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Digital factory of the future


Boeing is utilizing an industry-leading technology to transform the way we design, test and build airplanes. Today, Boeing engineering teams are studying how recent lessons learned from across the company could shape the factory of the future — with digital transformation as a major driver.

Why it matters: Stability and optimized performance is happening.

- Boeing’s T-7A Red Hawk team was able to build the first several aircraft in simulations before production even started and then join the aft and forward fuselages in less than a half-hour, a process that would normally take days.
- Although commercial airplanes are larger and production requirements are different from military aircraft, Boeing teams will apply those learnings to future programs. That knowledge, combined with more than a century of development experience on other programs, will guide future production.

It comes down to this: This will enable Boeing to predict performance of the production system and see how changes in the airplane design affect that performance, or vice versa. It will also allow teams to “build” the first several aircraft in a simulation, flattening the learning curve. Supplier readiness and success around first-time quality enables Boeing to operate more sustainably as a business.

By driving quality within the supply chain, Boeing demonstrates its commitment to sustainability by reducing rework and/or delayed parts in the value stream to minimize time lost and waste.

 **Video:** [Take a look at our future factory.](#)



“Creating a digital twin of our factory operations will help to increase stability and optimize performance prior to physically building a product. We have long used models to predict aircraft performance and refine them with test data as it comes available. Similarly, we will build models to predict production system performance and refine them as systems come online.”

Howard McKenzie, chief engineer and executive vice president of Engineering, Test & Technology

A simulated view of what a future commercial factory could look like. The concept builds off of lessons learned from how the T-7A program operates in St. Louis — no fixed tooling, no holding fixtures. The part becomes the tool, which is a revolutionary concept. (Boeing image)