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efficient engineering.

▶ Plant engineering perfectly organized with SAP ERP/PLM



User report on NEUMAN & ESSER GROUP

PROCESS CONSULTING

ENGINEERING SOFTWARE

IMPLEMENTATION

GLOBAL SUPPORT

FRIEDHELM LOH GROUP



Integrated SAP ERP/PLM system for shorter processing times in plant engineering



NEUMAN & ESSER GROUP (NEA)

NEUMAN & ESSER GROUP (NEA) is a technologically leading manufacturer of piston compressors, grinding and classifying systems as well as complete systems for the compression of air and technical gases. NEA products are used in a variety of applications in the oil and gas sector, the chemical and petrochemical industry, the food industry and in the renewable energy sector. The family-run business, founded over 180 years ago and headquartered near Aachen, Germany, is a global player with 24 operating companies in ten countries around the world. NEA employs around 1,000 people worldwide, about a third of whom work in plant and systems engineering. A dedicated R&D department ensures products undergo continuous development and market needs are being met.

The NEUMAN & ESSER GROUP (NEA) develops and produces piston compressors, grinding and classifying systems as well as complete plants for the compression of air and gases in industrial applications. The Group is overhauling its IT landscape to further expand its pioneering technological role. Using SAP ERP and SAP PLM means greater worldwide accessibility to plant-engineering expertise, accelerates order processing and simultaneously eliminates much of the risk of errors.

Innovation has a very long tradition at NEA. The beginnings of the family-run company based near Aachen, Germany, date back more than 180 years to the time of the (first) industrial revolution. NEA is now a global group of companies with around 1,000 employees whose core expertise include the manufacturing of compressors for air and technical gases. NEA are able to produce innovative products in the shortest possible time due to their skilled employees and an innovation-friendly corporate culture. "We specialize in delivering exceptional applications so we need to keep one step ahead of the current state of technology," stresses Karl-Josef Kremers, head of plant engineering at NEA Germany.

NEA Compressor Technology (CT), which employs around 270 people in plant engineering, has six engineering locations in six countries worldwide. Their task is to plan and design the system technology around piston compressors, to procure accessories and to supply customers with turnkey systems for their processing needs. "Engineering is always carried out under the

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supervision of the local NEA company. This benefits our customers because purchased parts such as coolers, engines, filters, etc. comply with local standards and are known and available locally,” says Kremers.

Standardizing the IT landscape

Like other plant and system engineers, NEA faces the challenge of developing customized systems within short deadlines. Synergy effects are gained through a constant sharing of knowledge between the sites, so at NEA, the wheel requires inventing only once. NEA reduces engineering effort by partially standardizing specific product components and globally standardizing tools, methods and processes.

“Standardizing and networking the IT landscape is the key,” stresses Kremers. “On the one hand, we want to share information and expertise at the sites independently of specific customer projects. On the other hand, we also want the experience and capabilities of the individual sites to be available for cross-location projects”.

As part of standardizing the IT landscape, NEA replaced an older ERP system which, despite being state-of-the-art, was no longer able to meet the growing demands of the corporate structure. SAP ERP was then implemented. With SAP software as a basis, the company also implemented, with support from CIDEON, the integrated SAP PLM solution which manages CAD data and documents throughout the process.



Added value for NEA

A reusability rate of up to 85% through standardizing plant components and documentation

Improved quality through globally standardized plant documentation

Reduction in error sources thanks to IT networking and the dissemination of cross-location knowledge

Shorter processing times due to data being recorded once and made accessible to the entire NEA process chain

More efficient order processing via IT standardization and global data access



Compressor systems installed in in base frames

The aim of the integration is to interlink technical and logistical business processes more closely and shorten order processing times. The “single source of truth” approach also means the company will benefit from a higher reusability level of existing drawings and documents when planning and budgeting new projects.

In addition to replacing the ERP system, a new CAD software solution was sought for the worldwide engineering locations because the existing system’s provider intended to discontinue support in Europe. After detailed evaluation of the plant engineering CAD systems available on the market, the Autodesk Plant Design Suite was chosen because it best met requirements. Mike Gorgas, project manager responsible for the introduction of SAP PLM said the key criteria were comprehensive 2D/3D functionality, the provider needed to be a global operator, the cost-benefit prognosis was good as well as integration options to the SAP world. “The specific benefits of integrating CAD and SAP only became apparent to us after implementing projects with CIDEON,” adds Kremers.



**Thinking bigger:
Implementing SAP ERP and
SAP PLM together**

Less effort is required to implement an SAP ERP/PLM solution together compared to integrating stand-alone systems

Better consistency between technical and commercial processes



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All expertise from a single source

In CIDEON, NEA found a single-source partner to provide everything to implement the new CAD system and its integration into SAP PLM. The software and consulting company was recommended not only because of its expertise as a specialized SAP PLM and Autodesk Platinum Partner, but also because of its many years of experience in plant engineering and its global presence, which would ensure worldwide support for NEA. “Another plus was CIDEON’s ability to supply the Autodesk Plant Design interface to SAP PLM,” says Gorgas. “This helped us enormously with this project because the process optimization specialists were very familiar with our needs and were able to pass these on to their colleagues in interface development.”

Specialists from CIDEON advised NEA on how to reorganize and optimize their business processes. In a pilot project, they defined step by step how cross-departmental collaboration and the company-wide integration of subsidiaries was to function, and supported the project team in mapping collaboration processes in SAP PLM. CIDEON also integrated special converter technologies to enable NEA to give to customers, general contractors and operating companies, plant geometries in formats such as 3D PDF, STEP, RMV (Aveva) and Intergraph.

