



Sustainable computed tomography solutions for a resilient tomorrow

Discovery™ RT





Creating a more sustainable future requires we care for the planet and its inhabitants.

It is essential that we continue to drive progress toward early, precise, and accessible diagnosis and treatment of more patients. For the planet, it is critical that we do so with a reduced impact on precious and rare resources that are imperative to life. We believe that the advancement of precision health, greater digitization of healthcare, and increased access to quality care are fundamental to accomplishing this goal.

We support carbon policies that reduce greenhouse gas emissions and promote sustainable development. We are committed to achieving net zero by 2050 and are part of the UN-backed “Race to Zero,” with a goal of reducing emissions based on the Paris Agreement. We’ve also set a public goal to achieve a 50% reduction in our own operational emissions by 2030. As a result of these efforts, we want to enable a more sustainable health system by addressing not only the environmental impacts of our products but also the challenges healthcare professionals and their patients face with resilient, digital options.



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We deliver sustainable, intelligently efficient solutions for a resilient tomorrow.

Building a healthier world to help improve access to care and enable better patient outcomes.



Green

Using fewer resources for a healthier planet.



Digital

Transforming healthcare through innovation.



Resilience

Building flexibility and dependability across healthcare systems.



Discovery™ RT helps create a resilient tomorrow

Our Discovery™ RT and its services help ensure that radiology professionals and the patients they serve have the technology necessary to create a sustainable and resilient tomorrow.

Reducing environmental impact

- >91% of materials used in the system are recyclable.
- 23.6% of product's service spare parts are harvestable or repairable.
- 59% of the mass of the X-ray tube is reused, saving on energy and natural resources.
- 94% to 96% of most systems are reused, refurbished, or recycled, extending the lifetime of each product.
- Upgrade options also help to extend the service lifetime at customer site.
- Our CT systems are built in scalability and upgradability to advance clinical capability and help prevent technology obsolescence.

Improving outcomes

- Max Field of View 2 (MaxFOV 2), a deep learning-based innovative reconstruction, can increase the maximum Display Field of View (DFOV) from 50cm to 80cm beyond the conventional physical limit.
- Deviceless 4D calculates the patient's breathing cycle length, automates the sorting of 4D CT images into the desired respiratory phase bins, and makes them available for virtual simulation. Complex setup of external respiratory monitor is no longer needed.
- 1024 Reconstruction matrix provides a higher pixel resolution, especially for larger DFOV and higher frequency reconstruction algorithms.





Contributing to a healthier planet

More than half of the healthcare sector’s climate footprint, approximately 53%, is attributable to energy use.¹ As a result, we have strengthened our commitment to environmentally conscious design and sustainable practices across our product manufacturing, sourcing, distribution, installation, and service operations. This includes improving energy efficiency, optimizing the use of limited or rare materials, providing digitally enabled and remote predictive and maintenance service throughout the product lifespan, and offering refurbishment and recycling options at the end of product life.

GE Healthcare environmental management system is ISO 14001 certified

Our production and service operations align to ISO 14001 standards.

Materials

GE Healthcare reviews the environmental aspects of the material supply used within our products to increase recyclability and decrease the use of hazardous substances, when possible.

Recyclable

We’re committed to high recyclability of our products and reuse when possible.

>91% of materials used in the system are recyclable.²

When we build a replacement X-ray tube for the Discovery RT, 59% of the mass of the X-ray tube is reused, enabling savings on energy and natural resources.

Reduce the use of hazardous substances

EU RoHS directive 2011/65/EU

REACH (EC) 1907-2006

The Discovery RT gantry design does not use lead material as counterweight, but instead uses steel.

Tungsten alloy are also used in pre-patient collimator to save the usage of lead material in shaping the X-ray beam.

This product contains other similar design features with the goal of improving production worker safety and reducing environmental impact.

Manufacturing

Through our environmental reviews, we also focus on implementing renewable energy and reducing waste.

Renewable energy

More than 1858 MWh per year of energy is generated with GE on-site solar renewable energy at the Waukesha, Wisconsin, CT production facility.

This large solar array is located on both the roof and surrounding grounds.

