



# POWER WITH PURPOSE

Delivering innovative end-to-end  
electrical power systems integration







## The industry's toughest challenges call for smarter innovations

*With airspace under increasing demand, the future of flight will depend on the development of solutions that can deliver better fuel efficiency, lower emissions and reduced operating noise.*

Already, digitally controlled electrical motors and fly-by-wire controls are replacing their hydraulic and pneumatic predecessors. Passengers expect on-board power charging stations and constantly-in-touch entertainment systems. Militaries require electrical power to support their growing use of unmanned aerial vehicles. And aircraft manufacturers are pressured to get these sophisticated aircraft to market sooner, so as to reduce development costs and accelerate revenue flow.

With more than 50 years as a leading electrical power systems provider, GE Aviation has the resources, knowledge and expertise to help our commercial, military and business aviation customers navigate these challenges and, together, develop the all-electric aircraft of tomorrow.

## Proven solutions for simpler, more efficient systems

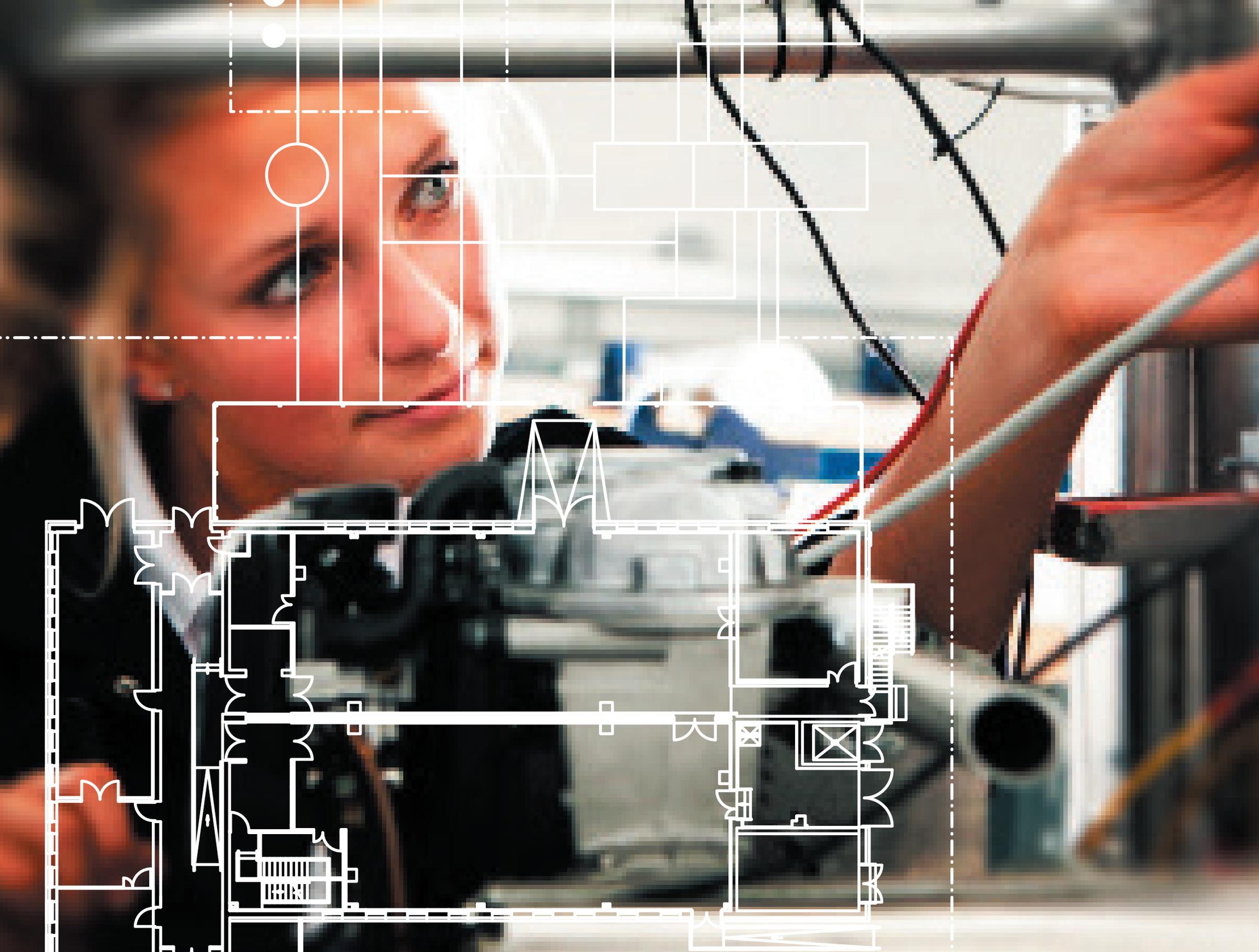
*Since Thomas Edison electrified the world with new possibilities and created GE more than a century ago, we've never stopped imagining ways to do things better.*

At GE Aviation, this includes over half a century of experience in electric power design and production, leading us to become a trusted end-to-end systems integration partner.

