MEDI2015

5th International Conference on MODEL & DATA ENGINEERING

PROGRAM

Island of Rhodes
Greece Amilia Mare
26-28
September

ARISTOTLE UNIVERSITY OF THESSALONIKI
DEMOCRITUS UNIVERSITY OF THRACE
Springer

http://delab.csd.auth.gr/medi2015/

MEDI2015BRIEFPROGRAM

	SAT26		SUN27	
08:30-09:00	REGISTRATION		REGISTRATION	
09:00-10:00		**KEYNOTE** **Pastor** *page 6*		**KEYNOTE** **Jensen** *page 5*
10:00-11:30		SESSION 01 **MOD** *page 8*	SESSION 06 **QUERY** *page 11*	SESSION 07 **ACTI** *page 11*
11:30-12:00		COFFEE	COFFEE	
12:00-13:30		SESSION 02 **ONTO** *page 8*	SESSION 08 **PREREC** *page 12*	
13:30-14:30		LUNCH	LUNCH	
14:30-16:00		SESSION 03 **EVENT** *page 9*	SESSION 09 **REQSYS** *page 12*	
16:00-16:30		COFFEE	↑ ROOM **B**	↑ ROOM **C**
16:30-18:00	SESSION 04 **CONTEXT** *page 9*	SESSION 05 **DM** *page 9*	TOUR	
	↑ ROOM **B**	↑ ROOM **C**		
19:30				
21:00	GALA PARTY			

PREFACE

The 5th event of the International Conference on Model Engineering and Data Engineering series (MEDI) took place in Rhodes, Greece during September 26th to September 28th. The main objective of the conference is to bridge the gap between model engineering and data engineering and allow researchers to discuss the recent trends in model and data engineering. It follows the success of the Obidos (Portugal, 2011), Poitiers (France, 2012), Armantea (Italy, 2013) and Larnaca (Cyprus, 2014) events.

For this event of MEDI'2015, two internationally recognized researchers were invited to give a talk. Professor Christian Jensen from the University of Aalborg, Denmark, gave a talk entitled "Keyword-Based Querying of Geo-Tagged Web Content", whereas Professor Oscar Pastor Lopez of the Universidad Politecnica de Valencia, Spain, delivered a talk on "Using Conceptual Model Technologies for Understanding the Human Genome: From an "Homo Sapiens" to an "Homo Genius"". We would like to thank the two invited speakers for their contributions to the success of MEDI'2015.

MEDI'2015 received 55 submissions covering both model and data engineering activities. These papers range on a wide spectrum covering fundamental contributions, applications, and tool developments and improvements. Each paper was reviewed by three reviewers. The Programme Committee accepted 18 regular papers and 10 short papers leading to an attractive scientific programme. The authors came from many different countries from all over Europe, e.g. Austria, Estonia, France, Germany, Greece, Ireland, Italy, Poland, Portugal, Spain, as well as from Australia, Algeria, Japan and Tunisia.

MEDI'2015 would not have succeeded without the deep investment and involvement of the Program Committee members and the external reviewers who contributed to review (149 reviews) and select the best contributions. This event would not exist if authors and contributors did not submit their proposals. We address our special thanks to every person, authors, reviewers, session chairs, Programme Committee and Organization Committee members involved in the success of MEDI'2015.

The EasyChair system was set up for the management of MEDI'2015 supporting submission, review, and volume preparation processes. It proved to be a powerful framework. In this respect, special thanks are due to Yannis Karydis for his timely technical support.

We hope that these proceedings will help researchers worldwide to understand and to be aware of recent issues related to model and data engineering. We do believe that they will be of major interest for scientists over the globe and that they will stimulate further research in these domains.

September 2015
Ladjel Bellatreche, Yannis Manolopoulos

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SUN**27** **09:00** ROOM**B**

KEYNOTE

Christian S. Jensen

Christian S. Jensen is Obel Professor of Computer Science at Aalborg University, Denmark, and he was previously with Aarhus University for three years and spent a one-year sabbatical at Google Inc., Mountain View. His research concerns data management and data-intensive systems, and its focus is on temporal and spatio-temporal data management. Christian is an ACM and an IEEE Fellow, and he is a member of Academia Europaea, the Royal Danish Academy of Sciences and Letters, and the Danish Academy of Technical Sciences. He has received several national and international awards for his research. He is Editor-in-Chief of ACM Transactions on Database Systems.

