Xelis Sales Guide

Jul. 2011

INFINITT
Healthcare

Table of Contents

INFINITT Healthcare

xelis Cardiac

Easy and powerful 2D, 3D, and 4D tools for Coronary CT Angiography and Left Ventricle Analysis

xelis 3D

Enables advanced 3D visualization and analysis tools with one-click functionality

Full Package

xelis Colon

Enhanced CT Colonography solution for easy and fast polyp detection

xelis Dental

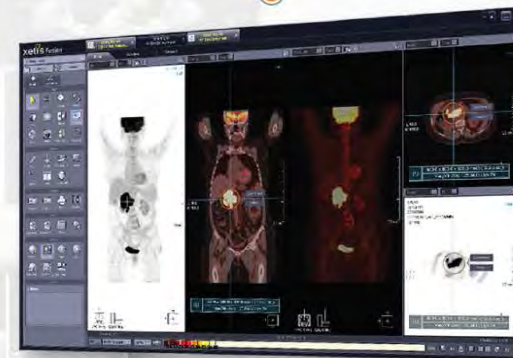Provides complete 3D information to optimize treatment planning software

xelis Lung

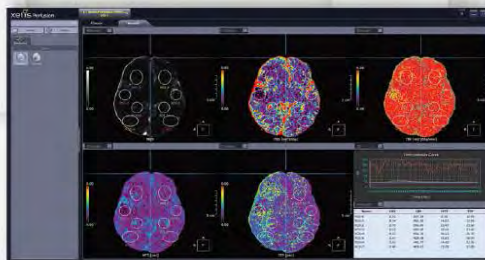Essential tool for the evaluation of the lung and lung nodules, and the comparison of serial exams

xelis Fusion

Enables you to fuse multi-modality studies, visualize 3D fused images and perform quantitative analysis with speed and accuracy

Separate Module

xelis Perfusion*

Industrial Background

Advanced visualization solutions bring a number of benefits to the radiology department including a manageable means of handling the massive data output of multislice CT scanners, the ability to produce high-quality reconstructions to enable more accurate and efficient diagnosis of orthopedic trauma, coronary artery disease, aneurysms, colon cancer and last but not least the ability to grow a practice with new exams like virtual colonoscopy or CT angiography.

Raysum   MinIP   MIP   VR

VC   Hepatobiliary   VR+2D Mix
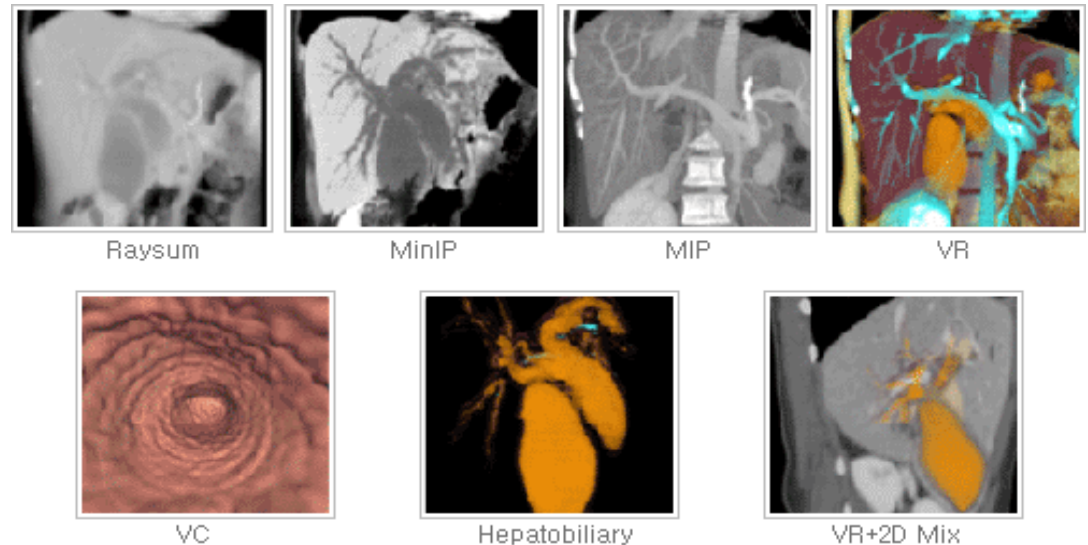
3D images helps clinicians to plan precise surgery and effective treatment by supporting with measurement of location and size of affected area and early detection of disease. And 3D images make communication with patients improved with the support of visualized material for patients' better understanding of their disease. In addition, diagnostic devices like MDCT produces large size of imaging data for better and quick diagnosis and it makes 3D(Advanced Visualization) software positively necessary for effective analysis and precise diagnosis.

