Aerospace
GE Inspection Technologies is the first company in the NDT industry to have dedicated segment-based marketing, sales and product management teams. This gives us a unique ability to be focused and in step with the aerospace industry and its critical inspection needs. With the global resources and expertise of GE, we can respond to those needs by facilitating the development of innovative, leading-edge and cost-justified solutions.

Universally, we are developing products and techniques that carry out more reliable and efficient inspections to keep pace with the maintenance requirements of a continually changing industry.

For example, GE has made significant advancements in Phased Array ultrasonics, pulsed eddy current and digital and computerized radiography. They are meeting the need to inspect aging aircraft and predict the effects of long-term corrosion to extend useful aircraft life.

We will continue to respond with the next generation of relevant and cost-effective inspection solutions for new materials as they are developed for both commercial and military aircraft and engines designs. This includes advanced composite structures, alloys, coatings and metallic laminates.
Eddy Current inspections

Portables
Eddy Current portable instruments such as the Phasec series have long been popular in the aerospace industry due to their lightweight design, simple operation and reliable results. The value they bring to the industry originates from a close relationship and understanding between GE and our customers.

Rigs
WheelScan rigs allow for the fast and accurate inspection of aircraft wheel half hubs. Over 50 major airlines across the globe use the rigs to help increase Probability of Detection (POD) and ensure the safety and integrity of their wheels.

Pulsed Eddy Current
Combined with array sensors to deliver large area scanning and increase productivity, pulsed eddy current technology is transitioning into portable equipment. GE solutions will enable the multi-layer inspection of metallic airframes from the surface, helping detect the presence of cracks and corrosion in any layer down to the 5th layer. Combined with world class imaging software, our technology will help eliminate labor-intensive accessibility for visual inspection and allow for the digitization of inspection records.
Ultrasonic inspections

Aerospace systems for airframe surface & structure inspections

Currently, GE has around 30 systems, based on either immersion or gantry techniques, installed and running at 6 airframe manufacturers around the world. Customers include large commercial aircraft companies and military aircraft manufacturing programs.

At the forefront of our UT technology is the advanced UTXX phased-array system, combined with the Nuscan imaging software package. The UTXX allows for the inspection of large and complex geometries, including radius, in an automatic mode. Equipped with intelligent data acquisition systems (from either CATIA files or surface contouring), our testing machines offer world class speed (up to 20 SqM per hour) regardless of geometry, and offer high accuracy advanced display features such as porosity in composite structures or wrinkles in metal structures.

The UTXX is also available in single mode; both phased-array and single channel allow either pulsed-echo or through transmission techniques.

Portable ultrasonic equipment

Based on decades of experience in the design of portable ultrasonic equipment for the aerospace industry, GE is now moving towards the next generation of instruments. They combine world class imaging displays for easy interpretation, advanced ergonomic design features (battery autonomy, minimized weights) and fast, intuitive operations from precision thickness measurement to advanced flaw detection.

Our new Phasor XS offers the productivity and imaging of Phased Array to the whole process chain of aerospace: from manufacturing (composite parts, structured components, engine parts) down to the long-term airframe inspection. This easy to operate, affordable, portable equipment will match most of the applications that are required today to keep airplanes airworthy.

GE Inspection Technologies offers a world-class portfolio of ultrasound arrays from 32 elements to 128 elements that are compatible with the Phasor XS.
Engine manufacturing

The LOGIQ® 9NDT combines technologies from GE Healthcare and GE Inspection Technologies to give unsurpassed ultrasonic inspection capabilities, specifically to solve the needs of the aerospace industry. The LOGIQ 9NDT uses Phased Array technology to give a full volumetric scan of engine disks and other aerospace components, and can be applied readily to existing test installations.

The LOGIQ 9NDT was developed through a collaboration between GE Inspection Technologies, GE Aircraft Engines and GE Global Research Center as a manufacturing tool to provide increased productivity and an errorproofed process. The result is a tool which can scan parts 2x to 10x faster than conventional devices, through the protected complexity of Phased Array design. This provides an optimized inspection solution that does not require any adjustment by the operator.

Growing beyond its applications on the manufacturing line, the LOGIQ 9NDT is evolving into a preferred tool of the materials team. In just seconds, the entire volume of a small test sample can be viewed and the output displayed as an intuitive cross section of a part. Laboratory personnel with no prior UT training can immediately see cracks, impurities and grain structure with the contrast of a micrograph. The system has been qualified by major Engine OEMs for forgings inspection.

A fast component scan is achieved using one large probe rather than multiple passes with one small probe.
Automated inspections to create lean processes

Digital radiography

Computed and digital radiography allows for real time imaging, creating an opportunity to completely automate the radiography process and dramatically improve productivity and safety.

Images can be digitally enhanced, or exposure levels can be digitally changed to make up for poor initial conditions.

The GEIT DXR family of digital radiography flat panels is the utmost integration of radiographic inspection within lean manufacturing. Whether you choose the DXR250 for real time image analysis, 500 for higher resolution or 1,000 for larger size applications, the instant digitization of inspection images yields instant productivity. The result is a high flow, versatile, fully digitized inspection process in line with manufacturing or maintenance repair activities. For instance, our engine blades, airframe and engine casings and full airframe inspection applications have built remarkable records of efficiency at over 30 aerospace manufacturing and maintenance centers world wide.