NEA now uses SAP PLM for CAD-data and document management in plant engineering at all its locations. Although the firms abroad are largely independent, Kremers assured us that acceptance of the worldwide rollout was not a problem: “We see ourselves as a group and we act as a group. Regular and unscheduled meetings and workshops take place throughout the year in which the need for such a system had been expressed as well as the impact it was to have on processing orders. It was therefore not a solitary decision-making process by the parent company, even though implementation was managed from Germany.”

Task: Standardizing and unifying the IT landscape at NEA

Approach: Replacement of the existing ERP and CAD system and implementation of an integrated SAP ERP/PLM solution

CIDEON solution: CIDEON SAP PLM interface to Autodesk Plant Design Suite, integration of converters for the transfer of plant geometries in standard formats

CIDEON Services: Process consulting, implementation, customizing, extra programs, training, support

Standardizing the IT landscape and worldwide data availability via a complete SAP ERP/PLM solution at NEUMAN & ESSER (NEA)

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Karl-Josef Kremers (right), head of plant engineering, and Mike Gorgas (left), project manager for SAP PLM implementation, NEA Germany



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Karl-Josef Kremers, head of plant engineering, NEA Germany

“Another plus was CIDEON's ability to supply the Autodesk Plant Design interface to SAP PLM.”

Mike Gorgas, project manager for SAP PLM implementation, NEA Germany

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Mike Gorgas, project manager for SAP PLM implementation, NEA Germany

Global rollout of SAP PLM

Around 50 to 60 users worldwide are now using SAP PLM in conjunction with the Autodesk Plant Design Suite, but not yet as the final package. “The software is so powerful that the rollout needs to take place module by module. At the beginning of next year, the final module will be available at the locations abroad,” says Gorgas. The users are predominantly, but not only, CAD designers. Personnel from other departments are gradually undergoing training to maintain their project-relevant information in SAP PLM instead of in separate MS products as was done previously.

“This is required to instantly enable ordering processes to be triggered in SAP or to create inquiry documents as soon as the ERP system is connected,” says Gorgas. SAP PLM is not yet being used with the new ERP system everywhere in plant engineering. Rollout to the engineering locations abroad is scheduled to begin in the middle of next year. A model for integrating processes into logistics is currently being defined at NEA Germany. This model can then be implemented with minor adaptations at the other engineering locations. “Implementing the integrated SAP ERP/PLM solution together requires less effort than integrating stand-alone systems, and it guarantees considerably better consistency between technical and commercial processes,” assures Jan Coppel, project manager at CIDEON.

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At the current stage of development, the benefits of an integrated ERP/PLM process chain for processing orders are already apparent. Kremers is confident that data consistency will also have a positive effect on processing times: “Information about a component or assembly has until now been input multiple times in many process steps, at the drawing, inquiry, ordering and logistics stages through to documentation. This has not only been time-consuming, but also error-prone. The new system design means we input the information once and are then able to utilize it across the entire process chain. Its effects on improved quality and time savings are of a magnitude we had not envisaged.”

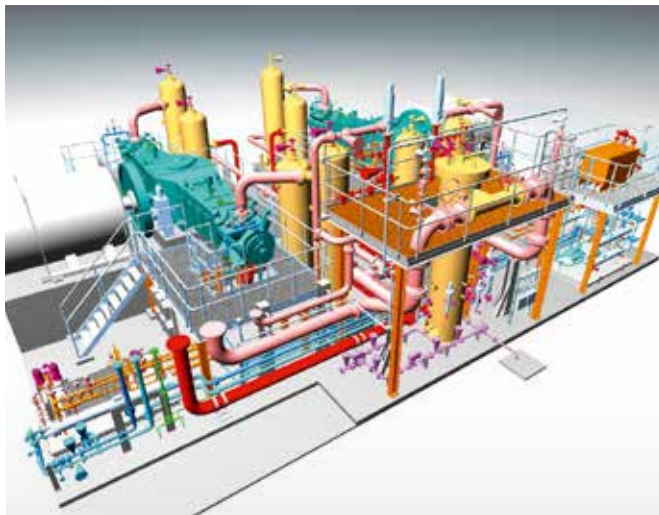
About CIDEON

CIDEON Software & Services GmbH & Co. KG is a software and solution provider specializing in engineering processes and all-round SAP PLM user support in conjunction with CAD solutions. For 25 years we have been providing solutions for lean product development processes and developing SAP PLM direct integration for market-leading CAD/CAE systems. Our many years of process and consulting know-how form the basis for practice-proven SAP PLM complete solutions that generate greater productivity and efficiency in the product development processes of customers.

Standardized documentation worldwide

Better options for standardization, both in terms of plant components and documentation, are now evident: “Specific priorities have been set in the individual NEA firms. If, for example, Brazil or India creates and releases a new component, then it is in the system and can

be accessed instantly by every employee in the NEA Group”, says Gorgas. P&ID flowchart standardization using corresponding models is relatively well advanced. This enables, for example, 85% of a secondary system’s design to be reused. This not only shortens processing times but also ensures globally standard, state-of-the-art plant documentation.



Defining a complete system from the 3D software

Next Steps

Preparing and providing manuals, certificates and other documents is still being done manually. NEA expects considerable rationalization here from integrating an output management system into the SAP environment. CIDEON has already proposed an appropriate solution, which will be tested next year as part of an evaluation. “Our vision is being implemented gradually according to the available resources, ensuring that it is a vision with a solid basis. In every phase of implementation, it is ultimately the production process that has priority,” concludes Gorgas.

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- Process Consulting
- Engineering Software
- Implementation
- Global Support

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