Product Summary

» Key Features
- Flexible License Type
  - **Full Package** : To use all of the specialized modules to be economically feasible
  - **A specialized module** : It is selective to install & to use a specialized module
- Easy to integrate with INFINITT PACS
- Concurrent User Access
- Regular Upgrade Service : To provide the software upgrade service 2-3 times per year

» Key Functions (Advanced 3D Diagnosis Support Solution)

- **3D (BAS)**
  - 3D Volume Rendering, MIP/MinIP/MPR, Slab rendering
  - Automatic bone removal / precise manual segmentation
  - Advanced vessel analysis
  - 3D Volumetry function
- **Cardiac**
  - Automatic Axis – Chamber View (HLA, VLA, SA)
  - MPR slab review incl. 4D Cardiac MPR and VR
  - Automatic blood pool segmentation
  - Detection of LV contours and LV Analysis
  - Calcium Scoring
- **Colon**
  - Automatic Centerline Extraction
  - Bandview one-pass navigation
  - Tagged-stool Overlay on 3D
  - Second reading with MDST

- **Lung**
  - Automatic Nodule Detection(GGO and solid type nodules)
  - Automatic grow rate calculation
  - Prior-exam comparison

- **Fusion**
  - Performing two different image sets automatically
  - SUV Analysis for PET-CT
  - Follow up mode for comparing

Product Information

xelis

Advanced 3D visualization

Product information – Xelis 3D

✓ Xelis 3D provides a **diagnostic function** and is useful **to find lesions** for all the diagnostic fields.

✓ Main Application : **Angiography**, **Bronchoscopy, Gastroscopy, Bone, Hepatobiliary, Volumetry, Venography**

✓ Key Functions : **Automatic Bone Removal** and **Vessel Analysis** with user friendly Graphic User Interface.

➢**A basic workstation for reconstructing 3D images optimizes routine diagnostic workflow**

Advanced visualization and analysis tools

• **3D view**
   - MPR reformatting, Observing suspicious lesion

• **Path view**
   - Navigation along a path, Reviewing tubular-shaped organ

• **Segmentation view**
   - Supporting 2D manual, threshold-based segmentation

• **Batch view**
   - Generation a series of reformatted image

xelis 3D

Product information – Xelis Cardiac(CVA)

✓ Xelis Cardiac provides easy and powerful **2D, 3D and 4D display** and analysis tools for evaluation of Coronary CT Angiography.

✓ Main Application **: Coronary CT Angiography**

✓ Key Functions : **Automatic Removal of Rib Cage, Auricle and ventricle** helps to improve productivity with only **one-click vessel tracking**.

➤**Xelis Cardiac offers fast and accurate cardiac vessel analysis with comprehensive image analysis and measurement tools, soft plaque analysis and efficient communication for referring physicians and patients.**

Powerful 2D and 3D Cardiac Review

- **Automatic rib cage removal**
- **Auto Segmentation of traced coronary artery**
  - **- Vessel protection**
  - **- Vessel list**
- **Powerful MPR-Slab Review**
  - **- Cardiac axis view**
- **4D Cardiac MPR & VR Review**

xelis Cardiac

Product information – Xelis Cardiac(CVA)

✓ Key Features

- Automatic Cardiac Axis view – Chamber view (HLA, VLA, SA)
- Powerful MPR slab review including 4D Cardiac MPR and VR image to visualize cardiac wall motion and contractility
- Automatic blood pool segmentation, detection of LV contours and LV Analysis
- Calcium Scoring : support for Agatston score and volume measurement

Accurate and Fast Vessel analysis

- **One click auto tracking**
- **Manual vessel tracking**
- **C-CPR (Compare Curved Planar Reformation)**

- **Stenosis analysis with 2-point/ 3-point methods**

- **Soft plaque analysis**

- **Calcium Scoring**

xelis Cardiac

Product information – Xelis Cardiac(CFA)

✓ Xelis Cardiac(CFA) provides quantitative analysis tools for the left ventricle, including parameters such as ventricle volume, ejection fraction and wall motion

