to logistics performance and international trade volumes within port infrastructure. In this paper, needed criteria to make difference in global trade with logistics power for a country determined with clustering analysis according to countries logistics performance index, quality of port infrastructures and international trade volumes. And competitiveness of the countries is evaluated according to that determined criteria.

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### **Mycenaean Bridges - In Situ Inventory and Static Analysis**

The article is the result of a short vetting combined with an equally brief inventory of two bridges in the area Mycenaean Arkadiko in the Peloponnese during the time of *2nd Annual International Conference on Transportation, Athens 2015*. Bridges are considered to be the oldest existing in the world. Conducted site visit was preceded by studies of literature, the result of which showed that in the field of Mycenaean construction, building practice there is very little known. It seems that even the superficial inventory there is a significant contribution to the knowledge of the bridges. The paper presents the results of the simplest static analysis which indicated weak points of existing construction, wherein they are the result of changing static scheme starting from the cantilever one into the somewhat random, but necessary in terms of mechanical, the scheme of cantilever-arched carrying structure. It was tried to restore a Mycenaean Bridge erection technology. However, in this respect it is not possible to talk about the success of the proceedings. Hence, it is only a test. Bridges are Mycenaean cultural heritage of humanity as well as technical heritage, a symbol recently supporting the concept of sustainable construction. Paradoxically, there is no sufficient knowledge about them.

Mycenaean Bridges are understood as those bridges built during the Mycenaean culture period, which dates back to the time of middle period bronze. This is associated with Crete (Knossos), starting from 3000 BC. The end of Cretan culture, also called the Minoan, is connected with the eruption of Thira (Santorini) island, which took place in the fifteenth century BC. After that, in this region of the world, there was a predominance of Mycenae (Μυκῆναι), which ended around 1000 BC with the fall of the Mycenaean civilization.

From this period today still exist two stone bridges made of cyclopean boulders. In the neighbourhood, ca 10km, is localized the Tirins fortress which was made in the same technology as the discussed bridges. The constructional solutions there applied provide a basis for comparative research.

Construction material is natural stone marble boulders with an average size of about 1m.

The bridges were labelled as the Bridge A and the Bridge B. They are structurally different from each other.

The present technical state of the bridges is good. With careful observation one can distinguish the original elements of the structure. Especially one of them is very interesting. This is the existence of a horizontal bottom foot plate - with minimal slope - that causes thresholds at the exit of the bridges.

It is worth mentioning that despite the passage of several millennia running riverbeds has not changed.



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**A Sustainable Development Analysis for a Market  
Penetration Scenario of Electric Vehicles with Range  
Extenders in the Stuttgart Metropolitan Area**

The EVREST project is a transnational European Project carried out in the framework of the ERA-NET Electro mobility+ call, including partners from Germany, France and Austria and was finished in 2015. The main idea of this project is to study how Electric Vehicles with a Range Extender (EREV), a small internal combustion engine, could match the different usage patterns and what would be the impact of such a solution. Electric vehicles with range extender would not be limited to urban trips. Occasional long distance trips would be possible and people living in low density areas could also be concerned. Electric vehicles with range extender are expected to be an effective solution to cope with pollutant and noise emission in urban areas and the demanded vehicle range by the potential users. The approach in EVREST takes into account the users' mobility needs collected in user surveys. A methodology to virtually design a set of possible EREVs that fulfil the requirements in terms of range and performance has been carried out. Concerning the environmental study, a Life Cycle Assessment that consider both the production and use phase of the proposed EREVs and of the reference vehicles - gasoline and Battery Electric Vehicles (BEV) - has been conducted. For a more global evaluation and market projection at horizon 2025, a set of indicators for the development of implementation scenarios was developed based on a car purchase decision model. Simulations of these scenarios to define the impacts on mobility and grid are conducted using a microscopic description (MobiTopp model) of cars and users in Stuttgart metropolitan area as well as a simulated grid with PERSEUSNET-TS model. The mobiTopp simulation results show EREVs are used rather similar to conventional vehicles and have a different use profile than BEVs. Technical, environmental, and social assessments were done within the project and results fed the Sustainable Development Analysis (SDA). Following the principle of a multi-criteria analysis, indicators and their contribution towards a sustainable development

were determined. The sustainable development analysis includes indicators of economic (energy consumption, employment effects), social (traffic safety, mobility cost) and ecological aspects (noise, global warming, primary energy from non-renewable resources, acidification potential, eutrophication potential, photochemical ozone creation potential). Especially in the field of economic aspects (energy consumption, employment) there are significant differences between the reference scenario and the implementation scenario. The "green" reputation of electric mobility is not clearly reflected, as manufacturing BEVs and EREVs cause greater environmental pollution than producing conventional cars. In terms of social aspects there are hardly any noticeable differences between the scenarios and only small differences for the indicator mobility cost. However, the overall SDA indicator shows a positive contribution towards sustainability.