¹ Health care climate footprint report | Health Care Without Harm (noharm-uscanada.org)

² Data on file.



Packaging and distribution

GE Healthcare imaging equipment has a robust and multi-sourced supply chain for systems and spare parts across all product portfolios.

Improved packaging

The packaging materials consist of wooden pallets with cardboard overpack and plastic vibration absorbers.

Wood: 73%

Cardboard: 24%

Plastic: 3%

Total package weight: 445kg

Product transportation³

Air transport: 47%

Ocean transport: 10%

Truck transport: 43%

Rail transport: Also supported for Discovery RT



53% product transportation utilizes low environmental impact modes³

³ The values provided are based on product transportation and distribution during 2021.

Product utilization

Our imaging products are designed to help enable energy efficiency through dedicated features and advanced applications to reduce the environmental impact.

Ergonomically designed

Patient setup and positioning

Deviceless 4D calculates the patient's breathing cycle length, automates the sorting of 4D CT images into the desired respiratory phase bins, and makes them available for virtual simulation. In this case, a complex setup of external respiratory monitor is not needed.

An 80cm wide bore allows complicated patient positioning with 80cm field of view reconstruction for simulation of Radiation Oncology. It also offers access for interventional procedures. When combined with a 650lb high-capacity table, the system is well-suited for obese patients (BMI>40).

Reduce staff burden

Radiation Oncology Applications Suite includes features like Deviceless 4D, Advantage 4D, Advantage Sim™ MD, Integrated Registration, etc. The suite will support operator from respiratory phase selection to virtual simulation without external respiratory monitoring device under challenging clinical scenarios.

Interventional Applications Suite contains the features SmartView and SmartStep. SmartView 2D provides real-time CT fluoroscopy, and SmartView 3D is an advanced fluoroscopy feature designed to improve efficiency of CT-guided interventional procedures. The SmartStep feature allows for quick step and shoot acquisition of axial images to support CT guidance using a simple foot pedal and remote control.



Product utilization (Cont.)

Guidance for product utilization

Instructions are provided for use of the equipment to minimize the environmental impact during installation, use, and operation.

Reduce energy consumption during use

Turning off the system after daily use may save energy consumption by up to 45%.

Power consumption⁴

Scenario – Off: 28.8 kWh
Scenario – Idle: 52.6 kWh

⁴ Per COCIR 2015 self-regulatory initiative for medical imaging equipment per a 24-hour period, with 12 hours of active day and 12 hours night scenario as noted (Off, Idle).



End of product life

We are increasingly putting our retired products' materials back into the supply chain to maximize efficient use and minimize unnecessary waste. This circularity model enables our imaging products to extend their clinical impact through longer lifespans while reducing the environmental footprint. Additionally, we offer our customers partnered support for upgrades and services throughout a product's lifespan to maintain optimal performance and help drive better patient outcomes.

Our refurbishment programs involve an extensive inspection and testing process, designed to bring equipment back to its original certified manufacturing specifications. If the system is not suitable for refurbishment, eligible parts are harvested for reuse after quality and performance testing, while the rest are returned to dedicated recycling facilities.

Guidance for end of lifecycle

Equipment instructions are provided to minimize the environmental impact for disposal or recycling.

Upgradeable hardware and software options are provided as a solution to extend the product lifespan.

Discovery RT offers multiple upgrade options to extend the lifespan of the system, including upgrading from 16 to 32 slices.⁵

A 650lb high-capacity table is also available for the system upgrade, which makes the system well-suited for obese patients and bariatric imaging.

Console upgrades introduce the latest hardware into our scanner, like NVME SSD and RTX GPUs, to build the most advantaged hardware platform for smooth workflow and AI software.

Accessories like Bar Code Reader and Child Positioner also can be integrated to meet extending requirements.

Parts harvesting and refurbishment options are provided to reduce waste and environmental impacts while extending imaging access to less advantaged regions.

CT system parts are eligible for assessment through the refurbishment program, in which they are assessed for refurbishment, harvesting, or recycling at the appropriate time in the lifespan.⁶

94% to 96% of most systems are reused, refurbished, or recycled, extending the lifetime of each product.

23.6% of a product's service spare parts are harvestable or repairable.

