North Carolina Department of Health and Human Services
Division of Health Service Regulation

Pat McCrory
Governor

Richard O. Brajer
Secretary DHHS

Mark Payne, Director
Health Service Regulation

October 25, 2016

Lisa Griffin
2085 Frontis Plaza Drive
Winston-Salem, NC 27103

Exempt from Review – Replacement Equipment

Record #:	**2081**
Facility Name:	Novant Health Forsyth Medical Center
FID #:	923174
Business Name:	Forsyth Memorial Hospital, Inc.
Business ID #:	755
Project Description:	Replace existing angiography equipment (Project ID #G-6502-01)
County:	Forsyth

Dear Ms. Griffin:

The Healthcare Planning and Certificate of Need Section, Division of Health Service Regulation (Agency), determined that based on your letter of October 18, 2016 and additional documentation received on October 24, 2016, the above referenced proposal is exempt from certificate of need review in accordance with G.S 131E-184(f). Therefore, you may proceed to acquire without a certificate of need the Philips Alllura Xper biplane angiography system to replace the Siemens Axiom Artis biplane angiography system. This determination is based on your representations that the existing unit will be removed from North Carolina and will not be used again in the State without first obtaining a certificate of need.

Moreover, you need to contact the Agency's Construction Section to determine if they have any requirements for development of the proposed project.

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,

Celia C. Inman
Project Analyst

Martha J. Frisone
Assistant Chief, Certificate of Need

cc: Construction Section, DHSR
Paige Bennett, Assistant Chief, Healthcare Planning, DHSR

Healthcare Planning and Certificate of Need Section
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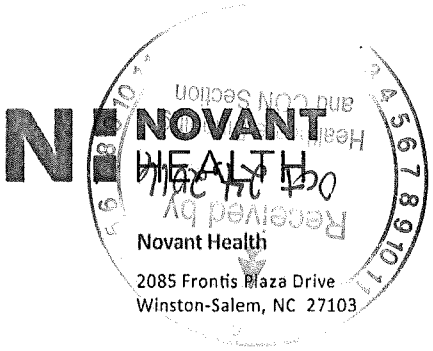


October 24, 2016

Ms. Celia Inman, Project Analyst, Certificate of Need
Healthcare Planning & Certificate of Need (CON) Section
North Carolina Department of Health & Human Services
809 Ruggles Drive
Raleigh, North Carolina 27603

Re: Follow-up to Request for More Information Regarding Replacement Equipment Exemption Request Pursuant to N.C.G.S. 131E-184(f) – BiPlane-Angiography Equipment at Novant Health Forsyth Medical Center (NHFMC); Forsyth County

Dear Ms. Inman:

This letter is a follow-up for a request for more information related to NHFMC's notice of exemption concerning a project to replace an existing biplane-angiography equipment room located in the hospital's Radiology Department with new biplane angiography equipment. As such, please refer to the original letter and attachments dated October 18, 2016, as referenced here.

To document that the equipment is to be located on the on the main campus of the licensed acute care hospital, "Main campus" means: "The site of the main building from which a licensed health service facility provides clinical patient services and exercises financial and administrative control over the entire facility, including the buildings and grounds adjacent to that main building and other areas and structures that are not strictly contiguous to the main building but are located within 250 yards of the main building."

The equipment, in this case, a biplane-angiography system, is located on the main campus in the Radiology Department of NHFMC, specifically in Room 202 on the First Floor, at 3333 Silas Creek Parkway, Winston-Salem, NC, 27103. The replacement biplane-angiography equipment will be located in the same area of NHFMC's main campus, but relocated to Room 203 adjacent to the existing room. Clinical patient services are located throughout NHFMC's campus as evidenced on the enclosed maps included as ***Attachment B****. Financial and Administrative control and oversight is managed by NHFMC's Senior Leadership personnel located in Administration at NHFMC (See* ***Attachment B****, Campus Map, Entrance A for a more detailed location).*

Please contact me at (704) 384 – 3462 if you need additional information to assist in your consideration of this request. Thank you for your prompt consideration of this request.

Sincerely,

Lisa Griffin

Lisa Griffin
Manager, Certificate of Need

NOVANT HEALTH

Novant Health
2085 Frontis Plaza Drive
Winston-Salem, NC 27103

October 18, 2016

Ms. Martha Frisone, Assistant Chief, Certificate of Need
Healthcare Planning & Certificate of Need (CON) Section
North Carolina Department of Health & Human Services
809 Ruggles Drive
Raleigh, North Carolina 27603

Re: Replacement Equipment Exemption Request Pursuant to N.C.G.S. 131E-184(f) – BiPlane-Angiography System at Novant Health Forsyth Medical Center (NHFMC); Forsyth County

Dear Ms. Frisone:

This letter outlines Novant Health Forsyth Medical Center's (NHFMC's) project to replace an existing angiography biplane system located in the hospital's radiology department with a new Philips Xper Angiography BiPlane system. As part of the project, the Anigiography BiPlane equipment will be relocated from Room 202 to the adjacent Room 203 and replaced. The existing Room 202 will no longer be used for angiography-biplane equipment. See **Attachment A** for the vendor quote from Philips. The total project costs related to the replacement of the angiography-biplane are $2,457,639, including the new equipment cost of $1,856,119. The project cost does not include: sales, property or excise taxes since NHFMC is a non-profit, tax-exempt organization and is not typically subject to these taxes. In addition, the expense for on-site training on the new equipment for the radiology staff is covered by the vendor quote on Page 17-18. The existing equipment is to be traded in and de-installed by Philips Healthcare (see page 46 of the quote in **Attachment A**) and will then be sold to an equipment vendor or reconditioning specialist and removed from North Carolina and not returned to North Carolina without the appropriate CON approvals.

Both the existing equipment and the replacement equipment are comparable medical equipment as explained on the following page. This project should be approved by the Agency as exempt pursuant to N.C.G.S. Section 131E-184(f) which states that a project is exempt from Certificate of Need review if it is more than $2 million and meets the following requirements:

1. The equipment is located on the main campus of the licensed acute care hospital, NHFMC;

   The equipment, in this case, an Angiography BiPlane System, is located on the first floor of the main campus in the Radiology Department of NHFMC, specifically in Room 202. The replacement linear accelerator will be located in the same location of NHFMC's main campus, but relocated to Room 203 which is adjacent to the existing space. See Maps documenting the location at NHFMC at 3333 Silas Creek Parkway, Winston-Salem, North Carolina in ***Attachment B****.*

2. The CON Department has previously issued a certificate of need for the equipment being replaced;

   The existing angiography equipment was acquired as part of the Certificate of Need application approved in December 2001 along with a cardiac catheterization lab. Please refer to Project ID #G-6502-01/Forsyth Memorial Hospital.

3. The facility proposing to acquire the replacement equipment shall provide prior written notice to the Department, along with supporting documentation to demonstrate that it meets the exemption criteria.

   This correspondence and supporting documentation serves as prior written notice to the CON Section that the linear accelerator replacement meets the exemption criteria.

This exempt project will replace a functionally similar operational equipment item on the main campus of NHFMC in the Radiology Department and will not increase the inventory of angiography equipment in Forsyth County. The proposed new angiography equipment is consistent with the replacement equipment definition at N.C.G.S. Section 131E-176(22a) which states that the replacement equipment is comparable to the equipment being replaced if it has the same technology as the equipment currently in use, although it may possess expanded capabilities due to technological improvements. The existing linear accelerator is used for angiography procedures in the hospital Radiology Department and the replacement angiography equipment will be used for angiography procedures in the hospital Radiology Department.

Pursuant to 10A NCAC 14C.0303 the proposed angiography equipment constitutes replacement equipment because:

1. It is comparable to the equipment currently in use. It has the same technology as the equipment currently in use, although it does possess expanded capabilities due to the technological improvements.
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.
3. The acquisition of the new equipment will 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.
4. The existing equipment was not purchased second-hand nor was the existing equipment leased.
5. The replacement equipment is not capable of performing procedures that will result in the provision of a new health service or type of procedure that has not been provided with the existing equipment.

Attached for your convenience please find:

1) a vendor equipment price quote (**Attachment A**);
2) maps indicating the location of the campus and the cancer center (**Attachment B**);
3) project/capital cost schedule which identifies the components of the total project costs (**Attachment C**);
4) a certified estimate of related construction costs from an independent licensed North Carolina architect (**Attachment D**); and,
5) the NC CON equipment comparison form summarizing essential information about the proposed equipment purchase (**Attachment E**).

NHFMC's acquisition of the replacement linear accelerator does not require a certificate of need because none of the definitions of "new institutional health service" set forth in N.C.G.S. Section 131E-176(16) is implicated. As discussed above, the total cost for the project is $2,457,639. This includes the cost of the equipment, as well as studies, surveys, designs, plans, working drawings, specifications, construction installation and other activities essential to making the equipment operational (such as staff training).

In conclusion, based on the information described above, please confirm that NHFMC's replacement equipment request does not constitute a "new institutional health service" and does fit within the replacement equipment exemption definition. Therefore, the project is not subject to certificate of need review.

Please let us know as soon as possible if you need additional information to assist in your consideration of this request. Thank you for your prompt consideration of this request.

Sincerely,

Lisa Griffin
Manager, Certificate of Need
Novant Health, Inc.

Enclosures

cc: Barbara Freedy, Director, CON, Novant Health
Laura MacFadden, Vice President, Design & Construction, Novant Health

File: FMC Angio-BiPlane REER Cover Letter101816.docx

Attachment A

PHILIPS HEALTHCARE
A division of Philips Electronics North America Corporation
22100 Bothell Everett Highway
P.O. Box 3003
Bothell, Washington 98041-3003

PHILIPS

Quotation #: 1-1DX5KG4	**Rev:** 9	**Effective From:** 28-Sep-16	**To:** 27-Nov-16

Presented To:

NOVANT HEALTH FORSYTH MEDICAL CENTER
3333 SILAS CREEK PKWY
WINSTON SALEM, NC 27103-3013

Tel:

Alternate Address:

Presented By:

Brett Kimball
Account Manager
Tel:
Fax:

Amy Morrow
Regional Manager
Tel: (828) 553-3118
Fax:

Date Printed: 12-Oct-16

Submit Orders To:

22100 BOTHELL EVERETT HWY
BOTHELL WA 98021

Tel: (888) 564-8643 Fax: (425) 458-0390

IMPORTANT NOTICE: Health care providers are reminded that if the transactions herein include or involve a loan or discount (including a rebate or other price reduction), they must fully and accurately report such loan or discount on cost reports or other applicable reports or claims for payment submitted under any federal or state health care program, including but not limited to Medicare and Medicaid, such as may be required by state or federal law, including but not limited to 42 CFR 1001.952(h).

Quote Solution Summary

Line #	Product	Qty	Price
	100227 Allura Xper FD20/15	1	$1,856,119.00
		Equipment Total:	$1,856,119.00

Solution Summary Detail

Product	Qty	Each	Monthly	Price
100227 Allura Xper FD20/15	1	$1,856,119.00		$1,856,119.00

Buying Group: **VIZIENT SUPPLY LLC** **Contract #:** **XR0312 CV**

Addt'l Terms:

Each Quotation solution will reference a specific Buying Group/Contract Number representing an agreement containing discounts, fees and any specific terms and conditions which will apply to that single quoted solution. If no Buying Group/Contract Number is shown, Philips' Terms and Conditions of Sale will apply to the quoted solution.

Each equipment system listed on purchase order/orders represents a separate and distinct financial transaction. We understand and agree that each transaction is to be individually billed and paid.

Payment Terms: 0% Down, 80% Upon Delivery, 20% Due When the Product is Available for First Patient Use, Net due 30 days from date of invoice

Quote Summary

100227 Allura Xper FD20/15

Qty	Product
1	NNAE848 AlluraClarity_FD20/15 Vascular
1	NNAE853 FlexVision_XL 8 Input Package
2	FCV0624 Addl LCD B&W mon for CR
1	NCVB629 FlexVision XL,XperHD,Snapshot
1	NCVB879 Aut Pos Contr Xper sys & table
1	NCVA695 FD Rotational Angio
1	NCVA694 Subtracted Bolus Chase
1	NCVA258 CO2 View Trace Software
1	NCVA999 Order handling surcharge
1	NCVA621 Biplane FD Dual Flouro
1	NCVC200 Wireless footswitch: bi-plane version
1	NCVA788 MultiSwitch.
4	FCV0587 Xper Live/Ref Slaving
1	NCVA673 Biplane FD SmartMask
1	NCVA121 FULL AUTOCAL
1	NCVA097 Cath Arm Support
1	NCVA098 Pulse Cath Arm Support
1	NCVA101 Peripheral X-ray Filter
1	NCVA851 Swivel for table base.
1	NCVA791 Xper Table Tilt
1	NCVB882 Cradle extension
1	FCV0271 Cerebral Filter Assembly
1	FCV0272 Neuro Wedge
1	FCV0706 Neuro Head Holder
1	FCV4894 Add.op-rail with cable ext.kit
2	FCV0017 CABLE CARRIER CS
1	NCVB266 3D-RA Complete
1	NCVC325 OncoSuite complete
1	NCVB878 Interventional Tools Hardware
2	FCV0056 18 INCH LCD MONITOR IN THE EXAM ROOM
1	NCVB641 VasoCT
1	FCV9067 Support & allowance, large
1	989801220375 Black Anti-fatigue Floor Mat w/logo.

Quote Summary

100227 Allura Xper FD20/15

Qty	Product
2	980406041009 Rad Shield w/ Arm (Contoured) 61X76
1	980406190009 PIVOTING TABLE-MOUNTED RADIATION SHIELD
2	989801220012 Cable Spooler
1	989801220158 Mark 7 Arterion, Table Mount
2	989801220273 Ceiling Track w/Column & Handle Ext
2	989801220279 LED Single Color Exam Lamp
1	989801220284 ISM Premium Audio Package
2	989801256037 Vascular Interventional Tools 20 Hours OffSite
1	989801299617 XD8982ALLURAXPERCLARITYREL8.2CTC5D
1	989801299784 XD9702 Flexvision XL eLearn
1	989801299780 XD3894 ALLURA XPER REL8.2 ESSENTIAL
1	989801220370 Low Load 15 kW UPS
1	SP003 Installation Labor
1	Third Party Item GD76-99
1	SP019 Trade in Allowance
1	SEBLRSVNP1 Customer Note
1	SEBLRSVNP1 Customer Note

100227 Allura Xper FD20/15

System Type: New
Freight Terms: FOB Destination
Warranty Terms: Part numbers beginning with two (2) asterisks (**) are covered by a System 12 Months Warranty. All other part numbers are third (3rd) party items.
Special Notations: Contingencies must be removed 120 days before scheduled shipment to assure delivery on specified date. Any rigging costs are the responsibility of the Purchaser.
Additional Terms:

Line #	Part #	Description	Qty
1	**NNAE848	AlluraClarity_FD20/15 Vascular	1

The AlluraClarity FD20/15 biplane cardiovascular system comprises a floor mounted C-arm stand, a ceiling mounted double C-arm and digital imaging X-ray system for cardiovascular diagnostic and interventional procedures.

