

From diagrams to data



Picture: Aucotec

HANOVER, end of November 2015. Plant engineers in particular, who are facing very complex challenges, came to the capital of German state Lower Saxony to attend Aucotec's fourth Technology Day. In addition to presentations on the latest engineering developments and different practical examples presented by users, there was an emphasis on the participants networking with each other. The companies Claudius Peters, Rippert, and IKN presented clear examples of the synergies which resulted from changing their engineering processes to database-driven design.

The speakers agreed that the approach that has emerged with the software platform Engineering Base (EB) requires rethinking, but saves a significant amount of time and produces documentation of a significantly higher quality. Reinhard Knapp, Senior Product Manager with the software vendor explained it in the following way: "EB moves engineering from the diagram to the data. Instead of being document-centric as in the past, the data itself is now the main focus, including its links." The basis for this is the database, which enables all information to be accessible at any time to everyone involved as a 'single source of truth'. A diagram is now only one of the possible perspectives of the plant model, and is not necessarily the starting point. Objects can be compiled and edited purely alpha-numerically, while the graphic counterpart is created automatically to a large extent.

Database instead of data islands

Ulrich Cord, Group Manager of Automation

Engineering at the bulk material and process engineering specialists Claudius Peters, explained: "We wanted to get away from the paper processes. We are in a state of flux which was initiated by Aucotec's platform EB. This is already a success story for us." EB has built interdisciplinary bridges and changed the communication culture in engineering. "We now collaborate much earlier and much more closely," Mr Cord said. The inefficiency of sequential work has only been demonstrated by the new, database-driven design, which has enabled the work from various disciplines to be done in parallel to a significant extent.

Work on a cement production line in Iran was the impetus for IKN, experts in pyro line issues for cement clinker production: The increasingly complex projects require significantly more modern software. An overview is top priority for projects with thousands of e-mails, over 5 000 drawings, 900 instruments, flow charts with 15 revisions and partners from several countries. "EB's data model was preaching to the converted where we were concerned, and we have internalised that very quickly," reported the Technical Director Jörg Hammerich. Mr Hammerich highlighted the transparency which major IKN projects now possess since complex plants can be fully mapped and everyone involved works with the same database. The system is already used to define the first rough plant idea. The individual disciplines then base their details on it. "All critical information about the plant sections is consolidated in EB," he said.

From left to right: Thomas Möller (Rippert), Ulrich Cord (Claudius Peters), and Jörg Hammerich (IKN)

Result: More of an overview and less effort in terms of consultation, monitoring and correction.

"Function-oriented thinking developed"

The surface treatment company Rippert designed its plants according to the internationally binding standard IEC 81 346, which also requires a function assignment for the components in addition to the product and installation location aspect. The designers took advantage of this requirement. "We have really developed function-oriented thinking," recounted administrator Thomas Möller, adding: "This way of thinking requires a different work method, but it's worth it because it saves a significant amount of time and divides the plant sections very clearly. The option of function-oriented assembly formation and the accompanying standardisation are EB's major advantages." In an initial major project, the structure of an enamelling booth was built once only, copied several times and combined into three lines. The unanimous agreement on exchanging addresses and making appointments for further individual discussions concluded the event day. This encourages the vendor to pursue its network concept. In recent years, customers and interested parties had already come to similar events, to learn from each other and to benefit from groundbreaking practical solutions.

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