NC DEPARTMENT OF
HEALTH AND HUMAN SERVICES

ROY COOPER • Governor
MANDY COHEN, MD, MPH • Secretary
MARK PAYNE • Director, Division of Health Service Regulation

VIA EMAIL ONLY

July 30, 2021

Sandy T. Godwin
stgodwin@capefearvalley.com

Exempt from Review – Replacement Equipment

Record #:	**3618**
Date of Request:	July 1, 2021
Facility Name:	Cape Fear Valley Medical Center
FID #:	943057
Business Name:	Cape Fear Valley Health System
Business #:	335
Project Description:	Replace existing CT scanner
County:	Cumberland

Dear Ms. Godwin:

The Healthcare Planning and Certificate of Need Section, Division of Health Service Regulation (Agency), determined that the above referenced project is exempt from certificate of need review in accordance with G.S. 131E-184(a)(7). Therefore, you may proceed to acquire without a certificate of need the GE Revolution CT ES to replace the existing GE CT scanner. This determination is based on your representations that the existing unit will be sold or otherwise disposed of and will not be used again in the State without first obtaining a certificate of need if one is required.

It should be noted that the Agency's position is based solely on the facts represented by you and that any change in facts as represented would require further consideration by this office and a separate determination. If you have any questions concerning this matter, please feel free to contact this office.

Sincerely,

Tanya M. Saporito
Project Analyst

Lisa Pittman
Assistant Chief, Certificate of Need

cc: Radiation Protection Section, DHSR
Construction Section, DHSR
Acute and Home Care Licensure and Certification Section, DHSR

CAPE FEAR VALLEY HEALTH

BEHAVIORAL HEALTH CARE
BLADEN COUNTY HOSPITAL
CAPE FEAR VALLEY MEDICAL CENTER
CAPE FEAR VALLEY REHABILITATION CENTER
HEALTH PAVILION NORTH
HIGHSMITH-RAINEY SPECIALTY HOSPITAL
HOKE HOSPITAL

BLOOD DONOR CENTER
BREAST CARE CENTER
CANCER CENTER
CAPE FEAR VALLEY MEDICAL GROUP
CARELINK
CAPE FEAR VALLEY HOMECARE & HOSPICE, LLC
CUMBERLAND COUNTY EMS
FAMILY BIRTH CENTER
HEART & VASCULAR CENTER
HEALTHPLEX
LIFELINK CRITICAL CARE TRANSPORT
SLEEP CENTER

July 1, 2021

Ms. Tanya Saporito
Project Analyst, Healthcare Planning & Certificate of Need Section
Division of Health Service Regulation
N.C. Department of Health and Human Services
809 Ruggles Drive
Raleigh, NC 27626-0530

RE: Replacement of CT Scanner at Cape Fear Valley Medical Center / Cumberland County

Ms. Saporito:

The purpose of this letter is to notify the North Carolina Department of Health and Human Services, Division of Health Service Regulation, Healthcare Planning and Certificate of Need Section (the "Agency") that Cape Fear Valley Medical Center ("CFVMC") plans to replace a CT scanner located in the hospital facility. CFVMC requests a determination that the respective replacement is exempt from review because it falls within the definition of NCGS § 131E-184(a)(7) and the regulations set out in 10A NCAC 14C .0303.

The existing CT scanner is situated in the CFVMC emergency department and has been in service at CFVMC for over 12 years. The equipment has exceeded its useful life. CFVMC intends to replace the existing CT scanner in the same location with a GE Revolution CT ES system. The existing CT scanner will be removed from CFVMC and returned to the vendor when the replacement CT scanner is installed.

Pursuant to NCGS § 131 E-184(a): "The department shall exempt from certificate of need review a new institutional health service if it receives prior written notice from the entity proposing the new institutional health service, when notice includes an explanation of why the new institutional health service is required, for any of the following: ... (7) To provide replacement equipment."

NCGS § 131E-176(22a) defines "replacement equipment" as equipment that costs less than $2,000,000 and is purchased for the sole purpose of replacing comparable medical equipment currently in use which will be sold or otherwise disposed of when replaced.

10A NCAC 14C.0303 defines "comparable medical equipment" as equipment that "is functionally similar and which is used for the same diagnostic or treatment purposes." Replacement equipment is comparable if:

(1) it has the same technology as the equipment currently in use, although it may possess expanded capabilities due to technological improvements; and

(2) it is functionally similar and is used for the same diagnostic or treatment purposes as the equipment currently in use and is not used to provide a new health service; and

(3) the acquisition of the equipment does not result in more than a 10% increase in patient charges or per procedure operating expenses within the first twelve months after the replacement equipment is acquired.

The replacement of the CT scanner at CFVMC falls within the parameters of this exemption. Specifically:

1. The equipment being replaced is currently in use at CFVMC.
2. The total estimated cost to acquire and install the replacement CT scanner is less than $2,000,000. Please see the following table.

Capital Cost Summary

Item	Cost
CT scanner	$1,396,765.47
Construction/Renovation	$119,955.00
Total	**$1,516,720.47**

3. The replacement equipment will be purchased for the sole purpose of replacing comparable equipment currently in use, which will be traded in for disposal and removed from North Carolina.
4. The replacement equipment is functionally similar to existing equipment and will be used for the same diagnostic and/or treatment procedures as the equipment currently in use.
5. CFVMC will not acquire any other major medical equipment or develop any other new institutional health services described in N.C. Gen. Stat. §131E-176 (16) as part of this project.
6. The project will not increase patient charges or per procedure operating expenses more than 10% within 12 months of the replacement equipment being acquired.

Please see Attachment 1, which contains a letter from Christopher Tart, PharmD, Vice President, Professional Services at CFVMC. Attachment 2 includes a budgetary equipment quotation from GE, the CT vendor. Attachment 2 also includes documentation verifying removal of the existing CT scanner, see Trade-in Addendum to GE Healthcare Quotation. Attachment 3 is the construction quote from our General Contractor for CT renovation.

CAPE FEAR VALLEY HEALTH

BEHAVIORAL HEALTH CARE
BLADEN COUNTY HOSPITAL
CAPE FEAR VALLEY MEDICAL CENTER
CAPE FEAR VALLEY REHABILITATION CENTER
HEALTH PAVILION NORTH
HIGHSMITH-RAINEY SPECIALTY HOSPITAL
HOKE HOSPITAL

BLOOD DONOR CENTER
BREAST CARE CENTER
CANCER CENTER
CAPE FEAR VALLEY MEDICAL GROUP
CARELINK
CAPE FEAR VALLEY HOMECARE & HOSPICE, LLC
CUMBERLAND COUNTY EMS
FAMILY BIRTH CENTER
HEART & VASCULAR CENTER
HEALTHPLEX
LIFELINK CRITICAL CARE TRANSPORT
SLEEP CENTER

CFVMC requests that the Division of Health Service Regulation make a determination that the replacement of the CT scanner, as proposed herein, does not constitute new institutional health services and is thus exempt from certificate of need review.

Please contact me at 910.615.6852 or stgodwin@capefearvalley.com regarding any questions concerning this request.

Sincerely,

Sandy T. Godwin
Corporate Director of Financial and Strategic Planning
Cape Fear Valley Health System

Attachment 1

Documentation of Comparable Medical Equipment

CAPE FEAR VALLEY HEALTH

BEHAVIORAL HEALTH CARE
BLADEN COUNTY HOSPITAL
CAPE FEAR VALLEY MEDICAL CENTER
CAPE FEAR VALLEY REHABILITATION CENTER
HEALTH PAVILION NORTH
HIGHSMITH-RAINEY SPECIALTY HOSPITAL
HOKE HOSPITAL

BLOOD DONOR CENTER
BREAST CARE CENTER
CANCER CENTER
CAPE FEAR VALLEY MEDICAL GROUP
CARELINK
CAPE FEAR VALLEY HOMECARE & HOSPICE, LLC
CUMBERLAND COUNTY EMS
FAMILY BIRTH CENTER
HEART & VASCULAR CENTER
HEALTHPLEX
LIFELINK CRITICAL CARE TRANSPORT
SLEEP CENTER

July 1, 2021

Ms. Tanya Saporito
Project Analyst, Health Planning and Certificate of Need Section
North Carolina Division of Facilities Services
809 Ruggles Dr.
Raleigh, NC 27603

Re: Replace an existing CT located in Cape Fear Valley Medical Center Emergency Department

Dear Ms. Saporito:

I am the Vice President for Professional Services at Cape Fear Valley Health System (CFVHS). In this role, one of the areas that I am responsible for is the oversight and administration of radiology services at Cape Fear Valley Medical Center (CFVMC).

This letter is to provide documentation that the CT scanner CFVHS is proposing to replace is currently in use in the CFVMC Emergency Department at 1638 Owen Drive, Fayetteville, NC. We currently provide both inpatient and outpatient clinical patient services at the current location. In addition, the proposed replacement equipment will be in the same location as the current equipment.

The equipment to be purchased is a GE Revolution CT ES system and will be used to diagnose patients consistent with what is done today on our older CT which is also a GE CT scanner. While the CT will have updated technology and will be faster with better image quality, the equipment is comparable to the equipment being replaced. The older equipment that is being replaced has been not available for patient use several times over the past 2 years due to failures. This includes replacing the x-ray tube due to artifacts on neuro imaging causing the unit to be down for multiple days for repairs. The older equipment also reached end of service life in December 2020. It has been in service for over 12 years.

