

# Wind farm operation and maintenance: Embrace the challenges

SKF Wind Farm Management Conference,  
19–20 April 2016, Brussels, Belgium





# Welcome!

Dear colleagues in the wind industry,

2016, what a dynamic year in the industry! We see consolidation of wind turbine OEMs and service providers, while large utilities are splitting their business and focusing on renewable energy. On the same time for many countries subsidies are reduced while wind energy becomes a vital part of energy supply.

The SKF Wind Farm Management Conference as an established and proven operation & maintenance forum has delivered timely and practical knowledge on how to do O&M for wind turbines. Now it is time to identify and embrace the new challenges in Wind O&M. The members of the program committee representing companies from DONG Energy, Gamesa, ABB, Availon and SKF have discussed and identified those topics and invited subject matter experts to present their views.

Similar as in the last conferences we have break-out sessions where sub-groups discuss specific subjects or aspects of the broad main theme. It is an opportunity for each participant to share experience, gain knowledge from others and drive the discussion actively.

Now let us take the time and listen to latest insights from leading industry players, make contacts and exchange knowledge to embrace the new challenges for 2016 and beyond.

On behalf of the program committee

*Hannes Leopoldseder*  
Global Sales Manager Wind O&M

*Thomas Bruun*  
DONG Energy



*Hannes Leopoldseder*  
SKF

*Christian Jourdain*  
Gamesa



*Philipp Schmid*  
SKF

*Michael Richter*  
Availon



*Raf Kerkhofs*  
SKF

*Teijo Karna*  
ABB



Media partner:



## Break-out sessions moderators:

Thomas Bruun – DONG Energy

Sylvain Humbert – SKF

Christian Jourdain – Gamesa

Teijo Karna – ABB

Raf Kerkhofs – SKF

Nicolaj Mensberg – DONG Energy

Steen Broust Nielsen – MAKE

Michael Richter – Availon

David Vaes – SKF

# Conference programme

## Tuesday, 19 April 2016

- 07:30–09:00 Registration at hospitality desk and coffee
- 09:00–09:05 Opening  
Hannes Leopoldseder  
Global Sales Manager Wind O&M – SKF
- 09:05–09:20 Welcome note  
Erik Nelander  
President – SKF Industrial Sales, Europe, Middle East & Africa.
- 09:20–09:50 Key note speech  
Alfredo Parres  
Group SVP at ABB, Head of Wind ISI – ABB/EWEA
- The effects of future energy markets on wind O&M**
- 09:50–09:55 Intro  
Hannes Leopoldseder  
Global Sales Manager Wind O&M – SKF
- 09:55–10:15 O&M in the global wind market  
David Hostert  
Senior Wind Analyst – BNEF
- 10:15–10:35 How to evaluate the impact of power prices on O&M  
Eckhard Kuhnhenne  
Managing Director – Enervis energy advisors
- 10:35–10:55 Creating an internal wind farm's service department, as response for changes within the energy market  
Michał Sekal  
Wind Farms and PV Maintenance Director – Energa
- 10:55–11:00 Practical info break-out sessions
- 11:00–11:30 Coffee break and networking
- 11:30–12:30 Break-out sessions\***
- 12:30–13:45 Lunch
- Our challenges, our response – case studies**
- 13:45–13:50 Intro  
Hannes Leopoldseder  
Global Sales Manager Wind O&M – SKF
- 13:50–14:05 Life prediction using physics based models  
Dr. Adrijan Ribaric  
Head of our Industrial Internet Solutions – Sentient Science
- 14:05–14:20 Performance monitoring based on estimated power curve  
Philippe Mol  
Project Engineer – Maintenance Partners
- 14:20–14:35 Our challenges, our response, ISP in China  
Da Ni  
General Manager – CH New Energy
- 14:35–14:55 **Panel debate – Our challenges, our response**  
Thomas Bruun  
Head of Technical Integrity Management – DONG Energy
- 14:55–15:00 Practical info break-out sessions
- 15:00–15:30 Coffee break and networking
- 15:30–16:30 Break-out sessions\***
- 16:30–16:45 Coffee break
- The good, the bad and the ugly maintenance**
- 16:45–16:50 Intro  
Hannes Leopoldseder  
Global Sales Manager Wind O&M – SKF
- 16:50–17:05 Service readiness evolution over the last decade (gear unit level)  
Wim Deckx  
Head of Wind Service MA – ZF Services
- 17:05–17:20 Premature bearing failures in wind turbine gear units  
David Vaes  
Senior Application Engineer – SKF
- 17:20–17:35 Human factor in wind farm maintenance  
Carsten L. Andersen  
CEO – DWPA
- 17:35–17:45 Closing of the day  
Hannes Leopoldseder  
Global Sales Manager Wind O&M – SKF
- 18:45–19:00 Meet at hotel lobby and walk to the conference dinner venue
- 19:00–23:00 Conference dinner at "La Tentation"  
Host: Laurent Vanhoudenhove  
Industrial Market General Manager Benelux

