



SCHOOL OF NAVAL  
ARCHITECTURE &  
MARINE ENGINEERING

## LABORATORY FOR MARITIME TRANSPORT NEWSLETTER No 10 July – September 2009



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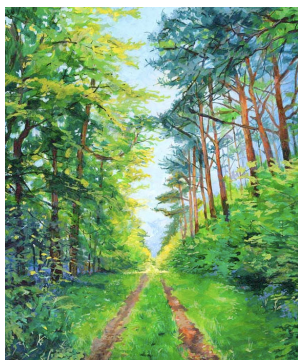
*Dear Reader,*

The electronic newsletter of the Laboratory for Maritime Transport (LMT) of NTUA is issued regularly to inform you regarding our current and forthcoming activities. You are warmly encouraged to visit our website ([www.martrans.org](http://www.martrans.org)) for further information and to contact us about your enquiries. Your feedback will be highly valued. Kind regards.\_

*The LMT staff*

### **Newsflash: New EU project SuperGreen is set to start soon**

A new EU project entitled "Supporting EU's Freight Transport Logistics Action Plan on Green Corridors Issues" (abbreviated name "SuperGreen"), with NTUA-LMT assuming the role of Coordinator, is set to start soon. The 3-year project is a Coordinated Action supported by the European Commission (DG-TREN) in the context of the 7<sup>th</sup> Framework Programme. The purpose of the project is to promote the development of European freight logistics in an environmentally friendly manner. Environmental factors play an increasing role in all transport modes, and holistic approaches are needed to identify 'win-win' solutions.



planning (vehicle navigation technologies), scheduling and track & trace need to be considered.

- *Recommendations for R&D.* Where the available "Green technologies" and present knowledge about "Smarter utilisation of ICT-flows" are not sufficient to improve the identified bottlenecks, recommendations for future calls for R&D proposals will be suggested.
- *Policy Implications.* The implications of related regulatory policies on the possible solutions proposed by the project will be examined, so as to provide assistance to the Commission in the formulation and harmonisation of policies on Green Corridors.
- *Dissemination and Awareness Raising.* The project is paying particular attention to dissemination and creation of awareness on its results. This would involve liaison with stakeholders involved in the topics addressed by SuperGreen (infrastructure managers, transport and terminal operators, shippers, logistics operators, national and local authorities, etc.). It would also include the development of a dissemination plan, promotional material, workshops and other events with stakeholder participation.

The objectives of the SuperGreen project concern supporting the development of sustainable transport networks by fulfilling requirements covering environmental, technical, economic, social and spatial planning aspects. This will be achieved by:

- *Benchmarking of Green Corridors.* Based on a total picture of relevant parameters (KPIs) like energy consumption and emissions, operational aspects and SCM issues, external costs (including social and spatial planning aspects), infrastructure costs and internal costs: identification of areas and candidates for improvement (i.e. bottlenecks).
- *"Green technologies".* Methods for improving the identified bottlenecks. Among the green technologies considered may be novel propulsion systems, alternative fuels, cargo handling technologies, new terminal technologies, cleaning technologies, heating and cooling technologies, or novel concepts of any kind relevant for the multimodal Green Corridors.
- *"Smarter" utilisation of ICT-flows* already available in the multimodal chain may improve the identified bottlenecks and make the Green Corridors even greener. The influence of issues like e-freight, supply chain management, smarter

The stakeholders that will be engaged in the SuperGreen project include: transport operators, terminal operators including ports, infrastructure operators, authorities etc. responsible for developing and maintaining the infrastructure, cargo owners (shippers), industry/consultants, Non Governmental Organisations (NGOs), environmental organisations, authorities responsible for social and spatial planning and R&D. In addition to industry partners, an external Advisory Committee of industrial and other stakeholders will be connected to the project. Through a 3-year programme of studies, networking, data dissemination and expert engagement, SuperGreen will work with all stakeholders to identify and seek solutions to bottlenecks.

The 22 partners of SuperGreen are:

- NTUA-LMT (Greece)- Coordinator
- MARINTEK AS (Norway)
- Sito Ltd -Finnish Consulting Engineers Ltd (Finland)
- D'Appolonia S.p.A. (Italy)
- Gijón Port Authority (Spain)



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- Det Norske Veritas (Norway)
- via Donau (Austria)
- NewRail - Newcastle University (UK)
- CONSULTRANS (Spain)
- PSA Sines (Portugal)
- Finnish Maritime Administration (Finland)
- Straightway Finland Ry (Finland)
- SNCF Fret Italia (Italy)
- Procter & Gamble Eurocor (Belgium)
- VR Group (Finland)
- Lloyd's Register-Fairplay Research (Sweden)
- Hellenic Shortsea Shipowners Association (Greece)
- Dortmund University of Technology (Germany)
- TES Consult Ltd (Ukraine)
- Turkish State Railways (Turkey)
- DB Schenker AG (Germany)
- The Bellona Foundation (Norway)

The launch of the SuperGreen project will be one of the presentations of a European Commission (DG-TREN) conference on Green Corridors, planned for Dec. 9, 2009 in Brussels. The conference aims to take stock of existing Green Corridor projects across Europe, to discuss the main issues related to their implementation and to launch new initiatives in support of the Green Corridor concept.