We look forward to receiving notification from the Certificate of Need Section that the replacement equipment is consistent with the statutory language and is indeed exempt from CON review.

Please do not hesitate to contact me with any questions.

Sincerely,

Christopher Tart, PharmD
Vice President, Professional Services
Cape Fear Valley Health System

Attachment 2

Equipment Quotation

March 29, 2021
Quote Number: **2007139149.12**
Customer ID: **1-23I51M**
Agreement Expiration Date: **6/27/2021**

Cape Fear Valley Medical Center
1638 Owen Dr
Fayetteville, NC 28304-3424

This Agreement (as defined below) is by and between the Customer and the GE Healthcare business ("GE Healthcare"), each as identified below for the sale and purchase of the Products and/or Services identified in this Quotation, together with any applicable schedules referred to herein ("Quotation"). "Agreement" is this Quotation and either: (i) the Governing Agreement identified below; or (ii) if no Governing Agreement is identified, the GE Healthcare Terms and Conditions and Warranties that apply to the Products and/or Services identified in this Quotation. In the event of conflict, the Quotation supersedes.

GE Healthcare can withdraw this Quotation at any time before Customer: (i) signs and returns this Quotation or (ii) provides evidence of Quotation acceptance satisfactory to GE Healthcare ("Quotation Acceptance"). On Quotation Acceptance, this Agreement is the complete and final agreement of the parties relating to the Products and/or Services identified in this Quotation. There is no reliance on any terms other than those expressly stated or incorporated by reference in this Agreement and, except as permitted in this Agreement, no attempt to modify will be binding unless agreed to in writing by the parties. Modifications may result in additional fees and cannot be made without GE Healthcare's prior written consent.

Handwritten or electronic modifications on this Agreement (except an indication of the form of payment, Customer purchase order number and signatures on the signature blocks below) are void.

Governing Agreement:	Premier
Terms of Delivery	FOB Destination
Billing Terms	80% on Delivery / 20% on Acceptance
Payment Terms	NET 45 DAYS
Total Quote Net Selling Price	$1,396,765.47
Sales and Use Tax Exemption	No Certificate on File

IMPORTANT CUSTOMER ACTIONS:

Please select your planned source of funds. Source of funds is assumed to be cash unless you choose another option. Once equipment has been shipped, source of funds changes cannot be allowed.

___ Cash

___ GE HFS Loan ___ GE HFS Lease

___ Other Financing Loan ___ Other Financing Lease Provide Finance Company Name _____

The parties have caused this Agreement to be executed by their authorized representative as of the last signature date below.

Cape Fear Valley Medical Center

Signature: _____

Print Name: _____

Title: _____

Date: _____

_____
Purchase Order Number, if applicable

GE Precision Healthcare LLC, a GE Healthcare business

Signature: Pete Swyt

Title: Imaging Account Manager

Date: March 29, 2021

March 29, 2021
Quote Number: **2007139149.12**
Customer ID: **1-23I51M**
Agreement Expiration Date: **6/27/2021**

To Accept This Quotation

Please sign and return this quotation together with your Purchase Order to:

Name: Pete Swyt
Email peter.swyt@ge.com
Phone: 843-810-0935
Fax:

Name: Jim Benecki
Email: jim.benecki@ge.com
Phone: (615) 390-3634
Fax: (910) 401-1049

Payment Instructions

Please **remit** payment for invoices associated with this quotation to:

GE Precision Healthcare LLC
P.O. Box 96483
Chicago, IL 60693

FEIN: 83-0849145

Cape Fear Valley Medical Center

Addresses:

Bill To:	CAPE FEAR VALLEY MEDICAL CENTER	CAPE FEAR VALLEY MEDICAL CENTER, ACCOUNTS PAYABLE 1638 OWEN DR FAYETTEVILLE, NC, 28304-3424
Ship To:	CAPE FEAR VALLEY MEDICAL CENTER	CENTER 1638 OWEN DR FAYETTEVILLE, NC, 28304-3424

To Accept This Quotation

- Please sign the quote and any included attachments (where requested).
- If requested, please indicate your form of payment.
- If you include a purchase order, please make sure it references the following information:
  - The correct Quote number and Version number above
  - The correct Remit To information as indicated in **"Payment Instructions"** above
  - Your correct SHIP TO and BILL TO site name and address
  - The correct Total Price as indicated above

Upon submission of a purchase order in response to this quotation, GE Healthcare requests the following to evidence agreement to contract terms: Signature page on quote filled out with signature and P.O. number **** OR**** Verbiage on the purchase order must state one of the following:

(i)Per the terms of Quotation # _____, (ii) Per the terms of GPO #_____; (iii) Per the terms of MPA# _____: or (iv) Per the terms of SAA # _____.

Include applicable quote/agreement number with the reference on the purchase order. In addition, Source of Funds (choice of Cash/Third Party Load or GE HFS Lease Loan or Third Party Lease through _____), must be indicated, which may be done on the Quote Signature Page (for signed quotes), or the Purchase Order (where quotes are not signed) or via a separate written source of funds statement (if provided by GE Healthcare)."

Catalog Item Details

Line	Qty.	Catalog	
1	1.00	S7919AY	Rev CT ES System

The Revolution CT ES configuration is a premium CT scanner that brings the essence of Revolution CT experience into a scalable platform. Built upon ground-breaking and clinically proven Revolution CT hardware platform, it delivers HD image quality, fast volumetric scanning and lower dose with optimized contrast use. And it has scalability with its ability to be upgraded in-room to a 160mm detector coverage system, allowing you to grow its clinical capabilities with your needs.
The Revolution CT ES delivers industry leading technical specifications for a premium CT system, including:
• VHD reconstruction, 3D Collimator, and focal aligned detectors provide high-definition image quality, while overcoming the challenges of typical wide detector systems such as cone beam artifacts, HU uniformity, scatter and beam hardening artifacts.
• ASiR-V provides integrated advanced iterative reconstruction technology that reduces noise and reduces low-signal streak artifact at very low signal levels. This technology is designed to deliver reduced noise levels, improved low contrast detectability and may enable a reduction in dose for all clinical applications.
In clinical practice, the use of ASiR-V may reduce CT patient dose depending on the clinical task, patient size, anatomical location and clinical practice.
A consultation with a radiologist and a physicist should be made to determine the appropriate dose to obtain diagnostic image quality for the particular clinical task.

Clinical Highlights
• High-Definition Imaging
The clinical needs for better image quality never stop. Visualizing the finest image details significantly enhances diagnostic confidence. Equipped with the 80 mm Gemstone Clarity Detector and the Performix® HDw tube, the Revolution CT ES achieves best-in-class 0.23 mm spatial resolution across all detector coverage, all FOV, all applications, even obese patients.
• Low Dose Lung Cancer Screening
Empowered by low dose high definition image chain and new low-dose CT lung cancer screening protocols, Revolution CT ES can deliver low dose, short scan times and sharp images for the detection of small lung nodules.
• Contrast Optimized Scanning
X-ray radiation and iodine hazards have become the major concerns associated with CT scan with contrast enhancement. Due to increased use of iodinated contrast media in diagnostic imaging and interventional procedures, Contrast-induced nephropathy has become a significant source of hospital morbidity and mortality. Equipped with the ASiR-V and Low kVp scanning, Revolution CT ES addresses these two challenges with one unique solution: achieving lower dose scan with optimized contrast usage.
• Fast Emergency & Trauma Imaging
The system allows for robust Triple RuleOut™ acquisition for all patients providing HD, motion free coronaries, PE & aortic dissection in a single exam covering the entire thorax. ECG gating and mA modulation along with flexible collimations enable low dose acquisition personalized to the patient.
80 mm helical mode combined with fast table speed of 300 mm/s allows for ultra-fast scanning, thus reducing the effect of breathing and other motion during the scan.
• Sedation-free Pediatric Scanning
Split second pediatric trauma acquisition of abdomen / pelvis is enabled by wide 80 mm z-coverage and fast table speed up to 300 mm/s, thus reducing the need for sedation and eliminating unnecessary repetition of scans in young children due to failed sedation, as is the case in 29% of conventional exams, shown in a large trial (British Journal of Anesthesia, 84 (6), 743-8 (2000)).
70kV scan mode allows for minimizing dose to pediatric patients while preserving excellent contrast to noise ratio and image quality.

Neurology (To achieve the full benefits described below, an AW workstation with dynamic and perfusion post processing tools may be required. Please consult with your GE sales representative)
The single energy metal artifact reduction solution for Revolution CT is Smart MAR. It uses an automated, three-stage projection-based process. Smart MAR is designed to reveal anatomic details obscured by metal artifacts by reducing photon starvation, beam hardening and streak artifacts caused by metal in the body, such as hip implants, surgical clips, endovascular coils, and dental fillings. Smart MAR requires one single kV scan and can be enabled in secondary reconstructions, making the metal artifact reduction workflow fast and efficient.

• Smart Stroke, the stroke-dedicated hardware, software and post-processing solution on Revolution CT, can help physicians to reduce “CT scan-to-report” time and “door-to-treatment” time, thus to save more brain tissue of patient with stroke.
• Dual Energy Scanning
Revolution CT ES features protocols which allow easy configuration of back to back axial or helical scans of the same anatomy at

two different X-ray energies (kVp's). To further improve registration accuracy patient immobilization may be utilized. The additionally acquired dual energy data can be post-processed on AW WS using Add/Sub function to gain additional clinical information.

