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PROTECTION, AUTOMATION & CONTROL WORLD



**PACW 2026**

22 - 25 June, 2026, Delft, The Netherlands



**PROTECTION, AUTOMATION & CONTROL WORLD  
CONFERENCE 2026  
Delft, The Netherlands**



**Welcome**

## Monday, June 22 2026

### **TU Delft Aula Congress CentreMekelweg 5, 2628 CC Delft, Netherlands**

12:00 – 17:00 Conference registration

13:30 – 17:00 **Tutorial: "Digital Transformation of the Electric Power"** by Dr. Alexander Apostolov, USA and Florian Fink, OMICRON electronics, Austria

- Digital transformation – what, why and how
- AI and Digital transformation
- Digital transformation and Asset management
- Open discussion

### **Delft Town Hall (Stadhuis van Delft)**

18:00 – 20:00 Welcome Reception

## Tuesday 23 June 2026

### **TU Delft Aula Congress CentreMekelweg 5, 2628 CC Delft, Netherlands**

8:30 - 8:45 Conference opening: - Dr. Alexander Apostolov, Conference Chairman -

8:45 – 9:15 Keynote address: "Towards Resilient and Intelligent Grids: Synchrophasor-based and AC-DC Protection & Applications – Insights from TU Delft" by Prof. Marjan Popov, TU Delft

#### **Morning Session TUM Part 1:**

**Chair: Rene Troost, The Netherlands**

9:15 – 9:30 Intent-Based Networking for IEC 61850 Ethernet Networks - Lukas Bechtel, Belden, Germany; Davy Haegdorens, Belden, Belgium; Stephan Kehrer, Belden, Germany; Guilhermme Lisboa, Belden, Brazil

9:30 – 9:45 Translating from Telecom PTP Profile to Power PTP Profile for GNSS-Backup - Doug Arnold, Meinberg, USA; Tahmina Hoque, Meinberg, Canada

9:45 – 10:00 Modernizing Transmission Grid Operations: Implementing Secure Remote Access and Automated Data Collection with NTCSA's Engineering and Data Concentrator Solutions (EADS) - Kgomotso Manyapetsa, Elekanyani Mugivhi ESKOM NTCSA, South Africa; Sunny Wong SUBNET Solutions inc., Canada; Sibusiso Mkhatswa, Eskom NTCSA, South Africa

10:00 – 10:15 Configuration of signal links between logical nodes in IEC 61850 data model - Konstantin Goriachevskii, Siemens Energy, Germany; Goran Pregrad, Pro Integris, Croatia

10:15 – 10:30 Discussions

10:30 – 11:00 **Coffee break at the Exhibition areas**

#### **Morning Session TUM Part 2:**

**Chair: Rene Troost, The Netherlands**

11:00 – 11:15 5G-based line differential protection: Practical results unveiled - René Troost, Joey Godefrooi, Amadou Louh, Stedin, Netherlands; Sebastiaan van Kuik, Alliander, Netherlands; Andrej Goerbing, Vincenzo Fiorentino, Philipp Stachel, Volker Gsaenger, Siemens, Germany

11:15 – 11:30 Data Digitization in Substations Using Mobile Devices and Generative Artificial Intelligence - Juan Carlos Sanchez, Florian Fink, OMICRON electronics, Austria

11:30 – 11:45 Twenty Years of Centralized Remedial Action at Southern California Edison: Architecture, Operational Lessons, and the Emerging Grid Control Platform - Bill Zhang, Obinna Obah, Ronald Lim, Steve Guerrero, Southern California Edison, USA; Joel Greene, SISCO, Inc., USA

- 11:45 – 12:00 Structured Generative Workflows for IEC61850 Engineering - Nikita Tsymbal, Andreas Reuter, Helinks GmbH  
 12:00 – 12:15 Modernizing utility IP/MPLS Networks with Segment Routing - Dominique Verhulst, Nokia, Belgium;  
 Ziad Majzoub, Nokia, Canada  
 12:15 – 12:30 Discussions  
 12:30 – 13:30 **Lunch break at the Exhibition areas**

