

Sponsored by

Power and productivity
for a better world™



General Sponsor



KONČAR

Končar - Inženjering za
energetiku i transport d.d.



SIEMENS

WORKSHOP FEES

Lectures, CD, Workshop notes, tea/coffee breaks, lunches and Thursday night gala dinner are included in the workshop fee.

University attendee: **400 €**
Industry attendee: **500 €**

REGISTRATION DEADLINE: March 20, 2009.

Registration Form available on: <http://www.hro-cigre.hr>

Please, complete and return Registration Form to ATLAS Travel Agency; Attn. Mrs Nina Dumančić
E-mail: nina.dumancic@atlas.hr

The ATLAS Travel Agency will send an invoice to each registered participant, after the confirmation of the workshop fee payment.

Thursday night dinner fee for accompanying person is **50 €**.
Optional excursion: Plitvice Lakes, Croatia – additional fee **80 €**
(Minimum 25 persons) www.np-plitvicka-jezera.hr

ACCOMMODATION

Special Prices have been arranged at **100 €** bed/breakfast for single occupancy. Please book rooms directly with the **Hotel International** (200 m from workshop location) as soon as possible to guarantee a room.

Address: Miramarska 24,
HR-10000 ZAGREB, CROATIA
Phone : +385 1 6108 800
Fax : +385 1 6108 700
E-mail: reservations@hotel-international.hr
Web: www.hotel-international.hr

Room reservations must be made by **March 20, 2009**. Please quote **"WAMPAC WORKSHOP"**. Reservation requests after that date will be based on space and rate of availability.

WORKSHOP LOCATION AND INFORMATION

Location: Faculty of Electrical Engineering and Computing
Unska 3, HR-10000 ZAGREB, CROATIA
GREY CONFERENCE ROOM
(SIVA VIJEĆNICA)

Workshop Secretariat: Croatian National Committee of CIGRE

E-mail: central@hro-cigre.hr
Phone: +385 1 487 25 07
Fax: +385 1 487 25 01

Workshop Coordinator: Irena Tomiša
E-mail: itomisa@hro-cigre.hr

Web: <http://www.hro-cigre.hr>

International Workshop on

Wampac – Guardian of power system

April 23-24, 2009

ZAGREB, CROATIA



Organized by



The National Foundation for science, high education and technological development of the Republic of Croatia



Hrvatska elektroprivreda, Croatia



Croatian National Committee of CIGRE



Faculty of Electrical Engineering and Computing, Zagreb, Croatia



Faculty of Engineering, Rijeka, Croatia



IEEE – Croatian Section

OBJECTIVES

Synchronized Measurement Technologies (SMT), such as Phasor Measurement Units (PMUs) have resulted in the design and application of various wide area monitoring, protection and control (WAMPAC) schemes. Most provide significant reliability and financial benefits in the planning, operation and maintenance of power networks at both the distribution and transmission level. This workshop is a result of 3 years work on the project focused on WAM implementation in Croatia founded by Croatian Ministry of Science and Croatian Electricity Company – HEP. The workshop offers transmission engineering and operating personnel, that have some knowledge about synchronized measurement in power system, practical knowledge of all aspects of deploying synchronized measurement technology for WAMPAC applications. The workshop is structured so that the first half focuses on technical and implementation issues (first day), while the second half addresses applications and benefits (second day).

Main topics are:

- Experiences of using WAM system worldwide
- Real-time monitoring applications,
- Future protection schemes based on synchronized phasor measurements
- Applications based on synchronized phasor measurements,
- Improved state estimation
- Phasor Measurement Unit – Testing standards
- System Integrity Protection Scheme (SIPS)

INTENDED AUDIENCE

This workshop is intended for professionals from academia, transmission system operators, distribution system operators, regulators, generation companies, customers (industrial facilities), consultants and post-graduate students.

WORKSHOP DURATION

This is a two day course, lasting from Thursday the 23rd to Friday the 24th of April, 2009.

TIMETABLE

8:00-19:00	THURSDAY April 23rd (first day)
9:00- 9:30	<i>Registration and Information</i>
9:30-11:00	Welcome and Introduction
	Skok, Ivankovic, Stojsavljevic: WAM Scientific Project Activities and Results 2006-2009.
11:00-11:15	<i>Coffee break</i>
11:15-12:45	Phadke: Recent Developments in State Estimation with Phasor Measurements
12:45-13:00	Panel discussion
13:00-14:00	<i>Lunch</i>
14:00-15:30	Terzija: WAMPAC System Building Blocks and the Related Standards; SMT Based Real-time State Estimation
15:30-15:45	<i>Coffee break</i>
15:45-17:15	Gabrijel: WAMS from Development to Routine
17:15-18:00	ABB
18:15-19:00	SEL
20:00-23:00	<i>Workshop gala dinner</i>
	FRIDAY April 24th (second day)
8:00-19:00	<i>Registration and Information</i>
8:00- 9:30	Novosel: System Integrity Protection Scheme (SIPS)
9:30-11:00	Guzman: System Integrity Protection Scheme (SIPS) for Generation Shedding at CFE-Mexico; Real-time Modal Analysis for SIPS.
11:00-11:15	<i>Coffee break</i>
11:15-12:45	Giannuzzi: Defence System and Real-time Applications/Algorithms
12:45-13:00	Panel discussion
13:00-14:00	<i>Lunch</i>
14:00-15:30	Sattinger. Analysis of System-wide Disturbances
15:30-15:45	Coffee break
15:45-16:45	Karlsson: Power IT Applications, Experiences and Research Trends in the Nordic Countries - Focused on Phasor Measurements; Voltage Stability - Modelling and System Protection Scheme
16:45-17:00	<i>Coffee break</i>
17:00-17:45	Moraes: Challenges to Deploy a Large Synchrophasor System; VLPGO (Very Large Power Grid Operators) – Synchrophasors Applications Working Group 2009 Activities.
17.45-18:00	<i>Coffee break</i>
18:00-19:00	Panel discussion
	SATURDAY April 25th
8:00-18:00	Excursion (Optional) – PLITVICE LAKES

ORGANIZING COMMITTEE

Chairman:
Srđan Skok

Co-Chairman:
Igor Ivanković

Members:
Neven Baranović
Zdeslav Čerina
Božidar Filipović-Grčić
Igor Kuzle
Alemka Markotić
Ante Marušić

INSTRUCTORS

Prof. Arun Phadke
Virginia Tech, USA

Dr. Damir Novosel
Quanta Technology, USA

Dr. Walter Sattinger
Swissgrid, SWITZERLAND

Dr. Daniel Karlsson
Gothia Power, SWEDEN

Dr. Rui Moraes
ONS – Operador Nacional do Sistema Elétrico, BRASIL

Prof. Vladimir Terzija
The University of Manchester, Manchester, UK

Dr. Uroš Gabrijel
ELES, SLOVENIA

Dr. Giorgio Giannuzzi
Terna, ITALY

Dr. Armando Guzman
SEL, USA

Assist. Prof. Srđan Skok
Faculty of Engineering, Rijeka, CROATIA

MSc. Igor Ivanković
HEP-TSO, CROATIA

MSc. Milan Stojsavljevic
Energy Institute, CROATIA