Key Hardware Components

Gemstone Clarity Detector
The Gemstone Clarity detector features a unique focally aligned layout of the detector sub-modules and a 3D collimator (post patient) to minimize scatter artifacts, ensure HU uniformity & reduce beam hardening artifacts associated with wide coverage systems. Combined with VHD reconstruction technology, the system delivers excellent image quality at full 80 mm coverage. The Gemstone Clarity detector also features a revolutionary ultra-low capacitance photo diode with new ASIC technology that redefines electronic noise at the quantum limit to less than 3 photons @ 120 keV (3100 electrons). The detector includes acquisition electronics which allow 4x faster bandwidth and 3x faster trigger rate than previous generations and reduces electronic noise by 25% which may improve image quality and reduce artifacts in low signal conditions as may be encountered in large patients. 3D Collimator Scatter Reduction Technology reduces scatter to primary ratio by more than 50% (R Melnyk, J Boudry, X Liu, and M Adamak, "Anti-scatter grid evaluation for wide- cone CT," Proc. of SPIE, Vol. 9033, 90332P1-7, 2014) and results in significant improvement in image quality and reduction in beam hardening and metal artifacts.

Gemstone Clarity detector specifications:
• Z-Coverage/360 degree rotation: 80 mm
• Number of slices: 256
• Number of detector rows: 128
• Number of detector elements: 106,496 cells with individual electronic/DAS channels
• Sampling rate: Up to 2,496 views per rotation (Up to 8914 Hz)
• Electronic noise: less than 3 photons noise (3100 electrons)
• Effective analog to digital conversion range >2,000,000:1
• Scintillator speed: 0.03us (100 times faster than GOS)
• Afterglow: 0.001% (4 times lower than GOS)
• Radiation damage: 0.03% (20 times less than GOS)
• Scatter to Primary Ratio: <10%
• Detection efficiency: 98% @ 120 kV

Performix HDw tube
The Performix HDw tube is a next generation anode-grounded, metal-ceramic x-ray tube. The tube enables improved spatial resolution via dynamic in-plane focal spot deflection and independent control of the focal spot size in both X and Z-axis which optimizes the focal spot to deliver consistent beam quality across the full 80 mm Z-axis coverage, making it one of the most innovative CT tubes offered today. The design is optimized for exams requiring a large number of scans without tube cooling. It is powered by an onboard high frequency generator capable of ultra-fast kVp switching. Due to the ultrashort exposure times associated with wide coverage scanning, traditional metrics related to tube cooling such as anode heat content & cooling rate lose their relevance. The GE Performix HDw tube includes a standard license that automatically enables the use of tube dependent advanced applications. The use of a third party X-ray tube will require an additional license for the activation of these features.

Ultra-fast kV Switching Generator
The new generator features 3x faster rise and fall times for kV switching compared to previous generator. This would allow for more time to be spent at the target energy levels and result in better energy separation between the datasets acquired at different kV levels using fast kV switching.
• Generator maximum peak power: 103 kW
• Tube current range: 10-740 mA with 5 mA increments
• Tube voltage: 70, 80, 100, 120, 140 kV. Automatically selected through kV Assist based on patient body habitus and examination type
• Max x-ray tube assembly heat content: 5.0 MJ (6.8 MHU)
• Max continuous heat dissipation: 3.0 kW
• Focal spot size according to IEC 60336/2005: 1.0 x 0.7mm, 1.6 x 1.2mm, 2.0x1.2mm

Gantry and Slipring
Revolution CT's gantry platform has been designed from the ground up to support the demands of today's scanning environment. Exclusive Whisper Drive system technology reduces audible noise during gantry rotation at 0.28s by more than 50% compared to a typical belt driven system thus improving patient comfort (audible gantry noise is measured at 69 dBA).
The contactless slipring transfers power and data to and from the rotating side of the gantry (slip ring) to the stationary side through contactless RF technology. This eliminates carbon dust due to brush wear- out in typical CT systems thereby increasing the reliability of the system. In addition, the gantry frame features redundant fail-safe mounts for all major components that is

designed and tested to stringent standards to ensure safe and reliable operation even at fast rotation speeds.
• Aperture: 80 cm
• Focus-to- detector Distance: 109.7 cm
• Focus-to- isocenter Distance: 62.6 cm
• Scan FOV: 50 cm
• Rotation speeds: 0.28s, 0.35s, 0.5s, 0.6s, 0.7s, 0.8s, 0.9s, 1.0s per 360° acquisition
• Temporal resolution: 140ms cardiac temporal resolution without using SnapShot Freeze. 29ms effective temporal resolution using SnapShot Freeze. (As demonstrated in mathematical phantom testing)(Cardiac Acquisition software and AW workstation or server with CardIQ Xpress 2.0 required to process SnapShot Freeze data)
• Data chain bandwidth: 40 Gbps
• Table and gantry control panels: Define both internal and external scan planes to +/- 1 mm accuracy. Activated any time during exam (with tube stationary)
• Front and rear integrated gantry LCD Display: Display patient information, ECG data from the integrated ECG module (optional), built-in patient breathing lights and countdown timer, cardiac gating indicator light and patient information videos
• Flexible cable manage system with coordinated straps attached to the gantry sides to keep cables connected to the gantry away from the floor and to reduce clutter

Operator Console
The Revolution CT scanner desktop allows simultaneous scanning, image reconstruction, display, processing and analysis, as well as networking and archival.
It features the new "Clarity Operator Environment" designed with your everyday needs in mind. The environment allows for more real time adaptive capabilities thus enabling dramatically improved timing with Smart Prep including automatically transitioning to acquisition in as quickly as 1 second when the set HU threshold is reached. The benefits provided by the new interface include:
• Smart prescription workflow automates scan set up by recommending scan parameters specific to the patient based on scout attenuation and ECG information, in the case of cardiac, to enable consistent image quality & dose performance across scans, irrespective of the technologist expertise level
• Seamless multi-tasking through ability to have multiple patient sessions open with one active patient for acquisition and the rest for post-acquisition tasks
• "Plan ahead" task list as part of scan setup automates repetitive tasks such as reconstructions, image transfer, image processing, etc. without requiring technologist intervention
• Ability to prospectively prescribe multi planar reconstructions for anatomies such as spine as part of the protocol, thus automating the workflow seamlessly
• Clear status visibility across all automated patient tasks without any interaction enables you to focus on the primary task at hand
• Manage your patient flow better with the ability to pre- pare scan prescription for the next patient while the current patient is getting off the table
• Quickly select scan protocols through global search, anatomical selection or user specific favorites in the new- ly designed protocol management system
• Facilitates protocol consistency by controlling access to changes and simplifying inputs required
• Integration with AW allows prescribing automatic image processing steps to be performed on the AW / AW Server post acquisition
• Better dose awareness through clearly visible real time projected dose indicator for the selected protocol

Operator console specifications
• Intel Xeon performance processor: 2.60GHz/8-Core CPU (or equivalent)
• Nvidia high performance GPU (or equivalent)
• 64 GB DDR3 unbuffered ECC (or equivalent)
• 24 inch dual monitors with screen resolution of 1920x1200
• Image data storage up to 700,000 uncompressed DICOM images (512x512)
• Scan data storage of 1 TB (up to 1500 scan files are supported)
• DVD-ROM (supports DVD-R, DVD-RW, DVD+R, DVD+RW, DVD+R DL, CD-R, CD- RW)
• USB 3.0 Port for External Hard Disk Drive Connectivity (scan data storage and image data storage are supported)
• Recon Server Xtream enables recon task parallelism and achieves up to 1.8x faster reconstruction throughput than Recon Server Pro
• Image reconstruction speed up to 65 fps with FBP and up to 25 fps with ASiR-V.

System Software
• Smart Flow
Simplified, automated scan prescriptions, personalized to the patient and easy-to-use reference protocols make the Revolution CT fast and efficient in patient set-up, prescription & scanning. The following features further help you streamline your workflow.
• Protocol Management System
Protocols can be copied, built and edited intuitively using the Protocol Management System.

• GE Reference Protocol: A set of predefined protocols for adult patients that cannot be modified but can be copied and used. These protocols are factory installed. They have been developed in collaboration with clinical partners to provide users with a convenient and clinical relevant starting point for tailoring your departmental protocols.
• Recently Scanned Protocols: A copy of the last 90 proto- cols reside exactly as they were used for review purposes only. These protocols can also be copied and used within into your departmental protocols.
• Anatomical Selector: Use the Anatomical Selector area to select a specific anatomical region to show only protocols related to that region.
• Favorites: A user can add to a list of favorite protocols commonly used by your site.

Clinical ID
Clinical ID is designed to streamline the clinical application specific workflow from protocol setup to reconstruction prioritization and automated reformatted views for timely diagnostic decisions.

AutoVoice™
Auto Voice provides recorded breathing instructions for the patient. Consistent breathing instructions assist with more precise timing during an exam. Auto Voice also provides a pre- message in the SmartPrep feature. The system also comes equipped with microphones at the console and gantry for communicating with the patient. The system has three, pre-recorded messages in ten selectable languages that cannot be deleted. You can also record up to 17 additional messages for each language. Default lan- guage options include: Chinese, English (Female) , English (Male), French, German, Italian, Korean, Japanese, Spanish (European), Spanish (Latin America).