For highly accurate and productive image scanning, GE also offers the revolutionary CR\textsuperscript{50P} Tower. It is the first of its kind to achieve scan resolution up to 50 micron. And in addition to faster exposures, wider latitude, fewer retakes and overall reduced costs then film radiography, the CR\textsuperscript{50P} offers faster image acquisition and greater overall productivity.
Large array sensor solutions

GE has developed an expertise in highly productive and versatile sensors to refine signal acquisition ability and productivity. It is the heart of our large array sensor expertise. Our flexible eddy current array offers one of the most versatile solutions to aerospace complex geometries inspection. Combined with robotics capability, the GE array allows the decrease in engine disk inspection time by up to 10 times.

UT arrays epitomize our ultrasound inspection leadership, as GE’s testing machines support aircraft and engine OEM programs. For example, the UTXX drives 128 channel arrays; the LOGIQ 9NDT drives a 1024 channel 2d array.

Digital metrology

GE LightScan

LightScan is a complete turnkey airfoil inspection system that measures and analyzes all programmed airfoil parameters within a cycle time of less than 20 seconds. The inspection system is designed to be tolerant of most surface finishes found on airfoils – without the need for coating or special surface preparation.

Fully enclosed and designed for the rigors of the shop floor, LightScan can be used on parts at different stages in the manufacturing process. The dimensional inspection data is displayed on the system’s monitor and the operator receives an instant “go” or “no-go” on the part – eliminating inference. As a productive, non-contact alternative to hard gauges, GE LightScan transcends airfoil inspection to accurate automation.
From basic borescopes and fiberscope to measurement capable digital video borescopes, and pan-tilt-zoom (PTZ) camera systems, GE Inspection Technologies has the right visual inspection equipment for your needs.

For ultra-small access, our 0.5 mm mini-flex fiberscopes can deliver a quick look at otherwise inaccessible areas. Rigid borescopes offer higher temperature capabilities and superb optical clarity for simple inspections.

When image recording, data processing, and higher inspection productivity are the drivers, our XLG3 VideoProbe® system is the best tool. With probe diameters from 3.9 mm to 6.1 mm, you can optimize a system for your application. The XLG3 VideoProbe® system is the only video borescope offering twice the light output and full probe interchangeability at the hand-piece. Combined with digital storage of still images or full-motion video to CompactFlash® card, or direct export to a PC, the superior measurement accuracy using Stereo or Shadow measurement technologies allows defects to be identified quickly and qualified with certainty.

Fiberscopes, rigid borescopes and video borescopes are primarily internal inspection devices. For applications in airframe or other large space inspections, our Ca-Zoom® PTZ camera systems are deployed. Featuring the same data processing systems as the VideoProbe® line, with still image and motion video capture and storage, and laser measurement capabilities, GE Inspection Technologies Ca-Zoom® PTZ camera systems deliver powerful inspection capabilities.

*XLG3 being used for turbine inspection*
Increasing productivity through technology & collaboration

Software solutions

Rhythm software

The user-friendly Rhythm software from GE Inspection Technologies offers advanced image review tools and data management for all X-ray inspection modalities, including computed radiography, digital radiography and film digitization.

Its advanced data sharing capabilities and wall thickness measurement software significantly improves productivity and enables faster identification of quality problems.

This leads to a reduction in production defects and better in-service asset management. Using industry-standard, non-proprietary data formats, Rhythm provides an advanced and cohesive solution for data management and sharing, while creating a stable platform for future NDT software capabilities.
Equipment Services – Long-term support

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After-sales support, leasing & rentals and training

A full line-up of equipment repair and calibration services is provided. With a global service network, GE Inspection Technologies can repair equipment faster than others in the business. Of course, GE’s financial strength means that we will be around to back up our warranties and provide you with the parts and accessories you need.

Equipment can be quickly dispatched from our regional service facilities to your job site along with all the required consumables, instructions and software to ensure a successful inspection project.

GE provides a wide array of training programs, designed to keep your staff up-to-date on all critical inspection methods. We understand the importance of keeping your staff well trained and informed, so we structure our courses to deliver both theoretical and practical training.

Applications Support

GE Inspection Technologies applications centers provide a broad spectrum of services to users of NDT testing applications. Our mission is to bring together worldwide knowledge and experience across multiple industries and modalities to help customers to quickly solve their inspection application problems. See www.geinspectiontechnologies.com for details and site locations.
Providing aerospace customers with smart, productive and lean inspection solutions for manufacturing and maintenance
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GE Inspection Technologies: productivity through inspection solutions
GE Inspection Technologies provides technology-driven inspection solutions that deliver productivity, quality and safety. We design, manufacture and service Ultrasonic, Remote Visual, Radiographic and Eddy Current equipment and systems. Offering specialized solutions that will help you improve productivity in your applications in the Aerospace, Power Generation, Oil & Gas, Automotive or Metals Industry. Contact your GE Inspection Technologies representative or visit www.ge.com/inspectiontechnologies for more information.