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**Idle Reduction Practices of the U.S. Transit Fleet**

In an effort to reduce energy consumption and greenhouse gas emissions many transit agencies in the U.S. have adopted alternative fuel vehicles or implemented idle reduction technologies and policies. Unlike alternative fuel technologies that often require significant up-front investment in vehicles and infrastructure, the strategies that focus on minimizing vehicle idling time can be implemented with no or little investment.

While the use of idle reduction on public transit vehicles is not as common as in the trucking industry, transit application has a great potential for cost savings and environmental benefits. Even a modest reduction in idle time of transit vehicles can offer significant reductions in petroleum consumption nationwide, provide tangible fuel cost savings for transit fleets, and generate public health benefits. Unnecessary idling can be reduced by installing specialized equipment on board of transit vehicles, or by implementing idle reduction policies aiming to alter vehicle operators' behavior.

The survey of the 48 U.S. transit agencies, conducted by the Center for Urban Transportation Research, showed that environmental concerns and reducing fuel costs were the two most important reasons for reducing idling by the U.S. transit fleets, followed by reduction in engine wear and other factors. Transit agencies view nature of fleet operations as the most important obstacle for implementing idle reduction, followed by the lack of understanding of the impact of idling, cost of idle reduction devices, and the lack of cooperation from employees.

The survey identified the preferences of the U.S. transit agencies regarding the types of idle reduction technologies and policies. Over 61.0 percent of agencies that reported using idle reduction technologies, use automatic engine shut-off devices, while 15.4 percent of the surveyed agencies employ direct-fire heaters to reduce vehicle idling. Shutting down vehicle engine after 3-5 minutes of idling is the most popular idle reduction policy implemented by over 60.0 percent of the surveyed fleets. Almost one third of the agencies reported limiting engine warm-up to 5 minutes, while 20.8 percent of the fleets rely on improvements in vehicle queuing and dispatching as a strategy to reduce idling. Transit fleets that implemented idle reduction technologies or policies, save an average of 165.6 diesel gallon equivalents, or \$507, per year per vehicle.

The fact, that over half of the surveyed agencies were not aware if their state of local jurisdiction offered any idle reduction incentive, reflects the lack of knowledge on the part of transit fleets. Educating transit fleets about the availability of state and local incentives may be useful for encouraging wider adoption of idle reduction practices.

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## **Redirection of the World Traffic Flow Far East – Europe via the Adriatic Sea**

Natural geographic directions – cargo flows represent the shortest natural traffic route connecting origins and destinations. When redirecting the world's traffic flow, these directions become the most important advantage only when preconditions of provision of competitive technical, technological, organizational and economical services on the specific traffic route are satisfied. The basic aim of the paper is the analytical elaboration and scientifically founded necessity for the redirection of the geotrafic flow from the Far East to Europe. Instead of destination in northern European ports (such as Antwerp, Rotterdam, Amsterdam and Hamburg) – the northern traffic flow, the flow should have to be redirected through the Adriatic sea to the ports of NAPA (North Adriatic Ports Association), that are Ravenna, Venice, Trieste, Koper and Rijeka. This route represents southern traffic flow. Specified redirection of above mentioned flows shortens the sea route between two continents for approximately 2130 nautical miles, while the land route is shortened for approximately 280 kilometres, relative to the reference destination in the center of Europe (e.g. Munich). Apart from shortening, emissions can be significantly reduced in all related transport branches, especially in maritime transportation; emission reduction for more than 10% per one TEU. The proposed redirection of elaborated route represents reasonable contribution to sustainable transportation improvements.

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## **Protection against the Animals Intrusion on Expressways in Poland**

The aim of the article is the protection against the animals' intrusion on expressways in Poland both from the point of view environment protection as well as road traffic users.

On the basis of police statistics the animal mortal cases achieved 30 thousands accidents. This is significant number of potential car collisions and threats also for car users.

The traffic increase on Polish roads during the last 25 years has forced the development of road infrastructure on Polish territory. The extension of the road network in Poland was an essential element of economic growth, in which an important element is road transport. Lying on the transit routes E-W, N-S, Poland for several years recorded a steady increase in the volume of materials transported by Lorries and indicators of transport performance.

The road network of national and international importance in Poland still does not reached the desired level of service comfort. Polish roads are statistically qualifying as the most dangerous in the EU.

Together with the increase of road traffic the safety must be ensured. The extension of the road network is one of the options to improve driving comfort and safety.

A steady increase in traffic, and constantly developing and growing road network, also contribute to the fragmentation of the natural environment. The construction of new roads and existing roads comfort parameters lifting, divides the existing ecosystems, crossing ecological corridors and corridors of animal migration.

Animals crossing the road create a traffic safety hazard. They often become perpetrators of dangerous incidents, in which they most likely die. Repeatedly in these accidents are killed or injured people.

In the case of expressways and motorways the only way, to effectively protect users against traffic incidents with animals is a full fencing of roads and the construction of new animal transitions.