ClarityIQ technology is the foundation of AlluraClarity systems touching every part of the imaging system.

ClarityIQ incorporates powerful state-of-the-art image processing technology, developed by Philips research, all working in real-time enabled by the latest computing technology:

- Noise and artifact reduction, also on moving structures and objects
- Image enhancement and edge sharpening;
  - Automatic real-time patient and accidental table motion correction on live images.
- Flexible digital imaging pipeline
- ClarityIQ systems have a flexible digital imaging pipeline from tube to display that is tailored for each and every application area such as Cardio or Neuro. This gives the flexibility to select virtually unlimited application-specific configurations.
- With ClarityIQ over 500 system parameters are fine-tuned for each application area; the result of years of Philips clinical leadership. It is now possible to filter out more X-ray radiation, use smaller focal spot sizes, shorter pulses, thereby fully utilizing the unique capabilities of the Philips MRC X-ray tube.

The AlluraClarity FD20/15 system uses an integrated single-host concept. The system is comprised of five functional building blocks: Geometry, X-ray Generation, Image Detection, Viewing, and User Interface. Each functional building block is explained in further detail including accessories.

GEOMETRY

The AlluraClarity Frontal Stand

The Allura stand consists of a floor mounted C-arm. The stand has the following capability:

- The L-arm can be rotated allowing a three-sided patient approach.
  - L-arm rotation around the patient table: +90, 0, -90 degrees.
  - L-arm rotation movement: motorized and manual

The Allura stand allows a very wide range of projections, including PA and AP imaging.

- In the head position (0 degrees position, L-arm parallel to patient table):
  - C-arm rotation range (degrees): 120 LAO to 185 RAO
  - C-arm angulation range (degrees): 90 CA to 90 CR
  - (Full angulation capability determined by patient position)
- In the side position (+90 / -90 degrees position, L-arm perpendicular to patient table):
  - C-arm rotation range (degrees): 90 LAO to 90 RAO
  - C-arm angulation range (degrees): 185 CA to 120 CR or 120 CA to 185 CR
  - (Full angulation capability determined by patient position)
- The stand provides fully motorized fast movements with variable and configurable maximum speed.
  - Variable C-arm rotation speed, up to: 25 degrees per second
  - Variable C-arm angulation speed, up to: 18 degrees per second
- L-arm rotation motorized and manual
- C-arm depth is 90 cm
- The FD20 Dynamic Flat Detector features Xper Access which allows the flat detector to be positioned in either portrait or landscape imaging modes in 3 seconds.
- The variable source image distance between focus and Dynamic Flat Detector input screen is motorized from 89.5 to 119.5 cm.
- The stand features BodyGuard a capacitive sensing collision avoidance system for patient protection.

The AlluraClarity Lateral Stand

The lateral stand consists of a double C-arm mounted to a ceiling suspended carriage.

The X-ray tube and the Flat Detector are integrated into the C-arm. The double C-arm concept enables mutual independent rotation and angulation movements. The FD15 Dynamic Flat Detector on the lateral stand is mounted at the right side of the patient, which provides lower scatter radiation towards the operator.

Ceiling carriage longitudinal movement: 315 cm

The lateral stand projection ranges:

- Rotation range (degrees): 27 RAO to 117 RAO
- Angulation range (degrees): 45 CA to 45 CR

The stand provides fully motorized movements. The rotation movement can be controlled separately or synchronously with the frontal stand. The Flat Detector is counterbalanced and can be moved motorized and manually.

- Rotation speed: 8 degrees per second, fixed
- Combined rotation speed (frontal / lateral): 8 degrees per second, fixed
- Angulation speed: 8 degrees per second, fixed
- Flat detector movement: motorized and manual
- Ceiling carriage longitudinal movement: motorized and manual

- Motorized fine adjustment when the lateral stand is in the biplane application area.
- During combined rotation, the BodyGuard detection system of the frontal stand controls the rotation speed of the frontal and the lateral stand.

Patient support

The Xper Table

Patient support with flat carbon fiber tabletop

- Table top length of 319 cm, width 50 cm
- Metal-free overhang 125 cm
- Floating table-top movement of 120 cm longitudinal and 35 cm transversal range.
- Motorized height adjustment from 79 to 107 cm
- Maximum cantilever of 223 cm , for full patient coverage
- Maximum patient weight 250 kg with 25 kg of accessories plus 500 N for CPR in any longitudinal position of the table top
- Xper Geometry and Imaging Modules for exam room controls.
  - The operating modules can be attached to either side of the table.

Patient Support Accessories set

- One cerebral filter
- Three rail accessory clamps
- One IV stand
- One slow recovery foam mattress
- One Set of Arm Supports (FCV0248)
- One Set of Patient Straps (FCV0250)
- One Head Support (FCV0251)
- One Arm Support (FCV0258)
- One Table-mounted Radiation Shield
- One anti-fatigue mat with Philips logo

X-RAY GENERATION

The AlluraClarity FD20/15 utilizes a microprocessor controlled high frequency 100 kW generator. The user interface control of this X-ray Generator is incorporated in the Xper module, Xper Desktop Console, and the Xper on-screen displays.

For each plane, the Certeray generator comprises:

- X-ray generator: 100 kW
- Voltage range: 40 - 125 kV
- Program selection:
  - Pulsed X-ray up to 3.75 , 7.5 , 15 , 30, frames/s for digital dynamic exposures
  - Pulsed X-ray for pulsed fluoroscopy (3.75, 7.5, 15, 25, 30 frames/s).

- Minimum exposure time of 1ms.
- ECG triggered acquisition: allows acquiring one exposure for each QRS peak with selectable delay time
- Automatic kV and mA control for optimal image quality prior to run to save dose
- Optimal X-ray tube load incorporated in the Certeray generator

- An X-ray collimator with single semi-transparent wedged filter with manual and automatic positioning.
- SpectraBeam filtering of low energy radiation to optimize image quality and dose efficiency with the MRC-GS 0508 X-ray tube.
- Xper Beam Shaping, which means that, both shutters and wedges can be positioned on the Last Image Hold without the need for X-ray radiation.

Fluoroscopy

- Three programmable fluoroscopy modes
  - Each mode can be set to different composition of dose rate, pulse speed, filter setting, and image processing (noise reduction, adaptive contour enhancement, and adaptive harmonization).
- Roadmap Pro (Formerly Trace Subtract Fluoroscopy)
  - A Roadmap Pro run is a vessel map an acquisition superimposed on live fluoroscopy
    - Acquisitions can be performed without losing the vessel map
  - Roadmap Pro features Smart Settings in special clinical modes that are optimized to visualize special materials such as coil and glue.
  - Automatic Motion Compensation (AMC) part of the roadmapping functionality. During roadmapping, small patient movements can lead to subtraction artifacts. These artifacts might conceal important clinical information. Automatic Motion Compensation compensates for rigid, uniform (skeletal/table) translations and is therefore very effective in interventional applications where subtraction imaging is used.
    - **Disclaimer:** AMC only corrects movement artifacts in two dimensions. Three dimensional movements such as swallowing or rotation of the head cannot be corrected.
  - Xres for vascular is a standard feature of Roadmap Pro
    - Xres is a multi-resolution spatial temporal noise reduction and edge enhancement filter
    - Xres Vascular enhances sharpness, contrast, and reduces noise in non subtracted fluoroscopy runs for vascular studies.
    - The settings for Xres can be customized with regard to the image quality.
- Xper Fluoro Storage, a grab function allows storage and archiving of both a fluoro image and the last 20 seconds of Fluoroscopy, called Xper Fluoro Storage. These fluoro images or fluoro runs can be archived as a regular exposure run.

X-ray tube

The AlluraClarity FD20 biplane frontal stand has the Maximus ROTALIX Ceramic grid switch tube assembly MRC 200 GS 0407 integrated in the C-arc. This MRC tube has an anode heat storage capacity of 2.4 MHU and 0.4/0.7 mm. nominal focal spot values. The tube has a maximal loading of 30 and 67 kW.

The lateral arc has the Maximus ROTALIX Ceramic tube assembly MRC-GS 05 08 integrated. This tube has 0.5/0.8 mm nominal focal spot values with maximal loading of 45 and 85 kW. The maximum heat dissipation of the assembly is 3400 W.

With dynamic pulsed fluoroscopy the tube uses grid switching technology to eliminate soft radiation and improve image quality. SpectraBeam allows for filtration of the x-ray beam with (a combination of) 0.2, 0.5 or 1 mm CU-equivalent filters.

Tube housing ROT-GS 1004 is for oil-cooling and has a build-in thermal safety switch. A rotor control unit is build-in for continuous rotation of the anode disk. The heat exchanger CU 3101 is for direct and continuous forced cooling with oil.

IMAGE DETECTION

Frontal imaging chain:

- A 30 cm by 40 cm FD20 Dynamic Flat Detector subsystem for fluoroscopy and fluorography procedures
- 8 imaging modes are available, 30 x 38, 30 x 30, 26 x 26, 22 x 22, 19 x 19, 16 x 16, 13.5 x 13.5, and 11 x 11 cm
- The flat detector subsystem features Xper Access, the detector can be rotated over 90 degrees, it moves from portrait to landscape back and forth
- The digital output of the FD20 flat detector is a 2k x 2.5k image matrix at 16 bits depth for the largest mode
- DQE (Detective Quantum Efficiency) >77%
- The pixel pitch is 154 x 154 microns
- Advanced Conductive Cooling technology

Lateral imaging chain:

- A 26 cm x 33 cm Dynamic Flat Detector subsystem for fluoroscopy and fluorography procedures
- Seven imaging modes are available; 29x26cm, 26x26cm, 22x22cm, 19x19cm, 16x16cm, 13.5x13.15cm, 11x11cm
- The digital output of the FD15 flat detector is a 1560 x 1420 image matrix at 16 bits depth
- DQE (Detective Quantum Efficiency) is 70 %
- The pixel pitch is 184 x 184 microns
- Advanced Conductive Cooling technology

Real time digital link

The AlluraClarity FD20/15 provides a Real Time digital image link

VIEWING

The AlluraClarity FD20/15 comprises the following components in order to display the clinical images in the control and examination rooms.

Displays

Examination Room

Four 19-inch monochrome LCD monitors designed for medical applications. There are two live display monitors, one per plane and two reference monitors, one per plane.

- 19-inch monochrome TFT-LCD display
- Native format 1280x1024 SXGA
- 10-bit gray-scale resolution with gray-scale correction

These monitors are not delivered when FlexVision XL, EP Cockpit or EP Cockpit XL is selected.

Unless otherwise stated, a Flat Monitor Ceiling Suspension (MCS) for 4 monitors is included for viewing in the examination room. It includes motorized height adjustment for most configurations and ceiling heights. At customer request, this 4 monitor MCS can be replaced by a 4, 6 or 8 fold MCS or an MCS integration kit for non-Philips MCS. The MCS integration kit contains vital parts for system operation. When FlexVision XL, EP Cockpit or EP Cockpit XL is selected the monitor ceiling suspension is configured for one of those options.

- The first reference channel is for the display of reference images or runs, controlled by infrared remote-control Xper Viewpad.
- The On-Screen Display provides status information on stand rotation, angulation, display of system messages, X-ray tube load status, selected fluoroscopy mode, selected detector Field of View, and both the rate and accumulation of the dose area product and skin dose.

Control Room

One 19-inch color LCD monitor used as a data monitor.

- 19-inch color TFT-LCD display
- Native format 1280x1024 SXGA

Two 19-inch monochrome LCD monitor designed for medical applications.

- 19-inch monochrome TFT-LCD display
- Native format 1280x1024 SXGA
- 10-bit gray-scale resolution with gray-scale correction

These control room monitors are not delivered when EP Cockpit or EP Cockpit XL is selected.

The Graphical User Interface on the monochrome monitor has the following features and functions:

- Step through file, run, or images
- File, and run overview
- Contrast, brightness, and edge enhancement settings
- Flagging of runs or images for transfer
- Applying text annotation in images
- Optional DICOM printing
- Executing Quantitative Analysis Packages if available
- Subtraction functionality
- Zoom/pan functionality
- Electronic shutters
- Video invert
- View trace, stacking of images
- Landmarking

Acquisition

The acquisition segment coordinates the parameters for automatic exposure control. The program is selected via the Xper module or Xper Desktop Console.

Exposure techniques:

- Serial imaging for DA and DSA with automatic exposure setting
- Single shot mode
- Acquisition frame rates:
  - 0.5 to 6 fps
  - 15 and 30 fps

This Allura offers a storage capacity of:

- 50,000 images per plane at matrix size of 1024 x 1024, 10 bit
- Maximum number of examinations is 999, with no limit to the maximum number of images per examination

USER INTERFACE

Xper is comprised of three elements: 1) Xper Settings, to customize the system to each user's preferred settings, 2) Xper User Interface, and, 3) Xper Integration, making advanced integration functionality available, such as DICOM Query / Retrieve, background archiving, and Xper Fluoro Storage.

The Xper User Interface comprises a range of User Interface modules in the Examinatio n Room, including On-Screen Display.

On-Screen Display

The On-Screen Display is positioned on the left side of each reference monitor.

The following system information is displayed:

- X-ray indicator
- X-ray tube temperature condition
- Gantry position in rotation and angulation
- Source Image Distance
- Detector field size display
- General System messages (frontal reference monitor only)
- Selected Frame speed (frontal reference monitor only)
- Fluoroscopy mode (frontal reference monitor only)
- Integrated fluoroscopy time (frontal reference monitor only)
- Skin Dose: dose rate at X-ray, cumulated dose at no X-ray (frontal reference monitor only)
- Dose Area Product: dose rate at X-ray, cumulated dose at no X-ray (frontal reference monitor only)
- Graphical bars for Body Zone specific dose-rate and accumulated skin dose levels, related to the 2 Gy level (cardiac applications only)
- Stopwatch (frontal reference monitor only)

The Xper ViewPad contains the preprogrammed function settings. The system is provides with two Xper Viewpads. The following functions are provided:

- Run and image selection
- File and run cycle
- File overview
- Store to Reference image file
- Copy image to photo file
- Digital (fixed)zoom and panning
- Recall reference images
- Laser pointer, intended to point at regions of interest on the imaging monitors
  - LED indication of laser pointer on/off and battery low
- Subtraction on/off
- Remasking
- Landmarking

Remote Intercom

The separate intercom which is connected independently from the system that allows separate placement of the intercom at the preferred working position in the control room and examination room.