## Wednesday, 20 April 2016

- 08:30–09:00 Coffee and networking
- 09:00–09:05 Intro & Recap day 1  
Hannes Leopoldseder  
Global Sales Manager Wind O&M – SKF
- How to extend life time of turbines and components**
- 09:05–09:20 Life extension – from theory to reality for a spanish wind farm  
Christian Jourdain  
Head of Marketing & Communication, Services – Gamesa
- 09:20–09:35 Retrofit and improvement of aging wind turbines to increase production and extent lifetime  
Jeff Peterson  
Global Product Line Manager Wind Service – ABB
- 09:35–09:50 After the design life time, in a market with low sales prices  
Strange Skriver  
Chief Technical Consultant – Danish Wind Turbine Owners Association
- 09:50–09:55 Practical info break-out sessions
- 09:55–10:25 Coffee break and networking
- 10:25–11:25 Break-out sessions\***
- 11:25–11:40 Coffee break
- Invest now or for sure pay later**
- 11:40–11:45 Intro  
Hannes Leopoldseder  
Global Sales Manager Wind O&M – SKF
- 11:45–12:00 Three points to bring down your long-term O&M costs  
Ulrich Schomakers  
CEO – Availon
- 12:00–12:15 Using big data to drive performance  
Mario Bachmann  
Operations Manager North Europe – GE
- 12:15–12:30 Driving down cost of offshore operation  
Nicolaj Mensberg  
Director – DONG Energy
- 12:30–12:50 **Panel debate – Invest now or for sure pay later**  
Christian Jourdain  
Head of Marketing & Communication, Services – Gamesa
- 12:50–13:00 Closing WFMC 2016 / Information 2017  
Hannes Leopoldseder  
Global Sales Manager Wind O&M – SKF
- 13:00–14:00 Lunch
- 14:00 Transfer to SKF European Distribution Center  
Tongeren Belgium  
(optional and only for those who registered)

### \* Break-out sessions

- O&M on electrical components
- The challenges of managing a fleet of different turbines
- New supply chain challenges
- Do's and don'ts in O&M contract management
- Maintenance strategy and execution
- Drive train challenges related to bearing technology
- Lubrication management
- Big data management in O&M
- Blade inspection

# Conference presentations

Tuesday, 19 April 2016

Topic: [Opening](#)  
Time: [09:00–09:05](#)  
Moderator: [Hannes Leopoldseder](#)  
[Global Sales Manager Wind O&M – SKF](#)

Topic: [Welcome note](#)  
Time: [09:05–09:20](#)  
Presenter: [Erik Nelander](#)  
[President – SKF Industrial Sales, Europe, Middle East & Africa](#)

Topic: [Key note speech](#)  
Time: [09:20–09:50](#)  
Presenter: [Alfredo Parres](#)  
[Group SVP at ABB, Head of Wind ISI – ABB/EWEA](#)

After a strong 2015, European wind industry is facing important decisions that will be taken by the European Union in the few years to come: a new renewable energy directive, new energy market regulations and new frameworks to finance new generation capacity and infrastructure investments. All these will have an impact on the way new projects are developed and existing plants are operated. EWEA is paying a very high attention to all these topics, following their development and ensuring the wind industry voice is well heard and taken into consideration by policy makers. The association is also very active in making sure European industry consolidates its leadership position in the world wind energy market, not only in terms of technologies to ensure a smooth integration of wind energy into the grids but also of technologies to reduce cost of energy where O&M optimization plays a key role.