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### **Synergism of the Curriculum - MPPD and the Graduation Design to Train the Ability Analyzing and Solving Complex Engineering Problems**

In the requirement of the engineering graduate in China engineering education, there are many items related to the complex engineering problems.

For training the ability of students analyzing and solving complex engineering problems, the curriculum—MPPD (mineral processing plant design) united the graduation design utilizes the various teaching methods and elaborately designs the training system, including “the model of less teaching and more practice, two loops, and three steps”. In the classroom teaching step, the focal point is to make students learn and master the theory of the complex engineering design, understand the relation of the mineral processing with the society, environment, and sustainable development, and comprehend the technology standards and norms. In the curriculum design step, the focal point is to train the students’ the basic skills of mineral processing plant with a series of practice about calculating and drawing design. In the graduate design step, the students accomplish a set of preliminary design of a plant independently, and undergo whole process of designing a large scale modern mineral processing plant from data analysis to blueprint drawing and economic evaluation, thus, their abilities of analyzing and solving complex engineering problems, designing complex industry system, using the design tools and norms, and the communicating in oral and written were improved substantially.

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## **The Urban Design Studio Pedagogic Approaches to Urban Sustainability: Problem-Based Solutions from the Classroom to the Community**

The urban design studio and university-community engagements have multiple goals. They include increasing university responsiveness to local needs, stimulating real world change, and preparing students to effectively address complex social challenges (Bourner 2010, Forester 1999). However, such approaches are complicated by a variety of factors including stakeholder expectations, power imbalances, and conflicting goals between educators and community members (Mansuri and Rao 2004). While the benefits of service learning programs to universities are well-documented, the experiences and benefits of such higher education partnerships to community participants is not as well-known (Netshandama 2010). Successful engagements seem to require community involvement and decision-making authority at every phase, mutual accountability and trust (Winkler 2013). This paper presents a series of case studies of community engagement and neighborhood empowerment in the development of a collective sustainable urban design plan/vision for inner-city neighborhoods. These neighborhoods are located in Columbus, Ohio and they have seen tremendous decline in population and economy over the past years.

The research team was challenged to ensure that the strategic vision was representative, and included the voices and perspectives of previously marginalized residents. Accordingly, a comprehensive and multi-scale (house, block, neighborhood, city) approach to outreach and engagement was developed. Additionally, a series of educational workshops and outreach activities were conducted that involved different segments of the population and diverse community groups in the identification of development priorities, a neighborhood health assessment, and education and assistance for green home rehabilitation.

The project findings show the value of mutual learning and education between community and higher education partners. Inner-city residents have diverse interests, wants, and needs that span many generations. Some of the challenges are acute, but all are interconnected, making it difficult to prioritize. While the project activities and documents reflect a community vision, there is ongoing need for participatory approaches where knowledge and solutions are produced and shared among everyone involved to provide guidance for future development.



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## **Crowdsourcing Public Participation in Urban Planning and Management for Small Towns**

With the rapid development of network and technology, information and communication technology offers new opportunities and potentials of public participation in urban planning and management. However, in the stage of the all-round accelerated urbanization in China, construction level of small towns is far behind the big cities subject to economic, technology and infrastructure conditions. In order to narrow the gap, we need to develop suitable technology of smart planning and management for small towns, using relatively low-cost investment and maintenance modes. Crowdsourcing with the main superiorities of low-cost production and open innovation has attracted more and more attention, widely used in many fields. An increasing number of mobile applications aim to enable public participation by harnessing contributions from residents armed with mobile devices. This paper summarises the application model and the strategies behind crowdsourcing can heavily influence E-public participation, and then put forward the applications in urban planning and management. Our findings provide urban planners and managers with a better understanding of smart mobile crowdsourcing features, and explore a path of smart planning and management technology for small towns.

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## **Antecedents of ITS Adoption in Intermodal Freight Transport Industry**

Despite rapid acceptance and growth of ICTs and their benefits for business processes, intermodal freight transportation companies face challenges in ICT adoption including low compatibility, lower level of management support and insufficient performance expectancy. These problems prevent companies from thoroughly deploying the ICT while the benefits of being proactive in Intelligent Transportation Systems (ITS) adoption as a new technology are largely documented. We study the antecedents of ITS adoption in intermodal freight transport companies on both the level of company and manager. This is important because the uptake of recent ICT advantages in the intermodal freight transport arena seems slow and the evidence on the determinants of such posteriori acceptability of ITS is limited in current applied ITS studies. We present a framework based on a critical analysis of relevant literature that identifies four broad categories of environmental, organizational, technological and individual characteristics, and show how these categories inform the decision of both companies and managers to adopt ICT in intermodal freight industry. This first and new adoption framework adoption draws on theoretical perspectives in Technologic, Organization and Environmental (TOE) theory and Unified theory of Acceptance and Use of Technology (UATUA). We further discuss the implications of this research for academicians and practitioners.