- Delivering 1,200+ Electrical Power Management Systems for the Apache
- Delivering 1,300+ Constant Frequency Generators and controllers for the Super Hornet
- Delivering 1,100+ Electrical Load Management Systems and Emergency Ram Air Turbines (RAT) Generators for the Boeing 777
- Providing a range of frequency converters, static inverters, transformer rectifier units and power controllers
- Developing a distribution system for the Gulfstream 650 that eliminates miles of wiring, hundreds of breakers and hundreds of pounds of system weight
- Pioneering solutions that can precisely control the delivery of electrical power to specific aircraft functions, creating total system integration







## The power of collaboration: Connecting brilliant minds and machines

*At GE Aviation, we're investing more than \$1B every year in our quest to invent the future of flight. Our leading-edge facilities enable real-time testing and collaboration between remote locations, thereby allowing an electrical power system to be linked to an engine test in Evendale, Ohio, or another GE facility. And through GE Global Research, our engineers have access to the breakthrough innovations and intellectual horsepower of GE researchers around the world.*



### **Electrical Power Integration Centre (EPIC)**

Our 30,000-square-foot facility in Cheltenham, England, features superior power sources, data acquisition and electrical load equipment in a flexible and expandable space. This gives us a wide range of testing capabilities, from individual units up to and including full system testing within a copper-bird environment.



### **Electrical Power Integrated System Center (EPISCenter)**

A state-of-the-art, 88,000-square-foot lab and infrastructure in Dayton, Ohio, enables testing of a complete electrical power system within a copper-bird environment. EPISCenter engineers collaborate with leading researchers at the University of Dayton on both civil and military applications.

# A purposeful approach that delivers powerful benefits

## **Offering total system optimization and increased reliability**

As aircraft become more electric, it's critical to ensure that a fault in an individual system element doesn't impact others. By developing and testing the complete electrical power system, we can deliver end-to-end insights on interactions among all system components.

This holistic approach offers many system-level benefits:

- Allows us to design and tailor power systems to each aircraft type
- Helps optimize performance and efficiency
- Results in fewer components for the aircraft manufacturer to integrate
- Reduces overall system weight
- Opens up more cabin space for other uses

## **Reducing development time, costs and risk**

Our approach is to identify, isolate and correct any potential challenges before the hardware is built. For this, we utilize dynamic software modeling, simulation and analysis to predict how the system and its individual components will perform. These advanced capabilities not only offer more design flexibility, but also help defray a manufacturer's overall costs through varying degrees of risk transfer.

Moreover, creating a prototype in our facilities and adding hardware as it becomes available allows us to benefit our customers in multiple ways:

- System and component testing can begin on Day 1
- Development cycle is significantly reduced
- More effective collaboration with aircraft development team and other system suppliers
- Accommodates natural design evolutions
- Helps ensure on-time delivery of systems that are right the first time