The effects of future energy markets on wind operation and maintenance

Topic: [O&M in the global wind market](#)  
Time: [09:50–10:15](#)  
Presenter: [David Hostert](#)  
[Senior Wind Analyst – BNEF](#)

Based on Bloomberg New Energy Finance's global market coverage and data, this presentation will look at the trends that define the onshore wind market today and explore the role O&M could play in the transition of the energy sector.

Topic: [How to evaluate the impact of power prices on O&M](#)  
Time: [10:15–10:35](#)  
Presenter: [Eckhard Kuhnhenne](#)  
[Managing Director – Enervis energy advisors](#)

Already in present feed-in-tariff systems the income from direct selling of wind power to the power market has an impact on the financial performance of wind farms. However, once projects are no longer operating in a feed-in-tariff system, power prices determine their overall income. In Germany, after 2020 approx. 8 GW of wind will no longer profit from a support scheme and will have to rely on the power market as the only revenue source. Hence, the maximization of energy production will no longer be the aim – the new target will be to maximize the contribution margin from the power markets. The presentation discusses the consequences of this development for O&M strategies.

Topic: [Creating an internal Wind Farm's service department, as response for changes within the energy market](#)

Time: [10:35–10:55](#)  
Presenter: [Michał Sękal](#)  
[Wind Farms and PV Maintenance Director – Energa Wytwarzanie](#)

Currently the wind energy market is becoming more and more mature. Together with a rapidly changing energy market, this creates an environment where a wind farm operator has the possibility of choosing a different solution in maintenance of wind turbines, and is actively searching for areas where costs can be optimized. As a result, the question about the way of maintenance has to be answered. In his presentation Michał Sękal will show which factors were considered as important during the process of choosing a maintenance strategy for Energa Wytwarzanie. What were the needs of the company, the expectations of management and what are the results after 1,5 years?

Our challenges our response – case studies

Topic: [Life prediction using physics based models](#)  
Time: [13:45–14:05](#)  
Presenter: [Dr. Adrijan Ribaric](#)  
[Head of our Industrial Internet Solutions – Sentient Science](#)

Estimating the life of existing assets that are in operation can be performed using either data-driven models or physics-based models. Physics-based models require significant less sensor measurements compared to Data-driven models in order to provide reasonable life prediction. However, physics-based models require a detailed physical description of the asset that is being analyzed. This presentation shows how Sentient overcome the hurdles of physics-based models and uses its domain expertise to support the wind industry.

Topic: [Performance monitoring based on estimated power curve](#)  
Time: [14:05–14:20](#)  
Presenter: [Philippe Mol](#)  
[Project Engineer – Maintenance Partners](#)

The implementation of condition-based maintenance requires advanced monitoring systems crossing data from different sources, which allow the detection of performance drifts at an early stage. Among all metrics in wind turbines, power curve, the relationship between the active output power and the wind speed, is one of the most sensitive to these changes. This presentation introduces the performance monitoring based on power curve which is estimated either from SCADA or modelled data. The monitoring method shows the effectiveness in the detection of faulty yaw misalignment and the verification of blade angle adjustment.

Topic: [Our Challenges, our response, ISP in China](#)  
Time: [14:20–14:35](#)  
Presenter: [Da Ni](#)  
[General Manager – CH New Energy](#)

Chinas wind market has more than 100 companies (OEM, OES, & ISP). Main players of chinese wind farm owners are of 5 state-owned power giants. As an SKF certified ISP in China, Da shares their cases of response to challenges they face from the customers technically, geographically, and bureaucratically, as well as from their huge amount of competitors.