Table Side Modules

Two Xper Modules are provided for use. The first Xper Module is mounted tableside. The Second Xper Module (NCVA778) is located in the control room. These modules use a touch screen, which

can be operated when draped with sterile covers. The Xper Module contains the following functionality:

- Acquisition settings
- Selection of Xper Setting allows the user to set frame rates and x-ray generation settings applicable for the type of the preferred intervention
- Automatic positioning recall to allow the stand position to match the reference image.
- Image Processing

The Xper Biplane Geometry T.S.O. module can be positioned at three sides of the patient table, while keeping the button operation intuitive. The Xper Geometry T.S.O. provides the following functionality:

- Tabletop float
- Table height position
- Source Image Distance selection per plane
- Gantry positioning per plane
- Biplane rotation of the two gantries
- Frontal gantry rotation in an axis perpendicular to the floor and longitudinal movement of the lateral gantry
- Store and recall of two scratch gantry positions including SID
- Emergency stop button
- Geometry reset button, which resets stand and table to a factory-default starting position

The Xper Biplane Imaging T.S.O. module can also be positioned at three sides of the patient table, while keeping the button operation intuitive. The Xper Imaging T.S.O. provides the following functionality:

- Fluoroscopy Flavor selection defined per Xper Setting
- Shutters and Wedge positioning
- Manual or automatic semi-transparent wedge filter
- Xper Fluoro Storage and Grab
- Selection of the Detector field size
- Shutter positioning
- Reset of the fluoroscopy buzzer
- Subtraction and other vascular processing factors
- Channel selection for the shutter and wedge control

Pan Handle (NCVA081)

The Pan Handle is an extension of the control facility for floating movements of the table

Control Room

The control room comprises a Xper Review Module, Xper Viewing Console, a keyboard, and a mouse. The Xper Review Module offers the basic functions for review. The Xper Review Module contains the following functionality:

- Power on/off
- Tagarno wheel to control the review of a patient file

- File and run cycle
- Contrast, Brightness, and Edge enhancement settings
- File, Run, Image stepping and run and file overview
- Delete run
- Image invert and digital zoom
- Reset fluoroscopy timer and enable/disable X-ray

System information is displayed on the bottom of the data Monitor:

- Stopwatch and Time
- System guidance information
- Dose Area Product (DAP) and Skin Dose, as dose rate during X-ray, and accumulative dose
- Frame speed settings, fluoroscopy mode, and accumulated fluoroscopy time
- Exposure and fluoroscopy settings per plane, like Voltage (kV), Current (mA) and time (ms)
- Geometry information per plane, like rotation, angulation, and SID

Vascular Quantification Software Package (NCVA786)

- Vessel diameter / stenotic index
- Automated vessel analysis
- Calibration routines

The workflow is divided into scheduling, preparation, acquisition, review, and archive.

Scheduling

The patients can be added, listed and selected per date, physician, or intervention type. Previous DICOM patient studies can be uploaded with the DICOM Query Retrieve function.
Patient management protocols are flexible and allow for multiple studies to be selected under one patient identification number. This means that new studies can be appended to an earlier patient file. Each study can contain multiple examinations to allow for split administrative purposes. Each examination contains multiple files, like acquisition file, reference file, and QA results file.

Preparation

The preparation page provides the information of the room and patient preparation of each individual physician. The preparation page is customizable per Xper Setting and allows each physician to provide his or her own room protocols

Acquisition

The acquisition page contains information on the current selected patient.

Review

The review page allows for reviewing of patients:

- Previous examination cases
- Review of other DICOM XA or DICOM SC studies

Line #	Part #	Description	Qty

Vascular Quantification Software Package

Functions:
- vessel diameter / stenotic index
- automated vessel analysis
- calibration routines

In addition the package allows manual measurements of line lengths (absolute and ratio's) and angulations. Multiple measurements in one image are possible.

RIS/CIS DICOM Interface

This package allows communication of the Allura Xper system with a local information system (CIS or RIS). The interface uses the DICOM Worklist Management (DICOM WLM) and Modality Performed Procedure Step (DICOM MPPS) standards.

If a hospital has an Allura Xper system and an information system it can receive patient and examination request information from the information system and report examination results in order to:

-Eliminate the need for retyping patient information on the Allura Xper
-Prevent errors in typing patient names and registration numbers (ensuring consistency with IS information to prevent problems in archive clusters auto-search for a name in case of later retrieval)
-Inform the IS about the acquired images and radiation dose

Upon request from the Allura Xper system the complete worklist with all relevant patient and examination data is returned from the IS to the Allura Xper system. For each patient the following information will be shown on the Allura Xper after it has been retrieved from the IS:

Patient Identification:

- Patient name
- Patient ID
- Birth date
- Sex

Examination/Request Information:
- Accession number
- Scheduled procedure step start time
- Scheduled performing physician's name

It is possible at all times to enter patient demographics information manually within the Allura Xper system in case of an emergency or in case the local Information System connection is down.

On request of the clinical user the Allura Xper will report the following information about the selected patient to the IS:
Patient Identification:
- Patient name
- Patient ID
- Birth date

- Sex

Examination/Request Information:

- Accession number
- Performed procedure step status start/end date and time
- Performing physician's name
- Referenced image sequence

Radiation dose:

- Total time of fluoroscopy
- Accumulated fluoroscopy dose
- Accumulated exposure dose
- Total dose
- Total number of exposures
- Total number of frames

Further detailed information can be found in the Allura Xper DICOM Conformance Statement.

The interface requires an EasyLink (hardware and software) if the IS is not compliant with DICOM Work List Management and Modality Performed Procedure Step.

Radiation Dose Structured Report

Collection of dose relevant parameters and settings and export to a DICOM database (e.g. PACS, RIS), according IEC60601-2-43, 2nd Edition.

The reported data can be used for, for example:

- Quality improvement: evaluating trends in X-ray dose performance per facility, system and operator.
- RDSR enables analysis of average dose levels & variance for routinely performed exams and procedures.
- Typical system usage can be extracted from the data.

Secondary Capture Dose Report

- The Secondary Capture Dose Report function allows the user to save & transfer, manually or automatically, a patient Dose Report to PACS in DICOM secondary capture format.
- The dose report will be stored in the related patient image folder.

Archive
Biplane Continuous Autopush (NCVA587)

Continuous Autopush is an archive accelerator, which ensures that background archiving continues with minimal disruptions.

Clinical studies can be archived to a CD or a PACS. The archive process can be completely automated and customized with Xper Settings. Parameters like multiple destinations; archive formats can be selected to the individual needs.

The Xper DICOM Image Interface enables the export of clinical images to PACS. The export formats are based on DICOM 3.0 protocols. The system exports clinical studies in Cardiac DICOM XA Multi-Frame or DICOM Secondary Capture formats.

- The export format is configurable in 512x512, 1024x1024 or 2048 x 2048 (unprocessed) matrix.
- The examination can be sent to multiple destinations for archiving and reviewing purposes.
- The Xper DICOM Image Interface provides DICOM Storage and DICOM Storage Commitment Services.
- The DICOM Query/Retrieve function allows older DICOM XA MF and DICOM SC studies to be uploaded in the system. Furthermore, additional information can be appended to a study, while keeping the patient identification the same.

Real Time Digital Link

The AlluraClarity FD20/15 includes Real Time Digital Link which enables real time image transfer to the optional Interventional Hardware.

Clinical Education Program for the AlluraClarity System

Essentials OffSite Education: Philips will provide up to two (2) Cardiovascular Technologists, Registered Technologists Registered Nurses, or other system operator as selected by customer, with in-depth didactic, tutorial, and hands-on training covering basic functionality and work-flow of the cardiovascular imaging system. In order to provide trainees with the ability to apply all fundamental functioning on their system, and to achieve maximum effectiveness, this class should be attended no earlier than two weeks prior to system installation.

In the event that an EP Navigator workstation has also been ordered, the offsite training course will be tailored to focus on the electrophysiology functionality of the FD system and the EPN workstation.

In the event that your main FD system will be dedicated to Cardiac applications your offsite training course will be tailored to focus on the Cardiac functionality.

This twenty-eight (28) hour class is located in Cleveland, Ohio, and is scheduled based on your equipment configuration and availability. Due to program updates, the number of class hours is subject to change without notice. Customer will be notified of current, total class hours at the time of registration. This class is a prerequisite to your equipment handover OnSite Education. CEU credits may be available for each participant that meets the guidelines provided by Philips. Please refer to guidelines for more information. **Travel and lodging are not included, but may be purchased through Philips. It is highly recommended that 989801292102 (CV Full Travel Pkg OffSite) is purchased with all OffSite courses.**

Handover OnSite Education: Philips Education Specialists will provide twenty-eight (28) hours of education for up to four (4) students, selected by customer, including technologists from night/weekend shifts if necessary. Students should attend all 28 hours, and must include the two OffSite education attendees. CEU credits may be available for each participant that meets the

Line #	Part #	Description	Qty

guidelines provided by Philips. Please refer to guidelines for more information. Note: Site must be patient-ready. Philips personnel are not responsible for actual patient contact or operation of equipment during education sessions except to demonstrate proper equipment operation. **It is highly recommended for systems that are fully loaded or for customers with a large number of staff members to also purchase 989801292099 (CV Add OnSite Clin Educ 24h).**
Education expires one (1) year from equipment installation date (or purchase date if sold separately). Ref# 106107-110915

2 **NNAE853 **FlexVision_XL 8 Input Package** 1

The FlexVision XL8 input package provides eight isolated wall connection boxes.
Isolated Wall Connection Box

This Isolated Wall connection Box facilitates connection of the video source via standard DVI cable/connector and lossless transfer of the video signal over the approximate 30 m cable distance. It can be mounted in the exam room or in the control room, depending on the location of the video source.

The quantity of the VWCB's has to be calculated as follows:

For each video signal to FlexVision XL on Vascular System: 8 VWCB
Note:

No VWCB is required in case a video signal is connected directly to a dedicated LCD from the following sources:

1) Xper Live/ref Slaving

2) Interventional HW (XtraVision), ViewForum, Xcelera (only if workstations are powered by Allura Xper)

3)Xper IM

3 **FCV0624 **Addl LCD B&W mon for CR** 2

This desktop LCD monitor is intended for viewing in the control room and is designed for medical applications. The main characteristics are:
. 19 inch monochrome TFT-LCD display
. Native format 1280x1024 SXGA
. 10 bit gray-scale resolution with gray-scale correction
. Wide viewing angle (~170 degr)
. Progressive display; high line rate, flicker-free non-interlaced display
. High brightness with luminance stabilization (max 1000Cd/m2, default 500 Cd/m2)
. Weight 5.6 kg (12.32 lbs) without pedestal
. Size 42.5 (W) x 37.5 (H) x 9.68 (D) cm (16.7 x 14.8 x 3.8 inches)
. PMS PD-format (B/W) via BNC-connector
. VGA standard PC-format (RGBHV)
. DVI interface standard
. Push buttons for control functions on front
. User programmable and standard reference setting
. On Screen Display

Line #	Part #	Description	Qty

. Internal selectable lookup table for gray-scale transfer function
. Internal power supply (100-240 VAC)
. Pedestal with vertical rotation
Comprising:
• LCD monitor
• Monitor pedestal
• Power cable, grounding cable and video cable; 30m length.

4	**NCVB629	**FlexVision XL,XperHD,Snapshot**	1

FlexVision XL is an integrated viewing solution designed to give you full control over your viewing environment.
The FlexVision XL provides the ability to:
• Display information from up to 8 sources simultaneously (incl. third party systems) on the Philips 58-inch color LCD with LED backlight in the Exam Room.
• Resize and/or enlarge information at any stage during the case.
• Select and customize viewing lay-outs of the Philips 58-inch color LCD via the Xper table-side module
• Overview connected equipment (incl. third party systems) from a single location.
XperHD on FlexVision XL brings High Definition viewing for clinical images. Native resolution of FD20 can be displayed. Excellent sharp and crisp clinical images can be displayed at full size without digital zoom.
Xper HD brings:
• High Definition imaging
- Sharp images at full size without zoom
• High Definition display at native resolution
- Up to 2k*2k image display fully integrated
• High Definition for the ultimate detail
- Enhanced small vessel visualization
The FlexVision XL consists of:
• DVI video composition unit.
o The DVI video composition unit allows the user to direct and switch the video output of all connected medical equipment to specific sub windows of the Philips 58-inch color LCD with LED backlight in the Exam Room.
o The DVI video composition unit is operated from the Xper tableside module.
o The DVI video composition unit supports a wide variety of display formats (up to 1920x1200)
o Up to 9 external inputs are connected to the DVI video composition unit via Wall Connection Box(es).
• Medical grade, high resolution color LCD in the Exam Room
o This display supports the image quality requirements for monochrome X-ray images as well as color images and replaces all displays normally delivered with an Allura Xper FD or AlluraClarity system for the Exam Room.
o Main characteristics are:
- 58-inch, 8 Megapixel color LCD
- Native resolution: 3840x2160
- Brightness: Max: 700 Cd/m2 (typical) stabilized: 400 Cd/m2
- Contrast ratio: 4000:1 (typical)
- Wide viewing angle (approx. 176 degrees)
- Constant brightness stabilization control
- Lookup tables for gray-scale, color and DICOM transfer function
- Full protective screen Ingress Protection: IP-21
• Large color LCD control (Xper Module)

Line #	Part #	Description	Qty

o Resize and/or enlarge information at any stage during the case via the Xper tableside module in the Exam or Control Room
o Select viewing lay-outs via the Xper table-side module in the Exam Room
o Create new layouts by matching inputs to desired locations on preset templates.

• Monitor Ceiling Suspension
o Monitor ceiling suspension for use in the Exam Room carries the 58-inch color LCD screen, providing highly flexible viewing capabilities. The monitor ceiling suspension is height-adjustable and moveable along ceiling rails. It can be positioned on either side of the table.

• Snapshot
o The snapshot function allows the user to store/save a screen-capture of any image on the 58-inch display as a DICOM Secondary Capture image to a connected PACS. The snapshot-all function allows the user to store/save a screen-capture for each displayed image in the Exam Room / Control Room as separate DICOM Secondary Capture images .

5 **NCVB879 **Aut Pos Contr Xper sys & table** 1

This Automatic Position Controller (APC) combines APC for Allura Xper FD10 and FD20 systems with table APC.
System APC provides two modes of operation:
Preset Position Sequence: the sequence of projections is determined through personnalized Xper Settings. Each set contains a maximum of 10 positions. Positions can be recalled in sequence or directly. The projection sequence comprises rotation angulation and SID settings related to the selected reference image.
Reference driven positioning: The projections on the reference monitors can be recalled with the push of a button. The reference driven positioning recollects the C-arm rotation angulation Flat detector image format and SID.
Table APC
The Automatic Position Controller (APC) for the table provides two modes of operation:
Auto positioning. The tabletop position and table height will be adjusted automatically to the pre-defined default point of interest. This to save time and x-ray dose at the start of an exam or for setting up the system for rotation scans.
Store/recall of a position of the table top. This includes the height-, longitudinal- and lateral position of the table top.