Keyword-Based Querying of Geo-Tagged Web Content

The web is being accessed increasingly by users for which an accurate geo-location is available, and increasing volumes of geo-tagged content are available on the web, including web pages, points of interest, and microblog posts. Studies suggest that each week, several billions of keyword-based queries are issued that have some form of local intent and that target geo-tagged web content with textual descriptions. This state of affairs gives prominence to spatial web data management, and it opens to a research area full of new and exciting opportunities and challenges. A prototypical spatial web query takes a user location and user-supplied keywords as arguments, and it returns content that is spatially and textually relevant to these arguments. Due perhaps to the rich semantics of geographical space and its importance to our daily lives, many different kinds of relevant spatial web query functionality may be envisioned. Based on recent and ongoing work by the speaker and his colleagues, the talk presents key functionality, concepts, and techniques relating to spatial web querying; it presents functionality that addresses different kinds of user intent; and it outlines directions for the future development of keyword-based spatial web querying.

SAT**26** **09:00** ROOM**B**

Oscar Pastor Lopez

Full Professor and Director of the Research Center on "Metodos de Produccion de Software (PROS)" at the Universidad Politecnica de Valencia (Spain). He received his Ph.D. in 1992. He was a researcher at HP Labs, Bristol, UK. He has published more than two hundred research papers in conference proceedings, journals and books, received numerous research grants from public institutions and private industry, and been keynote speaker at several conferences and workshops. Chair of the ER Steering Committee, and member of the SC of conferences as CAiSE, ESEM, ICWE, CIbSE or RCIS, his research activities focus on conceptual modeling, web engineering, requirements engineering, information systems, and model-based software production. He created the object-oriented, formal specification language OASIS and the corresponding software production method OO-METHOD. He led the research and development underlying CARE Technologies that was formed in 1996. CARE Technologies has created an advanced MDA-based Conceptual Model Compiler called Integra Nova, a tool that produces a final software product starting from a conceptual schema that represents system requirements. He is currently leading a multidisciplinary project linking Information Systems and Bioinformatics notions, oriented to designing and implementing tools for Conceptual Modeling-based interpretation of the Human Genome information.

Using Conceptual Model Technologies for Understanding the Human Genome: From an "Homo Sapiens" to an "Homo Genius"

Everybody accepts that understanding the Human Genome is a big challenge for the humanity. It will take at the very least decades to achieve such a goal reasonably well. But new advances that are showing promising results come continuously. Day after day new data is provided and new information is derived from them. As DNA sequencing technologies improve and evolve, it is evident that the rate of data generation at a local level is increasing dramatically. In this scenario, assuring the interoperability and consistence of data at the global level becomes both a challenge and a need. To face these problems adequately, the most advanced Information Systems design technologies are strongly required, to cover the needs of better data capture, organization and storage, improved data analysis and interoperability, and more efficient data standardization with the support of foundational ontologies. This principle is in the "Genome" of this keynote. Using Advanced Conceptual Model and Data Technologies, there is an opportunity to understand the secrets of life that the Genome Code hides. More and more data that relate genotype and phenotype are available, with especially attractive clinical applications. These ideas will be approached in the keynote, showing that the challenge of understanding the human genome can suppose a conceptual revolution: understanding the genome could allow improving human being features, something never before in the hand of we, humans. This is the idea of the title: Homo Sapiens becoming Homo Genius being able to understand and manage the principles of life, and subsequently improve then.