**Afternoon Session TUA Part 1:**

**Chair: Volker Leitloff, France**

- 13:30 – 13:45 End-to-End PAC Testing via Dynamic State Estimation - Sakis Meliopoulos, George Cokkinides, Georgia Institute of Technology, USA  
 13:45 – 14:00 The route to R-GOOSE: its application for back-up tripping - Joey Godefrooi, Jeroen Doorschodt, Rene Troost, Stedin, Netherlands  
 14:00 – 14:15 Open-Source Approaches to IEC 61850 Engineering: A Case Study - Axel Perales, Meinberg USA, USA  
 14:15 – 14:30 Techniques and Tools for Verifying LPTI-Based Protection Relays - Jose Ruiz, Doble Engineering, USA; Simone Meneghin, Doble Engineering, Italy; Bryan Gwyn, Doble Engineering, USA  
 14:30 – 14:45 Methods for preventing instrument transformer explosions - Daniel Engi, Zoltán Gregus, Ferenc Rakoczi, Robert Szedlak, Andras Woynárovich, MAVIR, Hungary; Gergely Pocsi, Kristof Hackel, Protecta, Hungary  
 14:45 – 15:00 Influence of renewable resources on the inertia of electrical power systems and its influence on frequency protection schemes. - Aníbal Antonio Prada Hurtado, Marta Bernal Sancho, María Teresa Villén Martínez, Eduardo Martínez Carrasco. CIRCE Technology Centre, Spain  
 15:00 – 15:15 Discussions  
 15:15 – 15:45 **Coffee break at the Exhibition areas**

**Afternoon Session TUA Part 2:**

**Chair: Volker Leitloff, France**

- 15:45 – 16:00 The importance of Real-time monitoring of time synchronization in IEC 61850 networks - Svenska kraftnät Åker digital substation - Krzysztof Nowacki, Erik Weierander, Bitstream S.A., Poland  
 16:00 – 16:15 Distributed Bus Protection Using Process Bus for a Large Transmission Substation at Duke Energy - Stephen B. Ladd, Taylor I. Raffield, Duke Energy, USA; Arun Shrestha, Md Aamir Rahmani, Mauricio Silveria, Schweitzer Engineering Laboratories, Inc., USA  
 16:15 – 16:30 Broken Conductor Protection in the MV Distribution Grid - Stefanos Papaefthymiou, Konstantinos Evangeliou, Evgenia Kasfiki, Andreas Tzevelekos, HEDNO, GREECE  
 16:30 – 16:45 Tree-Line Fault Detection Method for Distribution Networks Based on Dynamic Voltage–Current Characteristic Trajectory - Bin Wang, Yuxuan Jin, Yinfeng Liao, Ziyang Zhou, Xinzhou Dong, Tsinghua University, China  
 16:45 – 17:00 Standardizing System Verification Reporting for Substation Automation: A Lifecycle Approach to Early Error Detection and Risk Mitigation - Onur Durak & Burak Tahincioglu, OMICRON electronics GmbH, Austria  
 17:00 – 17:15 Use of Public 4G/5G Mobile Networks in Direct Transfer Trip Applications: Channel Quality Monitoring and Estimation - David Gil Donate, Marco Senesi Ranaldi, ZIV, Spain  
 17:15 – 17:30 Discussions  
 17:30 – 19:30 **PAC Demo Hour+ at the Exhibition Areas**

**Wednesday 24 June 2026**

**TU Delft Aula Congress Centre Mekelweg 5, 2628 CC Delft, Netherlands**

**Morning Session WEM Part 1:****Chair: Fred Steinhauser, Austria**

- 8:30 – 8:45 Stator-Rotor Differential Protection for Wound-Rotor Generators - Bogdan Kasztenny, Dale Finney, Douglas Taylor, Schweitzer Engineering Laboratories, Inc., USA
- 8:45 – 9:00 Proof of Concept results: Dutch DSO-DER interface for large-scale roll-out using IEC 61850 and WebSocket - Alain Stuijvenolt, Enexis, Netherlands; Davood Sooran, Tennet, Netherlands; Rik Fonteijn, Enexis, Netherlands; Rene Troost, Stedin, Netherlands; Robert Jan Peters, Alliander, Netherlands; Willem Boogers, Alexander Jumelet, Stedin, Netherlands; Nuno Pereira, ENCS, Netherlands
- 9:00 – 9:15 HSR Performance of Modular SAMUs in DSO substations - Bart Kloppenburg, Alliander N.V., Netherlands; Michel Kranenburg, Raymond Woertman, Grid to Great, Netherlands
- 9:15 – 9:30 Differential Protection of a 315 kV Underground Cable Section Using an OCT Merging Unit: Interoperable Architecture and Test Program - Benedict Mercier, Hydro-Quebec, Canada
- 9:30 – 9:45 Testing and Commissioning of Differential Protection for Transmission Lines and Transformer - Jun Verzosa, Doble Engineering, USA
- 9:45 – 10:00 Opportunities and Challenges for Process Bus interfaced Monitoring of HV and PACS Equipment - Volker Leitloff, RTE, France
- 10:00 – 10:15 Discussions
- 10:15 – 10:45 **Coffee break at the Exhibition areas**