Smart Patient Centering
The smart patient centering feature helps to detect suboptimal centering prior to the diagnostic scan. When scout is acquired, the system will assess patient centering. If the patient is off-centered greater than 2 cm, the system will display the table height location and an up or down arrow to indicate the elevation needed to reach that height.

SmartStartTM
• Gantry-mounted start scan button and countdown dis- play,
• Facilitates single-technologist operation by allowing start of scan at the gantry, with a visual reminder of time until X-ray initiation

SmartPrepTM with Dynamic Transition
Enables real-time monitoring of IV contrast and a user-selectable mode to dynamically transition to the diagnostic scan phase when a user entered Enhancement Threshold is reached in the Transition ROI.

Trauma Patient entry
Allows patient scans and image display/analysis without entering patient data before scanning.

Prospective Exam Split
Prospective Exam Split allows operator to specify how to split images from a scan into separate requested procedures/accession numbers in protocol management. This capability is especially useful in cases of full body trauma or for chest, abdomen and pelvis exams. Prospective Exam Split works with primary, secondary and reformatted images.

Smart DMPR
Smart DMPR can automatically generate reformatted views with prospectively set window width and window level and automatically transferring these image datasets to the designated PACS destination for fast review and diagnosis.

Digital Tilt
The system has preset protocols that can be selected prospectively, which allows images to be reconstructed at a specified tilt angle. This capability, combined with organ dose modulation and tilted head holder accessory for the patient allows for reducing the dose to sensitive organs such as the eyes while also reducing dental artifacts.

Enhanced Xtream Injector (Requires a compatible Bayer or Nemoto Injector system)
The Enhanced Xtream Injector provides synchronization of the start of the scan and the start of the contrast injector using the start scan button on the Scan Control Interface or the gantry controls. The Enhanced Xtream Injector also allows setting of the contrast injector parameters within the CT scan protocol and creation of an Injector Report at End Exam of what was delivered by the injector. The system and injector are operated independently after the start scan button is pressed on the system.

System Software
Volume High Definition Reconstruction
The system features state of the art image reconstruction technology designed to mitigate cone beam artifacts associated with wide coverage systems. In addition, the algorithm preserves temporal uniformity and provides excellent image quality at full 80 mm coverage. It further reduces variation in iodinated contrast HU uniformity across the full 80 mm z-coverage, typically caused due to heel effect. In addition, Smart MAR technology utilizes material physics learnings from GSI incorporated in single energy

acquisition. In conjunction with the 3D Collimator, this reduces beam hardening artifacts due to iron, bone, metal & other dense objects.

Iterative Reconstruction: ASiR-V
Integrated advanced iterative reconstruction technology (ASiR-V) reduces noise, even at very low signal levels. The ASiR- V algorithm focuses primarily on the modeling of the system noise statistics, objects, and physics and de-emphasizes the modeling of the system optics. The most time-consuming portion of the IR process is the modeling of the system optics. By excluding the most time-consuming component, system optics, and focusing on the other terms during the IR process, significant image quality improvement can be achieved with- out paying a large penalty in reconstruction speed. The advanced system noise model includes the modeling of the data acquisition system (photon noise and electronic noise) as well as noise characteristics of the reconstructed images. The photon noise model includes characterization of the photon statistics as it propagates through the imaging chain. The modeling of the reconstructed image noise includes characterization of the scanned object, using information obtained from extensive phantom and clinical data. This technology is designed to deliver reduced noise levels, improved low contrast detectability and may enable up to 82% reduction in dose when compared to FBP for all clinical applications.

Smart Dose technologies
Automatic Exposure Control (AEC)
AEC is a versatile and powerful tool designed to tailor the scanner's radiation output to each patient based on the patient's size, age, shape and attenuation and the user's re- quested level of image noise/quality criterion. AEC technology uses estimated patient attenuation values to adjust the mA dynamically in order to achieve the requested level of image noise/quality criterion.

3D Dose Modulation Utilizing SmartmA
Volumetric knowledge prior to scanning allows you to personalize protocols and optimize dose for every patient, large and small. During the scan, real-time, 3D dose modulation helps deliver consistent image quality because it automatically accounts for the changing dimensions of your patient's anatomy. In addition, the system provides guidance to assist in centering the patient to maximize the benefit of mA modulation.

Organ Dose Modulation
Organ Dose Modulation (ODM) builds on the SmartmA feature to enable even further patient dose reduction. By reducing the mA exposure profile as a function of the X-ray tube angle, radiosensitive organs towards the anterior surface of the patient, such as the eyes, breasts and thorax, can benefit from enhanced dose reduction while the overall image noise is still maintained.

kV Assist
kV Assist makes it easy to select optimal kV settings for the patient being scanned. It recommends tube voltage and current to achieve the lowest dose while meeting desired image quality goals.

70 kV Scanning
70 kVp scan mode enables low dose pediatric and small patient scans

ECG Modulated mA
For cardiac applications (optional), prospective ECG dose modulation automatically adjusts the mA to minimize the patient's expo- sure to X-rays – reducing mA, and thus dose, near the beginning and end of each prescribed phase range. Up to 3 phase ranges are selected within a heart cycle with different mA levels. The peak mA for the first phase range is automatically determined based on noise index set by the user. The user can also select the relative mA level for an optional second or third phase range, set as a percent of the mA level of the first phase range. This provides clear images and allows you to reduce dose yet provides motion free, high quality images for functional and anatomical analysis within a heart cycle

Color Coding for Kids
Based on the Broselow-Luten Pediatric System, the Color Coding for Kids was developed to help operator to select the correct pediatric CT protocol. The system divides the protocols into nine color zones based on height and weight, and incrementally increases scan technique as the patient's size in- creases. This arrangement of protocols assists you in reducing the variations in pediatric protocol selection. If the patient weight is unavailable, a Broselow-Luten Tape can also be used to obtain the weight based on the length.

- Smart Track: Advanced hardware and software for X-ray beam tracking minimizes patient dose.
- Smart Beam: Optimizes X-ray beam filtration independently for body, head, and cardiac applications.
- Soft Shutter: This capability reduces the over-beaming dose in helical scans by using an advanced reconstruction algorithm for helical scans that makes better use of acquired data through intelligent view weighting and back projection.
- Dose Check: Provides the user with tools to help them manage CT dose in clinical practice and is based on the standard XR-25-2010 published by The Association of Electrical and Medical Imaging Equipment Manufacturers Association (NEMA). Dose Check provides the following:

o Checking against a Notification Value if the estimated dose for the scan is above your site established value
o Checking against an Alert Value where the user needs spe- cific authority to continue the scan at the current estimated dose without changing the scan parameters if the estimated dose exceeds the alert value
o The ability to define Alert Values for Adult and Pediatric with age threshold
o Audit Logging and Review capabilities
o Protocol Change Control capabilities provided by robust protocol management interface
• Dose Computation, Display & Reporting: CTDIvol (CTDI volume), DLP (Dose Length Product), and Dose Efficiency computation and display during scan prescription provide dose information to the operator. Dose Reporting saves the CTDIvol, DLP, and phantom type in a DICOM Structured Dose Report and a secondary screen cap- ture. Series and cumulative exam values are saved. Saved values can be networked or archived.

DICOM Interchange
DICOM Interchange allows the saving of any image from the database, along with a PC viewer using Internet Explorer, to a CD-R or DVD-R with- out marking the exam/series or image as archived for exam transfer between stations that are not networked or pass along to referring physicians or patients. For detailed information, please reference DICOM conformance statement.
• DICOM Storage Service Class
• Service Class User (SCU) for image send
• Service Class Provider (SCP) for image receive
• Service Class User (SCU) for storage commitment
• DICOM Query/Retrieve Service Class
• DICOM Modality Worklist
• DICOM Modality Performed Procedure Step
Image Networking
Exams can be selected and moved between the Revolution CT and any imaging system supporting the DICOM protocol for network send, receive and pull/query. Image transfer time using DICOM protocols is > 16fps on a 1000baseT network.
Warranty: The published Company warranty in effect on the date of shipment shall apply. The Company reserves the right to make changes. All specifications are subject to change. Regulatory Compliance: This product is designed to comply with applicable standards under the Radiation Control for Health and Safety Act of 1968. Laser alignment devices contained within this product are appropriately labeled according to the requirements of the Center for Devices and Radiological Health.
This product complies with the performance standards of 21 CFR, sub-chapter J, and the applicable IEC 60601-1 series.
This product complies with NEMA Standard XR29-2013 / MITA Smart Dose Standard.
See the Pre-Installation manual for details of the siting requirements for GE Revolution CT.

Line	Qty.	Catalog	
2	1.00	B7919JM	**NG2000V heavy patient table**

The NG2000V heavy patient table has been exclusively designed for GEHC Ultra-premium CT systems.

The patient table features:
Maximal metal free horizontal scannable range: 2000 mm
Maximal table load: 306 kg / 675 lbs.
Maximal horizontal travel speed: 300 mm/s (standard) (437.5 mm/s optional with HyperDrive)
Horizontal positioning accuracy +/- 0.25 mm from any direction
Motor-driven table height adjustment from min. 550 mm to max. 1030 mm
Maximal vertical travel speed: 40 mm/s
10x more stiffness design to meet AAPM TG66 guideline specification.
Integrated ECG module with waveform and configuration through the gantry display
Workflow hub area with a see-through tray to give you the most flexibility in placing scanning related supplies, etc. without limiting visibility to the integrated ECG inputs.
IV Pole integrated at the foot-end of the table helps to prevent IV lines from becoming crossed and tangled and helps keep lines in place during patient table travel.
The X-strong foot switch cover, capable of supporting 612 kg / 1350 lbs. load, has been specially designed to support physicians or technologies to stand atop of it to implement diagnostic and/or treatment procedures to patients.