✓ Key Function : **LV / RV Functional Analysis, Ventricle Volume Analysis**

Quantitative analysis tools for the left ventricle

- **Multi-phase cardiac CT study loading**
- **Ventricle Volume Analysis**
  - **Automatically selected ED and ES phases**
  - **Automatic LV contour detection**
- **Ventricle Volume Analysis**
  - **Ejection Fraction(EF)**
  - **Myocardial volume**
  - **Wall thickness (ED/ES)**
  - **Wall thickening, wall motion, wall intensity**
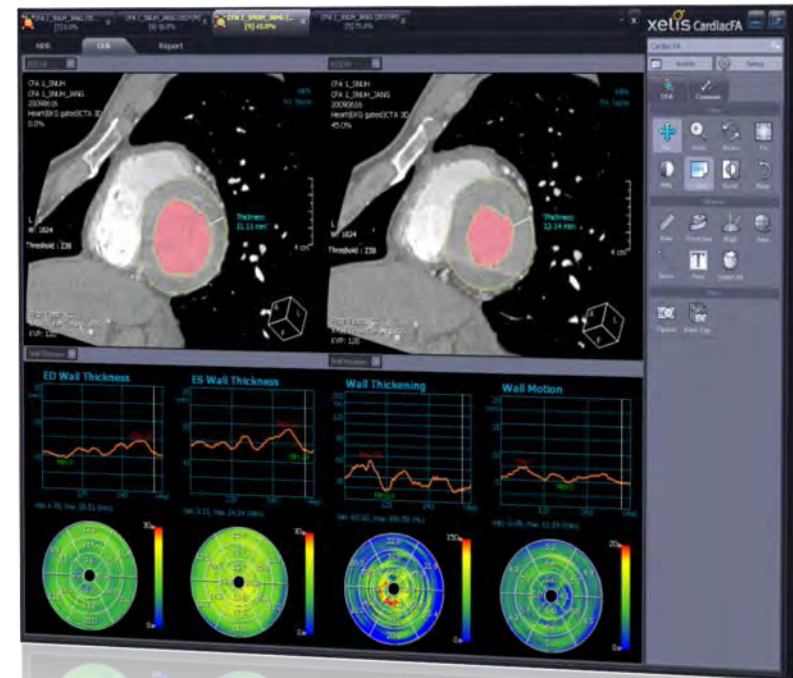
Product information – Xelis Colon

✓ Xelis Colon provides panoramic endoluminal fly-through-commonly called 'Band View' – and the seamless overlay of tagged stool during 3D fly-through, are substantial advances from the conventional endoluminal or flattening display methods.

✓ Main Application : **CT Colonography**

✓ Key Functions : **Easy-Define-Path, Band View, Tagged-Stool Overlay, Second Reading with MDST**

Improved Workflow ...
Accurate Image Analysis ...
Enhanced Productivity …

Xelis-Colon is a dedicated CT colonography (CTC) Solution designed to help radiologists to read CT images more accurately and efficiently.

Xelis-Colon offers greater diagnostic capability through innovative fly-through navigation technique.

xelis Colon

Product information – Xelis Colon

Band-View

Center-line

Line-slot
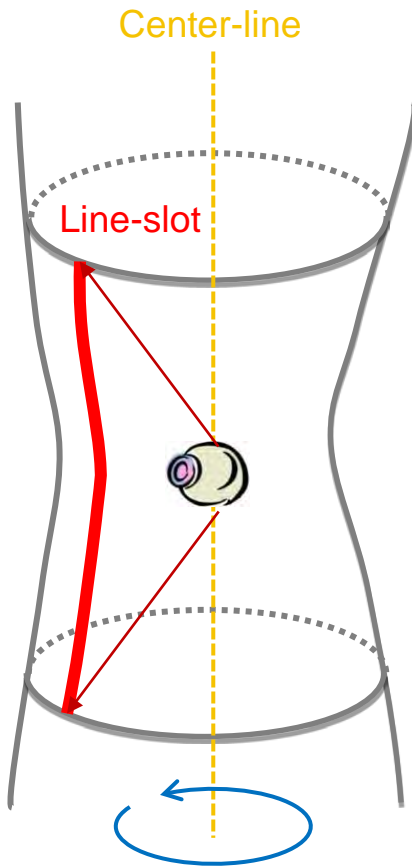
Band-View covers 360 degree.