More on the conference and on the SuperGreen project will be reported in the next LMT newsletter.

### IMO business

Work on environmental risk evaluation criteria in Formal Safety Assessment (FSA) continued at the 59th session of the Marine Environment Protection Committee-MEPC 59 (London, July 2009). The chairman of the correspondence group Prof. Psaraftis reported on the work undertaken in the intersessional period and underlined that further progress had been made. Within the context of the CATS criterion (for "Cost to Avert one Tonne of oil Spilled"), he pointed out that the group was able to reach an agreement in favor of criteria that are expressed on a cost-per volume of spilled oil. The group also agreed that a volume-dependent non-linear scale of a CATS threshold would be preferable to a single CATS threshold. He



noted that apparent agreement had also been reached on the frequency matrix in the Hazid step, as well as on the issue of how to handle the issue of collection and reporting of relevant data. However, divergent views still remain on issues such as the severity matrix and the specific non-linear CATS scale, and more time is required to reach convergence on the key issues that are open. Taking into account the need to complete this work as early as possible in 2010, MEPC 59 agreed to establish a Working Group on this subject at MEPC 60 (March 2010). In between, the work of the correspondence group will continue, with the following terms of reference:

- recommend in Step 4 of the FSA an appropriate volume-dependent CATS global threshold scale or function for ascertaining if a specific Risk Control Option (RCO) is cost-effective, including its integration within the FSA methodology;
- recommend a way of combining environmental and safety criteria for those RCOs that effect both environmental and fatality risk;
- conclude on an appropriate risk matrix or index for environmental criteria;
- recommend an appropriate ALARP region and F-N diagram, including an appropriate value for the slope of the F-N curve;
- address the issue of collection and reporting of relevant data;
- prepare draft terms of reference for a working group at MEPC 60; and
- submit a written report to MEPC 60.

LMT is also very much involved in the work of the Maritime Safety Committee (MSC), where Prof. Psaraftis is a member of the so-called FSA Group of Experts. This group is tasked to review FSA studies submitted to the IMO. Already the group met at MSC 86 (May-June 2009) to discuss 4 FSA studies submitted by Denmark and is expected to meet again at IMO headquarters in the first week of November 2009 and at MSC 87 next year.

All of the reports of the MEPC correspondence group (3 thus far) and other IMO-related documents can be found at LMT's web site, at <http://www.martrans.org/imo.htm>.

### Election to SNAME Fellow

On June 1, 2009, the Society of Naval Architects and Marine Engineers announced new additions to its rank of Fellows. The



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membership grade of Fellow is accorded to individuals who have contributed to significant achievements in naval architecture, marine and ocean engineering, and related fields in the form of advances in design, research, production, operation, education, and associated management. Prof. Psaraftis was among the 7 new SNAME Fellows. Quoting from SNAME's newsletter, *"Professor Psaraftis was an outstanding professor and researcher for ten years at Massachusetts Institute of Technology, and for the past 20 years, at the National Technical University of Athens (NTUA). His accomplishments include the development of a methodology for evaluating oil spill response decisions at strategic and tactical levels, methodologies for routing and scheduling problems for ships and other vehicles, research in ship safety and environmental protection. Despite his academic background, and his lack of managerial or political experience, Professor Psaraftis managed to survive as CEO of the Port of Piraeus for more than five years, while container traffic doubled, the port was transformed into a corporation, and systems were computerized."*

### Port of Venice peer review

In early August Prof. Psaraftis visited the Port Authority of Venice in the context of a peer review of the port. Psaraftis was invited for this review along with some other colleagues by Prof. Paolo Costa, President of the Port



Authority of Venice. The port of Venice is one of the major ports of the northern Adriatic, with significant hinterland connections to northern Italy and central Europe. In addition to the passenger port, which caters to cruise and ferry traffic, the port also handles a significant amount of cargo traffic in the Marghera commercial-industrial area. A visit of the port facilities took place and the current situation and future development plans of the port were discussed.

### LMT in Kos for consultation with the local Municipal Port Fund

In the context of the programmatic contract between NTUA and the Municipal Port Fund of Kos, LMT personnel has been visiting the island of Kos in order to assure the best possible

implementation of the prefeasibility analysis for the new commercial port of the island. Visits took place in July, with PhD candidate S.D. Chatzinikolaou, Lecturer Dr. N.P. Ventikos participating in meetings with local stakeholders (maritime agents, industrial representatives, port authorities and the Hellenic Coast Guard) so as to record problems, needs and perspectives of current/future port activities on the island. Meetings were also held in September with the participation of Prof. Psaraftis, the Mayor of Kos Mr. Kyritsis and the Vice-President of the Municipal Port Fund of Mr. Gerasklis to discuss progress on the project. Moreover the LMT staff made an on site survey of the current port and of potential sites/locations for the future new commercial port of the island.