**Morning Session WEM Part 2:****Chair: Fred Steinhauser, Austria**

- 10:45 – 11:00 Experience Gained from On-Site Testing of a Virtualized Wide Area Protection System - Lukas Dieterich, Matthias Wehinger – OMICRON electronics, Austria; Diego Gasca – OMICRON Technologies, Spain; Anna Kulmala, Ontrei Raipala – ABB Distribution Solutions, Finland; Gustavo Leonardo, Colin Scoble, Oussama Yousfi – UK Power Networks, UK; Ibrahim Abdulhadi – PNDC, University of Strathclyde, UK
- 11:00 – 11:15 EVPN Services Supporting IEC 61850: Scalable Multicast and Secure Utility Communications - Mauricio SUBIETA, Nokia, USA
- 11:15 – 11:30 Study of a protection scheme by means of polarity data" - Haruyasu Matsumoto, Mitsubishi Electric Corporation, Japan
- 11:30 - 11:45 Line Protection Behaviour During Frequency Changes in Networks with High Inverter Based Resources Penetration - Roberto Cimadevilla, Alberto Castañon, Javier García Villalobos, ZIV, Spain
- 11:45 – 12:00 Ecosystems for open digitalization platforms in energy grids - Sjors van der Heijden, Stedin, The Netherlands; Wilbert Prinssen, Technolution, The Netherlands
- 12:00 – 12:15 Applications of Hardware-in-the-Loop to Assess Advantages Between Central and Distributed Automation of Distribution Systems - Juan M Gers, Leinyker Palacios, GERS, USA
- 12:15 – 12:30 Discussions
- 12:30 – 13:30 **Lunch break at the Exhibition areas**

**Afternoon Session WEA Part 1:****Chair: Glenn Wilson, USA**

- 13:30 – 13:45 Standard architecture for software-defined open source vPAC systems - Stefan Richter, Red Hat, Switzerland; Daniel Schaefer, Red Hat, Germany
- 13:45 – 14:00 Locating Faults by Using Incremental Quantities: Introduction, Application Considerations, and Performance - Bogdan Kasztenny, Greg Smelich, Schweitzer Engineering Laboratories, Inc., USA
- 14:00 – 14:15 No Greenfield? No Problem: Digital Substations in Brownfield Projects - Birkir Heimisson, Landsnet, Iceland
- 14:15 – 14:30 Regulation of Three-Winding Transformers with Renewable Generation Sources - César Redondo Diez, ZIV Automation S.L., Spain; Philip Nort Príncipe, University of the Basque Country (UPV/EHU), Spain

- 14:30 – 14:45 Standardization Protection, Control and Commissioning for Renewables and Data Centre Substations: A Multi-Region EPC Perspective - Liam O Sullivan, Ross Kelly, Jonathan Regan, H&MV, Ireland
- 14:45 – 15:00 Supervisory Application for Anomalous Event Detection in Substations: Real-Time Implementation and Validation in a Virtualized IEC 61850 Testbed - Olga Klyagina, André Melim, Tiago Hekkert, José Ricardo Andrade, Everton Leandro Alves, António Carrapatoso, Cleberton Reiz, Clara Sofia Gouveia, INESC TEC, Portugal; Ana Aleixo, Rui Jorge, João Peres, EFACEC, Portugal
- 15:00 – 15:15 Discussions
- 15:15 – 15:45 **Coffee break at the Exhibition areas**