**Topic:** Panel debate – Our challenges, our response  
**Time:** 14:35–14:55  
**Moderator:** Thomas Bruun  
Head of Technical Integrity Management –  
DONG Energy

### The good, the bad and the ugly maintenance

**Topic:** Service readiness evolution over the last decade (gear unit level)  
**Time:** 16:45–17:05  
**Presenter:** Wim Deckx  
Head of Wind Service MA – ZF Services

This presentation will highlight some service readiness features of ZF's new generation of wind turbine gear units. This new generation is largely driven by the development of competitive wind turbines for specific wind sites. Therefore, increased serviceability, reliability and availability are essential.

**Topic:** Premature bearing failures in wind turbine gear units: Drivers and counter measures  
**Time:** 17:05–17:20  
**Presenter:** David Vaes  
Senior Application Engineer – SKF

Premature bearing failures are mainly seen at critical bearing positions in the gear units, in a wide range of wind turbines and bearing types. The failure mode is often described as white etching cracks (WEC) or white structure flaking (WSF) in the industry. This is however misleading because WEC/WSF focuses on symptoms rather than on root causes. It is crucial to understand the driving factors for these premature failures to identify countermeasures. Based on test results, this presentation will show that several operating conditions can lead to WEC networks; driven by stress related factors (e.g. short time high loads, structural stresses) as well as driven by environmental weakening aspects (e.g. hydrogen driven by mixed friction and slip, corrosion, stray current). Finally, potential countermeasures in the application and measures to increase the robustness of the bearings such as the SKF black oxide will be discussed.

**Topic:** Human factor in wind farm maintenance  
**Time:** 17:20–17:35  
**Presenter:** Carsten L. Andersen  
CEO – Danish Wind Power Academy

Will a perfectly scheduled maintenance, conducted correctly and followed by all procedures keep unplanned shutdown away? I am sorry, but unfortunately not. And if we use a highly advanced "CMS Condition Monitoring System", will this do it? Will it help? Yes, it does help, but it will not avoid unplanned shutdowns. We need O&M staff with open minds, understanding of the technology and strong ownership for the job of operating, maintaining and troubleshooting our already very well engineered wind turbines. The current attitude in maintaining complex wind turbines is one of our most expensive mistakes today.

**Topic:** Closing of the day  
**Time:** 17:35–17:45  
**Moderator:** Hannes Leopoldseeder  
Global Sales Manager Wind O&M – SKF

## Wednesday, 20 April 2016

**Topic:** Intro & Recap day 1  
**Time:** 09:00–09:05  
**Moderator:** Hannes Leopoldseeder  
Global Sales Manager Wind O&M – SKF

### How to extend life time of turbines and components?

**Topic:** Life extension – from theory to reality for a spanish wind farm  
**Time:** 09:05–09:20  
**Presenter:** Christian Jourdain  
Head of Marketing & Communication,  
Services – Gamesa

Life extension programs based on site conditions, historical operational data and inspections are relatively good to estimate turbine's fatigue accumulation, but are not precise enough to guarantee turbines' operations up to year 30 under a full O&M contract. Some customers might not need such comprehensive warranty but wind assets' owners in Spain do as revenues were cut by 40%. Through this tangible case, Gamesa will explain the different steps undertaken, the program of upgrades we will apply and finally its corresponding business case.

**Topic:** Retrofit and improvement of aging wind turbines to increase production and extent lifetime  
**Time:** 09:20–09:35  
**Presenter:** Jeff Peterson  
Global Product Line Manager Wind Service – ABB

As the wind energy market has matured, assets are aging, reducing the efficiency and increasing the operational costs of these turbines. This presentation covers a solution in how to maintain these aged fleets and their benefits – refurbishment and retrofit of different types of turbines, by installing a full power converter. Retrofitting enables wind turbines to work at variable speeds by controlling the system torque and allowing the maximum power transfer between the wind and turbine blades. This retrofit process will return an increase in productivity and a reduction in maintenance costs while meeting current grid codes.

**Topic:** After the design life time, in a market with low sales prices  
**Time:** 09:35–09:50  
**Presenter:** Strange Skriver  
Chief Technical Consultant – Danish Wind Turbine Owners Association

In Denmark we have many old wind turbine generators (WTGs), and we have discussed extending life time for many years. The low sales prices of electricity today give very little room for upgrades of the WTGs. How do we manage to keep the WTGs in operation, when the economy strives to omit even the smallest cost? Legislation demands extra inspections after the design life time. How do the OEMs and ISPs cope with this? What will we see for larger WTGs in the future when they reach the design life time?

