



3DEXPERIENCE

ENERGY, PROCESS & UTILITIES **OPTIMIZED PLANT CONSTRUCTION** Deliver projects on time and on budget



OPTIMIZED PLAN? PRECISE EXECUTION? MISSING DEADLINES? OFF BUDGET?

In a challenging economy for projects in which quality cannot be compromised, project delays and safety issues can drive up costs. Control over mega capital projects is crucial for all stakeholders in the energy supply chain.

DASSAULT SYSTÈMES OPTIMIZED PLANT CONSTRUCTION INDUSTRY SOLUTION EXPERIENCE:

- Transforms reams of data into meaningful information and makes project status available in real time in a collaborative environment that enables everyone within a company to play an active role in the experience development
- Ensures information consistency and traceability across the global operation
- Secures requirements compliance for project, safety, and regulations during construction
- Uses 3D as the common language in making complex plants easier to understand
- Reduces waste with executable and reasonable plans based on a project's real-time state

OPTIMIZED PLANT CONSTRUCTION EXPERIENCE

Industry challenges and trends

Very often during the execution of complex and large plant construction projects, design defects or ambiguities are identified too late, causing delays and cost overrun. Even worse, compliance to quality requirements may be compromised during construction. Since the start of the 21st century, new “lean” methodologies help improve construction thanks to better communication between all stakeholders and control quality by identifying and solving the causes of defects. The ability to validate that work can be done before it is released to installers, with the possibility to plan in greater detail as project maturity progresses.

An execution system to minimize waste

Imagine all project stakeholders having visibility to project information according to their role and organization, and having project status availability in real time for effective decision making.

This can help minimize waste of time, cost, and resources with executable and reasonable plans based on the actual state of the project. Such information sharing primarily requires a common project management and execution system to deliver a “single source of the truth.” Workflows, signatures, lifecycle, and versioning enable consistency and traceability of all information sources.

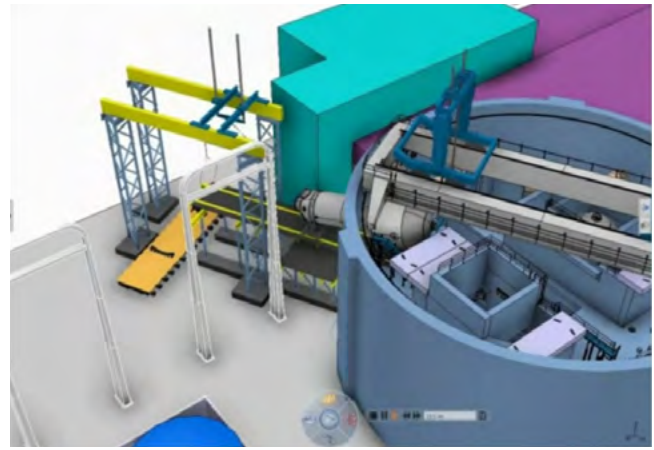
Then, from engineering deliverables to procurement and field execution, stakeholders can analyze change impact in real time and synchronize schedules between material flow and team activities.

Key Benefits

- Achieve minimum waste (= LEAN) with executable and reasonable plans based on the real-time state of the project
- Optimize cost and schedule without compromising quality requirements

Key Capabilities

- Unified schedule
- Requirements traceability
- Dynamic role-relevant information dashboards
- Collaborative procurement
- Plan construction in 4D (3D + Time)
- 3D as a common language for instructions



4D simulation of head exchange assembly

An execution system to insure quality

Capital projects in energy industries have huge lists of requirements coming from owner performance expectations, as well as from safety and environmental regulations. The **3DEXPERIENCE** platform “single source of truth” environment helps you reach quality meeting the ISO 9001 definition: “product and services consistently meet customer’s requirements.” While an engineering definition might comply with all requirements, deviation can easily occur during construction. But a quality-monitoring digital process can be built when individual requirements become granular data that are related to tasks and assets.

3D universal and unambiguous language

What if worker and contractor teams could “play out” an assembly sequence in a virtual environment before the actual work? They would benefit from successful “right the first time” assembly or construction in real life!

Even if legacy documents are still represented as 2D drawings, several Dassault Systèmes customers already experience 3D as their universal language for communication to achieve a clearer understanding of their plant designs.

Prior to documenting any assembly sequence, a schedule is prepared upstream concurrently with engineering design in a Virtual Construction 4D Simulation. It is not only validated as achievable before it is released to installers, but also defined before the design is too far advanced, where assembly problems can cause delays and drive up costs due to engineering rework. Then 3D Construction Instructions improves worker understanding by delivering an animated step-by-step construction sequence.

Our 3DEXPERIENCE platform powers our brand applications, serving 12 industries, and provides a rich portfolio of industry solution experiences.

Dassault Systèmes, the **3DEXPERIENCE**® Company, provides business and people with virtual universes to imagine sustainable innovations. Its world-leading solutions transform the way products are designed, produced, and supported. Dassault Systèmes’ collaborative solutions foster social innovation, expanding possibilities for the virtual world to improve the real world. The group brings value to over 170,000 customers of all sizes in all industries in more than 140 countries. For more information, visit www.3ds.com.



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