### Afternoon Session WEA Part 2:

Chair: Glenn Wilson, USA

- 15:45 – 16:00 Configuring and Testing a Multi-vendor Busbar Protection Scheme using IEC 61850 Sampled Values: An Experience Report from Cigré WG B5.74 - Pablo Flores, Axia, Brazil; Denys Lellys, Consultant, Brazil; Alexander Dierks, Alectrix (Pty) Ltd, South Africa; Andre Melo, Schneider Electric, Spain; Sindhuja Vijayaraghavan, SPIE, Netherlands; Rainer Goblirsch, Siemens, Germany
- 16:00 – 16:15 Digital Substation PACS Deployment - Top-Down Engineering Process Return of Experience - Mateus Alexandrino, Ana Gabriela da Silva de Azevedo, Silvia Sawada Simões Costa Higashi, Mateus Cruz Lunardi, Vitalcir Pietta, AXIA Energia, Brazil; Carlos de Souza Moraes Neto, Rafael Bonet Scheffer, Adriano de Oliveira Ferreira, Bruno Alexandre Oleskowicz, WEG, Brazil
- 16:15 – 16:30 Development, Implementation and Testing of an Islanding Tripping Scheme with Siemens SIPROTEC5 IEDs and Omicron Advanced TransPlay Module for DOW's Industrial Network - Mihaela Petcu, Delft University of Technology and Siemens Nederland N.V., Netherlands; Steven de Clippelaar - DOW Chemical Energy Technology Center, The Netherlands; Keysan Polat - Siemens Nederland N.V., The Netherlands; Marjan Popov - Delft University of Technology, The Netherlands
- 16:30 – 16:45 Protection Coordination Challenges in Medium-Voltage Distribution System of Process Plants: A Case Study - Muhammad Abdullah Sindhu, Fauji Fertilizer Company, Pakistan
- 16:45 – 17:00 Ensuring high quality, interoperable data through validation and conformance testing - Harish Krish-nappa, DNV, The Netherlands; Jan Vit Suntar, Lino Prka, DNV, Croatia, UCAlug Update - Herbert Falk, Joel Greene, UCAlug, USA
- 17:00 – 17:15 UCAlug Update – Herbert Falk, Joel Greene, UCAlug, USA
- 17:15 – 17:30 Discussions
- 18:00 - 22:00 **Conference Gala Dinner at the Nieuwe Kerk Delft – an old church in Delft**

**Thursday 25 June 2026**

**TU Delft Aula Congress Centre Mekelweg 5, 2628 CC Delft, Netherlands**

### Morning Session THM Part 1:

Chair: Alex Apostolov, USA

- 8:30 – 8:45 Integration of context-dependent protection characteristics suitable for converter-dominated grids into an IEC 61850-based engineering workflow - Arlind Damjani, Sarah Anhaus, Willem Leterme, IAEW of RWTH Aachen University, Germany
- 8:45 – 9:00 Line differential protection using satellite communication - Philipp Stachel, Carlos Guimarães, Florian Zeiger, Andrej Gorbing, Siemens AG, Germany
- 9:00 – 9:15 High-Impedance Fault Detection Based on Fault Component Extraction - Jiayao YANG, Rong LI, Schneider-Electric, China; Daniel SABIN, Schneider-Electric, MA, USA; Eric SUPTITZ, Schneider-Electric, France; David KEELING, Kun Cheng ZHENG, Schneider-Electric, China; Jiawei YUAN, Guobing SONG, Xi'an Jiaotong University, China; Ran RAN, Schneider-Electric, China; Yu CAO, Datalyxt GmbH, Germany

- 9:15 – 9:30 Practical Experiences and Lessons Learned in Adapting PG&E Line Protection Standard for IEC 61850 Digital Secondary Systems - Priyadharshini Guruprasad, Ashish Sharma, Rachel Oelsner, SEL, USA; Shashank Bodhankar, Pacific Gas and Electric, USA
- 9:30 – 9:45 Where Compliance Meets Visibility- OT IDS's Role in IEC 62443 Cybersecurity - Ozan Dayanc, OMICRON electronics, Austria
- 9:45 – 10:00 Discussions
- 10:00– 10:30 **Coffee break at the Exhibition areas**