## Invest now or for sure pay later

**Topic:** [Three points to bring down your long-term O&M costs](#)  
**Time:** [11:40–12:00](#)  
**Presenter:** [Ulrich Schomakers](#)  
[CEO – Availon](#)

Using the long-term full service fleet of Availon as an example, the presentation will focus on the following three main areas where you can optimize your long-term O&M costs: Best maintenance as a basis, installation of upgrades and understanding the structure integrity of your WTG.

**Topic:** [Using big data to drive performance](#)  
**Time:** [12:00–12:15](#)  
**Presenter:** [Mario Bachmann](#)  
[Operations manager Central Europe – GE](#)

Knowing a wind turbine's actual condition is key to minimize down time and maximize performance: The presentation focuses on how to turn real time operational data into actionable maintenance tasks by forecasting possible events and detecting anomalies before the unit stops.

**Topic:** [Driving down cost of offshore operation](#)  
**Time:** [12:15–12:30](#)  
**Presenter:** [Nicolaj Mensberg](#)  
[Director – DONG Energy](#)

As the largest turbine owner and operator of offshore wind turbines, the need for a high ability to improve the operation of new turbine platform is critical throughout the wind farm lifetime. DONG will share their prospective on some of the most critical leavers are and how to enable them.

**Topic:** [Panel debate – Invest now or for sure pay later](#)  
**Time:** [12:30–12:50](#)  
**Moderator:** [Christian Jourdain](#)  
[Head of Marketing & Communication, Services – Gamesa](#)

**Topic:** [Closing WFMC 2016 / Information 2017](#)  
**Time:** [12:50–13:00](#)  
**Moderator:** [Hannes Leopoldseder](#)  
[Global Sales Manager Wind O&M – SKF](#)

# Conference partners



**Presenter:**

**Carsten L. Andersen**  
**Danish Wind Power Academy**

After working for 15 years in the wind industry with installation and O&M, Carsten founded the Danish Wind Power Academy 11 years ago in 2004. With more than half of his life spent in this industry, he has developed a unique "condition-based training concept" that takes a data-driven approach and creates a customised training programme catered directly towards the operator's needs. The training programmes target all employees in operation of wind turbines from Risk, Asset and Operation Management to Technicians in the field and is taking into account their skills and backgrounds.



**Presenter:**

**Mario Bachmann**  
**GE Renewable Energy**

Mario started his career with Tacke Windtechnik in 1993 that got later acquired by General Electric and has over 22 years of operational experience in the wind industry. He led various international projects in New Markets around the globe and joined the offshore business in 2005 as operational lead. From 2010 he held the position as Advanced Service Manager and was in charge to develop products to increase productivity and life time extension. Since 2013 he is back in operations and today leading the field operations organization for services in North Europe.



**Moderator and member of program committee:**

**Thomas Bruun**  
**DONG Energy**

Thomas is Head of Technical Integrity Management within DONG Energy, Wind Power Operation. Technical Integrity Management is responsible for securing integrity across DONG Energy portfolio of wind assets in operation. Utilizing portfolio knowledge to optimize maintenance and fast tracking failure mode analyses. Thomas has 14 years of experience from the wind industry and holds a degree in Engineering as well Business Administration. Thomas has been in his current position since 2012.



**Presenter:**

**Wim Deckx**  
**ZF Services**

Wim Deckx holds a Mechanical Engineering Degree and Master of Business Administration from the University of Antwerp. In 2006, Wim has joined Hansen Transmissions (since 2011 part of the ZF Friedrichshafen AG) and has held several positions within ZF Wind Power and is since October 2015 Head of Wind Service(MA) at ZF Services.





**Organizer break-out sessions:**

**Fritz Ulrich Dettmer**  
SKF

Fritz Ulrich Dettmer, holding a Master of Business Engineering (MBE), joined SKF in 2010 and for the last 4 years he worked in business development for renewable energy and had various responsibilities

including offer management, aftermarket and wind generators. He is based in Schweinfurt. Previously he has been working in the automotive industry at ZF and Daimler.