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## **Post-Revolution Urban Landscape. Transformation of Public Spaces after 2011 Revolutions**

New York - Zuccotti Park, Cairo - Tahrir Square, Istanbul - Gezi Park, London - St. Paul' Cathedral, Madrid - Puerta del Sol; all these and more revolutions and places showed the world, the power that people and public spaces have in societies. Unlike previous revolutions, these were germinated in the digital sphere and spread with such intensity that the entire world was connected in its plazas, squares and streets simultaneously. This is the moment that changed the dynamics of the future city.

After these revolutions took place in both physical and virtual public space, local governments were conscious of the power these events can have. Soon, city councils started transforming the image of cities by selling public spaces to private investors. This is a strategy that already existed but has been pushed faster and wider since 2011. Planning departments from city councils became suspects and mediators, public assets have been quickly privatised and these cities face a rampant land speculation.

In cities like London, New York, Cairo, Rotterdam, etc., these privately owned public spaces share a common urban regulation scheme. This is a model that intends to be replicated in cities around the world focusing on aesthetics, safety, advertising, and shopping, besides a list of banned activities within these spaces. As a result, identity of local communities, traditions and image of the city have been replaced by a catalogue of homogeneous spaces.

Patterns of ownership and control based on values of private property are so inflexible that even public attention can do little to shift them. For spaces to be public, people who talk about it, use it, reimagine it must tie it to public life - law, speech, representation, policy, distribution, economics. These privately owned public spaces use design as a way of considering, representing, and constructing relationships between people and space in a way that they can control both of them by reforging these connections.

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## **The Supervisory Role of the Ministry of Finance in the Process of Awarding of Concessions in the Republic of Croatia**

According to the Croatian Concessions Act Ministry of Finance has a significant role in the process of awarding of concessions. This role can be classified into 3 groups. The 1st case takes into consideration when the Ministry of Finance has the right to appoint its officials in the commission in charge of awarding of concessions. The 2nd case refers to the situations where the Ministry of Finance receives regular reports from the concession provider and may intervene in case if it notices irregularities and the 3rd case refers to the situation when The Ministry of Finance plays an active role in giving approvals related to the concession. Croatian model of administrative contract is not drafted, therefore within concessions appear highly specific forms of control, which are unusual in current legal practice and not well described in the literature in the Republic of Croatia. Here are not taken into consideration any classic forms of inspection and administrative supervision, because those include monitoring of economic aspects of the concession relationship. Supervision of administrative contracts can not be viewed only under administrative procedures since it is neither administrative control nor inspection control

Therefore, we believe it is necessary to explain many roles of the Ministry of Finance in the process of awarding of concessions and supervision of concession agreements in the Republic of Croatia and possible changes in the legislation in order to be able to bring a new model for the establishment of the Committee based on external experts to carry out transparent work outside the supervision of the Ministry of Finance, which are less prone to corruption. One of the main principles of the EU, and that is the principle of transparency would then be satisfied with a new model in which the external experts would appraise the procedure of awarding of concessions in The Republic of Croatia.

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### **International Student Team Project in Modeling and Simulating Airport Transportation Operation**

Transportation is an area of interest for which models have been developed and implemented to monitor and control the essential impacts of constraint in transportation systems. Thus, transportation analysis concentrates on planning, safe operation, performance and evaluation of transportation systems and the required infrastructure including the respective economic and public policy and environmental aspects. A relevant environmental aspect in transportation is the awareness being more ecological, effective and flexible to handle the volume of people and cargo and freight projected worldwide. To achieve this goal the existing transportation chains must be improved cost effective and ecological sustainable connecting existing modalities in an innovative way making each of which more efficient. As part of the international study program in transportation international student team projects are conducted allowing students running, and evaluating transportation scenarios. The participating international students develop plans and procedures for as part of their transportation project embedding measurements, data processing and statistical methods. Moreover this approach allows collaborative student work at an international level, independently of time and location. This student team project in transportation focus on modeling and simulating the operation on the airport surface which include those at gate areas, ramp, and taxiway and runway systems, strongly influenced by terminal-area operations. The different components of the airport system have aircraft queues associated with them and interact with each other. The cost per unit time spent by an aircraft in one of these queues depends on the queue (scenario) itself; for example, an aircraft waiting in the gate area for pushback clearance predominantly incurs flight crew costs, while an aircraft taxiing to the runway or waiting for departure clearance in a runway queue with its running engines incurs additional fuel costs, and increasing surface emissions. The paper shows the derived models and results for a real airport analysis.

