A long-term plant engineering strategy supported by efficient engineering software products, that’s Aker Solutions approach to the oil and gas industry’s demand for continually higher engineering quality and decreased execution time for project developments.

As one of the leading engineering companies in the oil and gas industry, Aker Solutions is specialized in delivering complex project solutions for challenging environmental conditions. Via its headquarters in Norway and a network of global branches, Aker Solutions provides comprehensive engineering services and is involved in the engineering design, maintenance and renovation of complex industrial plants for its well-respected customers. Efficient data management and high quality in the data delivered is decisive factors for avoiding errors during construction and operation of a plant, and to ensure that possible problems can be dealt with early. As development of plants and installlations become more complex and involve ever greater volumes of data, these challenges are increasing.

www.siemens.com/comos
Continuous further development of the plant engineering concept

Aker Solutions have for decades employed innovative IT solutions in their plant engineering, to stay ahead of these constantly growing challenges. These solutions are based on CAE (Computer Aided Engineering) software and have been developed continuously over many years. Today the IT solution for plant engineering is in its third generation.

In the first generation deployed in the early 1980s, the company used 2D and 3D CAD (Computer Aided Design) software in conjunction with a central documentation system.

The second generation was based on a software tool designed by the company itself, where all project data could be managed centrally. This concept followed an object-oriented approach and allowed controlled, simultaneous engineering.

In 2006, Aker Solutions took a decision to replace their own systems engineering software tool with a third party system, COMOS from Siemens. This software solution is a key component of Aker Solutions third generation Engineering IT solution.

Standard software solution as data hub and planning tool

The software solution COMOS forms the basis of Aker Solutions’ Project Data Hub, and also delivers integrated engineering tools supporting key stages of the engineering lifecycle. COMOS is based on a uniform data platform and takes an object-oriented approach. In this context, object-oriented refers to the holistic description of a component/object in a single entity in a single database.

Numerous individual aspects of the various technical disciplines and departments form an overall picture for the specific component. Controlled cooperation between the various disciplines and external companies is achieved through the working layer technology embedded in the software. The open software architecture also allows Aker Solutions to connect other software tools such as weight control software. Flexible bidirectional data exchange with the other software systems is possible via various interfaces. Due to these properties, the software represents the ideal answer for Aker Solutions, allowing them to manage all the engineering data as a central project data hub. The software is also used as an engineering tool in the FEED phase and in detail engineering, for example in the creation of P&IDs (Piping and Instrumentation Diagrams) or the E&I (Electrical, Instrumentation and Control) design.

Tried and tested in practice

Nowadays, almost 1000 users work with the COMOS software at Aker Solutions. This group is further expanded by suppliers/subcontractors who exchange their project data with the COMOS project data hub. Significant numbers of FEED (Front End Engineering Design) projects and multiple detailed engineering projects have been executed. “With our innovative engineering concept and the use of the COMOS software, we are able to perform work sequences simultaneously with higher data quality”, says Stein Schjerve, CIO of the engineering division at Aker Solutions. COMOS is the primary source electronic data handover to Owner Operators. But even with these good results, the company is already working on further developments of their plant engineering concept, in which the COMOS software solution will continue to play a key role.