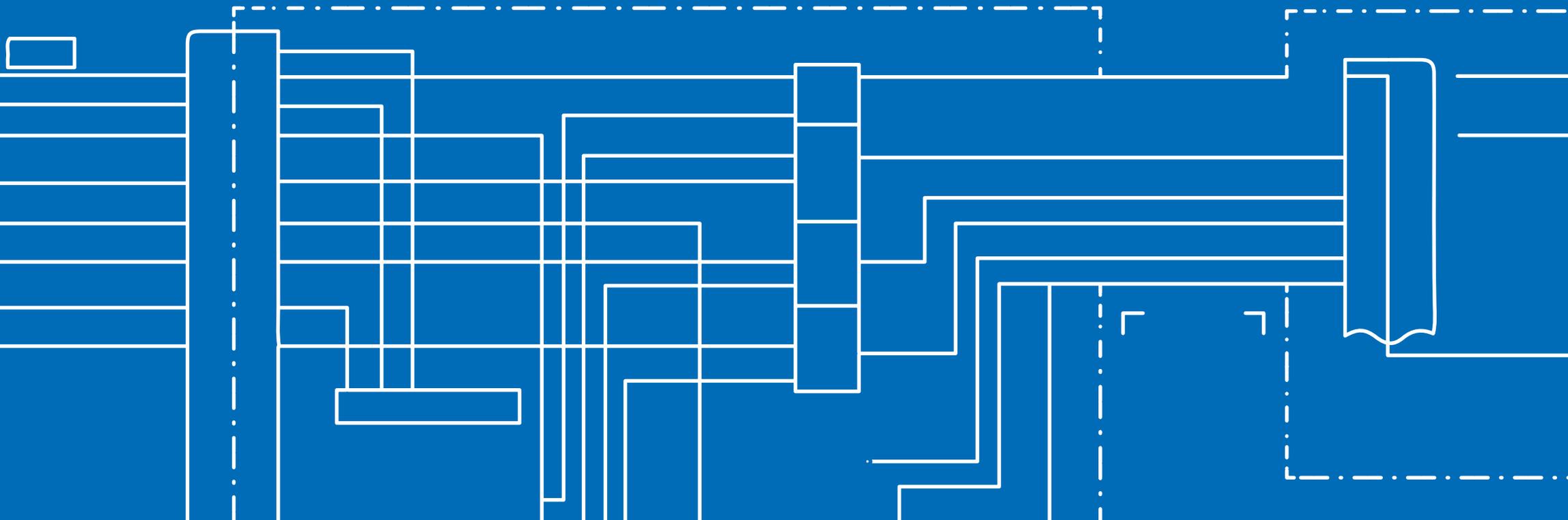


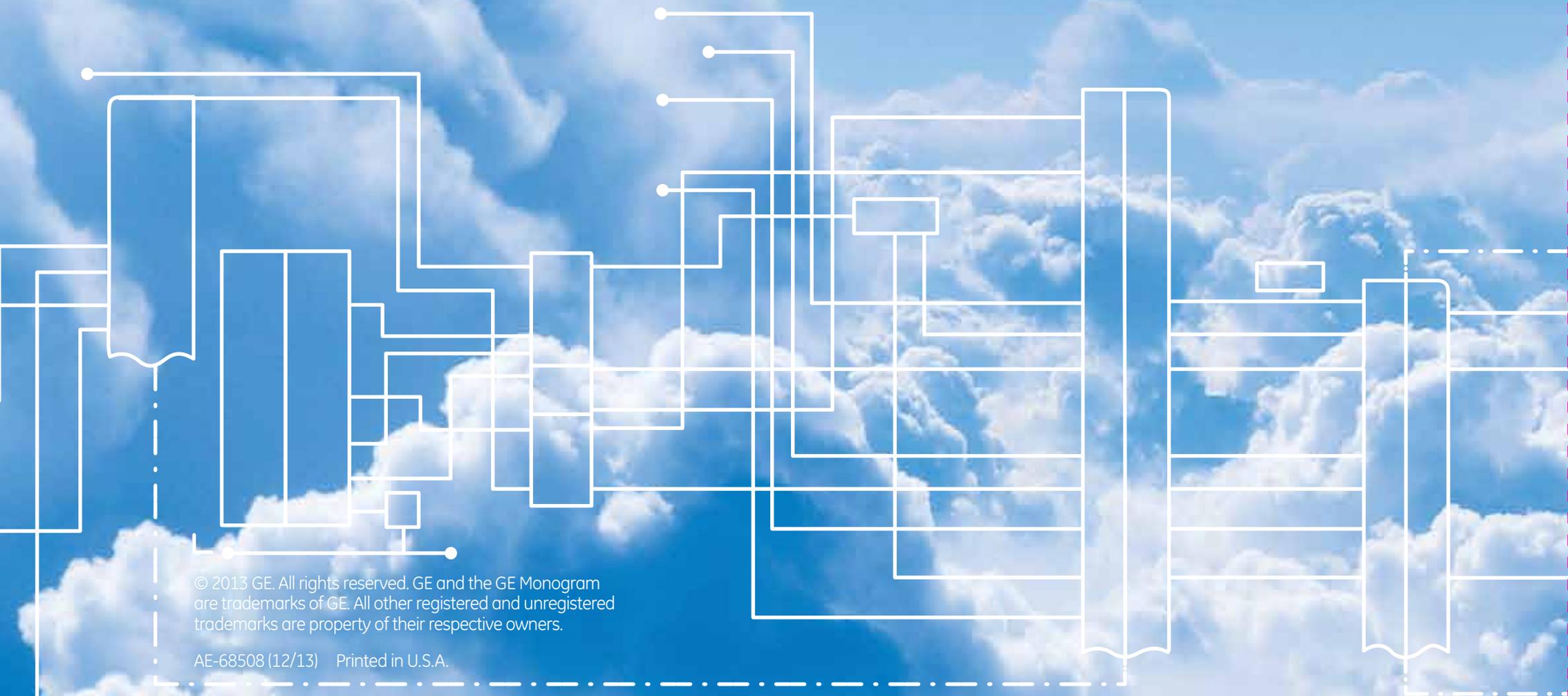


# Ready to meet any systems need

Designed with versatility in mind, our facilities have the flexibility to provide varying degrees of support to meet each customer's specific requirements. This includes everything from environmental testing of individual line replacement units up to and including full system integration and testing.

We also offer completely separate areas and infrastructure for civil and military platforms and other secure programs that require test facilities and technical support. It's all part of our commitment to delivering the best possible solution for every customer. And that's power with purpose.





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