GE Healthcare Introduces An Industry-First Modular, Scalable CT Platform to Minimize Technology Obsolescence & Maximize Clinical Capabilities

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- GE Healthcare introduces the industry's first [i] computed tomography (CT) platform with built-in scalability and upgradability[ii]
- The new Revolution Apex platform offers the world's fastest gantry speed: 0.23 seconds per rotation and 19.5 millisecond effective temporal resolution to freeze cardiac motion[iii]
- Altogether, the company's CT platform enables healthcare facilities to keep up with the latest technology while minimizing technology obsolescence, optimizing clinical capabilities, and standardizing workflows now and in the future[ii]

Revolution Apex platform
PICTURE CREDIT: GE Healthcare
IMAGE/JPEG · 3.95 MB

Chicago, November 29, 2021: At the Radiological Society of North America's 2021 Annual Meeting, GE Healthcare introduced its Revolution Apex platform[iv] – an industry first[i] computed tomography (CT) platform with built-in scalability for onsite CT detector upgrades from 40 mm to 80 mm or 160 mm detector coverage – all without replacing the gantry[ii]. Offering uncompromised clinical capabilities, the new Revolution Apex platform helps radiology departments stay ahead of the technology curve with a modular design that offers a seamless path to continuous hardware and software scalability and upgradability that will extend the lives of CT systems into the future[ii].

Today's radiology departments are under pressure like never before. The ongoing COVID-19 pandemic, steadily growing patient volumes, a rapid rise in the number of images generated, and increasingly complex image reviews are straining CT departments to their limits. What's more, departments are facing these challenges as they attempt to battle industry-wide staff shortages and burnout[v],[vi].

Twenty years ago, new CT technologies were introduced every four-to-five years; but today, we see new solutions introduced annually. This is largely due to the pace of innovation today, which has greatly accelerated due to the speed and growth of modern engineering, artificial intelligence (AI) and cloud computing. Because of these advancements, CT technology is becoming obsolete more quickly than ever before – resulting in 44 percent of facilities expressing challenges during their attempts to keep systems up to date[vii].

"I have to look to how to spend money in the right way. It's quite important to make good decisions to get the most advanced technology," says Johan de Mey, MD, PhD, Chair of Radiology at University Hospital Brussels in Belgium. As chair of the department and a member of the board of directors for the hospital, Pr. de Mey is tasked with planning capital expenditures for the entire radiology department.

With this challenge in mind, GE Healthcare developed a new, modular CT system design that enables hardware scalability so radiology departments and healthcare facilities can add service lines to accommodate evolving patient needs. Revolution Apex platform's Gemstone Clarity Detector is the foundation of this approach – enabling users to update their service line from a 40 mm detector and 0.28 second rotation speed up to a 160 mm detector and 0.23 second per rotation speed – the world's fastest gantry speed [ii],[iii]. This enables healthcare facilities to keep up with the latest technology while minimizing technology obsolescence and optimizing clinical capabilities now and in the future[ii]. This also helps streamline fleet management, allowing facilities to minimize overall operating costs and address budget constraints.

"In the past, we kept machines as long as possible, and we upgraded them with software. But if the hardware was obsolete, we removed it from the hospital. With the Apex, we have a platform with the latest technology and can easily upgrade as our clinical practice evolves," adds de Mey. "Additionally, if you have a machine that's upgradable, you already know how to use it. You can immediately start doing exams on a higher level. And if you're on the edge of research, this is huge. Being able to upgrade and work on the same platform and technology is much faster. For us, it's a big win"

The Revolution Apex platform was also developed with operational efficiency in mind. Studying radiology departments' entire workflows and identifying opportunities to simplify and streamline processes, GE Healthcare developed Effortless Workflow, which utilizes Artificial Intelligence (AI) technologies to automate much of the workflow, from pre-scan to post-scan – helping to reduce clicks, save time, and achieve exceptional efficiency and consistency in imaging.

"Workflow efficiency is critical," adds Ricardo Cury, M.D., Chair of Radiology, Baptist Health. "We have seen that by mapping our process, we can identify our pain points and subsequently automate processes and decrease errors as well as provide better standardization and less variability for our clinicians and techs."

