

Online-Conference

Network Construction and Operation Forum (Transmission Line Conference)

28th Conference, 6th and 7th May 2021 in Dresden,
Maritim Hotel Dresden + Congresscenter

Thursday, 6th May

- 09:00 Uhr **Welcome address**
Dr.-Ing. Alexander Kuhn, CEO, MVV Regioplan GmbH, Mannheim
- 09:05 Uhr **Introduction and moderation**
Dipl.-Ing. Markus Palic, CEO, TagungsgesellschaftEnergie mbH, Karlsruhe
- Law and health**
- 09:15 Uhr **Approval procedure for HV and EHV Overhead Lines – a legal update**
Dr. Till Elgeti, Lawyer, specialist for administrative law, Partner, Wolter Hoppenberg Rechtsanwälte Partnerschaft mbB, Hamm
Current legal practice on the extension and conversion of high and extra-high voltage overhead lines in Germany. Is an environmental impact assessment required? This contribution presents arising problems, legal consequences and possible solutions. Furthermore, the connection between licensing and land use is explained.
- 09:45 Uhr **EMF and health: The truth!**
Prof. Dr.-Ing. habil. Konstantin O. Papailiou, former CEO., Pfisterer Holding AG, Winterbach, former Chairman CIGRE SC B2 (Overhead Lines)
The urgently needed expansion of the transmission network is meeting with great resistance from the public, particularly because of fears about possible health hazards near overhead lines. This paper presents the latest findings and comes to a surprising conclusion.
- 10:15 Uhr **Coffee break**
- Overhead Lines**
- 11:00 Uhr **IHK- Overhead line technician - training course for overhead line construction**
Dipl.- Kffr. Gritt Wiegandt, Team leader continuing education, Erfurt Chamber of Industry and Commerce (IHK), Erfurt
Dipl.-Ing. Steffen Schulze, Cteam Consulting und Anlagenbau GmbH, Ummendorf
How and where does the overhead line technician acquire his specialist knowledge? This question is of concern to installation companies and network operators alike. Since 2017, the specialist concept of the Erfurt Chamber of Industry and Commerce has been offering a suitable answer. In 2019, the partners involved reacted to the current requirements of the industry and the resulting demand and developed two additional training schemes for overhead line construction. The paper describes the training contents and provides information on prerequisites and training duration.
- 11:45 Uhr **Digital line planning – functionality and reliability of 3D DSS**
Dr. Joram Schito, Institut für Kartografie und Geoinformation, ETH Zürich, Zürich (CH)
Joshu Jullier, MSc, Communication Manager, Swissgrid, Aarau (CH)
The 3D Decision Support System (3D DSS) is an application that computes the optimal corridor and path for new power transmission lines – either overhead or underground – and visualizes them in 3D. Stakeholders can bring in their individual interests which are considered along with laws, regulations, and technical constraints. The 3D DSS presents the first approach worldwide that determines combined lines that consist of overhead and underground sections, aiming at defusing areas that would be most affected by constructing an overhead line. We are looking forward to presenting you the latest findings that make transmission line planning even more realistic (continuation of the contribution of 2018 with current results).
- 12:15 Uhr **Lunch break**
- 14:00 Uhr **Influence of line carts on sag and permanent conductor elongation**
Dr.-Ing. Udo van Dyk, former Manager HV and EHV Overhead Line construction, Westnetz GmbH, Dortmund
Line carts are an indispensable tool for overhead line construction. Depending on their features, carts have a weight when empty of more than 200 kg and a permissible total load of more than 400 kg. This load is applied to the conductor via support elements and acts as a singular, movable individual load. The use of a cart can be regarded as a large additional load, the influence of which on the permanent elongation of the conductor was investigated in a study. The study comes to surprising results, which are presented and explained in the paper.
- 14:45 Uhr **Sabotage protection and safety in energy supply systems - better safe than sorry**
Dipl.-Ing. Thomas Hermes, Securiton GmbH, Business Unit Energy, Münster
Increased level for the protection of supply network nodes on the basis of ISO27001 and the BDEW white paper, requirements from re-audits standardised design of a property protection system for medium and large distribution network nodes, examples for the step-by-step realisation of integrated property protection concepts for network operators.
- 15:15 Uhr **Coffee break**