08:30 ↓ 09:00

Registration

09:00 ↓ 10:00

Room**B**

KEYNOTE 1

Using Conceptual Model Technologies for Understanding the Human Genome: From an “Homo Sapiens” to an “Homo Genius”

Oscar Pastor

Chair **Ladjel Bellatreche**

10:00 ↓ 11:30

Room**C**

SESSION 1

Modeling & Meta Modeling (MOD)

Chair **Anastasios Gounaris**

Andres Ojamaa, Hele-Mai Haav and Jaan Penjam
Automatic Generation of DSL Meta Models from Formal Domain Ontologies

Yassine Ouhammou, Emmanuel Grolleau and Pascal Richard
Extension and Utilization of a Design Framework to Model Integrated Modular Avionic Architecture

Richard Braun
Extending the MOF for the Adaptation of Hooks, Plug-ins and Add-ons in Conceptual Modeling Languages

11:30 ↓ 12:00

Coffee break

12:00 ↓ 13:30

Room**C**

MEDI **SESSION 2**

Ontology-based Modeling, Reasoning & Reuse (ONTO)

Chair **Oscar Pastor**

Mustapha Bourahla
Repairing Errors in Prism Programs using Probabilistic Abduction Reasoning

Houda Zaidi, Yann Pollet, Faouzi Boufares and Naoufel Kraiem
Semantic of Data Dependencies to Improve the Data Quality

Nadir Guetmi and Abdessamad Imine
A Cloud-based Reusable Design for Mobile Data Sharing

13:30 ↓ 14:30

Lunch

14:30 ↓ 16:00

Room**C**

SESSION 3

Event-B & Modeling Languages (EVENT)

Chair **Klaus-Dieter Schewe**

Christian Attiogbe
Deriving Event-B Models from Mealy Machines: Application to an Auction System

Dominique Mery, Rushikesh Sawant and Anton Tarasyuk
Integrating Domain-based Features into Event-B: a Nose Gear Velocity Case Study

Richard Braun
Towards an Integrated Method for the Extension of MOF-Based Modeling Languages

16:00 ↓ 16:30

Coffee break

16:30 ↓ 18:00

Room**B**

SESSION 4

Context Modeling and Model Transformation (CONTEXT)

Chair **Dominique Mery**

Okba Barkat
Extending Semantic Databases to handle Context - An Ontology Modeling Approach

Klaus-Dieter Schewe, Qing Wang and Mariam Rady
Knowledge-based Entity Resolution with Contextual Information Defined over a Monoid

Selma Bouarar, Stephane Jean and Norbert Siegmund
SPL Driven Approach for Variability in Database Design

Room**C**

SESSION 5

Data Mining (DM)

Chair **Alfredo Cuzzocrea**

Amina Houari, Wassim Ayadi and Sadok Ben Yahia
Discovering Low Overlapping Biclusters in Gene Expression Data through Generic Association Rules

Evangelos Sakkopoulos, Erion-Vasilis Pikoulis, Emmanouil Viennas, Eleni Cheilakou, Amani-Christiana Saint, Nick Achilleopoulos, Maria Koui and Athanasios Tsakalidis
Data Management for Materials Identification, Damage Assessment and Restoration of Cultural Objects

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Pierre Maret, Shinishi Warisawa, Fabrice Muhlenbach, Guillaume Lopez and Ichiro Yamada

A Generalized Model for Sensor Data and Data Mining Outputs for Better Data Granularity Management in Telemonitoring Applications

21:00 Gala Party

08:30 ↓ 09:00 Registration

Room**B**

09:00 ↓ 10:00 KEYNOTE 5

Keyword-Based Querying of Geo-Tagged Web Content

Christian Jensen

Chair **Yannis Manolopoulos**

10:00 ↓ 11:30

Room**B** SESSION 6

Query Processing (QUERY)

Chair **Christian Jensen**

Athanasios Naskos, Anastasios Gounaris, Haralambos Mouratidis and Panagiotis Katsaros

Security-aware Elasticity for NoSQL Databases

Amine Roukh

Estimating Power Consumption of Batch Query Workload

Eleftherios Tiakas and Dimitrios Rafailidis

Scalable Trajectory Similarity Search Based on Locations in Spatial Networks

Room**C** SESSION 7

Modeling Activities & Inference (ACTI)

Chair **Emmanuel Grolleau**

Bartosz Zielinski, Scibor Sobieski, Piotr Kruszynski, Maciej Sysak and Pawel Maslanka

Object pi-Calculus and Document Workflows

Orlando Belo, Claudia Gomes, Bruno Oliveira, Ricardo Marques and Vasco Santos

Automatic Generation of ETL Physical Systems from BPMN Conceptual Models

Gregory Provan

Bayesian Model Selection for Diagnostics

11:30 ↓ 12:00 Coffee break

Room**B**

12:00 ↓ 13:30

SESSION 8

Prediction & Recommendation (PREREC)