6 **NCVA695 **FD Rotational Angio** 1

Rotational angiograpy provides real-time 3D impressions of complex vasculature and coronary artery tree. It acquires multiple projections with just one contrast injection via a fast rotational scan of the region of interest.

Rotational Angiograpy can be used during screening procedures to quickly determine the optimal projection for the study as the angle (rotation/angulation) of the projection is indicated on each image.

Compared with traditional angiography, Rotational Angiography can save considerable time, dose and contrast, while providing image detail required for diagnostic and therapeutic decisions.

A rotational scan is possible both with the Allura Xper systems in the side position (ceiling mounted systems) and in the head position, providing the flexibility to perform procedures virtually from head to toe.

C-arm in side position:

- Max. rotation Speed: 30 degrees/s
- Max. rotation Angle: 180 degrees

C-arm in head position:

- Max. rotation Speed: 55 degrees/s
- Max. rotation Angle: 305 degrees

Max. Frame speeds are given by the framespeed specifications of the system configuration.

The speed and range of rotation are the highest available (see table). The very high speed allows using less contrast, whereas the very wide rotation range provides a complete evaluation of the anatomy.

A contrast run can be followed up with a mask run, to allow image/run subtraction.

The stand is designed for a very high mechanical stability. It offers precise positioning and high reproducibility, assuring you of high quality images and excellent subtraction studies.

Operation of Rotational Angiograpy is extremely easy. The procedure is selected, set up and executed virtually in a matter of seconds, supporting the highest patient throughput.
A set of dedicated acquisition programs is available on the Xper Module and can be selected at the touch of a button. The rotation end- and start-positions are easily selected. The procedure is controlled from the exposure hand- or footswitch.

7 **NCVA694 **Subtracted Bolus Chase** 1

For visualization of vessel structures when the blood flow is difficult to estimate, in particular in the lower peripherals.

Bolus Chase solves the problem of cumbersome step movements, the mismatch between blood flow and selected program, and lack of real-time image information.

During digital acquisition in non-subtracted mode with uninterrupted real-time image display, the contrast bolus is followed (chased) interactively by a motorized table scan movement using a hand-hold speedcontroller to adapt the speed of the table scan to the contrast flow.The framespeed can be adapted as well.

The bolus run is followed with a mask run while using the same speedcurve and framespeed as generated during the bolus run. Viewing is possible in the subtracted and non-subtracted mode. If subtracted viewing is not required, the mask run can be skipped.

Line #	Part #	Description	Qty

Subtracted Bolus Chase gives fast, accurate results for increased patient throughput and improved patient management. Automated exposure control and precise speed control assure a high quality images and excellent subtraction studies.

Comprising:

- automatic exposure control
- tabletop motordrive and hand-held speed controller (tableside)
- technique selection using Xper module, available both tableside and in control room (Xper FD20, FD20/10)

8 **NCVA258 CO2 View Trace Software 1

Software package which enables tracing (stacking) of images acquired with CO2 injections. This function can be used during postprocessing next to view trace of images acquired with iodine injection.

9 **NCVA999 **Order handling surcharge** 1

10 **NCVA621 **Biplane FD Dual Flouro** 1

The Biplane Dual Fluoroscopy mode allows monoplane or biplane digitally processed fluoroscopy in parallel with trace subtract fluoroscopy, providing a non subtracted reference fluoro image for complex interventions.
This option provides an additional biplane fluoro channel in parallel to the default biplane fluoro channel.
The subtracted fluoro image will be displayed on the live monitor, the non-subtracted image is displayed on the reference monitor.
Comprising:
· Hardware and software

11 **NCVC200 **Wireless footswitch: bi-plane version** 1

The wireless footswitch is an option for our Allura systems. It provides the possibility to have one wireless footswitch in the exam room.
A wireless footswitch provides workflow optimization, flexibility at table-side, removes cable clutter on the floor and provides easier cleaning of the footswitch.
The bi-plane wireless footswitch is a 6 pedal version;
1. Bi-plane fluoro
2. Channel selection
3. Roomlight control/Single shot
4. Frontal fluoro
5. Exposure
6. Lateral fluoro

The pedals can be configured according customers preferred lay-out.
The wireless footswitch is working via RF technology and is fully tested and released for medical use. It has an active range up to 10 meters, depending on structures within this range.
The wireless footswitch has a lithium battery which only needs to be recharged once per week. During recharging the footswitch still can be used and is fully functional. In parallel, a wired footswitch can also be used.
The status of the battery is indicated by an LED-indication on the footswitch itself, so that the user can decide when the footswitch needs to be recharged.

Line #	Part #	Description	Qty

The wireless footswitch can easily be cleaned in water. It has the highest water ingress protection standard (IPX8).

The wireless footswitch has an on/off switch. It can be switched off when not in use. When the footswitch is active, but not in use, it will go into a sleep-mode. It will be re-activated when touched or when one of the pedals is pressed.

12 **NCVA788 **MultiSwitch.** 1

MultiSwitch/Xper Window Switch

MultiSwitch is an option that provides the ability to share the Xper workspot in the Control Room with other applications that are loaded on separate PC modalities.

The MultiSwitch option allows switching of the (colour LCD) data monitor, keyboard and mouse, normally connected to the Allura Xper system, to a separate PC modality.

Thus saving significant space in the control room as only one monitor and keyboard is used for multiple applications.

Applications that are loaded on this PC modality, will run independantly of the Allura Xper system, operated from the Xper workspot in the control room. Obvious example PC applications from PMS are Xcelera, Xcelera CLM, 3D RA, StentBoost, Viewforum.

In addition to the Allura Xper system, up to three separate PC modalities can be connected to MultiSwitch. If these PC modalities are also connected to an Ethernet Network, the ethernet connection will also be switched by MultiSwitch.

The requirements of the PC modality that is connected to MultiSwitch,and the applicable applications are:

- maximum resolution for the colour LCD display: 1280*1024 VGA
- PS/2 keyboard- and mouse interface
- complies with UL60950 regulations and EMC level A

The maximum power supply requirement for three PC modalities (incl accessoiries) in total should not exceed 1400 Watts@230 VAC.

The MultiSwitch option comprises:

- KVM Switch box (4 inputs, 1 output)
- Ethernet switch (3 inputs, one output)
- 5 ea cable sets for keyboard, mouse and VGA
- 3 ea power cables for the PC modalities and one power cable for the ethernet switch
- 4 ea ethernet cables

The Xper Window Switch is an option that provides the ability to integrate networked functionality in the Control Room of the Allura Xper Flat Detector system. The Xper window switch provides the possibility to switch to CIS/RIS applications that are available on the network and are basically data-only oriented.

Line #	Part #	Description	Qty

Xper Window Switch to any RIS/CIS

The Control Room workspot can be switched to the hospitals' Cardiology/Radiology Information System. Only the user-interface devices Data Monitor, Keyboard, and mouse are switched via standard available solutions: "X-window", and "HTML browser" to become a standard UI for the RIS/CIS system.

This option is a software key which enables the specific Xper switch functionality for only the applications, which are available on site.

Compatible with:

- . Allura Xper FD10 R.3
- . Allura Xper FD10/10 R.2

13 **FCV0587 **Xper Live/Ref Slaving** 4

This option contains a kit to split the Live or Ref video source from the Allura Xper. The total amount of Xper Live/Ref Slaving that can be selected is maximal. 4. Additional monitors are not included in this option and must be ordered separately. This kit contains a video splitter and a cable set for one slave monitor. The Slave monitor is not powered by Allura.

14 **NCVA673 **Biplane FD SmartMask** 1

SmartMask simplifies roadmapping procedures by overlaying a selected reference image with fluoroscopy on the live monitor fluoroscopy in the exam room. Smartmask can be applied to both the frontal and lateral channel simultaneously.

The reference image can be faded in/out with variable intensity, controlled from tableside.
SmartMask uses the reference image displayed on the reference monitor.
Any previously acquired image can be used as reference.

SmartMask facilitates pre- and post- intervention comparisons to assess treatment results.

Compatible with
. Allura Xper FD10/10 rel.2 onwards.
- Allura Xper FD20/10 rel.1 onwards

. Allura Xper FD20/15

15 **NCVA121 **FULL AUTOCAL** 1

The AutoCal option is a software package to be used in conjunction with quantitative analysis software packages. It provides an auto calibration procedure for an object to be analyzed that is placed in the iso-center. When the object to be analyzed (e.g. Left Ventricle Vessel Segment) is placed in the iso-center AutoCal avoids the need to:

- acquire an additional image series containing a sphere or grid for calibration purposes
- calibrate manually on a calibration object (e.g. catheter) displayed in the image or image series to be analyzed

16 **NCVA097 **Cath Arm Support** 1

For brachial catheterisation and digital imaging technique
The support is made of X-ray transparent material with exception of the fixingclamp and pivots.

17 **NCVA098 **Pulse Cath Arm Support** 1

Line #	Part #	Description	Qty

Facilitates catheterization trough the pulse and provides room for placing catheterization instruments. It is a flat radio translucent board and is placed under the patient while a part projects at either the left or right side of the tabletop to support the arm.

Size: 100 x 85 cm
Material: carbon-fibre reinforced material

18 ****NCVA101** **Peripheral X-ray Filter** **1**

Set of flexible x-ray filters to provide an uniform density in angiographic examinations of the lower peripheral area.
Comprising:
- one central filter, at the top edge provided with sizing markers at every 5 cm, length : 1 m
- two side filters, length: 1 m

19 ****NCVA851** **Swivel for table base.** **1**

For angiographic- and interventional procedures of the upper and lower peripherals, in systems with the floor-mounted C-arm.
Allows:
Motorized longitudinal movement of the table base of 78.2 cm with locks on both end positions.
Pivoting of the table base around its vertical axis.
Pivot range is 180 degrees counter clock wise and 90 degrees clockwise
with swivel the table height range is 82-111 cm or 87-112 cm with tilt and/or cradle (optional).

20 ****NCVA791** **Xper Table Tilt** **1**

This innovating SyncraTilt enhances the accuracy and efficiency of gravity-oriented procedures. It is available as an option for the Xper table in Allura Xper series systems.

SyncraTilt is ideal for interventional, myelography, phlebography and head down procedures because it provides more precise imaging of contrast medium, blood, or objects in the body.

With SyncraTilt, the isocentre is automatically located at the isocentre of rotation and angulation of the stand. If the longitudinal position of the stand changes, the tilt isocentre is changed to match with the new stand position. As a result, the region of interest is always centred

As the table tilts, the X-ray beam automatically coordinates to the movement.

The table floats even when tilted, and the region of interest can be followed by panning the tabletop.

When combined with the Bolus Chase option, SyncraTilt enables phlebography to be performed with a head-up tilted patient.

The option provides:

- maximum tilt range:
- 17 degrees (head down) to +17 degrees (head up).
- tilt speed: 2 degrees/sec
- automatic safeguarding system with manual override
- panning range in tilted plane: equal to the standard
- tabletop specifications (longitudinal 120cm, lateral 35cm)
- easy to use controls
  Comprising:

Line #	Part #	Description	Qty

- Tilt drive with user controls

Compatible with:
. Xper table in Allura Xper FD series Rel 3 onwards (monoplane versions) and Rel 2 onwards (biplane verions)
. Bolus Chase
. Pivot for table base
. swivel for table base

21 ****NCVB882** **Cradle extension** **1**

This extension provides the possibility to cradle the table top.
This allows optimal positioning of the patient for f.i. more invasive (surgical) or guided puncture procedures.
Functionality:
. isocentric cradle with maximum cradle range: -15 degrees to +15 degrees for the full tilt range
cradle speed: 3 degrees/sec
. automatic safeguarding system with manual override
. easy to use controls

22 ****FCV0271** **Cerebral Filter Assembly** **1**

Filter for collimator to optimize the quality of neuro images. The cerebral filter is used for FD20 detectors for neuro angiographies of the head and avoids direct radiation, thus improving the overall image quality.

Not applicable with FD10 detectors.

23 ****FCV0272** **Neuro Wedge** **1**

The neuro wedge is used to obtain optimal iso center position of the head during neuro-radiology examinations.

24 ****FCV0706** **Neuro Head Holder** **1**

The Neuro Head Holder is designed to position and immobilize the head, improving patient comfort and Image Quality. The Neuro Head Holder features adjustment of rotation, height and angulation. It has a unique clamp assembly enabling the patients head to be turned left/right without changing the height enabling easier patient transfer. The aluminum equivalence of the Neuro Head Holder is between 1.0 and 0.5 mm enabling optimal x-ray translucency.

The Neuro Head Holder consists of;

- Head support
- Inlay
- 2 head straps

The Neuro Head Holder is compatible with all Allura tables & table tops (excluding the MAQUET tables).

25 ****FCV4894** **Add.op-rail with cable ext.kit** **1**

degrees with a rotation speed up to 55 degrees/sec.
C-arm in Side position: the Rotational Angiography run is performed over a scan range of 180 degrees with a rotation speed up to 30 degrees/sec.

2 3D Vessel Reconstruction
The rotational run is automatically transferred and displayed as a 3D vessel model: with the Real-Time digital link (option) 120 images are reconstructed into a 3 dimensional model within seconds. Additional reconstructions, using the Reconstructive Zooming Technique, can be performed as well.

3 Workflow:
Allura 3D-RA in combination with the Allura Xper FD series will provide an optimal workflow via the following workflow enhancers:
Complete automated 3D-RA process from 3D acquisition to 3D Viewing: no user interaction needed.
3D Automatic Position Control (3D-APC); When the optimal working position has been choosen via the Allura 3D-RA interventional tool, the C-arc will automatically steer to this position.
3D Follow C-arc; When the position of the C-arc (not using any X-ray) is changed, the 3D volume will automatically follow the position of the C-arc. This means the position of the C-arc (and therefore the 2D projection) and the 3D volume are always aligned. As last seen; when the user leaves the patient in the model and later selects that patient again, the Allura 3D-RA interventional tool will return to the image last used by the user.
Mouse over: When moving the mouse cursor over a button the mouse over text will show up to explain the function of that specific button.

4 Calibration
Allura 3D-RA calibrations are performed by Philips Healthcare Customer Support. Allura 3D-RA calibration data are stable over at least 6 months time.