Line	Qty.	Catalog	
3	1.00	B7919AE	**Standard cable set for GEHC ultra-premium CT systems**

Line	Qty.	Catalog	
4	1.00	B7918EN	English keyboard

Line	Qty.	Catalog	
5	1.00	B7919KG	ICM Accessories 2000 Table

The accessories of Integrated Cardiac Monitor (ICM) for 2000mm regular and heavy tables on Revolution Apex, Revolution CT, Revolution CT ES.

Line	Qty.	Catalog	
6	1.00	S7919AP	TrueFidelity CT Images

Deep Learning Image Reconstruction (DLIR) is the next generation image reconstruction option that uses a dedicated Deep Neural Network (DNN) to generate TrueFidelityTM CT Images.
Compared to current iterative reconstruction technology, TrueFidelity CT Images can elevate every image to a powerful first impression with distinguished image quality performance1, and preferred image sharpness2 and noise texture3, at the same dose.
TrueFidelity Images have the potential to improve the reading confidence in a wide range of clinical applications such as head, whole body and cardiovascular, for patients of all ages.
Natively running on Recon Server Xtream, the Deep Learning Image Reconstruction engine is incredibly powerful to achieve fast reconstruction for routine CT use, even in acute care settings.
Deep Learning Image Reconstruction is integrated into the scanner's existing raw data-based reconstruction chain to produce TrueFidelity CT images for standard or high resolution acquisitions of axial, helical or gated cardiac scans.
The user can select three strengths of Deep Learning Image Reconstruction: Low, Medium or High. The strength selection will vary based on user preference in specific clinical applications.
1 Image quality comparisons between DLIR and ASiR-V, were evaluated by phantom tests of MTF, SSP, axial NPS, standard deviation of image noise, CT Number accuracy, CNR, and artefact analysis. Additionally, LCD was demonstrated in phantom testing using a model observer with the head and body MITA CT IQ Phantoms (CT191, CT189 The Phantom Laboratory). DLIR and ASiR-V reconstructions were performed using the same raw data.
2 as demonstrated in a clinical evaluation consisting of 60 cases and 9 physicians, where each case was reconstructed with both DLIR and ASiR-V and evaluated by 3 of the physicians. In 100% of the reads, DLIR's image sharpness was rated the same as or better than ASiR-V's. This rating was based on each individual reader's preference.
3 as demonstrated in a clinical evaluation consisting of 60 cases and 9 physicians, where each case was reconstructed with both DLIR and ASiR-V and evaluated by 3 of the physicians. In 91% of the reads, DLIR's noise texture was rated better than ASiR-V's. This rating was based on each individual reader's preference.

Line	Qty.	Catalog	
7	1.00	B7919RK	CT Perfusion 4D Neuro for OC (USB)

CT Perfusion 4D Neuro for CT Operator Console is a post processing image analysis software on GE CT Console for analyzing CT perfusion images related to stroke and brain tumor angiogenesis. The simple user interface and fully automated perfusion post-processing make it easy for users to diagnose quickly and accurately - and help make treatment decisions more confidently.

The key perfusion parameters that CT Perfusion 4D Neuro generates are.

Regional Blood Volume (BV; ml/100g)
Regional Blood Flow (BF; ml/min/100g)
Regional Mean Transit Time (rMTT; sec)
Capillary Permeability Surface Area Product (PS)
Time of Arrival (IRF T0)
Transit Time to IRF Peak (Tmax; sec)

CT Perfusion 4D Neuro features

Protocol-driven workflow, including brain stroke protocol and brain tumor protocol, can automate the analysis process and improve productivity.
Streamlined workflow for tissue classification, that may aid the clinician in determining the status of the tissue based on thresholding values of perfusion parameters.
Smart Map that creates noise-reduced functional maps while preserving functional detail.

System requirement: Volume Viewer for CT Operator Console.

Line	Qty.	Catalog	
8	1.00	B7919GU	Revolution CT ES Cardiac Acquisition Software

High definition, motion free coronary images at any heart rate is enabled by a prospectively ECG-gated cardiac axial acquisition protocol that utilizes 80 mm of coverage with 0.28s rotation speed and real-time control to ensure robust, low dose and high definition cardiac imaging for all heart rates, with or without beta blockers. Smart Arrhythmia Management feature allows the system to automatically rescan a cardiac scan if significant heart rate variation is detected during exposure. (This package includes cardiac acquisition only software capabilities including SnapShot Freeze. CTM-400 Cardiac Trigger ECG module and post processing software require additional purchases).

Line	Qty.	Catalog	
9	1.00	B7919FF	Neuro MultiPhase CTA Protocols

- Neuro Multiphase CTA protocols is the group of CT acquisition protocols for multiphase CT angiography, an imaging tool that provides three time-resolved images of pial arterial filling in the whole brain, that can be used to predict clinical outcomes in patients with acute ischemic stroke.
- Neuro Multiphase CTA Protocols is the purchasable option of Revolution CT 2016 summer release.

Line	Qty.	Catalog	
10	1.00	B7919FX	HyperDrive on GE ultra-premium CT systems

HyperDrive is an unmatched high pitch scan mode on GE ultra-premium CT systems that combined wide coverage acquisition with high pitch helical techniques to achieve speeds up to 437 mm/s with uncompromised 50 cm field of view and image quality. This additional scan mode is especially beneficial in trauma or pediatrics environments.

Line	Qty.	Catalog	
11	1.00	B7919PW	Max FOV 2

MaxFOV 2 is GE new generation, deep learning powered CT image reconstruction option to extend the display field-of-view (DFOV) up to 80 cm with high accuracy of patient contour and CT numbers sufficient for accurate dose calculations in radiation therapy planning. MaxFOV 2 is intended for patients of all ages, especially bariatric patients.

Line	Qty.	Catalog	
12	1.00	B7919GH	Rear Gantry Display

Optional Revolution CT rear gantry display showing patient information, patient comforting videos, and current scan parameters such as kV, mA, scan time, table position, heart rate and ECG trace (from integrated ECG module)

Line	Qty.	Catalog	
13	1.00	B78552CA	CT Operator Console Desk

The Freedom workspace is an ergonomic working environment specifically designed for use with the GE Healthcare imaging systems. The sleek table design enables the efficient use of space while enhancing clinical workflow and technologist comfort.

The Freedom workspace provides a minimalist footprint to improve patient visibility and giving the user easier access to patients in the imaging suite.

It offers sit/stand and horizontal/vertical monitor flexibility. It can also help reduce noise and heat with remote location options of the console. The non-adjustable Freedom workspace version is 1300mm long x 895mm wide x 850mm height and weighs 55.8kg.

Line	Qty.	Catalog	
14	1.00	B7660B	Chair

Chair for CT scanner

Line	Qty.	Catalog	
15	1.00	B77292CA	CT Service Cabinet

Service cabinet for system accessories storage

Line	Qty.	Catalog	
16	1.00	B7864PZ	Eaton 14.4 KVA 3-Phase Partial System UPS for GE CT and PET/CT Scanners

Eaton's 14.4 KVA 3-Phase partial system UPS (Uninterruptible Power Supply) has been specifically configured to coordinate with compatible GE CT and PET/CT scanners.

The partial system UPS provides clean, reliable, constant voltage power to the scanner electronics. It helps protect the system's sensitive electronic components from damaging power anomalies such as high frequency noise transients and over voltage and under voltage conditions.

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

Specifications:
1. Rating: 14.4 KVA
2. Input voltage range: three phases; 102-132V/phase
3. Input frequency range: 45-65 Hertz

4. Input power factor: >95% typical
5. Output frequency: 50 or 60 Hertz, autosensing
6. Output regulation: <3% steady state for all conditions of line and load
7. Voltage distortion: <5% threshold
8. Overload capacity: 110% for 10 minutes; 125% for 1 minute; 149% for 5 seconds.
9. Efficiency: >90% typical
10. Battery backup time: >10 minutes typical
11. Battery recharge time: < 3 hours to 80% capacity typical
12. Operating temperature: 50°F - 104°F (10°C - 40°C)
13. Floor heat dissipation: 5122 BTU/hour typical @11.5 KVA
14. Humidity: 20-80% relative humidity, non-condensing
15. Audible noise (norm mode): <60 dBA @1 meter
16. Dimensions (H x W x D): 49 inches x 12 inches x 32 inches (1245 mm x 305 mm x 813 mm)
17. Weight: 620 lbs (277 kg)

NOTE: THE PARTIAL SYSTEM UPS HAS DIFFERENT INTERACTIONS WITH COMPATIBLE SCANNERS, BASED ON DIFFERENT SCANNER POWER ARCHITECHURE. REFER TO THE PARTIAL SYSTEM UPS PRODUCT DATA SHEET FOR DETAILS.
NOTE: ITEM IS NON-RETURNABLE AND NON-REFUNDABLE
NOTE: REMOVAL/DISPOSAL OF OLD UPS IS THE CUSTOMERS RESPONSIBILITY
NOTE: CONTACT GE SERVICE OR EATON FOR START-UP ASSISTANCE

Line	Qty.	Catalog	
17	1.00	B7919NB	SmartPower with Ethernet Card

Line	Qty.	Catalog	
18	1.00	B7900LC	Low Dose CT Lung Screening Option with Indication For Use

This option provides lung screening reference protocols that are tailored to the CT system, patient size (small, average large), and the most current recommendations from a wide range of professional medical and governmental organizations. Now, qualified GE Healthcare CT scanners with this option are formally indicated for, and can be confidently used by physicians for low dose CT lung cancer screening of identified high-risk patient populations. These protocols deliver low dose, short scan times, and clear and sharp images for the detection of small lung nodules. Early detection from an annual lung screening with low dose CT in high-risk individuals can prevent a substantial number of lung cancer-related deaths.