10°　　　350°　　　10°

Line-slot

Quality

80 pts
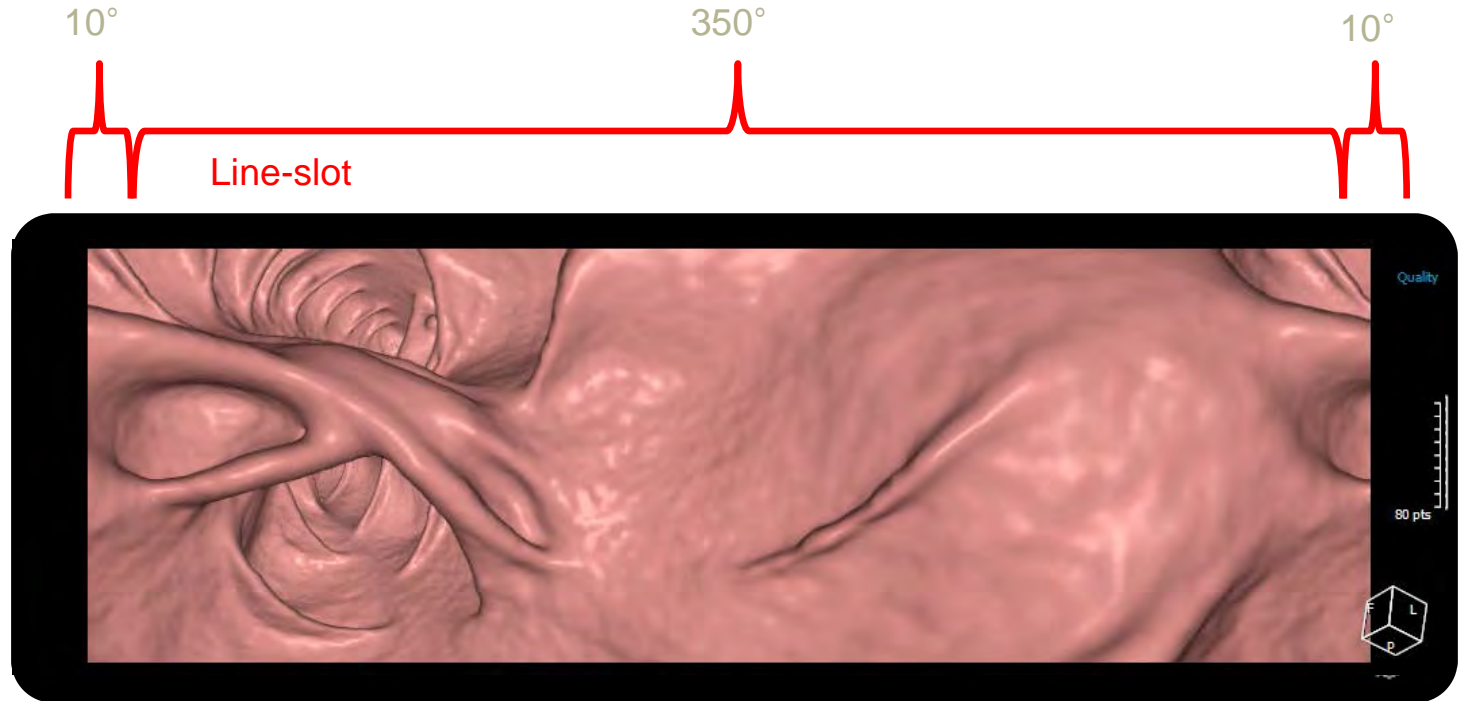
> **New unfolded viewing method without distortion**
> **One-Pass navigation is sufficient for entire colon wall**