Chair **Nieves R. Brisaboa**

Georgios Kostopoulos, Sotiris Kotsiantis and Panagiotis Pintelas
Predicting Student Performance in Distance Higher Education Using Semi-Supervised Techniques

Pavlos Kefalas and Panagiotis Symeonidis
Recommending Friends and Locations over a Heterogeneous Spatio-Temporal Graph

Alfredo Cuzzocrea, Giuseppe Psaila and Maurizio Toccu
The FollowMe Suite: Discovering Tourists' Trips Based on Geolocated Tweets

13:30 ↓ 14:30

Lunch

Room**B**

14:30 ↓ 16:00

SESSION 9

Requirement and Systems Engineering (REQSYS)

Chair **Panagiotis Symeonidis**

Zouhir Djilani and Selma Khouri
Understanding User Requirements Iceberg: Semantic Based Approach

Scibor Sobieski and Bartosz Zielinski
User Stories and Parameterized Role Based Access Control

Nieves R. Brisaboa, Alejandro Cortinas, Miguel R. Luaces and Matias Pol'la
A Reusable Software Architecture for Geographic Information Systems Based on Software Product Line Engineering

17:30

Walking Tour Medieval Rodos

SOCIAL PROGRAM

Saturday 26/9	21:00	**Gala Party**
Sunday 27/9	17:30	**Walking tour to the medieval town of Rhodes and visit to the Palace of the Grant Magistrus**

LOCAL INFO

Conference Venue

Hotel Amilia Mare Rodos
Main Street, Kallithea, 851 00 Rhodes
http://www.aldemar-resorts.gr/EN/Family%20resorts/Amilia%20Mare/

Emergency numbers

Police 100 • Fire brigade 199 • Ambulance 166

Telephone directory enquiries

Local 11888

Taxi Companies

Radiotaxi (in Rhodes Town) +30 22410 69800
Radiotaxi (out of Rhodes Town) +30 22410 69600
Diagoras +30 22410 66555