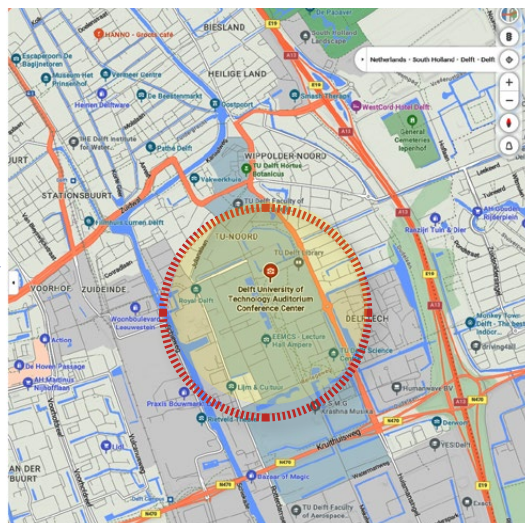
**Morning Session THM Part 2: Chair: Alex Apostolov, USA**

- 10:30 – 12:30 **Interactive Session - Ask the Experts**
- 12:30 – 13:30 **Lunch break at the Exhibition areas**

**Afternoon Session THA Part 1: Chair: Birkir Heimisson, Iceland**

- 13:30 – 13:45 Assessing network filtering efficacy against DoS attacks on protection relays using Sampled Values - Carlos E. F. Pimentel, GE Vernova, Brazil; Alexandre R. Aoki, Mateus D. Teixeira, Universidade Federal do Paraná (UFPR), Brazil
- 13:45 – 14:00 Modeling and State-Machine Control of a Wind-Solar-Hydrogen Experimental Platform Based on Literature Parameter Reconstruction - Xinzhou Dong, Liang Cui, Fantai Kong, Tsinghua University, China
- 14:00 – 14:15 A Supporting Infrastructure as a Habitat for Digital Substations - Fred Steinhauser, OMICRON electronics, Austria
- 14:15 – 14:30 Six-Phase Transmission - What? Why? & How? - A. Apostolov, PAC World, USA
- 14:30– 14:45 Discussions
- 14:45 **Closing Announcement**

Conference Venue



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# PAC WORLD CONFERENCE 2026

22 - 25 June 2025, TU Delft Aula Congress Centre, Mekelweg 5, 2628 CC Delft Delft, The Netherlands

The city of Delft came into being beside a canal, the 'Delf', which comes from the word delven, meaning to delve or dig, and this led to the name Delft. Delft became an important market town, the evidence for which can be seen in the size of its central market square. Around 1600, Delft occupied a prominent position in the field of printing. In the 17th century, Delft experienced a new heyday, thanks to the presence of an office of the Dutch East India Company (VOC) (opened in 1602) and the manufacture of Delftware, the distinctive and charming style of blue and white pottery.



## Monday, 22 June 2026

18:00 – 20:00

### Welcome Reception at the Delft City Hall

Join us at the Welcome Reception. This is a great way to kick-off the PAC World Conference 2026. We enjoy getting together to catch up and meeting others who are joining the conference.

The reception is included in your registration fee. You will need to wear your badge to attend the event.



The Delft University of Technology (TU Delft) established on 8 January 1842 by King William II as a royal academy is the oldest and largest Dutch public technical university, located in Delft, Netherlands. It specializes in engineering, technology, computing, design, and natural sciences.



TU Delft is one of Europe's leading institutions in engineering, design, and sustainability, bringing a vibrant, youthful energy to the city. This blend of old-world charm and cutting-edge science gives Delft its unique character: timeless yet forward-looking.



## Tuesday, 23 June to Thursday, 25 June 2026

8:30 – 17:30

### Conference Paper at the TU Delft Aula Congress Centre.

## Tuesday, 25 June 2026

5:30 – 19:30 or later

**PAC Demo Hour+** We are excited to invite you to visit the PAC World Conference exhibition area for a fantastic opportunity for you to spend quality time viewing detailed demos and information.