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## **Desecration of Public Monuments and Places: The Causes and Solutions**

The monuments and public spaces of Accra have become the platforms, or rather the notice boards of advertisement companies, churches and politicians to mention but few. This is gradually turning such national assets into monumental junkyards which leave visitors to the country with the first impression and memories of a country where the citizenry are indisciplined and lawless. This is because unlike in the developed countries where perpetrators of such acts use graffiti and artworks which are very difficult to trace to the culprits for fear of prosecution, the direct opposite is what happens in Ghana. The offenders here boldly display their faces, contact addresses, telephone and other personal information yet the police and city authorities look on as if it is alright to behave the way the wrongdoers do. In their desperation, the city authorities have resorted to painting some of the monuments with the national colours to deter people from using them as billboards. This research is intended to make a significant contribution to knowledge by unravelling the effects of ignorance, blatant disrespect of city by-laws and the non-enforcement of those laws could have on the image of a country. This raises the question: "to what extent are the desecration of public monuments and places due to ignorance, obvious disrespect of laws governing such places and the non-enforcement of the laws attributable to the rapid rate of public assets' vandalism?" In order to address the question, this study will use a mixed-methods research approach to collect and analyse data on the causes of the problem and make recommendations about how best to eradicate the predicament and restore such places to the glory they deserve.

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### **Transnational Cooperation in Europe: The Example of Integrated Spatial and Transport Development along the Hamburg-Athens Corridor**

As defined by the European Commission, the corridor Hamburg-Athens is one of the core European transportation axes. However, this corridor is not only of European importance – it coincides with the migration route and is one of the key areas for international, mainly Chinese, investments in transportation hubs and lines, such as Piraeus port and Balkan railway lines. Such global issues makes the Hamburg-Athens corridor a key strategic area in Europe. The paper poses the thesis that only transnational cooperation can improve the development of the corridor, particularly in terms of integrated spatial and transport development. Since the paper presents the results of the initial phase of the European project on transnational cooperation in the domain of integrated spatial and transport development along the Hamburg-Athens corridor, the overview of the results is given as follows. Firstly, the paper presents the main trade, economic and demographic statistic indicators in order to clarify the strategic position of Europe in transcontinental relations. Secondly, the major findings of the European documents on transnational cooperation are briefly given in addition to the overview of trade, economic and demographic parameters relevant for the countries along the Hamburg-Athens corridor. The overview of the current state and future development in the field of transport (rail, road and waterway) and spatial development (i.e. strategic areas) is particularly stressed. Finally, the close interaction between transport and spatial development in the cities along the corridor is presented. For this purpose, some of the positive examples of integrated spatial and transport development, such as Hamburg, Berlin and Vienna, as well as some less successful cases as Budapest, Belgrade and Athens are discussed. Such a multi-scalar perspective is believed to provide a better examination of the current situation. Moreover, it will briefly give a hint on the dynamics of transnational cooperation (in broader terms), as well as the cooperation process among many stakeholders from various domains, mainly transportation and spatial planning (in narrow terms).

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&

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## **Impact of Lengthening Change and Clearance Intervals at Signalized Intersections on Systems Performance**

Traffic signal timing continues to be a critical building block for traffic mobility in urban areas. The delicate balance between efficiency and safety due to extending the change and clearance intervals has been of interest to researchers and practitioners. In this research, new signal timing standard, adopted by the Florida State Department of Transportation (FDOT) on a number of signalized intersections, is investigated. In order to evaluate the impact of lengthening the change and clearance intervals on the individual intersections and the network's performance and safety, this paper investigated the before, after implementation of the proposed signal timing systems along different corridors. Traffic engineers designed the new signal timing based on the Institute of Transportation Engineers (ITE) that uses kinematic equation for calculating the vehicle clearance interval and change period.

The new design standards of change and clearance intervals are intended to minimize the dilemma zone size and the red light running (RLR) frequency.

A number of signalized intersections along three corridors during three periods were investigated. Synchro 8 was utilized to simulate the signalized intersections in three different signal-timing categories during three-time of day plans. The simulation's criterion was based on three traffic parameters to evaluate each signal timing performance and how the signal pattern 2 and 3 differ from the base signal timing (pattern 1).

Generally, it can be concluded that the delay and  $v/c$  ratio of signal timing pattern 2 and pattern 3 along the three arterials are significantly different than pattern 1 during the three times of day plans. Additionally, the 95% percentile queue length of pattern 2 was found significantly different than pattern 1 during midday plan along the three corridors while pattern 3 was found significantly different than pattern 1 along SR 50 at 90% confidence interval during midday and PM period only. However, P2 vs P3 was found significant only in the  $v/c$  ratio along the three corridors during the three time of day plans.

Investigation's results of signal timing impact on corridors were found significant. Simtraffic, which is a tool of simulation, tested the



signal timings categories. It was found that prolonging the change and clearance intervals significantly improved the total delay and increased the traveled time along the studied corridors during the three times of day plans.

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## **Waterscapes and Cities in the Amazonie of Peru**

In the last 50 years, the population growth of urban areas has increased significantly in Latin America. While this growth is mainly concentrated in coastal cities, places that were less populated before and even misperceived as uninhabited, as the Amazonia, also present an urban population increase.