Prof. Psaraftis with the Mayor of Kos Mr. Kyritsis

### LMT at the 10th IAEE European Conference



Austrian Association  
for Energy Economics  
● AAEE ●

LMT was present at the 10th IAEE (International Association for Energy Economics) European Conference, that this year took place in Vienna (Austria) on September 7-10 under the title "Energy, Policies and Technologies for Sustainable Economies". The Conference was organised by IAEE and the Austrian Association for Energy Economics (AAEE) and was hosted at the Hofburg Congress Center, a palace complex and former imperial residence of the Habsburgs.



LMT's participation was with the paper titled "Caspian - Black Sea – South East European Gas Corridors and the LNG parameter: A scenario bundles approach" presented by Dr K.G. Gkonis and co-authored by Prof. H.N. Psaraftis.

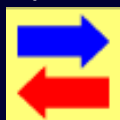
In this paper, a decision-making, planning, and analysis tool was proposed for use by ministries, national or regional (e.g.





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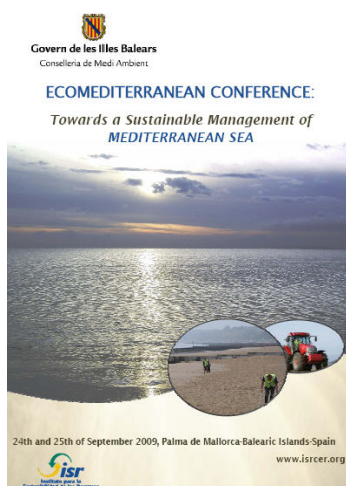


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EU level) authorities, national or international companies, and think-tanks, among other, in anticipation of future developments and in response to crisis events related to natural gas supply through pipelines or as LNG (Liquefied Natural Gas).

### LMT at the ECOMEDITERRANEAN Conference

LMT lecturer Dr. N.P. Ventikos was invited at the ECOMEDITERRANEAN Conference: "Towards a Sustainable Management of the Mediterranean Sea", that was held in late September at the city of Palma de Mallorca (Balearic Islands, Spain). The conference was sponsored by the Government of Balearic Islands. In the context of this conference Dr. Ventikos gave a presentation entitled "Maritime Transport and the Environment: The Mediterranean Fairy-tale" in which he focused on issues related to maritime safety, the preservation of the marine, littoral and aerial environment and the possibility for sustainable shipping within the basin of the Mediterranean Sea.



The conference's poster

### PhD thesis defense

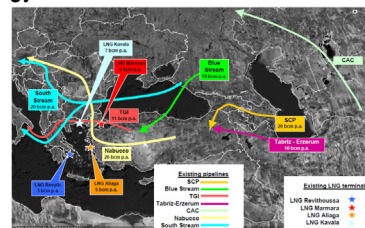
The Ph.D. title was awarded to LMT candidate Konstantinos G. Gkonis, who successfully defended on September 4 his thesis entitled "Analysis of Competition and Strategic Investments in the LNG market". The thesis supervisor was Professor H.N. Psaraftis.



The motivation for this thesis was the dramatic development in recent years of the LNG (Liquefied Natural Gas) trade, as an energy shipping market, and LNG's growing role in the world energy scene. In the thesis, the LNG market is presented and its special characteristics are described. Game theory is identified as a methodology that can propose optimal strategies

for the players involved in business contexts, but also in strategic interactions of geopolitical nature.

The first main set of contributions is developed under the title "Analysis of competition and strategic investments in the LNG shipping business". The market players considered in this context are providers of LNG shipping services. A second main set of contributions is about "The role of LNG in the formulation of national gas supply strategy", as LNG concerns decision-makers on a national planning level and in the formulation of gas supply strategies, given its geopolitical dimensions, as well as its importance for the security of gas supply regionally and internationally.



### Meetings and Events attended by LMT staff

- IMO-MEPC, London, UK, July 13-17
- Port of Venice peer review, Venice, Italy, August 6
- 10th IAEE European Conference "Energy, Policies and Technologies for Sustainable Economies", Vienna, Austria, September 7-10
- ECOMEDITERRANEAN Conference "Towards a Sustainable Management of the Mediterranean Sea", Palma de Mallorca, Spain, September 24-25
- Municipal Port Fund of Kos, Greece, July-September

### Papers, presentations and speeches published / presented by LMT staff

- Gkonis, K.G. and H.N. Psaraftis (2009), "Caspian - Black Sea - SE European Gas Corridors and the LNG parameter: A scenario bundles approach" (2009), Proceedings of 10th IAEE European Conference "Energy, Policies and Technologies for Sustainable Economies", September 7-10, Vienna, Austria.
- Gkonis, K.G. and H.N. Psaraftis (2009), "Some key variables affecting liner shipping costs", working paper.
- Psaraftis, H.N. (2009), "Coastal shipping ticket charges for third parties: myths and reality", Naftika Chronika magazine, August issue (in Greek).