xelis Colon

Product information – Xelis Colon

center line

Endoluminal Navigation

center line

Band-View Navigation

xelis Colon
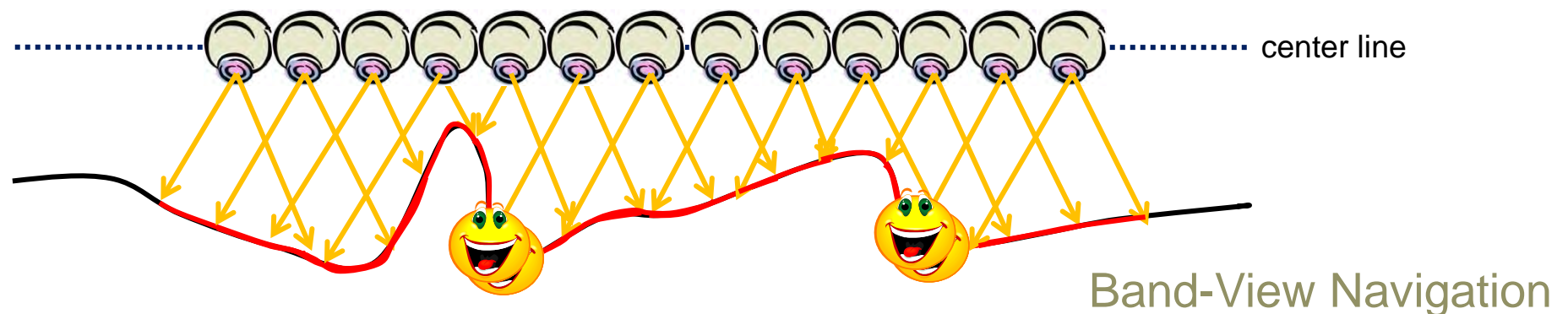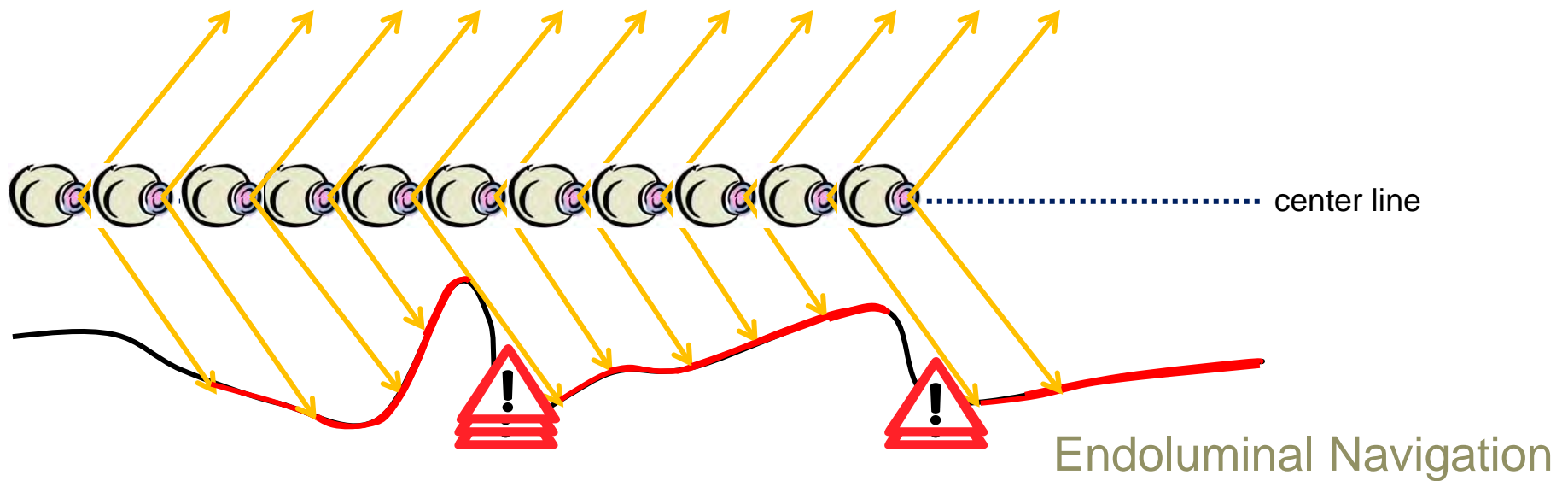
Product information – Xelis Lung

✓ Xelis Lung provides the helpful second-opinion for pulmonary nodule detection on MDCT images

✓ Main Application : **Chest CT Interpretation**

✓ Key Functions :
- **Fully automatic nodule detection** algorithm
- **Automatic GGO(Ground-Glass Opacity) & Solid type nodules Detection**
- **Automatic grow rate calculation**
- **Prior-exam comparison (Follow-up review)**

➢**A basic workstation for reconstructing 3D images optimizes routine diagnostic workflow**

Automatic Lung   Nodule Detection

- **The detection rate is over 80% for solid nodules (>3 mm diameter) and GGOs (>6 mm diameter)**
- **Provides the accurate volume size of the detected nodule**
- **The Growth rate of the detected nodule is important for judging whether it needs a biopsy.**

xelis Lung

Product information – Xelis Lung

> ➤ **Regions labeled as nodules are highlighted on the images for review by a user (Confirm or Reject)**