All new GE 64-slice and greater CT scanners, and virtually all of the 16-slice CT scanners that GE Healthcare sells are qualified for this screening option. This solution is also available to thousands of qualified GE CT scanners currently in use, increasing access to the quality scanners that satisfy both patient and physician needs. The new protocols, do include the choice for the user to be able to utilize GE Healthcare's industry-leading technologies such as ASiRTM, ASiR-VTM and VeoTM that are designed to reduce image noise, which is undesirable for physicians looking for small nodules.

This option contains two documents. Lung Cancer Screening Option Reference Protocol Guide, and the Lung Cancer Screening Option User Manual / Technical Reference Manual

i) The following GE Healthcare CT scanners are qualified to receive the new low dose CT Lung Cancer Screening Option: LightSpeed 16, BrightSpeed Elite, LightSpeed Pro16, Optima CT540, Discovery CT590 RT, Optima CT580, Optima CT580 W, Optima CT590 RT, LightSpeed Xtra, LightSpeed RT16, LightSpeed VCT, LightSpeed VCT XT, LightSpeed VCT XTe, LightSpeed VCT Select, Optima CT660, Revolution EVO, Discovery CT750 HD, Revolution HD, Revolution CT, Revolution Frontier.

ii) Moyer V. Screening for Lung Cancer: U.S. Preventive Services Task Force Recommendation Statement. Ann Intern Med. 2014;160:330-338.

http://www.uspreventiveservicestaskforce.org/Page/Document/RecommendationStatementFinal/lung-cancer-screening

Line	Qty.	Catalog	
19	1.00	E8007WJ	CTM-400 Cardiac Trigger Module - America and Asia

Ivy Biomedical's CTM-400 Cardiac Trigger Module is a sophisticated Computer Tomography (CT) gating module that synchronizes a patient's ECG to remove motion artifacts when generating cardiac or other physiological images. The CTM-400 is completely integrated with GE Healthcare CT Revolution™ scanner and installed directly into the gantry table. It communicates with the CT system via a standard serial communications link and requires less than 5 watts from a +8 to +24V medical grade power supply.

Imaging Applications
The CTM-400 module is intended primarily for use on patients in applications requiring precision R-wave synchronization such as timed imaging studies Simultaneously ECG vectors and the ECG trigger are sent to the CT system.

Intuitive Operation
Built-in LED indicators provide visual status of power, and system communication while a varied intensity light pipe illuminates the perimeter of the module during use. An RS-422 D-sub 15-position standard density network interface connector provides two-way communications between the module and the external console.

The Ivy CTM-400 Cardiac Trigger module is completely integrated with the CT Revolution scanner and installed directly into the gantry table.

Line	Qty.	Catalog	
20	1.00	E8016DA	CT Table Slicker for CT Revolution 2000 Table only

The GEHC Revolution CT and Revolution Apex table slicker is specifically designed to maximize contaminant protection. Manufactured to be used in conjunction with the table restraining belts, this slicker adds versatility to your CT procedures. Latex free, it is strongly suggested that the slicker is cleaned with a water/bleach solutioj prior to every procedure.

Features:
- Table gray cushion sealed in vinyl slicker Dimension 2403 x 788
- Table extender gray cushion sealed in vinyl slicker Dimension 406 x 788
- Cover for catheter bag hanger
- Increase system uptime by protecting table from spills and particulate contaminants
- Easy to install and comfortable for patients
- Will not interfere with normal operation of CT table
- Clear PVC plastic facilitates faster cleanup of blood and fluids
- Prevents contaminant build up in hard to clean areas
- Thermosealed seams and flaps
- Recommended for trauma centers and sites concerned about exposure to blood and fluid-borne disease

Line	Qty.	Catalog	
21	1.00	E8016DC	Foot Slicker for CT Revolution

The GEHC Revolution CT Foot Switch slicker is specifically designed to maximize contaminant protection. Latex free, it is strongly suggested that the slicker is cleaned with a water/bleach solution prior to every procedure.

Line	Qty.	Catalog	
22	1.00	E4502BG	UL Main Disconnect Panel 380-480V 50/60Hz 175A for CT Rev2.0

The MDP (Main Disconnect Panel) and UPS Control Panels serve as the main facility power disconnect source installed ahead of the Revolution CT system. On systems where the optional partial system UPS is included in the system, the panel provides NEC mandated UPS emergency power-off control function via a UPS control cable included with the UPS. The MDP saves time, installation labor, and valuable mounting space by consolidating the main circuit breaker, control power source and required indicator lights into a compact factory manufactured panel.

Applications For general installations of GE Revolution Apex™.

Designed for reliability and easy installation
• The MDP saves time, installation labor, and valuable mounting space by consolidating the main circuit breaker, the feeder overcurrent devices, magnetic contactors and UPS emergency power-off into one compact panel
• The system provides stock availability of otherwise special-order devices, saving time and installation costs
• Reduces installation time and cost by eliminating delays in obtaining individually enclosed components and by eliminating on site assembly
• UPS emergency power-off functions are included for future, partial system UPS addition
• Disconnects system power on first loss of incoming power, preventing damage to system components
• Provides a standardized platform for UPS or other future GE engineered modifications or upgrades

Built for investment protection
• UL, cUL listed
• Supplied with low voltage, cover mounted Push to Stop, Twist to Restore pushbutton and long life LED pilot lights
• Provides overcurrent and short circuit protection
• Suitable for use on systems with 25,000A of short circuit current. It is the installer's responsibility to verify that the available shout circuit current is 25,000A or less for compliance to all electrical codes.
• An optional partial system UPS provides clean uninterrupted power to the system computer, maintaining system integrity during power loss while also providing a solution to power quality problems.
• Emergency-off disconnects power to both the PDU and optional partial system UPS output, per National Electric Code
• Main power disconnect operating handle can be padlocked in the Off position for servicing safety and OSHA lock out/tag out
• The door has provisions for padlocking
• Enclosure door is interlocked with On / Off disconnect handle to prevent unauthorized access if disconnect is in the On position
• Factory wired and tested
• Panel disconnect provides OSHA lockout / tag out provisions
• The main disconnect panel may be used as a stand-alone main disconnect, with the optional GE partial system UPS or with a GE full system UPS

Remote EPO (Emergency Power Off)
Includes two normally closed contact blocks attached to the back of the emergency off push button. Two are included with each MDP. NOTES:
• Customer is responsible for arranging for installation with a qualified party
• ITEM IS NON-RETURNABLE AND NON-REFUNDABLE

Line	Qty.	Catalog	
23	1.00	W0301CT	TIP CT Scanner 1 Training Program

This training program is designed for customers purchasing a GEHC CT system to include Optima, EVO, or Cardiographe. GEHC will work with the designated Customer contact to agree upon a reasonable training schedule for a pre-defined group of core technologists that will leverage blended content delivery and may include a combination of onsite days and virtual offerings, to

include TiP Virtual Assist, the GEHC Answerline and available on-demand courses ("Virtual Inclusions"). This blended curriculum with multiple delivery platforms promotes learner retention and allows for an efficient and effective skill development.

This program may contain:
• Onsite training (generally 10 days)
• Virtual Inclusions may include:
• Remote instructor-led training: Instructor leads a remote training session one-on-one or in a group, typically for 1 hour
• Answerline Support-Access to GEHC experts for clinical, non-emergency applications assistance via phone or by using the iLinq button on the imaging console
• Tip Virtual Assist-Direct interactive access to a GEHC expert for enhanced support.
• On Demand courses-On healthcare learning system. Self-paced courses and webinars (CE and non-CE).
Training will be delivered at a mutually agreed upon time between the customer and GE Healthcare (excluding GE Healthcare holidays and weekends), are subject to availability and generally will not exceed 14 days. This training program has a term of six (6) months commencing on Acceptance, where all onsite training must be scheduled and completed within six (6) months of Acceptance and all Virtual Inclusions also expire at the end of such six (6) month period. Additional onsite days may be available for purchase separately.
All GEHC "Training" terms and conditions apply. Given the unique nature of this program, if this program is purchased as part of a purchase under a Governing Agreement, including any Master Purchase Agreement, Group Purchasing Organization Agreement, or Strategic Alliance Agreement, this program shall take precedence over any conflicting training deliverables set forth therein.

Line	Qty.	Catalog	
24	1.00	R21013AC	Standard Service License

GE Healthcare has reclassified its service tools, diagnostics and documentation into various classes (please refer to the Service Licensing Notification statement at the beginning of this Quotation). The Standard License provides access to service tools used to perform basic level service on the Equipment and is included at no charge for the warranty period.