The cities of Lamas and Santa Maria de Nieva belong to the network of Peruvian northern cities: they are located in a transverse axis connecting the coast (Piura, Chiclayo) with the lower Amazonia (Iquitos).

Taking into account the characteristics of land occupation, using cartographic sources (maps and satellite images) and gathering data from field research conducted during the month of August 2015, a first analysis of the urban water cycle was performed. It is based on the idea that this cycle is not only carry out in urban areas but rather has a close relationship with the territory (and resources) surrounding both locations.

The results show that both cities have a significant impact (negative and positive) in the water sources and wastewater discharges of the territory. It has also been found that inside the urban space, water is an element that configures or sets sub-zones.

**Dani Sabalja**

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## **A Contribution of Advance Global Vessel Traffic Management System**

Continuous growth of maritime traffic in the last fifty years, especially dangerous goods requires a need for more effective and comprehensive supervision and management of maritime navigation in the coastal and in oceanic navigation areas.

This paper presents a possible structure of the global organization of supervision and management of maritime navigation (GVTMS<sup>1</sup>) with a view to continuous monitoring of the world's shipping activities in all areas of sailing. This paper will analyze the basic characteristics and historical development of service monitoring and management of sea navigation. Will show the contribution of these services increases the safety of navigation and marine environmental protection in areas where these services are established and in which successful performing. Designate on the correlation of VTS service on the established areas and the proposed ocean area

Oceanic navigation routes are not clearly defined or explored until the end. No single system of navigation guidance or control system of navigation. As a result, a great freedom in the choice of waterways in certain directions of movement of the ship's crew. Select the desired route to ocean navigation is left to the will of the officers and commanders of ships, resulting in a multitude of different routes that can hybridize with each other and thereby cause mutually avoiding boats that should be done in accordance with the Rules for Preventing Collisions at Sea (COLREG).

Sometimes avoidance is not performed timely or in accordance with these rules reducing the level of safety of navigation systems, therefore, would focus on navigation that would significantly reduce the number of crossing routes that also contributed to the mutual avoidance of ships to increase the degree of safety.

Misinterpretation received meteorological, oceanographic data crews can result in inappropriate selection of routes with adverse consequences. Analysis of the received data and continuous monitoring of the further development of the meteorological situation and the movement of ships from the established professional team and consequently the issuance of guidelines for action would certainly reduce the number of incorrectly selected routes. In order to incorporate all the relevant factors, the paper will analyze all the

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<sup>1</sup> Global Vessel Traffic and Management System

essential features of oceanic navigation. In the paper will be presented in detail Hydro - Meteorological and Oceanographic conditions at ocean areas, and to analyze existing or proposed navigation routes. Taking into account all relevant factors and the definition of criteria to select the optimal navigation route will propose the establishment of separate zones for different types and speed of sailing ships.

The width of navigation paths each zone separated navigation area will be defined according to specified intervals approximate daily intensity of maritime traffic. This paper will analyze and modern technologies should be used when establishing GVTMS that on board and in the malls on the mainland in order to better and faster exchange of information and communication between ships and VTS-a.

Perceiving the survey collected data may be relevant to the proposal GVTMS structure and algorithm of a GVTMS.

This paper should set out the survey results indicate the validity of structuring GVTMS and thereby contribute to increased safety and marine environmental protection in all world areas of sailing, facilitating decision-making and management of navigating seafarers sailing in all areas of the world.

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&

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## **Charge Detection in Al-Ain Region**

Al Ain city, also known as the garden city due to its greenery, is the second largest city in the Emirate of Abu Dhabi and the fourth largest city in the United Arab Emirates. The city development shows a fast growth of its urban boundaries during the last 40 years, with a population increase from 51,000 inhabitants (in 1975) to 560,214 (in 2010). Given the geophysical characteristics of the city (sand dunes, mountains and valleys) and the magnitude of recent changes, the objective of this research is to analyze the most recent land-use dynamics, from 2005 to 2014, at a new spatial scale of study, the district. Therefore, the 62 districts that conforms Al-Ain have been included and two general master plans considered (1986-2003 and 2003-2015). In order to develop this objective, a principal component analysis was applied to synthesize the spatial dynamics using population data extracted from censuses and land-use data derived from remote sensing images and a vector base map of Al Ain 2014. The results show the spatial changes, at district scale, from the six principal components that were retained. They were labeled as foreign workers associated to commercial services, local people associated to private and public housing, industry, rural activity, housing from big companies and, finally, religious and recreational facilities. According to them, the main urban expansion has been located to the north (Hili and Al Foah districts), with the exception of the large Al Fayda urban promotion placed in the south, and to the west (Remah district) around the main road network connecting Al Ain to Abu Dhabi. Similar expansion direction has been reported in the case of industry (north and west development) but different in the agriculture extension because the main direction has been to the west and south-west (around Abu Krayyah district).