Waste reduction

This system is in accordance with Waste Electrical and Electronic Equipment (WEEE) regulations.

⁵ The 32 slices is achieved by software feature overlap recon.

⁶ Products within MR, CT, Nuclear Medicine, and PET/CT are eligible for refurbishment, although whether a system is actually refurbished versus harvested for parts or otherwise recycled or reused is dependent on the state of the system when GE Healthcare takes possession of it. Data on file.



Ge Healthcare product stewardship commitment

For more than 20 years, GE Healthcare's GoldSeal program has played a vital role in reducing medical imaging equipment waste by promoting and enabling the reuse of equipment and parts from de-installed imaging systems. After undergoing an extensive inspection and testing process, GoldSeal equipment is refurbished to meet the original system specifications. Buyers of GoldSeal MRI, CT, or PET/CT products can save on the acquisition costs associated with buying new equipment. Machines deemed unsuitable for GoldSeal refurbishment are dismantled at end of life, and after successfully passing acceptance testing criteria, specific parts are harvested for reuse. Where harvesting is not appropriate, GE Healthcare recycles about 94% to 96% of most systems. In a typical year, GoldSeal refurbishes approximately 8,000 pieces of imaging machines and ultrasounds.

NEW PRODUCT PURCHASE OR LEASE

GOLDSEAL PROGRAM: LEASE RETURN PRODUCT OR BUYBACK

- Comprehensively refurbished and/or remanufactured
- Updated with new software
- Recertified following all FDA requirements
- Equipment backed with 1 year, same-as-new equipment warranty

RECLAIM FOR PARTS AND MATERIALS

Identify parts for refurbishing and/or repurpose

END OF LIFE

About 94% to 96% of most systems are recycled, substantially reducing the volume of waste en route to landfills.



Digitizing healthcare through transformative innovations for a resilient tomorrow

We are committed to investing in digital capabilities that help accelerate clinical decision making, optimize imaging operations, and drive efficiencies in exam workflows, all of which can improve patient outcomes. Enabling digital transformation will further enhance our predictive and maintenance service operations for the life of your products.

We are also dedicated to driving a more resilient and sustainable future in healthcare. Many factors, including the pandemic, climate-related weather disasters, and supply-chain issues amplified this need. Managing operations through these challenges requires resilience and perseverance.

Advancing clinical outcomes

Advanced applications and cutting-edge AI tools provide personalized data to drive actionable insights, helping healthcare professionals make fast, accurate clinical decisions for care pathways.

Gain actionable clinical insights quicker for earlier diagnosis

MaxFOV 2 is a new deep learning-based innovative reconstruction technology that increases the maximum DFOV from 50cm to up to 80cm, allowing clinicians to visualize more anatomical information. The MaxFOV 2 improves axial image quality in terms of skin line accuracy and CT number accuracy and provides improved contour in 3D image, even under challenging clinical scenarios. The enlarged DFOV and improved image quality make it easier for more precise simulation and treatment planning.

Automate detection of lung nodules thanks to Lung VCAR.

Help improve patient outcomes with improved image quality

ASiR™ (Adaptive Statistical Iterative Reconstruction) is a reconstruction technology that may enable reduction in pixel noise standard deviation. The ASiR reconstruction algorithm may allow for reduced mA in the acquisition of diagnostic images, thereby reducing the dose required. ASiR works with all scan modes.

Smart MAR helps reducing photon starvation, beam hardening, and streak artifacts caused by metal in the body, such as hip implants. The reconstructions are complete in less than 3 minutes, typically.⁷

⁷ An example of a typical case would be 2 metal implants that are 20 x 20mm round and 200mm long.



Optimizing imaging operations

Our AI-based and advanced digital solutions are designed to increase efficiencies across the radiology spectrum without increasing the administrative and training burden on radiologists and technologists.

Increase productivity and consistency

Remotely upload, edit, and monitor protocols for multiple service lines, including CT and MR, to deliver consistent image quality and optimal patient care with Imaging Protocol Manager.

Reduce repeat scans and ensure accuracy through live support by leveraging centralized expertise and standardizing care across the enterprise with Digital Expert.