> ➤ **GGO (Ground-Glass Opacity) type nodules can be automatically detected as well as solid type nodules**
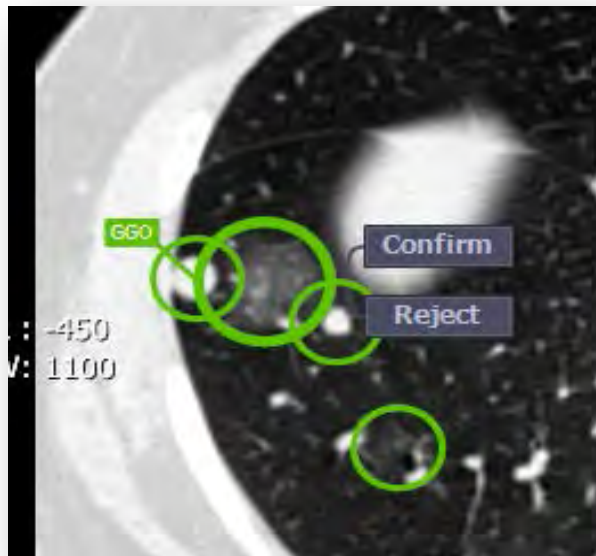
Automatically detected nodules: Solid and GGO types
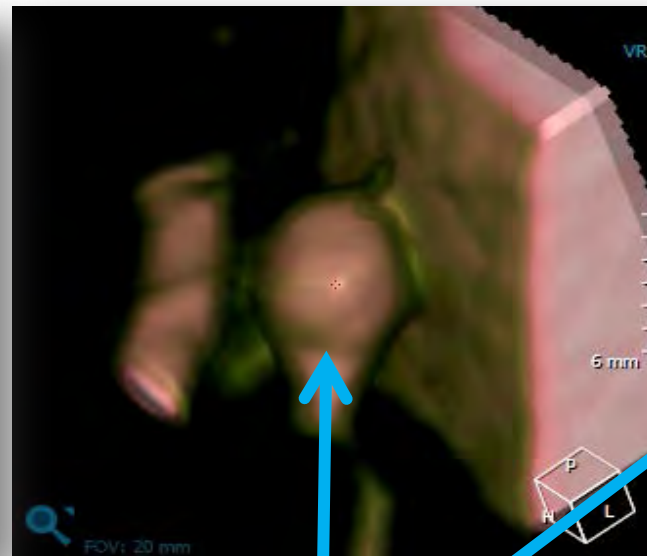
VR Rendition of Solid nodule
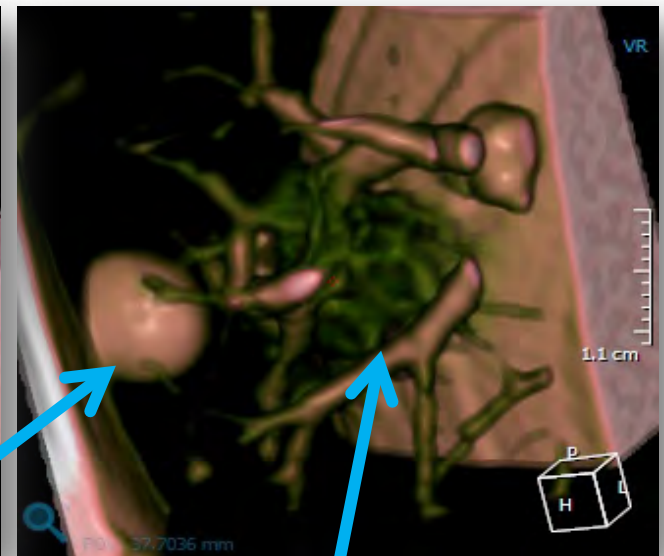
VR Rendition of GGO nodule

xelis Lung

Product information – Xelis Fusion

✓ Xelis Fusion performs two different image sets from different modalities automatically.

✓ Main Application : **Nuclear Medicine**

✓ Key Functions :
  - **SUV Analysis for PET-CT** such as Body weight, Lean body mass, Body surface area
  - **Follow up mode** for comparing current and previous PET/CT fusion studies

Multimodality Image Fusion

- **Xelis-Fusion enables automatic and accurate image fusion between multi-modalities (e.g. CT-PET, CT-SPECT, MR-PET, MR-SPECT) or single modality (e.g. MR-MR, CT-CT and MR-CT)**