Rhodes Airport

Phone Centre +30 22410 88700, 88701

Municipality of Rhodes Department of Tourism

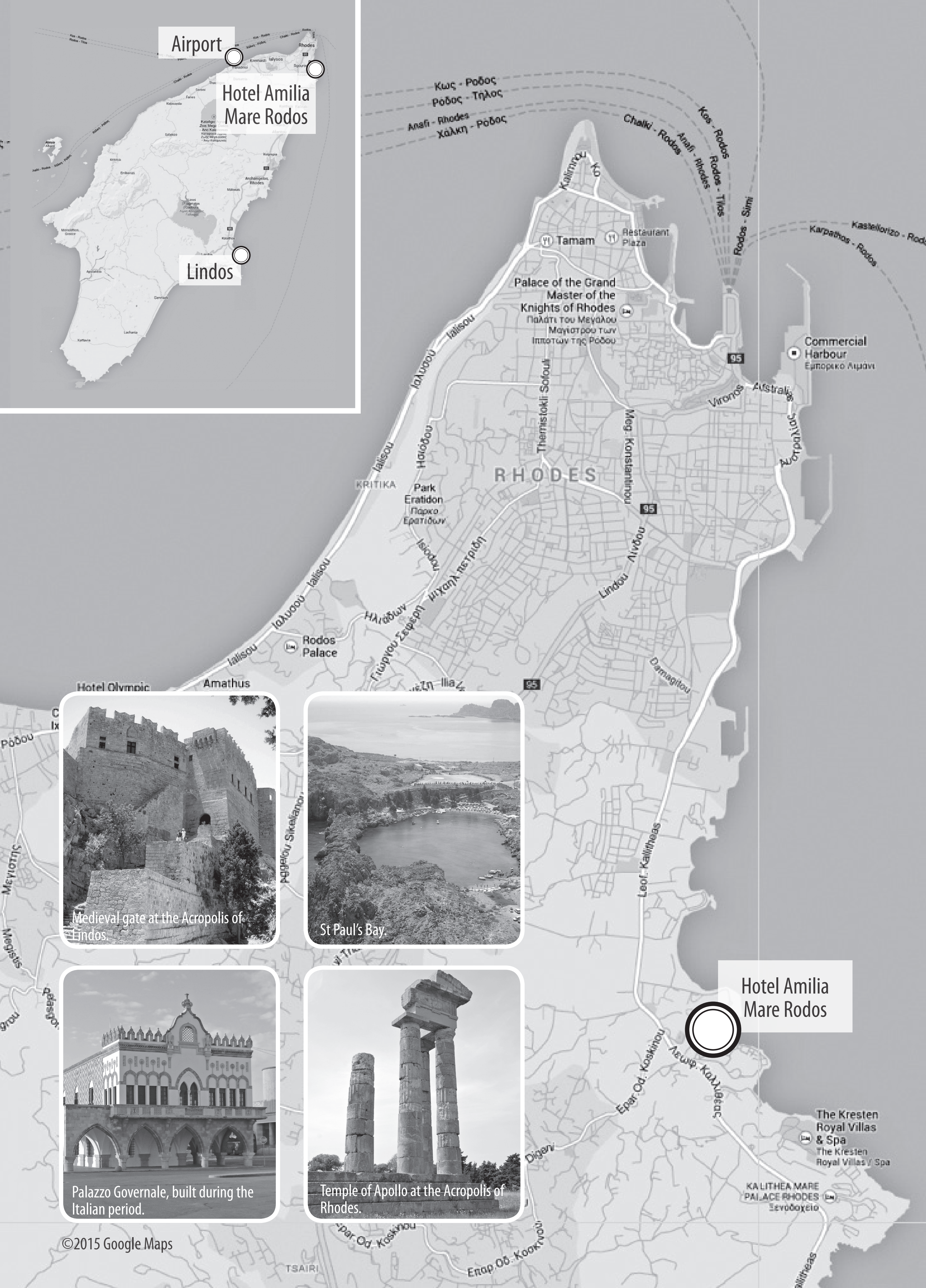
3, Averof, 851 00 Rhodes
Tel: +30 22410 35240, 35945

Greek National Tourism Organisation (EOT)

1, Ethnarhou Makariou Street and Papagou Street, 851 00 Rhodes
Phone center +30 22410 44333
Information: 171 (applicable inside Greece)

Tourist Police

1, Ethnarhou Makariou Street and Papagou Street, 851 00 Rhodes
Phone center +30 22410 27423 • Information: 171 (call inside Greece)


Airport
Hotel Amilia Mare Rodos
Lindos
Κως - Ροδος
Ροδος - Τήλος
Αναfi - Rhodes
Χαλκη - Ροδος
Chalki - Rodos
Anafi - Rhodes
Kos - Rodos
Rodos - Tilos
Rodos - Simi
Kastellorizo - Rod
Karpathos - Rodos
Tamam
Restaurant Plaza
Palace of the Grand Master of the Knights of Rhodes
Παλάτι του Μεγάλου Μαγίστρου των Ιπποτών της Ρόδου
Commercial Harbour
Εμπορικό Λιμάνι
Themistokli Sofouli
Meg. Konstantinou
Vironos
Australias
Αυστραλίας
Kalimnou
95
RHODES
KRITIKA
Park Eratidon
Πάρκο Ερατιδών
Ησιόδου
Ialisou
Ιαλυσού
Ηλιάδων
Μιχαήλ Πετρίδη
Γεωργίου Σεφέρη
Lindou
Λίνδου
Damagitou
Rodos Palace
Amathus
Hotel Olympic
Ilia
Leof. Kallitheas
Epar. Od. Koskinou
Λεωφ. Καλλιθέας
Diagori
Αγγέλου Sikelianou
Μεγίστης
Megistis
The Kresten Royal Villas & Spa
The Kresten Royal Villas / Spa
KALITHEA MARE PALACE RHODES
Ξενοδοχείο
Επαρ.Οδ. Κοσκίνου
TSAIRI

Medieval gate at the Acropolis of Lindos.

St Paul's Bay.

Palazzo Governale, built during the Italian period.

Temple of Apollo at the Acropolis of Rhodes.

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