5 Viewing
A Real Time user interface is available with 3D-RA, providing 3D object viewing in any space direction. A graphical display of (C-arm) stand position including angulation/rotation for any projection.
Philips' CRM (Contrast Resolution Management) Technology for a considerable increase in contrast resolution in all volumes.
Various Image Rendering possibilities: Volume/Surface Rendering, MIP, Endoscopy, SUM (pseudo x-ray image) Gradient rendering; the possibility to display the vessel structure transparently.
Cut-plane function to get a precise insight of the shape of the pathology
Orthoviewer providing a multi-planar visualization of objects using the different Image Rendering possibilities.
MPR (Multi-Planar Reformatting): enables visualization of the volume in all three standard projections (coronal, sagital and axial) Especially useful for optimal viewing of spine procedures (e.g.Vertebroplasty)
SpineView: special acquisition protocol for optimal viewing of the spine, especially osteoporotic vertebrae
CalciView: allows visualization of Hyper dense plaque in 3D, separately or in relation to the lumen.
5 different distance measurements calculated in the same volume, including "Quick measurement" feature
Volume calculation
Automated Vessel Analysis (AVA), provides information on vessel segment diameter, area and length with only three mouse-clicks. Endoscopic and cross sectional views are available.
Computer Assisted Aneurysm Analysis (CAAA), providing information on Aneurysms, like volume, neck size etc..
Catheter tip shape simulation, providing information on how to shape the catheter tip.
Virtual stenting; Ability to simulate a stent placement in a selected vessel segment for proper stent sizing. All relevant data of the simulated stent are displayed

Annotation: text can be added to a volume to capture comments.
Interpolative Zoom
Reconstructive Zooming Technique, 2 additional user defined reconstructions focused on the Volume Of Interest (VOI) using different cube size and voxel resolution.
Subtraction of reconstructed volumes, allowing to visualize vessels without embolization devices (stents, coils, clips,..) to assess the outcomes of treatment
Automatic Voxelshift: compensates for movement when rendering subtracted or superimposed volumes
Set the grey values WW/WL
Store/Recall of user defined projections.

6 3D-RA on Xper Module
The 3D-RA on XPER MODULE integrates the off-line 3D-RA application in the Allura Xper system. It allows operation of 3D-RA with the Xper module in the examination room during an examination. Display of 3D-RA imaging in the examination room has to be arranged for the monitor ceiling suspension with an additional monitor or with MultiVision (sharing an existing monitor). Following 3D-RA functions are available on the Xper module:
Image rotation
Image translation
Start mouse mode
Snapshot
Segmentation (window-width/window-level control)
3D zoom control
Store/recall views
Recall Anterior-Posterior view
Select 3D APC / Follow stand mode

7 3D and MR/CT Roadmap
3D Roadmap extends the capabilities of the integrated 3D product by providing a sustainable 3D roadmap to support interventional procedures. The 3D Roadmap option matches the real-time 2D fluoro images with the 3D-RA reconstruction or a previous acquired CT or MR data of the vessel tree. It provides a 3D real time insight of the advancement of the guide wire, catheter and coils through complex vessel structures.
Image Acquisition
The 3D Roadmap is based on the visualization of the vessel tree out of 3D-RA THE MR/CT roadmap is baded on visualization of the anatomy on previous acquired CT or MR data sets which are match with the X-ray unit by registration of the CT or MR data sets with a low dose 3D-RA scan. The roadmap is activated with one button touch at tableside (Xper Module). Select the roadmap function on the touch screen module, activate fluoroscopy and the roadmap is activated. The "live" 2D fluoroscopy image is overlaid with the 3D volume of the vessel tree and is automatically displayed on the roadmap monitor in both the examination and control room.

Table side control
The bidirectional link between the X-ray system and the roadmap allows the user to select the optimal stand position for the procedure in two ways. 3D Automatic Position Control allows the gantry to automatically move to the best interventional projection as shown on the roadmap monitor. 3D Follow C-arc allows the roadmap to remain in sync with the 2D projection, automatically adjusting viewpoint as the gantry is repositioned

The roadmap is dynamic, providing the freedom to change:

- The angulation of the C-arc;
- The rotation of the C-arc;
- The Field of View;

- The Source to Image Distance.

i.e. if the geometry system is changed, the image angle changes accordingly, real-time.

Intuitive, fully controlled from tableside:

- Landmarking to adjust the intensity of the anatomical reference surrounding the vessels;
- 3D blending to fade in/out the 3D view;
- WW/WL settings to control the contrast/brightness;
- Store and review runs for reporting and archive purposes;
- Store snapshots and movies

8 Archiving
Transfer to:
Optional Hard Copy unit (DICOM Print)
Any optional DICOM compatible device (e.g. PACS/ViewForum/Xcelera), supported are DICOM XA, DICOM SC, DICOM CT and DICOM 3D
Any PC in a standard PC compatible format (JPEG,AVI)
One or multiple DVD's, CD-ROM(s) for easy archiving
Store a subset of exportable objects (snapshots and AVI Movies) to a USB removable memory device.

CV 3DRA Handover OnSite Education:

Philips Education Specialists will provide sixteen (16) hours of education for up to four (4) students, selected by customer, including technologists from night/weekend shifts if necessary. CEU credits may be available for each participant that meets the guidelines provided by Philips. Please refer to guidelines for more information. Note: Site must be patient-ready. Philips personnel are not responsible for actual patient contact or operation of equipment during education sessions except to demonstrate proper equipment operation. Education expires one (1) year from equipment installation date (or purchase date if sold separately). Ref# 222-100615

28 **NCVC325 OncoSuite complete 1

OncoSuite provides a complete solution for Tumor Embolization and Percutaneous Ablation procedures in Interventional Oncology. Its 3D Live Image Guidance is based on the superior visualization with XperCT Dual, tumor embolization with EmboGuide and its percutaneous Ablation with XperGuide with the Ablation option.

OncoSuite consists of XperCT Dual, EmboGuide and XperGuide with Ablation option.

XperCT Dual extends the capabilities of the interventional suite offering CT like imaging to visualize bone, soft tissue and vessels in case of contrast enhanced acquisition. XperCT Dual protocols are available covering routine procedures such as biopsies and drainages but also advanced procedures such as abdominal oncological imaging up to neuro high resolution stenting. All protocols can be selected at the tableside via the XperModule.

The DualPhase dual view functionality allows the simultaneous visualization of two 3D datasets acquired at different times of the procedure such as the arterial and post-arterial contrast enhancement in oncologic liver imaging. In this DualView, XperCT Dual allows the segmentation of multiple lesions at the same time in the viewed datasets.

XperCT Dual acquires up to 60 frames/sec. (frame rate extension to 60frames/sec is included) and supports fast abdominal protocols with 5 to 10 second acquisition time for Allura release prior to 8.2 and even 5 to 8 second acquisition times for Allura release 8.2 or higher, thereby minimizing respiratory artifacts. The XperCT volume is displayed automatically within 8 to 15 seconds after acquisition. No user interaction is required.

XperCT Dual includes Metal Artifact Reduction to reduce the artifacts caused by metal presence in the region of interest. In case the original XperCT shows metal artifacts, the interventional radiologist can perform a second reconstruction and select for Metal Artifact Reduction, which will remove the artifacts caused by the metal present. The most typical examples of metal presence are: metal implants, coils or stents with stainless steel structures. Moreover, BMI Noise Reduction is included to reduce the noise caused by large size patients.

Note: BMI Noise Reduction is only available when Abdominal XperCT runs are selected

The XperCT volume can be viewed in the control room and in the examination room. The viewing package comprises:

- 3D volume viewing in any desired orientation
- Slice viewing in any desired orientation
- Slice viewing at any slice thickness with a minimum of 0.5 mm
- Five distance measurements calculated in the same volume, including "Quick measurement" feature
- Cut-plane functionality to provide precise insight into anatomical structure
- Unique high-resolution reconstructive zoom technique
- Graphical display of stand position including rotation and angulation parameters
- Contrast and brightness control
- Contrast resolution 5-10 Hu
- Spatial resolution of the initial reconstruction: 10 lp/mm
- Contrast range -1000 to 2000 Hu
- High resolution imaging mode produces
- 512x512x512 volume rendered reconstructions
- XperCT Dual can be controlled via the Xper module and the mouse at tableside.

The XperCT volume can be matched with (when additional options are available) Allura 3D-RA and pre acquired CT, PET/CT or MR volumes. This view allows combining multiple images from different modalities in order to provide additional anatomical insight. This multimodality volume can be viewed with the following functionalities:

- Registration of the two volumes from the same patient
- The resulting volume can be viewed with complete 3D-RA viewing functionality
- The XperCT slice can be overlaid onto the 3D vessel for better assessment of the region of interest
- Three different contrast rendering options to allow optimal viewing of the 3D vessel in the soft tissue structure
- (128x128x128, 256x256x256, 384x384x384 and 512x512x512 volumes)
- Movie clip recording functionality (AVI) to capture dynamic views

- 3D automatic position control at tableside: When an optimal working position is selected from the XperCT volume the C-arc steers itself to the selected position
- 3D Follow C-arc at tableside: When selected, the XperCT volume automatically follows the position of the C-arc.
- XperCT data and 3D-RA with XperCT Dual overlay is stored in the same patient file as all other patient related data. All this data can be reviewed at any time

XperCT data can be sent to:

- Any optional DICOM compatible device (e.g. PACS/ViewForum/Xcelera), supported are DICOM XA, DICOM SC, DICOM CT and DICOM 3D
- Any PC in a standard PC compatible format (JPEG,AVI)
  XperCT datasets can be stored/achieved on:
  - A PACS systems as DICOM Secondary Capture images or movies
  - USB removable memory device
  - One or multiple DVD's, CD-ROM(s) for easy archiving
  - Hard copy via the (DICOM Print) protocol

EmboGuide provides workflow-guided Embolization support in three steps. The first step comprises of the Identification and Segmentation of multiple lesions. Secondly, the feeders of the segmented lesions are identified. The Automatic feeder detection function supports the user with this. Finally, Live Image Guidance is used in order to reach each of the identified feeders for a selective or super-selective Embolization.

The essential components of EmboGuide are:

- 3D lesion segmentation tool for 3D target(s) identification and volume measurement.
- Workflow-driven planning tool with automated feeding vessel detection and marking.
- 3D roadmap navigation with lesion and feeding paths overlay.

Depending on Allura configurations, XperCT Dual allows obtaining two manual forward scans or two automatic rotational scans with a user-defined delay between them (automatic rotational scans only for Allura release 8.2 or higher). In case of two automatic rotational scans, the first scan is performed in a forward direction while the second one is performed in reverse direction (DualPhase wiper rotation). In both configurations, the first phase can be used to show early tumor contrast uptake and its feeding vessels, while the second scan can be used to depict the delayed contrast uptake in lesion, determining its vascularity and perfusion. Optimal automatic high volume reconstruction is in this respect is essential to secure appropriate feeding vessel detection in the first phase and a good soft-tissue contrast in the second phase. The 3D lesion segmentation is an interactive user-guided tool that allows isolating regions of interest in a 3D volume using image-specific features. The tool can be used for user-guided segmentation of lesions from MR, CT or XperCT volumes. A workflow-driven planning tool, building on already available vessel detection and volume cut features, can then be used to highlight the feeding vessels to the lesion. Real-time overlay and registration of the 3D volume on live 2D X-ray images from the Allura X-ray system of the same anatomy can be used as additional 3D image guidance to support the navigation of the device/catheter. Planning data, like the earlier annotated feeding vessels and/or 3D landmarks can be displayed on 2D-3D fused images as supporting information.
EmboGuide provides the following functions:

- Automatic Feeder Detection; supports the user in analyzing the vasculature of lesions by giving the initial suggestions of the feeding vessels of the segmented lesions. The detected feeding vessels will be annotated and added to the planning.
- Manually add and/or remove feeding vessels; after running the automatic feeder detection function, the user can verify and refine the planning by manually adding and/or removing feeding vessels.
- Follow Feeder; for verification, the user may use the Follow Feeder function. This function allows the user to trace the path of a single annotated feeding vessel to verify whether it traces into a targeted lesion.
- 3D Landmarks; landmarks can be put on the 3D volume as additional information to support with the navigation of the catheter.
- Live 3D Image Guidance; real-time overlay and registration of the 3D volume on the live 2D X-ray images from the Allura X-ray system of the same anatomy, can provide additional 3D image guidance to help the user with navigating the device/catheter to the embolization target.
- Storage of the live 2D-3D overlay runs; the real-time overlay of the 3D volume with the live 2D X-ray images from the Allura X-ray system can be recorded and stored for reviewing at any time.
- Table-side control; to provide efficient work-flow during the interventional procedures, the most frequently used functions can be controlled from table-side.

Image data for EmboGuide is stored together with the EmboGuide movies and snapshots and can be sent to any optional DICOM compatible device (e.g. PACS/IntelliSpace Portal/Xcelera). Supported are DICOM XA, DICOM SC, DICOM CT and DICOM 3D and any PC in a standard PC compatible format (JPEG,AVI). All this data can be reviewed at any time.

EmboGuide movies and snapshots can be stored/achieved on:

- A PACS systems as DICOM Secondary Capture images or movies.
- USB removable memory device.
- One or multiple DVD's, CD-ROM(s) for easy archiving.
- Hard copy via the (DICOM Print) protocol.

OncoSuite Ablation allows planning of the ablation zone with a high degree of accuracy using conventional methods. XperGuide ablation software helps to plan and guide the specific ablation zones and distance between the ablation needles in 3D based on the manufacturer's specifications of each needle. OncoSuite Ablation shows the isotherm of each needle on an XperCT overlay or on a pre-acquired MR, CT or PET/CT volume. OncoSuite Ablation assists clinicians in planning the optimal placement of the ablation needle to cover the targeted lesion. The needle path can be planned by drawing it or by defining entry and target locations on XperCT, MR, CT or PET/CT slices. By allowing the precise planning of multiple needles, XperGuide's ablation software assists clinicians in treating large tumors and thereby helping to prevent re-do.

OncoSuite Ablation consists of both XperGuide and the XperGuide Ablation option.

XperGuide enables real-time needle guidance in the angio suite. Virtual needle paths are created by XperCT Dual data and on overlays of previous acquired MR, CT, or PET/CT datasets. In order to visualize the actual needle path versus the virtual path that is planned upfront, XperGuide offers the possibility to match real-time 2D fluoroscopy images with 3D volume of XperCT Dual, CT, PET/CT or MR datasets. A wide range of gantry projections can be used to define the needle path. This volumetric dataset can be viewed in any slice direction providing optimal sight.
Path planning in XperGuide can be done by:

- Drawing a virtual needle path on an XperCT, CT, PET/CT or MR slice
- Defining entry and target points on different XperCT Dual, MR, CT or PET/CT slices
- Defining a help line on a 3D volume XperGuide automatically calculates the optimal gantry projections for the path and transfers them to the planning to draw the needle path. The calculated virtual needle paths can be viewed on the XperCT Dual, MR, CT or PET/CT slices, to verify if this path is feasible

XperGuide supports planning of multiple needle trajectories. During the needle procedure, XperGuide is fully controlled at tableside. When XperGuide is active, guidance is automatically active when the fluoroscopy pedal is pressed. The live 2D image is projected over the XperCT Dual, MR, CT or PET/CT volume. The gantry can be positioned in the calculated gantry positions or controlled manually. The XperGuide images (live 2D fluoroscopy projected over the XperCT Dual, MR, CT or PET/CT volume) will follow the gantry projections.