**Moderator and member of program committee:**

**Teijo Karna**  
ABB

Teijo is an Industry Segment Manager for Wind in ABB and is responsible for generators, converters and motors. He has been working in the wind industry since 2001 in mainly sales and management roles. He started in the industry when the turbine size just had shifted from kW to MW class so he has had the opportunity to closely follow the industrialization and rapid growth.

Teijo is also a member of the ABB Wind business core team which is coordinating all wind related business activities globally within the ABB Group.



**Presenter:**

**David Hostert**  
BNEF

David leads the wind analysis at Bloomberg New Energy Finance (BNEF). He is a member of a global team of analysts responsible for producing and communicating research and analysis on the economics, policy, and strategic dynamics of the wind industry. Based in London, he specialises in European markets, and covers policy and auction analysis, forecast, asset valuation, project economics, and supply chain dynamics.

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**Moderator and member of program committee:**

**Raf Kerkhofs**  
SKF

Raf Kerkhofs, holding a master in Information Management, is working for 10 years at SKF having different international positions. Before joining the wind industry, he has been working in aftermarket business for various industries and Key Account Management. In the last 4 years he is in charge of Business Development for Wind O&M as well as responsible for SKF Wind O&M strategy. Raf is based in Brussels, Belgium.

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**Moderator:**

**Sylvain Humbert**  
SKF

Sylvain Humbert, based in Nancy (France), reporting to SKF Maintenance Products in The Netherlands, is in charge of business development of "MaPro" Sales for OEM's in different industries and especially in the Renewable Energy Segment. Through the different roles and positions he held since he joined SKF ERC as an intern, Sylvain went from fundamental manufacturing process research to product development and finally business development in the last years. His link to the wind industry started with the development and sales of large size induction heaters for main bearing assembly with Wind Turbine manufacturers. He since then got to work with more solutions and more components of Wind Turbines all over the world, including lubrication.

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**Presenter:**

**Eckhard Kuhnhenne**  
Enervis energy advisers

Eckhard Kuhnhenne-Krausmann is Managing Director and partner of the consulting company Enervis energy advisers, where he is responsible in particular for the energy-economic evaluation of wind energy projects. In addition to the project evaluation and technical economic due diligence, the economic optimization of wind projects is the focus of its work. Enervis is analyzing the additional revenue opportunities and risks in the marketing of wind farms. Enervis developed the necessary evaluation tools such as the Market Value Atlas, revenue reports and the enervis auction model. Mr. Kuhnhenne-Krausmann is active in the energy economy in various functions since 1992.

Eckhard Kuhnhenne-Krausmann is Managing Director and partner of the consulting company Enervis energy advisers, where he is responsible in particular for the energy-economic evaluation of wind energy projects. In addition to the project evaluation and technical economic due diligence, the economic optimization of wind projects is the focus of its work. Enervis is analyzing the additional revenue opportunities and risks in the marketing of wind farms. Enervis developed the necessary evaluation tools such as the Market Value Atlas, revenue reports and the enervis auction model. Mr. Kuhnhenne-Krausmann is active in the energy economy in various functions since 1992.



**Presenter, moderator and member of program committee:**

**Christian Jourdain**  
Gamesa

Christian Jourdain is a civil engineer with an MBA from HEC Paris and ESADE, with strong international experience. Christian already has 9 years of experience in the wind industry and carried out

different managerial positions in purchasing, operation & maintenance and sales within Gamesa. He is currently the head of the marketing & communication department for Services for all regions. Prior to joining Gamesa, he worked for Kodak for 5 years, based in New York State and in France, developing B2B web portal solutions. Christian also patented a board game on wind industry in which players are assets managers.



**Conference moderator and member of program committee:**

**Hannes Leopoldseder**  
SKF

Hannes Leopoldseder, based at SKF in Steyr, Austria, is responsible for the global wind energy aftermarket sales within SKF. Throughout his career within SKF, which started in 2001, he has

Hannes Leopoldseder, based at SKF in Steyr, Austria, is responsible for the global wind energy aftermarket sales within SKF. Throughout his career within SKF, which started in 2001, he has held a number of managerial positions in business development including two international assignments, Germany and Sweden. His background in the wind industry comes from his business development activities related to drive train solutions. He is in charge of developing the global SKF wind aftermarket sales as well as for the SKF wind aftermarket strategy implementation.