Total Quote Subtotal: $1,446,765.47

Qty.	Credits and Adjustments	
1.00	SiemensDualSource-DefinitionDS Trade-in	$-50,000.00

Total Quote Net Selling Price: *$1,396,765.47*

If applicable, for more information on this devices' operating system, please visit GE Healthcare's product security portal at: https://securityupdate.gehealthcare.com/en/products

Optional Items

Please initial the Catalogs you wish to purchase

Catalog Number	Qty.	Description	Net Price	Initial
B7919RC	1.00	**Enhanced Xtream Injector Kit (USB)**	$450.00	

Enhanced Xtream Injector Kit contains software key and connection cables to allow the seamless communication between GE Revolution CT family scanners and contrast injectors with Class IV controller area network (CAN) technology. The resulting injector and CT scanner integration benefits may include:
Reduced overall programming time
Improved scanner and injector protocol matching through programming of the injector from the scanner console
Better control over contrast injection procedure with a synchronized CT scan start time.
Preview injection parameters before beginning the scan.
Complete post-study reviews of injection results at the scanner console.
Automatic documentation of the injection results in PACS

Trade-in Addendum to GE Healthcare Quotation

This Trade-In Addendum ("Addendum"), effective on March 29, 2021, between the GE Healthcare business identified on the Quotation and **Cape Fear Valley Medical Center** ("Customer"), is made a part of Quotation # **2007139149.12 ^** dated March 29, 2021 ("Quotation") and modifies it as follows:

A. Customer: (i) certifies that it has full legal title to the equipment and/or mobile vehicle ("mobile vehicles" are defined as any systems requiring a vehicle title) listed in Section E ("Trade-In Equipment"), free and clear of all liens and encumbrances; (ii) conveys title and, if applicable, registration and license documents to GE Healthcare effective on the date of removal or receipt of the Trade-In Equipment (mobile vehicles will not be removed from Customer site until GE Healthcare has received a clean title signed over to GE Healthcare); and (iii) affirms that the Trade-In Equipment has never been used on or to provide care to animals. If GE Healthcare removes the Trade-In Equipment, it will do so at its expense at a mutually agreed time. Trade-In Equipment shall be removed no later than thirty days following installation of Customer's new system, unless explicitly otherwise agreed to by the parties in writing.

Mobile vehicles must include the VIN# on this trade-in addendum: VIN# [insert Vin #]. Mobile vehicles must have a valid DOT sticker and be road worthy at the time GE Healthcare is to take possession of them in order for GE Healthcare to accept a mobile vehicle on trade-in. Any and all logos or hospital affiliation stickers must be removed (outside and inside) by Customer and Customer shall clean the mobile vehicle of all debris and medical supplies prior to removal of the mobile vehicle by GE Healthcare.

B. Customer is responsible for: (i) providing timely, unrestricted access to the Trade-In Equipment in a manner that affords GE Healthcare, or third-party purchaser of the Equipment through GE Healthcare, the ability to complete Equipment inspection and testing, and the ability to complete an operating system back-up prior to de-installation within the timeframe required by GE Healthcare or said third-party purchaser, failure of which to provide may result in termination of this Trade-in Addendum and related credits and/or payments; (ii) ensuring that the Trade-In Equipment and the site where it is located are clean and free of bodily fluids; (iii) informing GE Healthcare of site-related safety risks; (iv) properly managing, transporting and disposing of hazardous materials located on site in accordance with applicable legal requirements; (v) rigging, construction, demolition or facility reconditioning expenses, unless expressly stated otherwise in the Quotation; and (vi) risk of loss and damage to the Trade-In Equipment until safety risks are remediated and the Trade-In Equipment is removed or returned.

C. Prior to removal or return to GE Healthcare, Customer must: (i) remove all Protected Health Information as such term is defined in 45 C.F.R. § 160.103 ("PHI") from the Trade-In Equipment; and (ii) indemnify GE Healthcare for any loss resulting from PHI not removed. GE Healthcare has no obligation in connection with PHI not properly removed.

D. GE Healthcare may in its sole discretion reduce the trade-in amount or decline to purchase the Trade-In Equipment and adjust the total purchase price of the Quotation accordingly if: (i) the terms of this Addendum are not met; (ii) Customer fails to provide access to the Trade-In Equipment as required herein; or (ii) the Trade-In Equipment is missing components or is inoperable and/or non-functioning when removed or returned – Customer is required to confirm for GE Healthcare the operability of the Trade-In Equipment prior to the deinstallation of the Equipment. All other terms and conditions of the Quotation remain in full force and effect.

E. Trade-In Equipment:

Trade-In Equipment Mfr.	Model & Description	Quantity	System ID*	Trade-In Amount ($)
SIEMENS	SiemensDualSource-DefinitionDS Trade-in	1.00	CFV910615SDDS	$ -50,000.00

This Addendum is executed when: (i) signed by the parties below; (ii) Customer receives this Addendum and signs the Quotation that references the Trade-In Equipment; or (iii) Customer receives this Addendum and issues a purchase order identifying either the terms of the Quotation (which includes a reference to the Trade-In Equipment) or the Governing Agreement identified on the Quotation as governing the order (PO# _____)t.

Cape Fear Valley Medical Center

Signature: _____

Print Name: _____

Title: _____

Date: _____

GE Healthcare

Signature: _____

Print Name: _____

Title: _____

Date: _____

Attachment 3

Construction Quotation

Blake Contracting, LLC.
Specializing in Healthcare Contracting

"Exhibit D"

NC License #: 66279
March 31, 2021

Douglas J. Freeman
Architect | Engineering and Construction Management
Cape Fear Valley Health System
1638 Owen Drive
Fayetteville, NC 28304

Ref: Cape Fear Valley Health Systems-Fayetteville (Fayetteville, NC)
GE ED CT Renovations-Quote#BS20-883-Rev-02

Mr. Freeman,

Blake Contracting, L.L.C., Inc. is pleased to provide a proposal to provide labor, material, equipment, supervision and subcontractors for the renovation of the existing room GA038 and GA038A to facilitate installation of GE Revolution CT ES CT System and two new ultrasound rooms at Cape Fear Valley Health Systems-Main Campus Site located in Fayetteville, NC. The renovation work to facilitate the new equipment is limited to that specified in this Scope of Work, will comply Typical installation drawings, Preliminary installation drawings file name: CTM232795-PRE-00.DWG, dated 02-16-21 and is based on information received by Blake Contracting, L.L.C.

This scope of work is to be completed as a phase of a one (1) continuous phase.

The Scope of Work is as follows:

Division 00 – Procurement

1. Provide Architectural, Mechanical, Electrical and Plumbing drawings for site construction for this scope of work only to meet DHSR Guidelines.
    a. Specification Manual is not included. Specifications are on the drawings.
    b. Other trades design is not included based on limited scope of work in those areas.
    c. Includes additional site visit by Blake Contracting staff for design meeting, one onsite meeting during construction, one pre-DHSR inspection and one for DHSR inspection.
2. Attend the following design and pre-construction meetings:
    a. One (1) pre-design meeting with customer and with A&E team members for site research.
    b. One (1) pre-construction meeting at time of submission of drawings to permitting office.

Division 01 – General Requirements

1. Provide labor to compile project timeline in Ghant format.
    a. Timeline to be in MS project format and PDF.
2. Provide general supervision.

3. Provide Air scrubbing filtration during the project to create negative airflow during the construction process to meet the ASHE Infectious control standards.
    a. Air flow / negative air monitoring to include completion of "Owner Supplied" paperwork. Reports to be provided to customer at the end of each week.
    b. Includes Blake Contracting Supplied Manometer for observation by ICRA control personnel and Blake Contracting Superintendent.
4. Dumpster as required for construction debris to be located in the ED area.
5. Construction clean-up for occupancy.
    a. Customer to terminal clean/final clean area.

Division 2 – Existing Conditions

1. Provide labor and materials for the construction of temporary plastic dust barriers for safety purposes, noise reduction, and dust containment to allow patient flow during the corridor alterations.
    a. Provide sealing off appropriate supply and return ducting to minimize dust contamination of ductwork and surrounding areas.
    b. Barriers to be constructed out of plastic for relocation purposes. Long term barriers will be ¼ drywall (outside of rated barriers) and constructed to ceiling.
2. Demolition of the following areas to accommodate new proposed layout as follows:
    a. Demolitions of wall sections for installation of vendor specific items as required.

Division 3 – Concrete (Not Applicable)

Division 4 – Masonry (Not Applicable)

Division 5 – Metals

1. Provide labor and material to install two new overhead supports to attached to the existing structure in the exam room for the CT Monitor and injectors in the Exam Room area.

Division 6 – Woods, Plastics and Composites (Not Applicable

Division 7 – Thermal and Moisture Protection

1. Provide labor and material to install caulking and fire rated sealant compounds at penetrations necessary to produce the renovation work inside of this scope of work only.

Division 8 – Doors, Windows, and Glass (Openings)-See Division 13 for Specialty items) - (Not Applicable)

Division 9 – Finishes

Walls:

1. Patch, include priming if applicable, the areas of the existing walls within the Site damaged by the production of the Work.

Floors:

1. Provide labor and materials to patch LVT flooring in the CT Exam room at the CT Gantry base. The materials will be similar to flooring installed in the CT Room now.

Ceilings:

1. Provide labor and materials to remove and re-install acoustical ceilings for installation of HVAC duct work rework and new overhead Injector and Monitor Boom locations.