Remote diagnostics and predictive analytics solutions to streamline your needs:

- Enable software updates, reducing the need for on-site support
- Secure serviceability, review, and system troubleshooting
- Training and support



Optimizing imaging operations (Cont.)

Reduce downtime

OnWatch™ enables predictive services, which digitally track key system metrics and detect any anomalies. It sends proactive alerts to a remote engineer who either makes the repair online or schedules a service call.

- 16% reduction in unplanned downtime
- 18% of total onsite labor hours
- 28% reduction in unplanned X-ray⁸

Utilizing a partial system UPS can help maintain user productivity and improve system reliability. It can also help to reduce service costs and prevent system downtime.

Cybersecurity

GE Healthcare's Design Engineering Privacy and Security (DEPS) process follows GDPR, HIPAA, NIST 800-53, NIST 800-30, ISO 27001, and NIST CSF requirements.

⁸ Based on a study made out of 2535 systems across Japan, EU, and US/Canada during 2020. Results may not be typical of every customer's performance. For more detail, refer to CT Predictive Service Brochure, GE Healthcare JB15760XX.



Enabling intelligent exam workflows

Intelligent automation features help to drive consistency, enable fast, easy exams, and improve workflow with fewer resources, all while achieving similar or improved productivity.

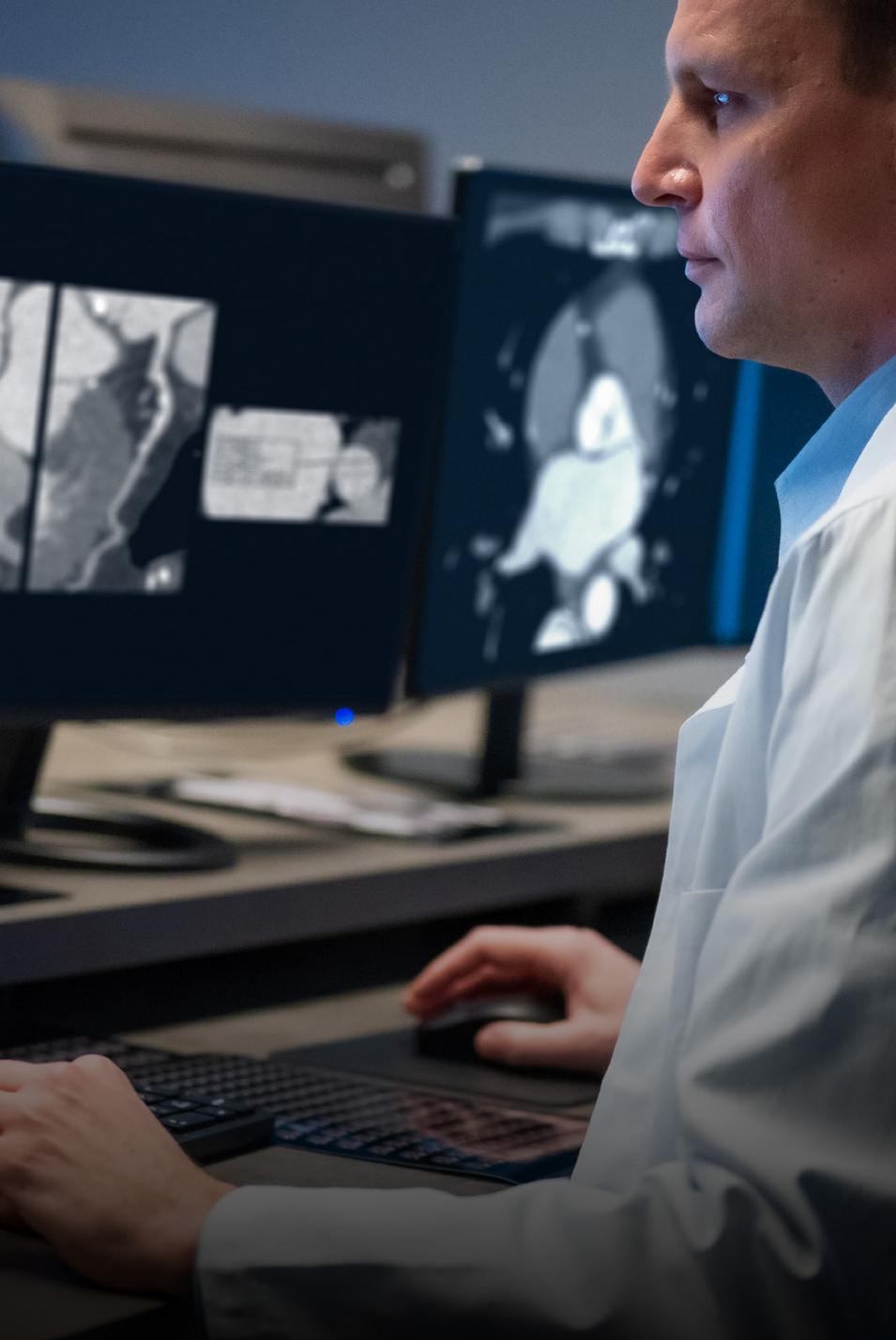
Reduce setup time

Deviceless 4D calculates the patient's breathing cycle length, automates the sorting of 4D CT images into the desired respiratory phase bins, and makes them available for virtual simulation. In this case, a complex setup of external respiratory monitor is not needed.

Smart mA automatically optimizes mA to maintain constant image noise when collimation/detector configuration, scan mode, scan rotation speed, table speed, or image thickness changes.

Reduce exam time

Xtream™ FX Technology is an advance in workflow design and has greatly improved speed, image quality, and flexibility to provide an optimized workflow solution from acquisition to final report. Four features are contained, including Direct MPR, Exam Split, Data export, and Interchange.



Enabling intelligent exam workflows (Cont.)

Ease of use

Advantage Sim MD available on Advantage Workstation (AW) offers a robust package of Virtual Simulation and Planning tools. Powerful macros increase productivity for geometric planning and generate high-resolution DRRs and exquisite low-contrast resolution for visualizing tumors and critical structures. Advantage Sim MD integrates 4D data into the planning process, providing multi-modality/multi-phase simulation for the use of state-of-the-art treatment methods, like IMRT and IGRT. Auto segmentation algorithms provide accurate contours for 15 anatomical structures in less than 4 minutes.