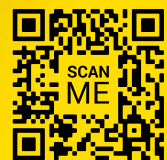


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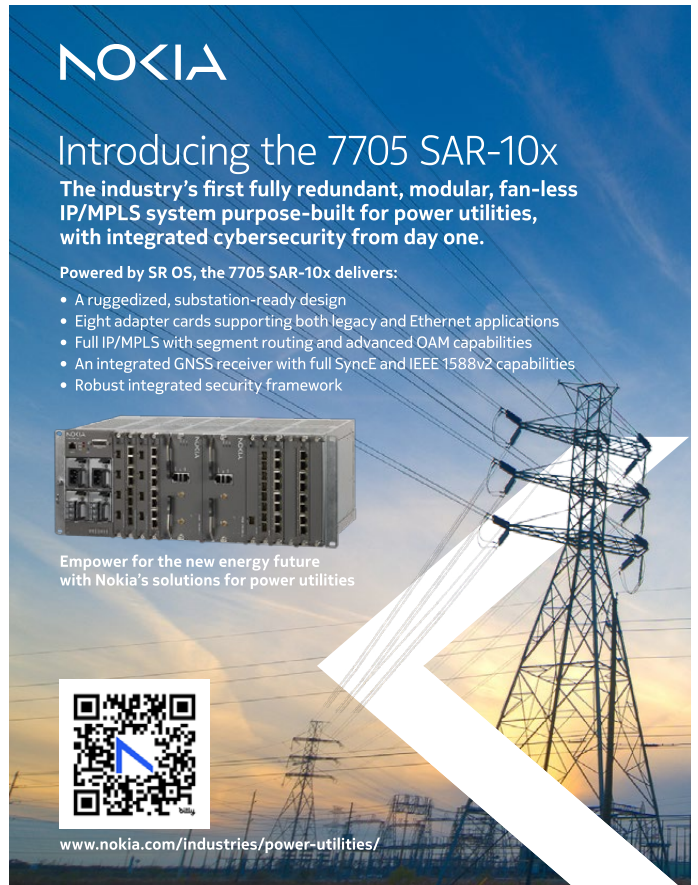
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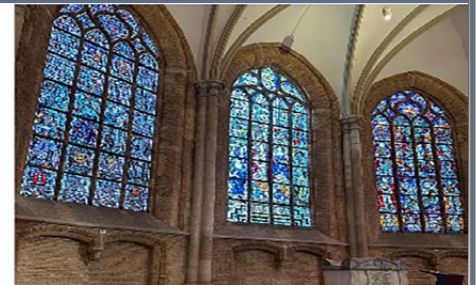
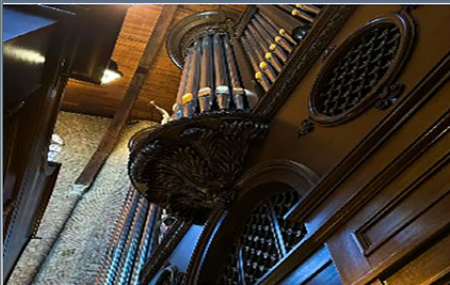
WHEN TRUST MATTERS

## YOUR TRUSTED AND EXPERIENCED PARTNER IN IEC 61850 & OTHER PROTOCOL TESTING



- Server & client conformance testing
- GOOSE performance & sampled values testing
- Engineering tool validation (ICT/SCT)
- Protocol & cybersecurity testing for SCADA
- Interoperability, performance, safety & reliability
- Protocol test tools and hands-on training

## Gala Dinner - at the Nieuwe Kerk Delft



**Wednesday, 24 June 2026 - Drinks Reception starts at 18:00 - Dinner is at 19:00**

Join us for our Conference Gala Dinner. We will be at the Nieuwe Kerk Delft – an old church in Delft. It's the perfect time to enjoy a nice meal, good entertainment and the awards ceremony for the Photo Competition inside an amazing venue. We encourage everyone to register for this optional event and bring your spouse or guest to experience an entertaining evening.

The Oude Kerk and Nieuwe Kerk are an integral part of the history of Delft and the Netherlands, and are living monuments that preserving the past and shaping the present. The Nieuwe Kerk is renowned as the final resting place of William of Orange and other members of the Dutch Royal House. At the same time, the Oude Kerk and Nieuwe Kerk Delft are vibrant cultural venues, hosting exhibitions, concerts and lectures.

the Gala Dinner is  
kindly sponsored by OMICRON electronics

**OMICRON**



**Organizing Committee:**

Chairman: Rene Troost (Stedin, Netherlands), Marjan Popov (TU Delft, Netherlands), and Angela Sayegh (PAC World, USA)

**Advisory Committee:**

To ensure that the PAC World magazine and conference are at a high level that meets the needs of the industry, we have invited world known experts in the field of electric power systems protection, automation and control as members of the magazine Advisory Board and the conference Advisory Committee.

They help us with their ideas, comments and suggestions to improve the content and quality of the magazine and the conference.

The members of the PAC World Advisory Board and the PAC World Conference Advisory Committee are (in alphabetical order):

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Jorge Miguel Ordacgi Filho (Brazil)  
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**Thank you, All**