At table side, XperGuide adapts in real-time to the following parameters:

- Changes in the angulation of the C-arm
- Changes in the rotation of the C-arm
- Changes in the field of view
- Changes in the source image distance

XperGuide data, like XperGuide movies and snapshots, can be exported to any optional DICOM compatible device (e.g. PACS/ViewForum/Xcelera). Supported are DICOM XA, DICOM SC, DICOM CT and DICOM 3D and any PC in a standard PC compatible format (JPEG,AVI).
XperGuide movies and snapshots can be stored/achieved on:

- A PACS systems as DICOM Secondary Capture images or movies
- USB removable memory device
- One or multiple DVD's, CD-ROM(s) for easy archiving
- Hard copy via the (DICOM Print) protocol

XperGuide Ablation is an extension to the XperGuide software to facilitate the planning of tumor ablation procedures. It supports all percutaneous ablation techniques (RF, microwave and cryo-ablation) by displaying the isotherm of the chosen ablation needle. It allows the visualization of multiple needles by entering their thermal characteristics, and the assessment of their combined impact in the ablation zone. A virtual ablation needle with its thermal characteristics is displayed on a 3 dimensional XperCT volume or previously acquired CT, MR or PET/CT data to verify optimal positioning of the needle and obtain total tumor coverage. The thermal characteristics of each needle consist of the width, breadth and front of its ablation zones. Per needle up to three ablation zones of different isotherms can be defined. XperGuide Ablation allows to plan and store up to 60 different types of thermal needle characteristics simultaneously.

All thermal characteristics can be stored and transferred to other Allura systems. After the needle planning is performed, the 2D fluoroscopy overlay on the 3D volume allows real time needle guidance along the planned trajectory on XperCT, MR, CT and PET/CT datasets. During live needle guidance it is possible to adjust the ablation transparency and modify the previous plan. After the needle(s) are positioned, it's possible to control the effective ablation target with the previous plan.

Line #	Part #	Description	Qty

Clinical Education Package for OncoSuite Complete:

XperCT Handover OnSite Education: Philips Education Specialists will provide eight (08) hours of education for up to four (4) students, selected by customer, including technologists from night/weekend shifts if necessary. CEU credits may be available for each participant that meets the guidelines provided by Philips. Please refer to guidelines for more information. Note: Site must be patient-ready. Philips personnel are not responsible for actual patient contact or operation of equipment during education sessions except to demonstrate proper equipment operation.

iXR EmboGuide OnSite Education: Philips Education Specialists will provide eight (8) hours of education for up to four (4) students, selected by customer, including technologists from night/weekend shifts if necessary. CEU credits may be available for each participant that meets the guidelines provided by Philips. Please refer to guidelines for more information. Note: Site must be patient-ready. Philips personnel are not responsible for actual patient contact or operation of equipment during education sessions except to demonstrate proper equipment operation.

iXR XperGuide Onco Ablation OnSite Education: Philips Education Specialists will provide eight (8) hours of education for up to four (4) students, selected by customer, including technologists from night/weekend shifts if necessary. CEU credits may be available for each participant that meets the guidelines provided by Philips. Please refer to guidelines for more information. Note: Site must be patient-ready. Philips personnel are not responsible for actual patient contact or operation of equipment during education sessions except to demonstrate proper equipment operation.

Education expires one (1) year from equipment installation date (or purchase date if sold separately). Ref#292335296250296249-20151215

29	**NCVB878	**Interventional Tools Hardware**	**1**

The Interventional hardware is the hardware for the interventional tools and enables import and viewing of DICOM compatible data from other imaging modalities.

The processing platform provides two visual outputs, one for the control room and one for the examination room.

An available color LCD display, or an EP cockpit, EP cockpit XL or FlexVision XL display solution is required for the examination room.

The Interventional Hardware comprises at least:

- Computer Workstation
- CR 19" display • 16 GB memory
- 2 TB disk for the operating system, application software and application data
- Internal CD-Rom / DVD writer
- Mouse tablet to interact with all the interventional tools at the table side.

Conditionally:
FD Calibration Tool Kit for 3D-RA and/or XperCT.

30	**FCV0056	**18 INCH LCD MONITOR IN THE EXAM ROOM**	**2**

Line #	Part #	Description	Qty

18" Monochrome LCD monitor. The LCD monitor is intended for viewing in the examination room and is designed for medical applications.

The main characteristics are:

- 18 inch monochrome TFT-LCD display
- Native format 1280x1024 SXGA
- 10 bit gray-scale resolution with gray-scale correction
- Wide viewing angle (approx 160 degr)
- High brightness (max 600 Cd/m2 default 500 Cd/m2) with ambient light dependent brightness control
- Push buttons for control functions on front
- User programmable and standard reference setting
- On Screen Display
- Internal selectable lookup table for gray-scale transfer function
- Internal power supply (110-240 VAC)
- Including LCD protection screen

31 ****NCVB641** **VasoCT** **1**

VasoCT provides high resolution 3D imaging that reveals key information about cerebral vascular structures and devices to support the highest possible spatial assessment. The devices can be visualized in parent vessel context.

Key Benefits:
• Enhances visualization of endovascular devices (stents, flow diverters etc.) and vessel morphology down to perforator level
• Allows visualization beyond the clot with peri-procedural imaging of the distal vessel aspects in ischemic stroke
• Allows rapid non-traumatic follow up of interventional patients, as a consequence reducing procedural and hospital stay costs

VasoCT is an extension to XperCT Dual.

32 ****FCV9067** **Support & allowance, large** **1**

Support & allowance, large

33 ****989801220375** **Black Anti-fatigue Floor Mat w/logo.** **1**

Black Anti-fatigue Floor Mat with Philips Logo

36" x 60"

34 ****980406041009** **Rad Shield w/ Arm (Contoured) 61X76** **2**

Contoured Rad Shield with Arm rest. 61X76

35 ****980406190009** **PIVOTING TABLE-MOUNTED RADIATION SHIELD** **1**

Line #	Part #	Description	Qty

Table-mounted radiation shield for additional protection of physician and staff against scatter radiation. The shield consists of two protective parts: a lower shield and an upper shield. The shield is specially designed for use with the AD5 patient table.

The table mounted radiation shield provides the following features:

- Mounting to either the right orleft tableaccessory rails;
- Pivoting into the required working position;
- Pivoting into the parking underneath the tabletop facilitating patient preparation;
- The upper shield can be positioned upright providing optimal protection or can be folded down for free access to the patient.

The table mounted radiation shield includes:

- Lower shield measuring 70 cm high 80 cm wide 0.5 mm Pbequivalence;
- Upper shield measuring 40 cm high 50 cm wide 0.5 mm Pbequivalence;
- Mounting clamp;

Docking device for wall mounting.

36 ****989801220012** **Cable Spooler** **2**

37 ****989801220158** **Mark 7 Arterion, Table Mount** **1**

The Mark 7 Arterion Injection System is the latest in MEDRAD's "Mark" series of angiographic injectors. Compared to earlier systems, the Mark 7 Arterion injector head is lighter and easier to use so you can focus more on the patient.
The clear and intuitive user interface guides you through proper set-up, and highlights the information you need to perform safe procedures.
Unique to the market, the front load system simplifies set-up and makes for a cleaner tear down.
The clear syringe provides a higher level of confidence that you are ready to inject.

Made from a clear material, the Mark 7 Arterion syringe (Catalog ART 700 SYR) allows you to easily view the inside of the syringe for smoother purging of air. And MEDRAD's famous fluid dots are still there to help-round for fluid, oval for air.
The table mount injector solution ensures the contrast injector is conveniently placed and always available when it is needed. It provides a clean workspace without occupying valuable floor space.
System includes:

- Table Mount
- display control panel
- 6 ft. coiled hand switch
- operation manual (CD)
- 10 ft. head cable
- syringe heat maintainer
- imaging system interface cable for the Allura / Allura Xper
- consumables starters kit

For the MEDRAD Mark7 Injector system Philips is only the distributor. MEDRAD provides the service as well as the application support of both versions unless stated differently in the Philips Service Agreement

Line #	Part #	Description	Qty

System Specifications:

- Flow Rate 0.1-45.0 ml/s in 0.1 ml increments
- 0.1-59.9 ml/m in 0.1 ml increments
- Volume 1-150 ml in 1 ml increments
- Pressure Limit 100-1200 psi in 1 psi increments
- (150ml syringe) 689-8273 kPa in 1 kPa increments
- Rise Time 0.0-9.9 seconds in 0.1 increments
- Delay Time 0.0-99.9 seconds in 0.1 increments
- Fill Speed 1-20 ml/s
- Fill Volume 1-150 ml
- Syringe Size 150 ml
- Syringe Heat Maintainer 35 °C (95 °F) ± 5 °C (9 °F)
- Protocol Memory 40 Protocols
- Injection Memory History

38 ****989801220273** **Ceiling Track w/Column & Handle Ext** **2**

Mavig 2.5m Ceiling Track with Ceiling trolley, 360 degree column, and brake handle extension.

39 ****989801220279** **LED Single Color Exam Lamp** **2**

LED Single Color M LED130F
Examination Lamp

Portegra2 Extension/Spring Arm Combination with M LED 130F,
Single Color, incl. Power Supply

Light in new dimension LED lamps support your daily operations through innovative technology and design. In addition to advantages provided by MAVIG with all light equipment, LED technology offers the following enhanced features:

- Faceted multi-lens system
- In-depth illumination
- Superior color rendition
- Extension arm 750mm
- Spring arm 900mm
- LED-Examination-light
- Operating voltage is 24V DC. The lamp is supplied with a transformer, should it be used with 230V.

Technical data LED 130F:

- Light intensity at 1 meter distance: 60.000 Lux
- Color rendering index: Ra = 95
- Focusable: yes
- Focusable size of the light field: 14-25 cm
- Color temperature: 4500 Kelvin
- Electronic light intensity control at the lamp head: standard dimming range: 50 - 100 %
- Temperature increase in head area: 0.5° C

Line #	Part #	Description	Qty

- Mains: 230 V / 60 Hz
- Power consumption: 28 W
- Number of LEDs: 19
- Life-span of the LEDs: > 40.000 h
- Diameter of the lamp head: 33 cm
- Working distance: 70 - 140 cm
- Height Adjustment: 117 cm

40 ****989801220284** **ISM Premium Audio Package** **1**

The Premium Audio Package is comprised of the following items:

Control System - Touchscreen Control Package offers touchscreen control with 7" Touch panel

Advanced Audio Communication System with Hands Free Telephony - Advanced audio uses an echo cancelling audio communication system with the EasySuite touchscreen to call or receive a telephone call. The hands-free system utilizes O.R. loudspeakers and 1 boom mounted microphones with no handset required.

MP3 Audio and Charging Interface - Universal MP3 music interconnection system allows any 3.5mm jack-enabled personal audio device to play music through the Advanced Audio System. Provides integrated charging capability via USB.

Speaker Upgrade for AAC (adds 2 additional speakers for Exam Room) Upgrade adds two recessed ceiling mounted speakers to the Standard Audio System, or Advanced Audio System, for a total of four speakers per Operating Room.

PTT Control Room Communication System with Control Room Loudspeakers - Push to talk intercom microphone system for control room plus two recessed ceiling mounted speakers for Control Room.

Ambient Room Lighting Control Enables touch panel control of room lights using customer provided lighting controller. Functions include on/off and ability to select multiple lighting presets.

41 ****989801256037** **Vascular Interventional Tools 20 Hours OffSite** **2**

A Philips Clinical Instructor will provide 20 hours (2.5 days) of in-depth didactic, tutorial and hands on training covering the Vascular Interventional Tools used in conjunction with the FD system. This course is designed to provide basic functionality, workflow and application knowledge necessary to fully utilize the Vascular Interventional Tools programs. Due to software release levels, the software used for training may slightly differ from software used at the trainee's facility. This course is highly recommended and will compliment your standard On-site training for Vascular Interventional Tools. This 20 hour course is located in Cleveland, Ohio at the Cleveland Training Center. Due to program updates, the number of class hours is subject to change without notice. The customer will be notified of current total class hours at time of registration. CEU credits may be awarded if the participant meets the ASRT guidelines.

Travel and lodging are not included, but may be purchased through Philips. It is highly recommended that 989801256039 (CV Partial Week Travel Pkg Offsite) is purchased.

Education expires one (1) year from equipment installation date (or purchase date if sold separately).

42 ****989801299617** **XD8982ALLURAXPERCLARITY REL8.2CTC5D** **1**

Line #	Part #	Description	Qty

Allura Xper / Clarity release 8.2

Course Number: XD8982
System Codes: 722-026, 722-027, 722-028, 722-029, 722-033, 722-034, 722-035, 722-036, 722-038, 722-039
Course Title: Allura Xper / Clarity release 8.2
Course Length: 5 days
Delivery Method(s): ILT
Modality: iXR-CV
Location: PHC and CTC
Target Audience: CS Field Service Engineers

DESCRIPTION:
This course will provide information on and in insights in the differences between Allura Xper release 8.1 and Allura Xper / Clarity release 8.2.

PREREQUISITES:
XD3970, Allura Xper Rel 7.6 part 1(Or history courses XD3966 & XD9065 or XD3875 & XD9065);

Field experience;

XD9906, Allura Xper update to R8.1;

FC9021 Cat Tool.

COURSE OBJECTIVES:
Upon completion of this course and using the appropriate service manuals, the FSE can:
• Identify differences between the 8.1 release and the 8.2 release.
• Recognize new system parts.

- Certeray Generator

- motion control Clea-stand

- FD20 and FD15 detector

- AD7XT and AD7XNT table

- Power Supply gPDU

- Cabinet layout and cable routing
• Identify and sequence the steps to installing an 8.2 release.
• Identify the new service documentation structure
• Identify the Diagnostic CM procedures.

* PHILIPS PROPRIETARY MATERIALS SUCH AS DIAGNOSTIC SOFTWARE AND SERVICE DOCUMENTATION ARE NOT INCLUDED IN THE TRAINING AND WILL NOT BE AVAILABLE FOR USE OUTSIDE OF THE TRAINING ENVIRONMENT. THE TRAINEE MUST RETURN ALL

Line #	Part #	Description	Qty

PROPRIETARY MATERIALS RECEIVED DURING THE TRAINING AT THE END OF THE TRAINING. CUSTOMER ACKNOWLEDGES AND AGREES THAT NEITHER CUSTOMER NOR TRAINEE WILL RECEIVE A LICENSE TO SUCH PROPRIETARY MATERIALS AND THAT THE TRAINEE MAY NOT BE ABLE TO FULLY UTILIZE THE TRAINING WITHOUT THE USE OF SUCH PROPRIETARY MATERIALS. (CERTAIN LICENSES MAY BE OBTAINED THROUGH PURCHASE OF SUPPORT OR ASSIST AGREEMENT.) Course dates and location to be finalized by Philips. Philips shall attempt to accommodate Customer requested dates and training location. The price quoted includes course tuition. Travel and living expenses are not included, but may be purchased separately through Philips.