Painting and Other Finishes:

1. Provide labor and materials to paint existing walls and door and window frames in the CT Exam and control rooms with 2 coats of latex paint.
2. Provide labor and materials to paint the exposed new electrical cable ducting and conduit in the CT Exam room with 2 coats of latex paint similar to the paint color on the adjacent walls.

Division 10 – Specialties (Not Applicable)

Division 11 – Equipment (Not Applicable)

Division 12 – Furnishings (Not applicable)

Division 13 – Special Construction

1. Provide labor and materials to patch lead radiation shielding as it relates to this scope of work.
    I. Physicists design and calculations area excluded.
    II. Post testing of new shield and final physicist testing are the customer's responsibility.

- **Rigging of CT, UPS/Power Conditioner or any other equipment is excluded.**

Division 14 – Conveying Systems (Not Applicable)

Division 21-Fire Suppression (Not Applicable)

Division 22-Plumbing

Domestic Plumbing: (Not Applicable)
Medical Gas Work: (Not Applicable)

Division 23-Heating, Ventilating and Air Conditioning

1. Provide labor and materials to rework the existing HVAC in the areas as follows:
    a. Relocate existing supply's and returns from the equipment closet into the CT exam room to supplement the existing HVAC.
    b. Install new VAV box in the exam room to increase the supply and rework the existing return to handle the additional heat load in the exam room area.
        1. Controls to tie into the existing VAV control system inside the exam room area.

Division 26 – Electrical

1. CT Areas:
    a. Provide labor and materials to tie the existing X-ray in use light into the scanner.
    b. Provide labor and materials to install 1 – 90 amps breaker in the existing panel to feed the new GE Healthcare supplied MDC panel.
        i. Includes installation of associated conduit from point to point.
        ii. Include rework of load side of the breaker into the new equipment.
    c. Provide labor and materials to install new overhead and wall raceway to accommodate the new CT Equipment.

Division 27 – Communications (Not Applicable)

Division 28 – Electronic Safety and Security (Not Applicable)

Division 31 – Earthwork (Not Applicable)

Division 32 – Exterior Improvements (Not Applicable)

Division 33 – Utilities (Not Applicable)

EXCLUSIONS: The following elements of design, engineering, construction, equipment or related work or services **ARE NOT INCLUDED** in the renovation work or otherwise a part of this Work Scope:

1. Mold abatement and/or the correction of existing conditions.
2. Relocation and/or correction of existing underground utilities.
3. Any item or work not specifically stated to be included in this quote should be considered excluded.
4. Existing structural conditions and/or the correction of existing structural conditions outside of the items within this proposal.
5. Asbestos testing, abatement or encapsulation.
6. Any upgrades to existing power conditions beyond this Scope of Work.
7. Any construction due to state or local code upgrades.
8. Work in bio-hazardous, radioactive, toxic, asbestos or other high-risk environments.
9. Any work involving telephone systems, computer data systems, alarms, code blue and nurse call or networking to other modalities (outside of items outlined in this proposal).
10. Any state or room licensing fees.
11. Impact, sewer tap and/or encroachment fees.
12. Utilities needed for ancillary equipment such as film processors, film viewers, etc.
13. New utility power services, work involving emergency power, UPS or power conditioning equipment beyond this scope of work.
14. Relocation of existing main electrical services or expansion of main electrical power capacity.
15. Energy and building management systems.
16. Any work involving fire alarm or fire suppression systems additions or modifications except per inclusions.
17. De-installation of existing diagnostic imaging system and reinstallation of new diagnostic imaging system.
18. Removal of existing medical equipment, furniture and shelving.
19. Performance and payment bonds.

Qualifications:

1. Blake Contracting, L.L.C., Inc. will need approximately four (4) weeks, after receipt of building permit, to complete construction based on sufficient lead – time to order non-stock items.
    - 25-30 days-Architectural and Engineered drawings production
        - 3-4week schematic design.
        - 1-week customer review (if required)
    - Permitting:
        - Local-10-15 days.
        - State-30-45 days. We should be able to start construction during state review as egress is not changing for the area.
    - 4 weeks for construction.
2. All work to be performed during standard working hours of Monday through Friday, excluding holidays, between the hours of 7:00 am – 5:30 pm or at the discretion of Blake Contracting, LLC.
    - Shut down to be performed after hours.

- Major noise producing items to be performed in early morning hours or late afternoons.
  - Major defined as concrete cutting, jack hammering, concrete drilling, etc. Normal construction related items are not considered for afterhours work. We will work with staff to minimize disruption in the area.

3. Any changes to the scope of the work will be handled through a written change order process only.
4. Cost / Plus items shall be charged cost plus 10% for overhead and 5% for profit.
5. This proposal expires **30 days** from date list on Page 1 above.

If you have any questions, please do not hesitate to contact me. We look forward to serving you and your organization soon.

Materials and Labor:
All for the sum of = $119,955.00
(One hundred nineteen thousand, nine hundred fifty-five dollars and 00/100's)

Quote#: BS20-883-Rev-02

$109,050.75	**SF of project:**	**1**	**Price per SF:**	**$119,955.83**	
Phase #. Item # / Description	Misc Cost	Labor Cost	Subcontract Cost	Other	**Budget Total**
00 - PROCUREMENT (A&E)	$0.00	$0.00	$16,000.00	$1,000.00	**$17,000.00**
01 - GENERAL REQUIREMENTS	$9,758.25	$8,475.00	$0.00	$0.00	**$18,233.25**
02 - EXISTING CONDITIONS	$450.00	$557.50	$0.00	$0.00	**$1,007.50**
03 - CONCRETE	$0.00	$0.00	$0.00	$0.00	**$0.00**
04 - MASONRY	$0.00	$0.00	$0.00	$0.00	**$0.00**
05 - METALS	$0.00	$0.00	$6,900.00	$0.00	**$6,900.00**
06 - CARPENTRY	$0.00	$0.00	$0.00	$0.00	**$0.00**
07 - MOISTURE PROTECTION	$90.00	$42.50	$0.00	$0.00	**$132.50**
08 - OPENINGS	$0.00	$0.00	$0.00	$0.00	**$0.00**
09 - FINISHES	$2,417.50	$2,421.50	$0.00	$0.00	**$4,839.00**
10 - SPECIALTIES	$0.00	$0.00	$0.00	$0.00	**$0.00**
11 - EQUIPMENT	$0.00	$0.00	$0.00	$0.00	**$0.00**
12 - FURNISHINGS	$0.00	$0.00	$0.00	$0.00	**$0.00**
13 - SPECIAL CONSTRUCTION	$450.00	$35.00	$0.00	$95.00	**$580.00**
14 - CONVEYING SYSTEM	$0.00	$0.00	$0.00	$0.00	**$0.00**
21 - FIRE SUPPRESSION	$0.00	$0.00	$0.00	$0.00	**$0.00**
22 - PLUMBING	$0.00	$0.00	$0.00	$0.00	**$0.00**
23 - HVAC	$0.00	$0.00	$26,550.00	$0.00	**$26,550.00**
25 - CONTROLS	$0.00	$0.00	$0.00	$0.00	**$0.00**
26 - ELECTRICAL	$8,250.00	$9,000.00	$0.00	$0.00	**$17,250.00**
27 -	$0.00	$0.00	$0.00	$0.00	**$0.00**

COMMUNICATIONS					
28 - SECURITY	$0.00	$0.00	$0.00	$0.00	**$0.00**
31 - EARTHWORK	$0.00	$0.00	$0.00	$0.00	**$0.00**
32 - EXTERIOR IMPROVEMENTS	$0.00	$0.00	$0.00	$0.00	**$0.00**
33 - UTILITIES	$0.00	$0.00	$0.00	$0.00	**$0.00**
				TOTAL JOB COST	**$92,492.25**
				Fee: 17.90%	**$16,558.50**
				Sub Total	**$109,050.75**
			CONTINGENCY (% OF CONSTRUCTION IF REQUESTED)	**10.00%**	**$10,905.08**
				Total:	**$119,955.83**

Work can begin on this project upon acceptance of this proposal/Exhibit and/or signature of AIA141-2014 (Standard AIA contract between owner and Contractor with Blake Contracting, LLC Amendments). By accepting this Exhibit, you are accepting the terms and conditions of AIA Contract documents A141 2014 to be include as part of this proposal/Exhibit.

This proposal and scope of work is confidential information and is the sole property of Blake Contracting, L.L.C. Distribution is prohibited without prior approval from Blake Contracting, L.L.C.

Please complete the following information and return to our office *(Payment terms are "monthly progress payment"/ invoices to be submitted each month and/or upon Substantial Completion. Customer to make payments to Blake Contracting, L.L.C. within thirty (30) days of receipt of any application for payment / invoice. Any payment, outside of the substantial completion invoice (retainage in reduced to 5% for closeout), shall be subject to customer's right to withhold and retain ten percent (10%) of the payment amount set forth in each invoice, until the payment is made following Substantial Completion, which payment shall be made in full within thirty (30) days of receipt of invoice):*

Accepted by (Signature): _____ Date _____

Printed signature / Title: _____

PO #: _____PO Amount $ _____

*****All work in this scope is warranted for one (1) year after first use by customer and/or Certificate of Occupancy. Or manufactures standard warrant (which may be less or more than a year). Mechanical equipment is warranted one year from startup. *****

Thank you for the opportunity,

Blake Skarpalezos
President/CEO
Blake Contracting, L.L.C.