

**3DEXPERIENCE**

AEROSPACE & DEFENSE **READY FOR RATE** Planning the future factory today



HOW DO YOU ACCELERATE MANUFACTURING PLANNING TO REACH OPTIMAL PRODUCTION RATES FASTER?

Aerospace and defense Original Equipment Manufacturers (OEMs) and large suppliers juggle the need to manage large manufacturing sites and complex global supply chains to meet aggressive delivery targets. Analysts report over 30% of errors and waste occur during production. The **Ready for Rate** Industry Solution Experience accelerates manufacturing planning by providing engineering and manufacturing planning stakeholders with cross-site digital continuity and real-time access to accurate product and product build information to shrink development time and improve quality.

Ready for Rate, using DELMIA® applications, enables flexible production rates while delivering products with first-time quality, on budget, and on schedule. The solution offers aerospace manufacturers the digital continuity to implement lean practices that remove waste in critical areas of manufacturing. For example, manufacturing planners can define a 3D Manufacturing Digital Mock Up (MDMU) to define and validate manufacturing processes down to individual work instructions. Doing this virtually allows planners to introduce and test new processes before they are implemented on the shop floor. By first virtually

validating the assembly of each part, component, or system, removing waste becomes simple. Manufacturers use real-time analytics and 3D modeling technology to better coordinate design and manage the supply chain to ensure delivery of systems and services. Plant leaders can accelerate their supply chain strategy by visualizing the impact of design changes immediately and optimizing the master schedules for the plant and shop floor.

HARNESS THE SUPPLY CHAIN

Managing the global supply chain consistently ranks as a top concern for commercial aviation manufacturers (Roland Berger Midlands Aerospace Alliance Annual Conference 2014). Best-in-class manufacturers in all segments use lean manufacturing planning methods to support faster production ramp-up.

Ready for Rate improves manufacturing planning so production starts sooner and optimal rates are met faster. Simplifying both “inbound” and “outbound” supply chain design using real-time analytics and powerful simulation gives planners visibility from fasteners to full sections. Traceability of materials, parts and assemblies directly to each source and throughout all planned production processes allows planners to nimbly adjust the master schedule due to unforeseen changes—ranging from simple design changes to natural disasters. Manufacturing engineers and planners can use a single platform to manage multiple product lines across multiple plants around the world.

SIMULATE MANUFACTURING

Using manufacturing trade studies—powerful process simulations that reveal an exponentially increased amount of tradeoffs—plant managers and planners can identify which areas of production to improve and the related program impact. These areas of impact include:

- Rate: Identify the resources needed for production process improvements.
- Engineering: Define the number of design changes needed and related deadlines.
- Risk Issue Opportunity: Detect and correct weaknesses in production plans.
- Supply Chain: Project suppliers’ rate and influence on production change scenarios.
- Production Innovation: Plan, validate, and proof new innovation processes to implement them into production faster and with first time quality.

IMPROVE QUALITY

Digital continuity between the engineering, manufacturing planning and operations supports real-time communication on the impact of Engineering Change Orders (ECOs). Removing disconnects between teams and the use of virtual prototypes to reduce time and cost overruns allows early detection and mitigation of design issues improving First Article Inspection (FAI) quality at a lower cost.

The complexity of delivering at quality performance levels multiplies exponentially when managing an extended supply

chain. **Ready for Rate** unified engineering and change management provides suppliers and contract manufacturers visibility to ECOs that improve response. Plus, unified engineering and change management reduces the amount of out-of-specification materials shipped. Digital continuity offers the traceability of all engineering requirements and manufacturing specifications so they are included in manufacturing planning. This allows complete delivery and first-time quality starting with the first system or aircraft off the line. First-time quality accelerates production rate ramp-up and reduces the cost of planning, rework, and scrapped parts.

SUPPORT LEAN MANUFACTURING

With the **Ready for Rate** Industry Solution Experience powered by the Dassault Systèmes **3DEXPERIENCE®** platform, digital continuity provides plant managers and planners with improvements such as:

- Comprehensive views via drill-down information of plant, line, and cell for better decisions
- Detailed shop floor operator instructions resulting in reduced errors
- Program Key Performance Indicators (KPIs) in real-time for decision support
- Manufacturing trade studies to model issue resolution options
- Integrated schedule development for faster execution

INNOVATE YOUR FACTORY

Leveraging an end-to-end digital system, where digital modeling is tightly integrated with manufacturing planning and execution systems, **Ready for Rate**, part of a Future Factory model, provides digital continuity from planning to the shop floor. A digitally integrated execution schedule offers plant managers and operators a blueprint for success. The same digital continuity allows drill downs of plant information from the plant, to line, and to cell. Ready for Rate provides digitally proven simulated manufacturing assembly and installation supporting first-time quality at (full production) rate. This increased efficiency offers Future Factory innovations, today.

For more information on Ready for Rate, visit our website: www.3ds.com/industries/aerospace-defense/ready-for-rate/

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

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