IMPORTANT Notes Regarding Admission to Philips Customer Engineer Training Courses:

1. Trainee must meet all prerequisites

2. Course expires one (1) year from equipment installation date (or purchase date if sold separately)
3. Customer must sign Philips Nondisclosure statement

4. Trainee must sign Philips Nondisclosure statement

5. Customer must sign Philips terms and conditions of training

43 **989801299784 XD9702 Flexvision XL eLearn 1

Course Number: XD9702
Course Title: FlexVision XL
CSIP Level: All course materials are on CSIP level 1
Course Length: 10 hours
Delivery Method(s): Standard eLearning
Modality: IGT Systems
Location: Online
Target Audience: Field Service Engineers and Licensed Representatives
System Code(s): Not applicable

DESCRIPTION:

This e-learning module will familiarize the engineer with FlexVision XL basics with regards to:

- System Architecture
- Signal Flow
- Setting to Work
- Monitor replacement

This course has a one question exam only. You have to declare that you studied and understood the content in order to be certified as trained.

PREREQUISITES:

All of the below courses:

- FC9002 – Safety
- FC9003 – Imaging Systems Safety

* PHILIPS PROPRIETARY MATERIALS SUCH AS DIAGNOSTIC SOFTWARE AND SERVICE DOCUMENTATION ARE NOT INCLUDED IN THE

TRAINING AND WILL NOT BE AVAILABLE FOR USE OUTSIDE OF THE TRAINING ENVIRONMENT. THE TRAINEE MUST RETURN ALL PROPRIETARY MATERIALS RECEIVED DURING THE TRAINING AT THE END OF THE TRAINING. CUSTOMER ACKNOWLEDGES

Line #	Part #	Description	Qty

AND AGREES THAT NEITHER CUSTOMER NOR TRAINEE WILL RECEIVE A LICENSE TO SUCH PROPRIETARY MATERIALS AND THAT THE TRAINEE MAY NOT BE ABLE TO FULLY UTILIZE THE TRAINING WITHOUT THE USE OF SUCH PROPRIETARY MATERIALS. (CERTAIN LICENSES MAY BE OBTAINED THROUGH PURCHASE OF A PHILIPS RIGHTFIT SERVICE AGREEMENT.) Course dates and location to be finalized by Philips. Philips shall attempt to accommodate Customer requested dates and training location. The price quoted includes course tuition. Travel and living expenses are not included, but may be purchased separately through Philips.

IMPORTANT Notes Regarding Admission to Philips Customer Engineer Training Courses:

Trainee must meet all prerequisites
Course expires one (1) year from equipment installation date (or purchase date if sold separately)
Customer must sign Philips Nondisclosure statement
Trainee must sign Philips Nondisclosure statement
Customer must sign Philips terms and conditions of training

44	**989801299780	**XD3894 ALLURA XPER REL8.2 ESSENTIAL**	1

PHILIPS PROPRIETARY MATERIALS SUCH AS DIAGNOSTIC SOFTWARE AND SERVICE DOCUMENTATION ARE NOT INCLUDED IN THE TRAINING AND WILL NOT BE AVAILABLE FOR USE OUTSIDE OF THE TRAINING ENVIRONMENT. THE TRAINEE MUST RETURN ALL PROPRIETARY MATERIALS RECEIVED DURING THE TRAINING AT THE END OF THE TRAINING. CUSTOMER ACKNOWLEDGES AND AGREES THAT NEITHER CUSTOMER NOR TRAINEE WILL RECEIVE A LICENSE TO SUCH PROPRIETARY MATERIALS AND THAT THE TRAINEE MAY NOT BE ABLE TO FULLY UTILIZE THE TRAINING WITHOUT THE USE OF SUCH PROPRIETARY MATERIALS. (CERTAIN LICENSES MAY BE OBTAINED THROUGH PURCHASE OF SUPPORT OR ASSIST AGREEMENT.) Course dates and location to be finalized by Philips. Philips shall attempt to accommodate Customer requested dates and training location. The price quoted includes course tuition. Travel and living expenses are not included, but may be purchased separately through Philips.

IMPORTANT Notes Regarding Admission to Philips Customer Engineer Training Courses:

1. Trainee must meet all prerequisites

2. Course expires one (1) year from equipment installation date (or purchase date if sold separately)
3. Customer must sign Philips Nondisclosure statement

4. Trainee must sign Philips Nondisclosure statement

5. Customer must sign Philips terms and conditions of training

Course Number:

XD3894

Course Title:

Allura Xper release 8.2 Essentials

CSIP Level:

All course materials are on CSIP level 1

Course Length:

9 days

Delivery Method(s):

ILT

Modality:

iXR

Location:

PHC, CTC, SLC, HCA

Target Audience:

Field Service Engineers (multi-modality)

Licensed Representatives

System Code(s):

Associated system codes: 722-026, 722-027, 722-028, 722-029, 722-033, 722-034, 722-035, 722-036, 722-038, 722-039, 722-058, and 722-059

Document Date:

2015-05-26

DESCRIPTION:

After successfully finishing this training the Engineer reaches compliance to work on the above mentioned system codes. The training is performed on "basic" system configurations. Commercially available system options are only partially covered; these are offered as separate courses.

Aims of this training are :

- The engineer will learn how to:
- perform planned maintenance.
- execute a repair of the system.
- perform 1st line fault diagnosis on the system.

Topics covered:

- Planned Maintenance
- plan visits
- perform preparation:
- customize planned maintenance modules
- determine visit type
- get latest planned maintenance instructions
- determine needed tools and materials
- operate the system; basic understanding of system operation
- use software service tools; field service framework and the Xper management tool on a basic level.
- perform the following planned maintenance instructions:
- general planned maintenance
- adjust generator, adjust image detector and perform level 1 Image Quality measurements
- adjust geometry
- patient support AD7X(N)T
- radiation safety
- electrical safety
- XtraVision release 8.8.1/9.0.x
- finishing activities

Repair
For these repairs it is assumed that the fault diagnosis has been done by remote support, tier 2 or tier 3.

- Identify "all" Field Replaceable Units of the Allura Xper rel. 8.2 system
- Find the correct service instruction to replace a Field Replaceable Unit
- Identify connections between parts using the corrective maintenance manual
- Perform replacement cases; demonstrate replacement of various parts using the appropriate repair manual.

First line fault diagnosis
Use the Corrective maintenance manual for faultfinding

- diagnostic flows (90%)
- functional diagrams (5%)
- led indications (5%)
- Learn how power is distributed
- Escalate to helpdesk
- Perform various fault finding cases
- power on problems
- movement problems

Line #	Part #	Description	Qty

- acquisition problems

PREREQUISITES:

All of the below courses:

- FC9002 – Safety
- FC9003 – Imaging Systems Safety
- XD3007 – X-Ray Systems basic part 2
- XD9903 – Anatomy and pathology of the heart and bloodvessels
- XD9904 – Allura Xper Operation and Clinical Workflow
- FC9017 – Basic Networking

COURSE OBJECTIVES:

Upon successful completion of the course the learner will be able to:

- perform planned maintenance on the system according the planned maintenance instructions.
- execute a repair of the system with the help of available repair manuals.
- perform 1st line fault diagnosis on the system using the corrective maintenance manual.

45 ****989801220370** **Low Load 15 kW UPS** **1**

MGE Galaxy 5000 80 kVA Low Load – 15kW UPS
G5TUPSU80KPLL
Adjacent MGE Galaxy 5000 Battery Cabinet with one full string of batteries and standard Galaxy 5000 Adjacent battery Temp sensor.
High Voltage 6 Alarm Relays Card
MGE GALAXY 5000 Remote Alarm Status Panel
MGE SNMP/Web Communication Card
Top Feed Auxiliary Cabinet

In the event of a power loss the UPS provides emergency power to allow system function but limits the X-Ray function to the use of fluoroscopy for up to 15 minutes.

46 **SP003** **Installation Labor** **1**

Accessory display installation, calibration and testing labor.

47 **Third Party Item** **GD76-99** **1**

Mavig parts to provide a two-LCD accessory display in procedure room - 2x LCD mount, with spring arm and carriage, on ceiling track with cable guides.

48 **SP019** **Trade in Allowance** **1**

Customer represents and warrants that (i) Customer has, and shall have when title passes, good and marketable title to the equipment being traded in and (ii) has the authority to effect such trade in.

100227 Allura Xper FD20/15

Line #	Part #	Description	Qty

Product: Siemens ANGIO
Serial Number: 150624
Manufacturer: SIEMENS MEDICAL SYSTEMS, INC.

Trade-In authorization number: 41076

Trade-In Value: $8,600.00

De-install Date: 12/16/2016

Customer will be trading-in equipment that is described on the attached System Disclosure Form (the "Trade-In"), which Trade-In the parties agree (i) will be removed on the De-install Date and (ii) is currently in the condition as represented on the System Disclosure Form. In addition, the parties agree as follows:

1. Customer represents and warrants that Customer has good and marketable title to the Trade-In as of the date of this Quotation and will have good and marketable title when Philips removes the Trade-In from Customer's site (the "Removal Date");
2. Title to the Trade-In shall pass from Customer to Philips on the Removal Date, unless otherwise agreed by Philips and the Customer;
3. Notwithstanding anything to the contrary in any Business Associate Addendum, Customer represents and warrants that as of the Removal Date all Protected Health Information will have been de-identified or removed from the Trade-In;
4. Philips may test and inspect the Trade-In prior to de-installation. If the condition of the Trade-In is not substantially the same on the Removal Date (ordinary wear and tear excepted) as it is identified on the System Disclosure Form, then Philips may reduce the price quoted for the Trade-In;
5. If the removal date is delayed until after the De-Install Date, unless Philips causes the delay, then Philips may reduce the price quoted for the Trade-In by six percent (6%) per month.
6. Philips is responsible for normal de-installation costs of the Trade-In.
7. The trade-in value will not include costs associated for any facility modifications and/or rigging required for de-installation and must be accounted for separately.
8. Customer is responsible for all plumbing necessary to properly drain coolant from chiller system and cap the lines.
9. Prior to the Removal Date, Customer shall remove from the room all equipment that is not being de-installed.

49	SEBLRSVNP1	Customer Note	1

Project note: hospital requests the MultSwitch function be implemented to support two PC systems - Philips 3D workstation and hospital-supplied PC.

50	SEBLRSVNP1	Customer Note	1

Configuration note: "FCV9067 Support and allowance, large" is used to provide NCVA197 Pedestal including UI's (Geo and Imaging Module) and including the TSM for the biplane system.

NET PRICE $1,856,119.00

Buying Group: VIZIENT SUPPLY LLC Contract #: XR0312 CV

Addt'l Terms:

Each Quotation solution will reference a specific Buying Group/Contract Number representing an agreement containing discounts, fees and any specific terms and conditions which will apply to that single quoted solution. If no Buying Group/Contract Number is shown, Philips' Terms and Conditions of Sale will apply to the quoted solution.

Each equipment system listed on purchase order/orders represents a separate and distinct financial transaction. We understand and agree that each transaction is to be individually billed and paid.

Price above does not include any applicable sales taxes.

The preliminary delivery request date for this equipment is:_____.

If you do not issue formal purchase orders indicate by initialing here_____.

Tax Status:

Taxable_____ Tax Exempt_____

If Exempt, please indicate the Exemption Certification Number:_____, and attach a copy of the certificate.

Delivery/Installation Address:

_____

_____

_____

Contact Phone #:

_____

Invoice Address:

_____

_____

_____

Contact Phone #:

_____

Purchaser approval as quoted:

_____

Date:

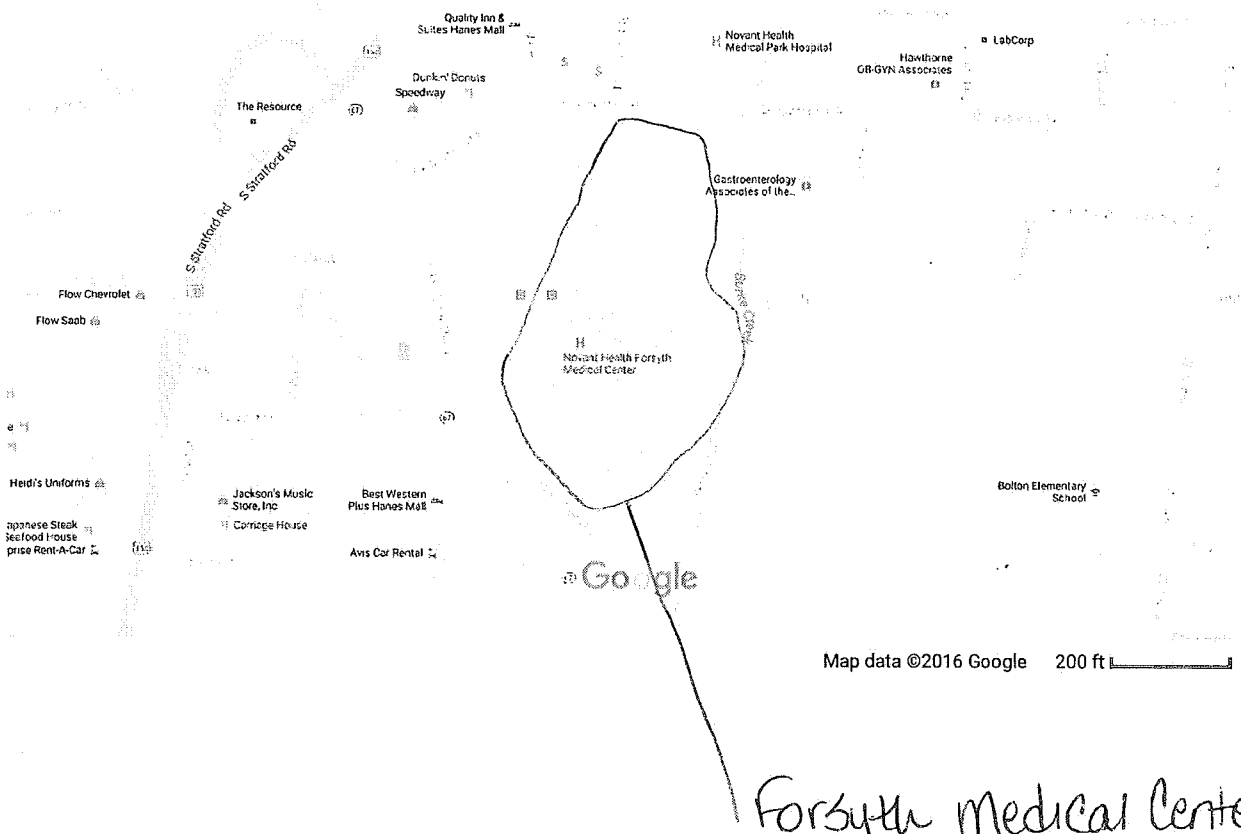
_____

Title:

_____

This quotation is signed and accepted by an authorized representative in acknowledgement of the system configuration, terms and conditions stated herein.