- Underground cables**
- 16:00 Uhr **HVDC cables - DC voltage stress in insulation systems of cables and cable joints**
 Prof. Dr.-Ing. Andreas Küchler, former Director of the Institute of Electrical Power and High Voltage Engineering, Hochschule Würzburg-Schweinfurt, Schweinfurt
- With the extensive use of HVDC cable lines for power transmission from north to south, transmission system operators are breaking new ground in Germany. Under DC voltage stress, the behavior of electrical insulation systems is completely different to the behavior manufacturers and operators of AC equipment have been used to. Particularly critical are transient shifts of electric field stresses as well as stationary fields, which are determined by elusive conduction processes and space charge accumulations. In the contribution, these particularities, the challenges and the possible solutions are explained and discussed.
- 16:45 Uhr **End of presentations of first day**
- 19:00 Uhr **Champagne reception for presence event participants, followed by a banquet with surprise pre-dinner speech**
- Friday 7th Mai**
- News on overhead line construction from FNN and CIGRE**
- 09:00 Uhr **News from FNN**
 Dipl.-Ing. Thoralf Bohn, Network Technology/Network Operation Forum (FNN) in the VDE e.V., Berlin
- The Network Technology/Network Operation Forum (FNN) develops VDE application rules and guidelines for the planning and operation of transmission and distribution networks. The European grid codes and the restructuring of the energy system are leading to new requirements, especially for grid connection and grid operation. To ensure that the networks continue to function safely and reliably in the future, the development of rules and related technology must be foresighted. This contribution provides an overview of the current work of the FNN.
- 09:30 Uhr **News from CIGRE**
 Ing. Herbert Lugschitz, Chairman of CIGRE Studi Committee B2 (overhead line), Wien (A)
- CIGRE is the biggest organisation for electric power networks and electric systems worldwide with a total number of 8.000 members. They come from utilities, industries and science from 90 countries and cover current trends and new technical developments in the business. In the present series of conferences a speaker reports regularly about the work at CIGRE on current issues in the field of overhead lines.
- 10:00 Uhr **Coffee break**
- Current issues - New services and components for network construction**
- 11:45 Uhr **ACCM and ACCS – Innovative conductors with carbon fiber core and integrated monitoring system**
 Dipl.-Ing. Davide Peroni, De Angeli Prodotti, Bagnoli di Sopra (I)
 Béatrice Gundlach, MD wiretec handels- und beratungsgesellschaft mbH, Ratingen
- Since 2006, starting with the filing of a patent application and then as a participant in the "Best Path Program", De Angeli Prodotti has been working on the development of solutions for the future electricity networks with a focus on carbon fiber. The result is two new types of overhead line conductors: ACCM, a conductor with a core of stranded carbon fiber wires enclosed in an aluminium tube and ACCS, a conductor with a core of a single carbon fiber wire, also enclosed in an aluminium tube, which integrates a monitoring system based on glass fibers, which provides information on the carbon fiber core and can non-destructively identify the location of damage during production or installation.
- 11:05 Uhr **News about Bird Protection – How to avoid a Power Line Collision**
 Wolfgang Bartke and Dr.-Ing. Klaus Schmitt, Hammarprodukter AB, Bjursås (S)
- Collision of large birds with power lines can be avoided using suitable mitigation devices. This contribution uses multispectral photography to visualize how birds see and proves in a scientific manner the function of bird protection devices on the example of the FIREFLY[®] bird diverter. Additional video recordings prove the positive change of the flight behaviour of birds on approaching protected power lines with "Firefly". Further we show a cost- and time-effective way to mount our bird protection devices using drones.
- 11:25 Uhr **Textile ropes and winch ropes for overhead line construction**
 Andreas Halle, MD, Seilflechter-Tauwerk GmbH, Braunschweig
- Textile ropes and winch ropes have been successfully used for years during line installation by many overhead line construction companies in Europe. Thereby failing loads, payloads and working loads have to be considered. Apart from joining issues, service life and discard criteria are important safety aspects. What are the possibilities to work economically and safely? How can textile ropes be used, repaired and refurbished? How can documentation be prepared easily and sustainably?
- 11:45 **ZOS - an intuitive software solution for the overhead transmission line construction site**
 Jaroslav Truchly, Zeck GmbH, Scheßlitz
- First software solution on the market developed from the ground up for the special needs of a transmission line construction site. A user-friendly ecosystem, which provides a new way of visualizing the work progress. Through the interconnection of the system components, up to date information is always at hand, for all project participants in real time. Simple data entry promotes user-friendliness, eliminates double data entry, saves time, reduces mistakes and to a large extent the use of paper.
- 12:05 Uhr **Lunch for all presence event participants at the end of the Conference**
End of Conference at 14:00

- Event format:** The Conference will take place as a hybrid event in a presence and online version in German. The **online Version** is offered **also in English**.
- Online event:** English Participants will be able to follow the event via live-stream remotely using an access code, which is strictly personal since if a participant is online using this code, further access with this code is not possible! The presentations will be synchronously translated from German into English. The presentation slides are bilingual. Questions and comments can be asked or made in writing via a chat. These will be introduced into the live event by the moderator and answered or explained by the speakers or exhibitors. In this way, online participants can take part in the lectures and the exhibition without any restrictions, even though the ever important social contacts will be unfortunately missing.
- Presentations:** The presentations are given by the speakers in person, by being physically present in the auditorium and will be streamed live.
- Exhibition:** The exhibition will take place in the conventional manner physically in the hotel adjacent to the Conference hall. In order to give online participants the opportunity to get to know the exhibition, the exhibitors and their products, the moderator will take a tour of the exhibition on the evening before the Conference after the exhibition has been set up and interview the exhibitors on video about their company, their products and, in particular, about innovations from their companies. During the coffee breaks, the recordings will be broadcast to the Conference hall on the screen as well as to the online participants. The clips are synchronized in English for the English-speaking participants. The questions and comments of the online participants in the chat will be forwarded to the respective exhibitors for answering and comments. Exhibitors who are unable to attend the conference in person will be given the opportunity to submit the presentation of their company, products and innovations in advance as a video clip in German and English. These will then be integrated into the screen show during the breaks, together with the interviews on site, and will be presented to the participants in German as well as to the online participants in the language of their choice. This gives the exhibitors the opportunity to reach the online participants as well as the physically present attendees.