**Olga Skoczylas**

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## **Transformation of City Space and Housing Estates Associated with Changes in Lifestyle of Inhabitants**

The article presents difficulties of the city and its inhabitants related to changes of lifestyle. It also provides examples of solutions for these problems. It is showed spontaneous solutions and those planned ones, foreign as well as from the Polish "backyard". Article touches also the problem of urban sprawling and encourages to prevent or to reduce this phenomenon through a comprehensive thoughtful transformation of existing prefabricated housing estates built during 70's and 80's. Limited area of neighborhood spaces between 30 meters height buildings causes struggles the inhabitants social, serviceable and resting needs. Especially parking cars places involve significant consumption of estates' space. Particularly since these areas are an inseparable element of the Polish town landscapes and there is no perspective something will change. Underestimation this part of the city and pushing it to the sidelines of thought by urban planners, architects and scientists can start the process of social division which is very difficult to stop. It also has negative impact on reducing the competitiveness of apartments on cities. On the basis of carried out some social and architectural researches proposals are given.

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&

**Adam Kirk**

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## **Simulation-Based Conflict Analysis for Left-Turn Phasing Choices**

A fundamental objective of traffic signal operations is the development of phasing plans that reduce delays while maintaining a high level of safety. Left-turn phasing can be operated as a protected movement, a permitted movement yielding to conflicting traffic or a combination protected-permitted movement. While protected-only movements can improve safety for the turning movement, they can also increase delays and congestion at the intersection. Most states use a threshold based on the cross product of the left turn volume and opposing through movements as guidance for protected left-turn phases. The use of the cross product has been questioned recently as an indicator for determining phase selection. Moreover, most of the states that have any safety criteria developed for the left-turn phasing decision utilize a threshold number over a specific period of time without consideration of any intersection features.

This research utilized the concept of conflict points as an indicator of potential safety estimation to assist in left-turn phasing decisions. Prediction models of potential conflicts were developed through micro simulation where the left turn demand is considered along with opposing volume, percent green time, cycle length and number of opposing lanes. The models are developed based on observed capacity from 450 VISSIM micro simulation scenarios which evaluated varying opposing volume, opposing number of lanes, cycle lengths and green time splits. The number of conflicts was developed through SSAM where vehicle trajectories from VISSIM were post-processed to determine the number of potential left-turn related conflicts. The proposed models provide a simple, yet realistic, approach in determining the boundary conditions in regards to safety when decisions between permitted and protected left-turn phasing are required. Finally, a nomograph is developed which presents the model in a simple form for interpretation and application by practicing traffic engineers, when required to determine left turn phasing options.

**Jeffrey Taub**

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## **Why is America's Marine Highway Program Failing to Thrive?**

This paper presents a synopsis of the establishment and structure of America's Marine Highway Program (the program) followed by an in-depth analysis of the program with a focus on possible reasons the program is not meeting initial expectations, not providing the country with the degree of benefits that the designers and planners of the program had envisioned, and not being utilized to its potential capacity. The paper presents possible solutions that might increase the use of short sea shipping in the United States such that America's marine highways can become the program for which it was conceived.

Following an introduction and brief discussion of the importance of waterborne transportation throughout America's history, the paper addresses the current situation of domestic landside transportation of cargo in the United States, specifically identifying the problems that have developed over time as the result of the increasing movement of container freight via landside highway routes, such as increasing levels of traffic congestion and noise, highway infrastructure deterioration, fuel consumption, carbon emissions, and highway accidents and fatalities. This section also describes the current situation of the use of marine highways in the United States, to include a discussion of the areas of the country where short sea shipping is being used effectively.

The second section of the paper discusses the establishment of America's Marine Highway Program, the intent of the program, and its potential benefits. The paper addresses that the program would support America's shipbuilding industry, supplement America's strategic sealift assets, and create jobs in the maritime industry.

The third section of the paper provides analysis of some of the reasons America's Marine Highway Program has not lived up to expectations. The reasons are many and varied, including unfortunate timing, old habits, current regulations, lack of awareness, reluctance of shippers to commit to a different mode of transportation, higher and additional costs, unreliable and slow service, shortage of container ships, and sufficient supply of trucks to handle the current demand.

The fourth section of the paper addresses the short sea shipping situation in Europe to include its history, successes, and programs designed to encourage shipping on waterways. This section includes comparisons between Europe's short sea shipping and America's Marine Highway Program.



The paper concludes with some recommendations on actions and policy changes that may help reinvigorate America's Marine Highway Program, such as additional government incentives, waivers of regulations, increased promotion and marketing, and changes to the structure of taxes assessed on goods moving via waterborne routes. With a concerted effort by public and private entities, it is not too late to save America's Marine Highway Program.