Advantage 4D captures the full range of motion of critical internal structures and lesions during respiration and aids users in selecting the proper phase(s) of the respiratory cycle in order to plan for a more targeted standard or gated radiation treatment, reducing the need to apply general or guessing margins.

Integrated Registration helps clinicians to target critical structures with confidence with the following 3 aspects:

- Accuracy—Rigid and deformable algorithms are optimized to anatomical regions and imaging modalities.
- Speed—Automatic fusion takes otherwise time-consuming image registration down to seconds, while auto-propagation of results reduces multiple registration steps.
- Ease of Use—Results can be seamlessly exported to GE Advantage Sim or any Treatment Planning System.



Enabling intelligent exam workflows (Cont.)

Ease of use

SmartView 2D provides real-time CT fluoroscopy with image latency of 200ms at 0.5 second rotation, offering real-time display speed of 12 frames per second at single image mode (1i mode) or 24 frames per second at triple image mode. SmartView 3D is an advanced fluoroscopy feature designed to improve efficiency of CT-guided interventional procedures. An advanced needle detection algorithm (NDA) and Multiple Planar Reconstruction (MPR) of the needle based on the needle's frame of reference and the identified needle tip location.

Smart Step allows for quick step and shoot acquisition of axial images to support CT guidance using a simple foot pedal and remote control.

Cleanability

Our equipment is designed to be cleaned and disinfected easily. We continue to test and approve new cleaning and disinfecting agents. Visit [Cleaning.GEHealthcare.com](https://www.gehealthcare.com/cleaning) for updates.



Building a healthy world to help enable better patient outcomes.

GE Healthcare is a member of COCIR, the European Trade Association representing the medical imaging, radiotherapy, health ICT, and electromedical industries.⁹

⁹<https://www.cocir.org/about-cocir/members.html>

Not all products or features are available in all geographies. Check with your local GE Healthcare representative for availability in your country. Not all features are included in the standard system configuration. Check with your local GE Healthcare representative.

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