

## Press Release

June 12, 2025

### **CIREN 2025**

### **Aucotec to present the world's first full integration of IEC 61850 in Engineering Base**

- **No external tools, no media disruptions: first complete integration of IEC 61850 into an end-to-end engineering platform**
- **More efficient, more secure and ready for the future: shorter engineering times, maximum interoperability and a streamlined IT landscape for grid operators and planners**
- **AI-driven engineering with SM Energy: the AI DB Builder automates the creation of standard-compliant protection and control technology models**

At the CIREN 2025 international conference being held in Geneva, Switzerland on June 16 – 19, Aucotec AG will be presenting the complete integration of IEC 61850 into its own Engineering Base cooperation platform. This groundbreaking development makes digital substation engineering more efficient, consistent and future-proof. Aucotec is now carrying out this full integration within a data-driven environment in close collaboration with European customers and grid operators.

Independently of CIREN, Aucotec's close cooperation with technology partner SM Energy shows how an AI-driven solution for automated implementation of standard-compliant protection and control technology models works. Using Engineering Base as a basis, the Brazilian company has developed the AI DB Builder.

### **Seamless integration of IEC 61850 – consistently throughout a platform for the first time**

Digitalization and decarbonization of power grids set new demands on the planning and operation of modern substations. In this new era, it is servers and data bus systems that handle the exchange of information, while traditional, document-based tools are increasingly reaching their limits. This has led to the IEC 61850 standard establishing itself as the key basis for digital substations.

Managing this transition in an efficient, future-proof way calls for platforms that are able to map the standard's full potential on a technical level. And this is precisely what Aucotec has achieved with Engineering Base: Engineering Base is the world's first platform to allow IEC 61850-compliant data models to be modeled directly without the use of external tools and to be linked to the product aspect, i.e. the hardware world. The entire definition process is centralized, compliant with standards and free of media disruptions – from the data object through to the finished configuration.

### **The next step in energy infrastructure**

"At CIREN, we will be demonstrating what digitalization in engineering really looks like," says Michaela Imbusch, Product Manager Power Transmission & Distribution at Aucotec. "Not only does our full integration save time, it also provides the technical foundation for end-to-end data models and interoperability: this is the next step in energy infrastructure. Engineering Base is the first system to meet all requirements throughout the entire substation life cycle."

All disciplines, from primary equipment to control technology, work in parallel and in a centralized form using the same data. Dedicated libraries, change tracking and a uniform database ensure excellent efficiency and maximum transparency. The close link between the functional model and the actual hardware significantly streamlines the system landscape, freeing up IT resources.

### The AI DB Builder: intelligent data modeling

The AI DB Builder developed by SM Energy is a prime example of this new flexibility and automation. It is still being offered as a custom solution at present, yet it already shows what innovations could be expected from Engineering Base in the future. The AI DB Builder extracts technical information from engineering documents then translates it into object-oriented models within Engineering Base. As a result, all sorts of different data sources – e.g. for grid structure or protection concepts – are converted into structured engineering data in an automated process.

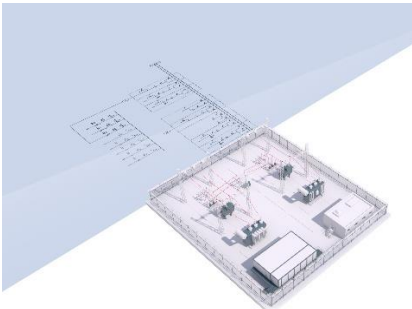
This automatically creates device models, IEC 61850 data structures, connection information, signal definitions and more, thereby bridging the gap between traditional documentation and the requirements of modern station automation. Thanks to the open architecture of Engineering Base, the AI DB Builder can be seamlessly integrated into the digital engineering process. Doing so means that protective functions, interlocking logics and IED structures are automatically created, validated and associated with the actual hardware – all without any errors and in record time.

### Benefits for operators and planners

"Engineering Base gives us the infrastructure we need to enable automated, standard-compliant mapping of complex processes," explains Renata Fernandes, CTO at SM Energy. "The combination of Engineering Base and AI DB Builder offers tangible benefits for grid operators and engineering offices alike: significantly shorter engineering times, fewer manual errors, full compliance with standards and future-proof workflows – including direct implementation of protection concepts and interlocking logics."

The development of the AI DB Builder follows an open, modular approach that fits seamlessly into the architecture of Engineering Base.

### Images\* and captions:



Transparent, always up-to-date [digital twin](#) of the substation in Engineering Base. (Image: Aucotec)



[Michaela Imbusch](#), Product Manager at Aucotec. (Image: Aucotec)



[Renata Fernandes](#), Chief Technology Officer at SM Energy. (Image: Aucotec)

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**Aucotec AG** has almost 40 years' experience in the development of engineering software designed for use throughout the life cycle of machinery, plant equipment and mobile systems. Solutions range from flow diagrams and process-control/electrical technology for large-scale plant systems to modular on-board power supply units designed for the automotive industry. Software supplied by Aucotec is currently in operation throughout the world. In addition to the headquarters near Hanover, the Aucotec Group includes six other locations in Germany as well as subsidiaries in China, India, Malaysia, South Korea, the Netherlands, France, Italy, Austria, Poland, Sweden, Norway and the USA. What is more, a global partner network ensures local support all over the world.

We would be grateful if you could supply us with a copy of your article. Thank you very much!

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