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**Reliability Design of Residential Sized Refrigerators  
Subjected to Repetitive Random Vibration Loads  
during Rail Transport**

During railroad shipment of residential refrigerators, two failures due to the repetitive random vibrations were occurring. These included the fracturing tubes between the compressor and condenser and the tearing compressor rubber mounts. Sample inspections, accelerated life tests and corrective action plans were used to identify the key control parameters for the connecting tubes. The failure modes and mechanisms found experimentally were identical to those of the failed samples in the field. The missing controllable parameters of the refrigerator system in the design phase included the shape of the compressor rubber and the connecting tube design. To correct these problems, the compressor rubber mounts and connecting tubes were redesigned. The refrigerators with the targeted B1 life were expected to survive without failure during rail transport.

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**&**

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## **Creative Tourism and Big Variation of Community**

This article explores creative of class how to produce community that has different way of life, cultural diversity, and tolerant attitude. Through creativity provides activity that involve in creative tourism is also not limited to a single actor, such as the tourists themselves, but involved the creative interplay of producers, consumers, policy makers and landscapes to develop embedded creativity in tourism experiences. This integration has also led some to identify a specific form of creative tourism, which involves the co-creation of participative, 'authentic' experiences that allow people to develop their creative potential and skills through contact with local people and culture. At the same time, it gives many small-scale examples to identify authenticity in the city, pointing to community intimacy, original physical structures, and community belonging. This paper discusses big variation community of process as it has to reflect the cultural and creative fields, contains an important economic factor; and contains all kinds of work, and mutual penetration of new forms of work and lifestyle in a case study of Zhengxing Street of Tainan City, Taiwan.

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## **Housing Provision Systems and the Impact on Urban Development, the Case of Kayseri, Turkey**

Turkey has experienced a different urbanization process and housing development. In Kayseri parallel with Turkey, housing provision and effective actors experienced many transformations beginning from the early 1930s and is still going on. Rate of urbanization, land ownership, development in land values, features of entrepreneurs in the housing sector, improvements in a building material industry, policies of the state to this sector are the factors determining the housing provision types and actors.

Kayseri is considered as a planned city in Turkey and reached its current spatial order as a result of five city plans (1933, 1945, 1975, 1986, 2006). The development of housing production sector in Kayseri started with housing cooperatives in 1930s. In the later period we have seen different housing provision and actor. These are; individual housing provision and building cooperatives (1930-1950) developers housing provision (build- sell and large-capital builders) (1950-1980), mass housing corporations production (mostly building cooperative associations) (1950-1980) and local administrations (1980-2000) housing provision, individual squatter housing provision, semi-organized squatter housing provision" (1980-2000).

The changes in the political atmosphere after the 2000s have created the appearance of new actors and changing roles in the housing sector. This time, the public (both national units and local governments) has entered into the housing sector as a leading producer. Although the private sector has played an important role in housing provision, the housing investments of public sector have increased considerably with the provision of TOKİ. Also, the middle-upper and upper income groups have started to settle in self-sufficient gated communities outside of the city

The aim of this study is to examine housing provision and effective actors and show their effects on Kayseri urban development. First step of study briefly examines the processes of rapid urbanization that occurred in turkey and Kayseri and how they have influenced the actors involved in housing production. Following this, the study then

outlines the role of various development actors and the impact that these actors have had on housing production and servicing. Third, the case of Kayseri is presented, laying a foundation for the rest of the discussion. Finally, results of a detailed analysis of findings are presented with regard to the changing nature of housing production in Kayseri, the actors involved in the development process, and the impending implications on spatial segregation and social organization. The method of study is based on the preliminary findings of a Scientific Research Project (funded by Erciyes University, Council of Scientific Research Projects) being developed by the authors. As well as literature review, on-site observations, analysis of plans and documents examined and prepared by authors.

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## **Development of Population Mobility in Czechia in the Context of Transformation Processes at the End of the 20<sup>th</sup> Century**

The transportation system of the Czech Republic was deformed by the disproportionate support of public transportation in the socialist period (1948-1989) the same as in other post-communist countries.

After 1989, there occurred fundamental changes in connection with transformation processes. The size of companies was reduced, working hours become more flexible, people stopped to bind work to the current operating regions, and there has been a fragmentation of the settlement structure, the number of cars in households' increased, socio-economic differences between people deepened. These processes led to changes in the modal split. The management of public transportation makes effort to create a stable, efficient and reliable transportation system that supports a social and economic development of regions with respect to occupancy and landscape sustainability. Nevertheless, the Czech Republic faces increasing share of individual car transport at the expense of public transport.

The paper presents the results of an analysis of developments settlement system of the Czech Republic, catchment regions and the strongest transportation links between catchment centres and their hinterlands. The paper highlights the strengthening position of cities and transportation links between cores and hinterlands caused by past transformation processes. In the context of spin processes for small and medium-sized cities and suburbanization processes, the proportion of urban population increased by more than 10% for the past 50 years. Consequently, the public transportation operates mainly in areas with strong demand for transportation and many commuting regions have a growing proportion of private transportation. The paper points out the need to analyse the traffic changes to support the competitiveness of the public transportation against private transportation. The paper also presents an analysis of the selected regions of the adequacy of changes in transportation to changes in demand for transportation.