- **Provides manual registration**

- **New Fused 3D**
  - VR+MIP-with-color overlay

xelis Fusion

Comparison

xelis

Advanced 3D visualization
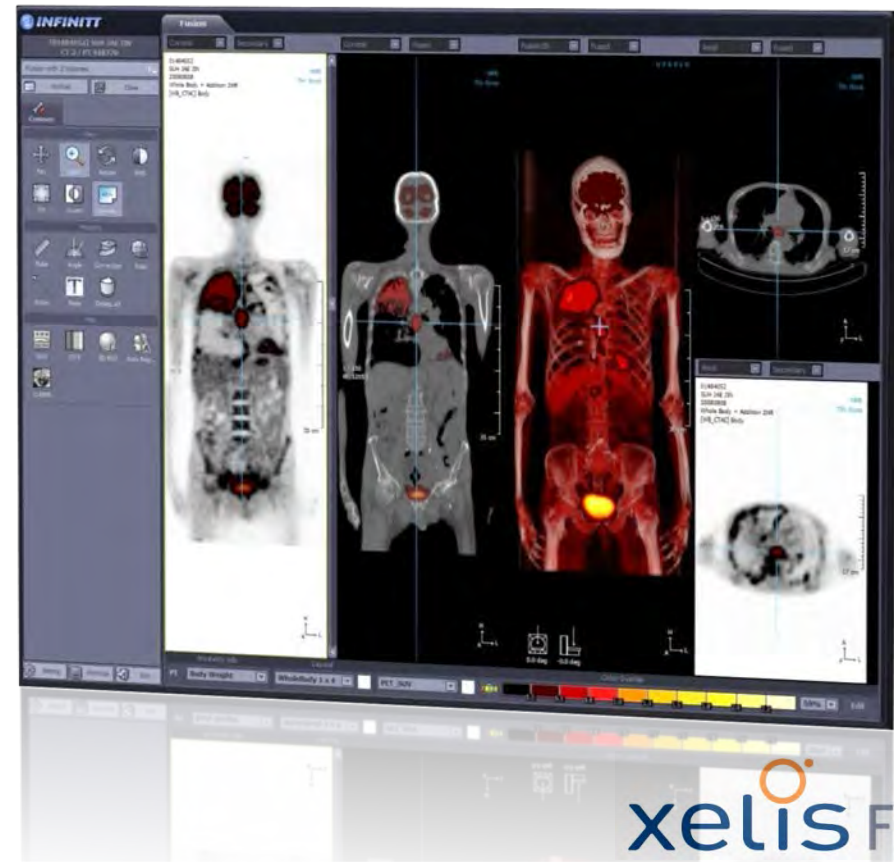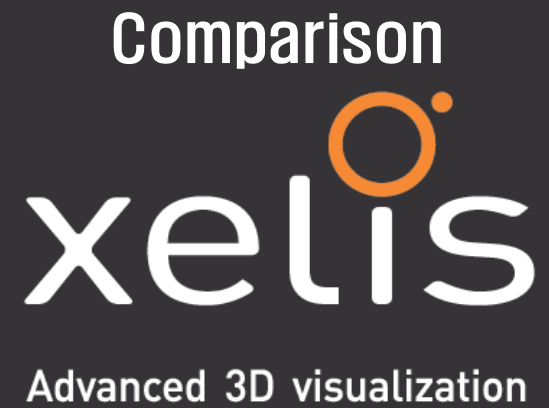
Comparison Chart

Specialty	Features	iNtuition	Vitrea	Xelis	Gx Version*
Colon	Path Generation	O	O	O	O
	Band-view, Endo navigation	△	△	O	O
	Polyp Measurement	O	O	O	O
	Colon CAD (MDST)	O	O	O	O
	Electronic Cleansing	O	O	X	O
Cardiac	Rib-cage Removal	O	O	O	O
	Vessel Centerline Extraction	O	O	△	O
	Soft-plaque Analysis	△	O	X	O
	LV Analysis	O	O	△	O
	RV Analysis	X	O	X	O
	Automatic Segmentation	X	O	X	O
	Calcium Scoring	O	O	O	O
	MR Cardiac FA	X	X	X	O
	MR Cardiac Delayed Enhancement	X	X	X	O
	XA, CT Cardiac Registration	X	X	X	O
Fusion	Automatic Registration	O	O	O	O
	CT/MR/PET/SPECT Overlay	O	△	O	O
	Standard Uptake Value	O	O	O	O
	Follow-up Mode	X	O	O	O
	ROI Analysis	△	O	O	O
Liver	Tumor Measurement	O	O	△	O
	Liver Volume Measurement	X	O	X	O
	Portal, Hepatic Vein Segmentation	X	X	X	O
	8-Segment Classification	X	X	X	O
Perfusion	CT Brain Perfusion	O	O	△	O

* Gx Ver. will be released by Mar 2013 under the WBS(World Best Software) project supported by Korean Government.
** △ : Support but need to improve performance

- **Currently Not Supported but will be supported by Gx**
- **Supported by Xelis at current but Not supported by competitors**

Comparison Chart

Specialty	Features	iNtuition	Vitrea	Xelis	Gx Version
3D	3D VR (Quality, Speed)	O	O	△	O
	Auto Bone Removal (Abdomen, LE)	O	O	△	O
	Auto Bone Removal (Head & Neck)	O	X	X	O
	BAS	O	O	O	O
	Batch Reformat Functions	△	O	O	O
	Flythrough	O	O	O	O
	Point-click Segmentation	O	O	△	O
	2D-based Interactive Segmentation Toolkit	X	X	O	O
	Vessel Analysis (CT)	O	O	O	O
Lung	Lung CAD	O	O	O	O
	Nodule Matching, Follow-up	O	O	O	O
	GGO Detection/Measure	X	△	△	O
	RECIST support	X	X	X	O
	Emphysema(COPD) Analysis	X	X	X	O
	Bronchus Analysis	X	X	X	O
MR Breast	Multi-phase MR	O	X	X	O
	Perfusion and Volumetry	X	X	X	O
Server-side Processing	Thin-Client System	O	O	△	O
	Scalability, Load Balancing	O	O	X	O
	Web Admin tools	O	O	X	O
	Web-based Client Viewer	O	O	X	O
	APS	O	X	X	O

* Gx Ver. will be released by Mar 2013 under the WBS(World Best Software) project supported by Korean Government.

