

An aerial view of a large commercial airplane, likely an Airbus A320neo, in a green primer coat, positioned on an assembly line. The aircraft is surrounded by various ground support equipment, including orange mobile staircases, yellow service vehicles, and blue storage containers. The floor is a polished, reflective grey.

BUILD TO OPERATE DIGITAL PRECISION THROUGHOUT MANUFACTURING OPERATIONS

HOW DO YOU MANAGE CHANGING DEMAND AND STILL KEEP MANUFACTURING EFFICIENCY TO REACH OPTIMAL PRODUCTION RATES?

The Aerospace & Defense industry has been deeply affected by the pandemic causing an unprecedented effect. Companies need to adapt production demand while continuously improving quality & sustainability, lowering costs, ensuring worker safety and health, and deliver on time.

The **Build to Operate** Industry Solution Experience based on the **3DEXPERIENCE®** platform, accelerates meeting production targets and increases manufacturing capacity. It connects planning to the shop floor through a «virtual twin» to anticipate issues, and take proactive actions. The solution offers aerospace Original Equipment Manufacturers (OEMs) and suppliers the ability to implement lean practices, integrate new technologies and meet demand without sacrificing either quality or schedule. With **Build to Operate**, manufacturing management's real-time view of plant status significantly improves their control of manufacturing operations.

IMPROVE GLOBAL MANUFACTURING

For aerospace and defense companies, **Build to Operate**, based on DELMIA Apriso, offers manufacturing operations management (MOM) capabilities to monitor, control and validate all aspects of manufacturing with digital precision ranging from replicable processes and production sequences, to the flow of deliverables throughout their supply chain—on a global scale.

By receiving all required data through the Internet of Things (IoT), plant managers can view, control and execute automated manufacturing operations in real time. This capability allows manufacturers to manage global material supplies, logistics execution and production operations for one site and then execute across all sites. Visibility into operation results in better alignment with business performance.

EXPAND FACTORY AUTOMATION

Having the ability to enforce complete procedural control during build allows faster improvements and provides a sustainable lean manufacturing system. Features like automated verification and procedural enforcement means work is performed only by qualified individuals, in the correct order and with collection of all required data. Sites with a new or multi-lingual labor force acclimate faster using 3D work instructions perfected in mature operations. Delivering these work instructions at the right time decreases cycle times. **Build to Operate** eliminates most material shortages by synchronizing materials across external and internal supply chain.

REPLICATE QUALITY

The complexity of delivering contracted quality performance levels multiplies exponentially when managing extended supply chain partners. **Build to Operate** offers full insight into manufacturing data, allows manufacturers to identify root causes of failure and adjust processes in real-time as conditions change. Manufacturers can minimize risk of installing defective components with full traceability of supplier “as-built” data. This real-time traceability enables quick containment and disposition of quality issues. Unified engineering and change management provides suppliers visibility to engineering change orders (ECOs) for faster response time and reduces the amount of “out of specification” materials from being shipped. These insights translate into improved quality across the supply chain.

CREATE A LEAN PAPERLESS FACTORY

Build to Operate offers precise paperless synchronization of production, material, quality and labor processes while delivering real-time visibility and control across all supply chain. Solution highlights include:

- Closed-loop visibility of all manufacturing operations to assess risks and implement mitigation procedures
- Global deployment of lean manufacturing processes, including line automation performance and failure information that can be reviewed in a virtual “replay” and analytics environment; is resulting in improvements that can be implemented globally across all sites
- Real-time KPIs provide instant visibility on all levels – productivity, plant, line, station, cell and individual – for continuous improvement

With **Build to Operate**, manufacturers can accelerate the production ramp up of new lines and increase the efficiency of existing production lines through ‘future factory’ innovations available today.

KEY BENEFITS

- Obtain full visibility and control of shop floor processes
- Decrease manufacturing cycle time by delivering the right instructions at the right time
- Enable OEMs and suppliers to deliver at rate with finite capacity planning and scheduling for assembly activities, primary parts and MRO
- Continually monitor composite processes to identify areas of improvements
- Centrally manage and monitor the quality disposition and flow of material to warehouse, staging areas and production lines

For more information on **Build to Operate**, visit our website:
<https://ifwe.3ds.com/aerospace-defense/build-to-operate>

Our 3DEXPERIENCE® platform powers our brand applications, serving 11 industries, and provides a rich portfolio of industry solution experiences.

Dassault Systèmes, the 3DEXPERIENCE Company, is a catalyst for human progress. We provide business and people with collaborative virtual environments to imagine sustainable innovations. By creating ‘virtual experience twins’ of the real world with our 3DEXPERIENCE platform and applications, our customers push the boundaries of innovation, learning and production.

Dassault Systèmes’ 20,000 employees are bringing value to more than 270,000 customers of all sizes, in all industries, in more than 140 countries. For more information, visit www.3ds.com.

