



3DEXPERIENCE®

ENERGY, PROCESS & UTILITIES **OPERATIONS EXCELLENCE**

Deliver reliable and predictable performance



ENHANCE OPERATIONAL RELIABILITY TO DELIVER SAFE, PREDICTABLE AND QUALITY-ASSURED PERFORMANCE

Changing requirements and regulations, combined with rising cost pressures and workforce turnover, are making it increasingly difficult to operate complex production facilities and to balance production and maintenance priorities. To target optimum production efficiency and streamline operational tasks, companies need to focus more on a multidisciplinary and preventive approach rather than on a series of corrective actions essentially managed by specialists.

Based on the **3DEXPERIENCE®** platform, Operations Excellence enables Owner/Operators within the Energy, Process & Utilities industry to improve operational efficiency and reduce production downtime while promoting compliance with the highest safety and quality standards. Operations Excellence also empowers Engineering/Procurement/Construction companies to differentiate themselves and develop new business models, by delivering and maintaining virtual plants alongside their physical capital facilities.

LIFECYCLE
STAGES



INTRODUCING OPERATIONS EXCELLENCE

Operations Excellence combined with Capital Facilities Information Excellence provides one source of information for every stage of the plant lifecycle from operations to maintenance, repairs and overhauls. Together they enable companies to improve worker safety, increase asset availability and make better use of their resources.

Virtual Plant Model with multidisciplinary data enhances decision-making

Asset digitization is at the core of Operations Excellence by way of a detailed 3D Virtual Plant Model that includes operational data from Industrial Internet of Things (IIoT) data sources.

Operational activities are prepared and optimized in a virtual environment enhanced by advanced rendering tools for a realistic view. Work instructions are rehearsed and refined based on real operational data before they are performed in the field. Potential problems are identified early and any missing elements are detected and remedied. Stakeholders can capitalize their past experiences and best practices and share this knowledge across the ecosystem.

Consolidate and analyze data from multiple sources to reduce unplanned downtime

By connecting real-time operational data, assets and processes to the Virtual Plant Model, stakeholders make the right decisions for maintenance management as well as process optimization. The greater depth and accuracy of information helps them fine-tune schedules to improve asset utilization. Simulations based on real and past data allow stakeholders to choose the most efficient and accurate course of action.

The operating conditions of assets are closely monitored for early failure detection, allowing stakeholders to implement the appropriate predictive maintenance. Prescriptive analytics

deliver information that show how different settings impact performance and reliability and provide recommendations to adjust operating conditions to help prevent breakdowns. Potential failures are detected and attended to before they cause far-reaching problems, reducing on-site downtime and added costs while promoting a safe working environment at all times.

Prepare and rehearse work in a virtual environment to substantially improve worker safety and efficiency

Operations Excellence delivers an immersive virtual environment to prepare for missions, to test and practice repair and maintenance tasks. In this way, issues are discovered and resolved before workers go on site.

The entire step-by-step work order is linked to resources, training, tools, permits, assets and standard operating procedures to provide workers with all they need to get the task completed on time, thereby reducing operational downtime. Digital simulations are more efficient for learning and retention than traditional training, and increases workers' proficiency and safety, particularly when working in hazardous environments. **Some companies have reported that using a Virtual Plant Model helped them better plan all the activities performed during plant outage, reducing by 1 to 2 days the overall shutdown period.** Moreover, they can better prepare their fieldworkers to perform high-risk inspections, operations and maintenance and improve their efficiency through digitally-simulated training on a 3D virtual plant model, enabling them to save, **as reported by one customer, up to 6000 man-hours.**

KEY BENEFITS

- Virtual simulation better prepares field workers, mitigates risks and improves safety
- Robust production planning and scheduling features lower costs and reduce downtime
- Better visibility on processes, staff and assets improves resource utilization

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 210,000 customers of all sizes in all industries in more than 140 countries. For more information, visit www.3ds.com.



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