The Revolution Apex platform is also designed to produce high quality CT images at the lowest possible radiation dose through TrueFidelity deep learning image reconstruction. TrueFidelity is GE Healthcare's exceptional image reconstruction technology that uses a dedicated Deep Neural Network to generate high-definition, low-noise CT images. Fully integrated with both single-energy and dual-energy imaging, TrueFidelity produces images with exceptional sharpness, low-contrast performance and preferred noise texture, even with low dose.

Furthermore, the Revolution Apex platform is equipped with GE Healthcare's patented Quantix X-ray tube – a powerful tube designed to provide the output necessary to comfortably image all anatomies regardless of patient size without compromising image quality. A key application of this technology is next-generation Gemstone Spectral Imaging, which reduces image noise in low energy monochromatic images to detect and assess small lesions.

The Revolution Apex platform is also built to seamlessly upgrade. After installation, facilities can stay ahead of evolving technological advancements with regular software upgrades that include new capabilities and workflow enhancements, as well as image quality, dose management, cybersecurity and service tools[ii] – all without learning a new user interface. The Revolution Apex platform also provides the industry's first subscription-based service for CT applications, Smart Subscription, which enables easy access to the latest technology so radiologists can continue to deliver high-quality patient care.

"Given the volatility of today's healthcare environment, it makes sense to have a system that is scalable to meet today and tomorrow's evolving CT needs," says Jean-Luc Procaccini, president and CEO, Molecular Imaging and Computed Tomography, GE Healthcare. "Understanding that healthcare systems are challenged to keep up to date with the latest cutting-edge CT technologies, we developed a new modular solution that can grow with healthcare systems – so they have what they need, when they need it. Altogether, we are incredibly proud of our Revolution Apex platform and are thrilled with the feedback we have received on its performance and usefulness."

For more information on GE Healthcare's Revolution Apex platform, see gehealthcare.com or visit the company's #RSNA21 booth in person or virtually.

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About GE Healthcare:

GE Healthcare is the $17 billion* healthcare business of GE (NYSE: GE). As a leading global medical technology, pharmaceutical diagnostics and digital solutions innovator, GE Healthcare enables clinicians to make faster, more informed decisions through intelligent devices, data analytics, applications and services, supported by its Edison intelligence platform. With over 100 years of healthcare industry experience and around 47,000 employees globally, the company operates at the center of an ecosystem working toward precision health, digitizing healthcare, helping drive productivity and improving outcomes for patients, providers, health systems and researchers around the world.

Follow us on Facebook, LinkedIn, Twitter, and Insights for the latest news, or visit our website www.gehealthcare.comfor more information.

*Excludes Biopharma

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[i] GE Healthcare data on file.

[ii] Scalability and upgradability are subject to the availability and compatibility of new capabilities and products.

[iii] 0.23sec and 19.5msec are 510k pending and not available for sales in all countries. 19.5msec effective temporal resolution is achieved by a 6x improvement of motion-blur reduction while maintaining high spatial resolution as demonstrated in cardiac phantom testing. The reduction in motion artifacts is comparable to a 0.039 equivalent gantry rotation speed with effective temporal resolution of 19.5 msec, as demonstrated in mechanical and mathematical phantom testing.

[iv] GE Healthcare's Revolution Apex platform is FDA 510(k) cleared and not available for sale in all countries.

[v] Gleeson, Cailey. "Healthcare staff shortages project for every state by 2026." *Becker's Hospital Review* . Published 29 September 2021. Accessed 24 November 2021. https://www.beckershospitalreview.com/workforce/healthcare-staff-shortages-projected-for-every-state-by-2026-4-report-findings.html

[vi] Levine, David. "U.S. Faces Crisis of Burned-Out Health Care Workers." *U.S. News & World Report*. Published 15 November 2021. Accessed 24 November 2021. https://www.usnews.com/news/health-news/articles/2021-11-15/us-faces-crisis-of-burned-out-health-care-workers

[vii] GE Healthcare data on file.

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