**Presenter and moderator:**

**Nicolaj Mensberg**  
DONG Energy

Nicolaj Mensberg holds a B. Sc. in Electrical Engineering and a degree in Business Administration. He has worked in wind since 1999 for several leading wind turbine suppliers such as NEG Micon, Vestas, Suzlon and Clipper Windpower. During this time the work have involved many aspects of the of wind business including product development, product management, sales, project development and execution. In 2012 Nicolaj joined DONG Energy Wind where he now heads up Asset Integrity Management which is a multi-disciplined function in operations with the main responsibility of ensuring the asset integrity of all DONG Energy wind farms under DONG operations.



**Moderator:**

**Steen B Nielsen**  
MAKE

Steen leads and manages MAKE's global business development and sales efforts across both research and consulting businesses, while also lending his extensive experience in and knowledge of global wind power markets, policy developments, mergers and acquisitions, investor relations and supply chain to MAKE's custom consulting projects. Steen has over 15 years of senior management experience in the wind power industry and prior to joining MAKE, Steen was a Director, responsible for strategy, communications and market intelligence for LM Wind Power. He also served on the Boards of the European Wind Energy Association and the Global Wind Energy Council for several years.



**Presenter:**

**Philippe Mol**  
Maintenance Partners

Working for Maintenance Partners since 2011, Philippe is involved in the business development department inside where he is mainly focusing at the implementation of the Wintell system, a health and performance monitoring platform.



**Key note speaker:**

**Alfredo Parres**  
ABB

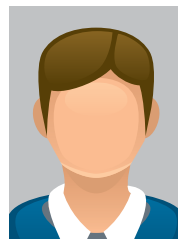
Alfredo Parres is Group SVP at ABB, Head of Wind ISI. He is currently based in Madrid. In addition to his position, Alfredo is member of the EWEA Board and Chair of its Networks Working Group. He has been active in the wind industry since he joined ABB 15 years ago. In his current position with ABB he spent 5 years in China where he acquired a deep understanding of the Chinese Wind Industry and was Chair of the Renewable Energy Working Group at the EUCCC. Alfredo is Spanish, born in Belgium and has engineering and business administration degree from the Université Catholique de Louvain (UCL – Belgium).



**Welcome note:**

**Erik Nelander**  
SKF

Erik was born in 1963 and is married with three children. He has a Master of Business Administration from School of Business, Economics and Law at the University in Gothenburg, Sweden. Erik joined SKF in 1987 and started his career in the areas of controlling and accounting, working in Sweden and in Latin America. In 1999 he took his first management position as Managing Director of SKF Mekan AB. After this, he has held senior management positions as Managing Director of SKF Sverige AB (2002–2006), Director of SKF Aerospace and Super Precision Business Unit (2006–2010), President SKF China (2010–2013) and as Vice President of SKF Industrial Market (2015–2016). As from February 2016 he was appointed President SKF Industrial Sales – Europe and MEA.



**Presenter:**

**Jeff Peterson**  
ABB

Jeff is responsible for ABB's Wind Converter Service global portfolio, making sure the needs of OEMs, ISPs and End Users are met during and after the warranty period. He has 15 years of experience in various roles and industries with the past two years in the wind industry. He holds a BS in Mechanical Engineering from Michigan State and a MBA from University of Chicago – Booth.



**Presenter:**

**Da Ni**  
CH New Energy

Da Ni established CH New Energy, which became a SKF Certified Service Provider (CSP) in 2015. The company is specialized in providing services and solutions to power train related issues in wind market. Throughout Da's career he led in numerous positions in power generation and controls in terms of engineering, commissioning and service. He has a strong service background when working in GE Convertteam UK, Southeast Asia, and China for 6 years. Da graduated from Newcastle University, UK with an MSc degree in Electrical Power.