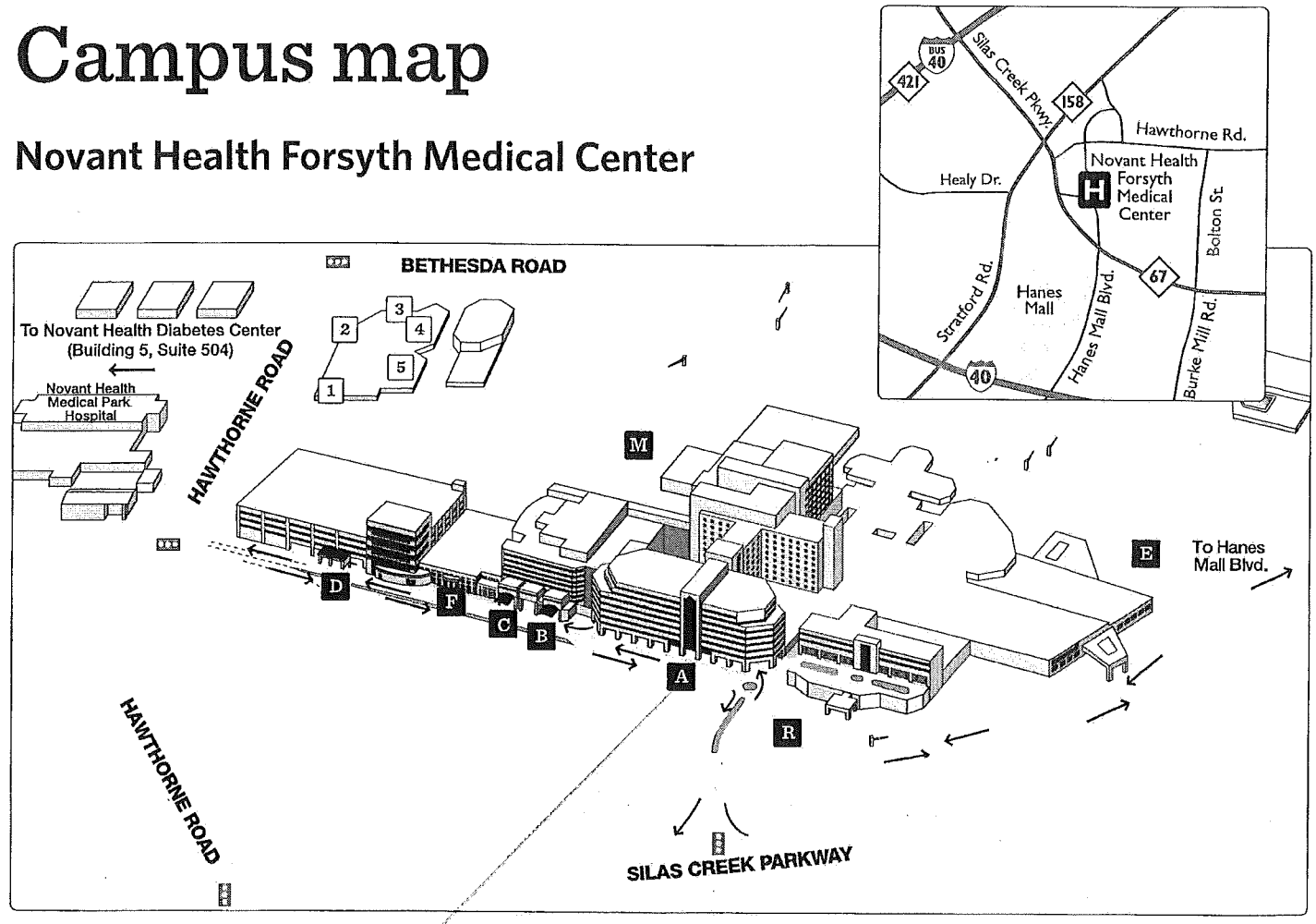
Attachment B



Forsyth Medical Center
3333 Silas Creek Parkway
Winston-Salem, NC

Campus map

Novant Health Forsyth Medical Center



Entrance A
- Administration
- Cashier/business office
- EKG
- Endoscopy lab
- EOPS
- Lab services
- Outpatient day center
- Patient registration
- Radiology
- SPPU (Day of surgery)
- Valet parking

Entrance B
All registration from 7 p.m.-5:30 a.m. and weekends (after 5:30 a.m.)
- Birthing center
- Community rooms
- Gyn anesthesia unit
- Gyn surgery
- Prenatal care
- Novant Health Maya Angelou Women's Health & Wellness Center
- Valet parking

Entrance C
- Cardiac procedures
- Preanesthesia visits
- Valet parking

Entrance D
- Handicapped
- Public parking deck

Entrance E
- Emergency Services

Entrance F
- Conference center

Entrance M
- Novant Health Cancer Center
- Patient parking (Radiology and Cancer Center only)
- PET/CT, nuclear medicine & MRI
- Novant Health Imaging
- Novant Health Oncology Specialists
- Valet parking

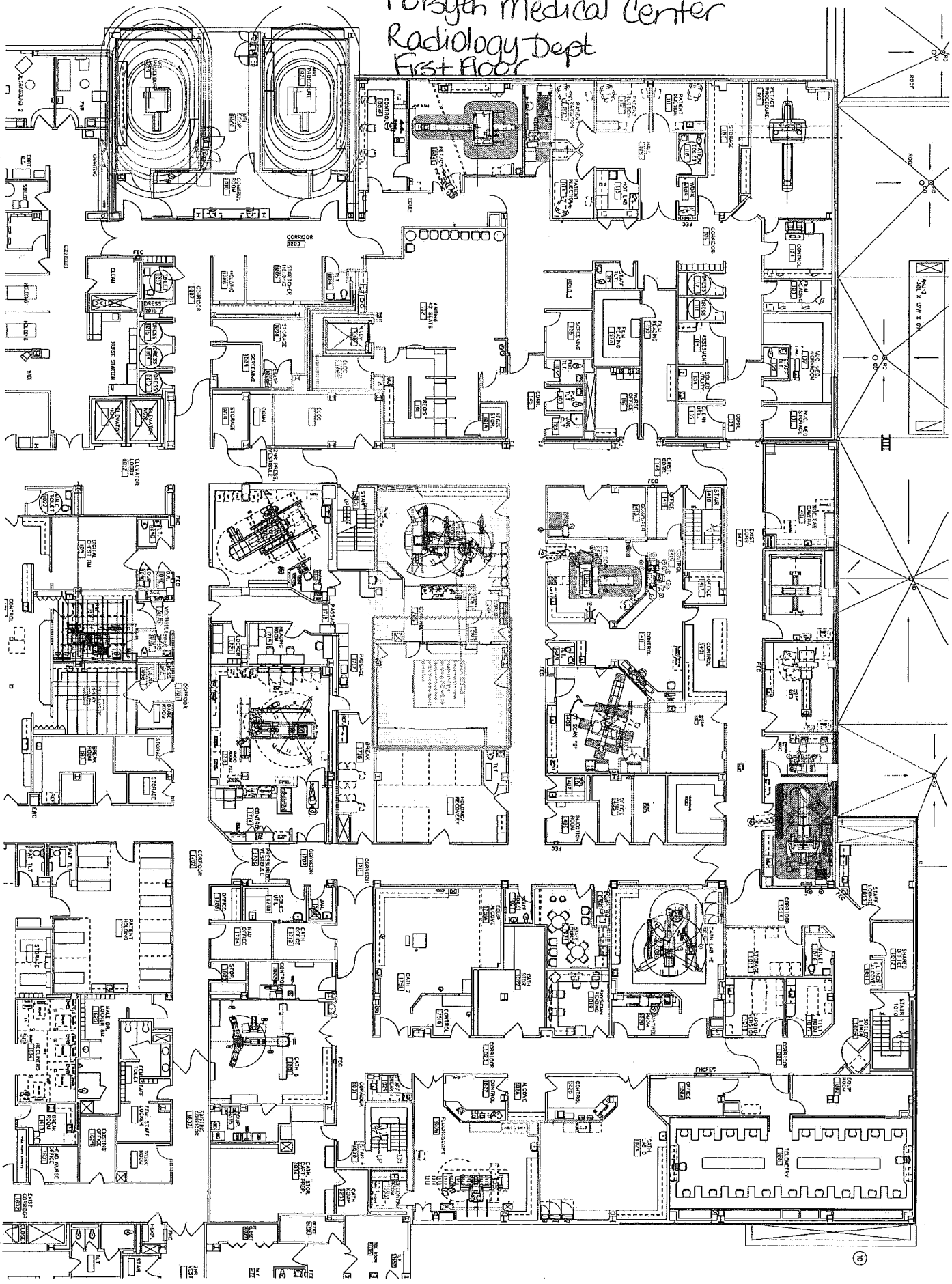
Entrance R
- CHF clinic
- Infant audiology
- Heart & Wellness
- Rehabilitation services
- Wellness programs

1. Novant Health Hawthorne Outpatient Surgery
2. Novant Health Rehabilitation Center
3. Novant Health Wound Care
4. Forsyth Nutrition Center
5. Salem Room

3333 Silas Creek Parkway, Winston-Salem, NC 27103 • 336-718-5000 • NovantHealth.org

NOVANT HEALTH

Forsyth Medical Center
Radiology Dept
First Floor



Attachment C

PROPOSED CAPITAL COSTS

Project Name: **Replace BiPlane Angiography System** October 17, 2016

Proponent: **Forsyth Medical Center (FMC)**

A.	**Site Costs**				
(1)	Full purchase price of land			$	
	Acres_____ Price per Acre			$	
(2)	Closing Costs			$	
(3)	Site Inspection and Survey			$	
(4)	Legal fees and subsoil investigation			$	
(5)	Site Preparation Costs				
	Soil Borings	$			
	Clearing Earthwork	$			
	Fine Grade For Slab	$			
	Roads Paving	$			
	Concrete Sidewalks	$			
	Water and Sewer	$			
	Footing Excavation	$			
	Footing Backfill	$			
	Termite Treatment	$			
	Sub-Total Site Preparation Costs			$	0.00
(6)	Other (specify)			$	
(7)	**Sub-Total Site Costs**			$	0.00
B.	**Construction Contract**				
(8)	Cost of Materials			$	179,550.00
(9)	Cost of GC Labor			$	219,450.00
(10)	Other			$	
(11)	**Sub-Total Construction Contract**			$	399,000.00
C.	**Miscellaneous Project Costs**				
(12)	Building Purchase			$	
(13)	Fixed Equipment Purchase/Lease			$	1,856,119.00
	Add Trade-In Value of Existing Equipment			$	8,600.00
(14)	Movable Equipment Purchase/Lease			$	
(15)	Furniture			$	
(16)	Landscaping			$	
(17)	Consult Fees				
	Architect and Engineering Fees	$	38,500.00		
	A&E reimbursable expenses		3,900.00		
	DHSR review fee		1,702.00		
	Legal Fees	$			
	Market Analysis	$			
	Other*	$	2,500.00		
	*Med gas testing, special inspections, permitting, T&B				
	Sub-Total Consultant Fees			$	46,602.00
(18)	Financing Costs (e.g. Bond Loan, etc)			$	
(19)	Interest During Construction			$	
(20)	Other (7.5% Project Contingency)			$	147,318.25
(21)	**Sub-Total Miscellaneous Project Costs**			$	2,058,639.25
(22)	**Total Capital Cost of Project** (Sum A-C above)			$	**2,457,639.25**

Attachment D

ksqdesign

2115 Rexford Road, Suite 500
Charlotte, North Carolina 28211

704.364.3400 Office

ksq.design

September 9, 2016

Mr. Jeff Bailey
Novant Health, Inc.
3600 Country Club Road, Suite 102
Winston-Salem, North Carolina 27104

Re: Novant Health | Forsyth Medical Center | Angio Room 202 Equipment Replacement
Winston-Salem, North Carolina

Dear Jeff:

We have prepared our estimate for the Angio Room 202 Equipment Replacement. The Angio Room 202 and Control Room total 808 SF. We estimate the construction labor cost will be $219,450.00 and the construction material cost will be $179,550.00. Therefore, we estimate the total construction cost to be $399,000.00.

The architectural and engineering design fees shall be $38,500.00 and estimated project reimbursables are approximately $3,900.00. The DHSR review fee is estimated to be $1,702.00. Therefore, the total estimated cost of construction, including A&E fees and reimbursables, and DHSR review fee is $443,102.00.

If we can be of further assistance, please do not hesitate to contact me.

Sincerely,

Nelson C. Soggs, AIA, LEED® AP, Associate
Senior Project Manager
KSQ Architects, PC dba KSQ Design
nsoggs@ksq.design

NELSON COFFEY SOGGS
REGISTERED ARCHITECT
7981
NORTH CAROLINA
CHARLOTTE, N.C.
9/9/2016

Attachment E

Replace FMC BiPlane Angiography System	EXISTING EQUIPMENT	REPLACEMENT EQUIPMENT
Type of Equipment (List Each Component)	Bi-Plane Angiography	Bi-Plane Angiography
Manufacturer of Equipment	Siemens Medical Solutions	Philips Medical Systems
Tesla Rating for MRIs	n/a	n/a
Model Number	522535/Axiom Artis BA	Allura Xper
Serial Number	03148	TBD
Provider's Method of Identifying Equipment	Internal Asset Numbering System	Internal Asset Numbering System
Specify if Mobile or Fixed	Fixed	Fixed
Mobile Trailer Serial Number/VIN #	n/a	n/a
Mobile Tractor Serial Number/VIN #	n/a	n/a
Date of Acquisition of Each Component	May - 2003	TBD
Does Provider Hold Title to Equipment of Have a Capital Lease?	Title	Title to be held by Forsyth Medical Center upon purchase
Specify if Equipment Was/Is New or Used When Acquired	New	New
Total Capital Cost of Project (Including Construction, etc.) <Use Attached Form>	$2,022,079	$2,457,639
Total Cost of Equipment	$1,772,079	$1,856,119
Fair Market Value of Equipment	$8,600	$1,856,119
Net Purchase Price of Equipment	$1,772,079	$1,856,119
Locations Where Operated	Forsyth Medical Center	Forsyth Medical Center
Number Days In Use/To be Used in N.C. Per Year	365	365
Percent of Change in Patient Charges (by Procedure)	None	None
Percent of Change in Per Procedure Operating Expenses (by Procedure)	None	None
Type of Procedures Currently Performed on Existing Equipment	Angiography Procedures	
Type of Procedures New Equipment is Capable of Performing		Angiography Procedures