**Presenter:**

**Dr. Adrijan Ribaric**  
Sentient Science

Dr. Ribaric holds a Ph.D in Mechanical Engineering from the University of Arizona with an emphasis in deformable MultiBody dynamics and a M.S. in Naval Architecture from the University of Duisburg, Germany. During his studies, Mr. Ribaric has conducted extensive research in the area of Finite Element reduction techniques and rolling dynamics. Since 2012, Mr. Ribaric has been involved in several SBIRs for development of physics-based prognostics models for gears, bearings and complete rotary drivetrain systems to address key rotorcraft and wind turbine durability issues. Today he oversees the system modelling process at Sentient and integration with live operation data.



**Moderator and member of program committee:**  
**Michael Richter**  
 Availon

After Michael's Business Administration studies in Germany and USA, his employment in Richter Company In- and Export, as well as his subsequently activities in Airbus, he changed in 2003 to the Jungheinrich company, where he worked in different positions until 2009. In February 2011 he finished his MBA studies, which he began in July 2011. At the same time, he was working for the Multi-Trade International company. From March 2011 until February 2013, he was responsible for service sales in Europe and North America in Nordex company. Since March 2013 he works as Global Sales Manager at Availon for Poland, Portugal, Spain, Italy and Germany.



**Presenter:**  
**Strange Skriver**  
 Danish Wind Turbine Owners Association

Strange Skriver was employed at the Danish Wind Turbine Owners Association in 1990. The main tasks during these 25 years of work have been End of Warranty inspections. Besides EoW inspections, his tasks also include inspection of gearboxes, endoscope inspections, work shop inspections, gear oil filter inspections, type approval of small wind turbines, member meetings, consultancies, inspection training etc. Strange Skriver has carried out more than 3 500 inspections on wind turbines in the range from 3 kW to 3 600 kW of more than 50 different wind turbine manufacturers and in more than 20 countries worldwide.



**Organizer and member of program committee:**  
**Philipp Schmid**  
 SKF

Philipp Schmid followed business studies focusing on marketing and industrial management and researched on strategic marketing in China during his PhD studies. Before joining SKF he worked as

Client Service Executive and Junior Research Consultant for GfK in China and Germany. As from 2008 he joined SKF and worked as project manager, market analyst and marketing manager in the Renewable and Energy industries. Besides working for SKF he is also teaching industrial marketing at Baden-Wuerttemberg Cooperative State University.



**Presenter and moderator:**  
**David Vaes**  
 SKF

David Vaes has joined SKF after his master and PhD in Mechanical Engineering. Meanwhile he is working for more than 10 years as (senior) application engineer in renewable energy, with a focus on wind turbine gear units. For several years, he has been responsible for the technical support to one of the major OEM customers of SKF. Since 2014, he is project leader in the SKF project investigating premature bearing failures and WEC, responsible for the application side of the problem. David Vaes is based in Brussels, Belgium.



**Presenter:**  
**Ulrich Schomakers**  
 Availon

Ulrich Schomakers has a degree in Electrical Engineering and studied at the University of Applied Science in Munster. He is CEO of Availon Holding GmbH since 2009. Before joining Availon he was

CEO Director of SSB Group. He has over 20 years of experience in wind energy and was holding different positions in several companies. Ulrich has worked for Tacke Windtechnik GmbH & Co KG, Enron Wind Service and GE Wind Energy GmbH. After graduating he started his career as a Project Manager for ABB Robotics in Friedberg.



**Presenter:**  
**Michał Sękal**  
 Energa

Michael was born in 1980 in Warsaw, Poland. After his studies on Warsaw University of Technology on Power and Aeronautical Engineering Faculty and on Academy of Finance in Warsaw, he started to work

in 2005 for SIEMENS as an engineer in the Energy and Environmental Solutions Department. In 2008 he moved to Iberdrola in Poland and worked as O&M Manager, working in an international O&M department and was responsible for maintenance of Iberdrola's wind farms located in Poland. Currently he is responsible for the maintenance of wind farms belonging to Energa Wytwarzanie S.A., where he is leading and developing the Q&M department focused on In-House service since 2014.

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