** △ : Support but need to improve performance

Currently Not Supported but will be supported by Gx

Supported by Xelis at current but Not supported by competitors

Know Your Competitors

CT Manufacturers	CT Model	CT Channels	3D Workstation
GE Healthcare	Discovery CT 750 HD	up to 500 Slices for 4D CTA & Perfusion Studies	Advanced Workstation (AW)
	LightSpeed VCT XTe	64	
	LightSpeed VCT	32	
	Optima CT660	64 or 128	
	Optima CT580	8 or 16	
	BrightSpeed Elite	64	
	BrightSpeed Series	4, 8 & 16	
	Brivo CT325	2	
	Widebore CT for RT		
	Discovery CT590 RT	16	
	LightSpeed RT16		
	LightSpeed RT		
Siemens	SOMATOM Definition Flash (Dual Source CT)	2 x 128 slices	syngo.via
	SOMATOM Definition AS FAST CARE	128 Slices (AS+)	
		64 Slices (AS)	
	SOMATOM Definition AS Excel Edition	128 Slices (AS+)	
		64 Slices (AS)	
	SOMATOM Definition AS	40 Slices	
		20 Slices	
	SOMATOM Definition AS Open	64 Slices	
		20 Slices	
	SOMATOM Emotion 6/16 (Multislice CT)	16 Slices	
		6 Slices	
	SOMATOM Emotion Excel Edition	16 Slices	
	SOMATOM Spirit (Multislice CT)	Spirit 2 Slices	
		Spirit Power 2 Slices	
	SOMATOM Sensation Open	40 Slices	
Toshiba	Aquilion One	640	Vitrea, Voxar
	Aquilion Premium	320	
	Aquilion Prime	160	
	Aquilion CXL	128	
	Aquilion 64	64	
	Aquilion 32	32	
	Aquilioin 16	16	
	Activion 16	16	

Know Your Competitors

CT Manufacturers	CT Model	CT Channels	3D Workstation
Philips	Brilliance iCT/iCT SP	128 or 256	Volume Vision on iSite PACS Brilliance Everywhere
	Ingenuity CT	64 (128 slices)	
	Brilliance CT 64	64	
	Brilliance CT 40	40	
	Brilliance CT 16	16	
	MX CT 16	16	
	Brilliance CT Big Bore (Oncology)	16	
	Brillance CT Big Bore (Diagnostic Imaging)	16	
	MX 6000 Dual	16	
	MX 4000 Dual	16	
Hitachi	Medical Systems ECLoS 4/8/16	4 or 8 or 16	-
	SCENaRIa 64ch Multislice CT	64	
NeuroLogica	bodyTom Portable CT-Scanner	32 Slices	3D S/W Package

3D Workstation only

Company	3D Workstation
Terarecon	Aquarius, iNtuition
Aze	Virtual Place
ZIOsoft	Ziostation, Zioterm
Vatronix	V3D
Fovia	HDVR
MeVis Medical Solutions	Visia
Intrasense	Myrian
SHINA Systems	3Di
AGFA HealthCare	IMPAX
FUJIFILM	SYNAPSE 3D
GEMED	GEMD-PACS 3D
IMAGE Information Systems	iQ-VIEW PRO 3D
itz-medi.com	Hyper.PACS and 3rd Party SW
KONICA MINOLTA	Acies
Medigration	ImageVision
PROTEC	PROPAXX and/or CONAXX
SECTRA	IDS7/dx IDS7/cx
VISAGE IMAGING	Visage 7
VISUS	JiveX Diagnostic 3D

Business Strategy

xelis

Advanced 3D visualization

Business Models

CT / Accessory Vendor
- Sales Partnership with CT (Accessory) Vendors / Local Dealers
- Sales to Hospitals with New/Replaced CT Scanners

OEM
- OEM Sales of Particular Module (BAS, Colon, Lung, etc.) to CT Manufacturers
- OEM Sales to PACS Company

xelis
Advanced 3D visualization

INFINITT PACS
- Sales to New/Existing INFINITT PACS Users
- Demo License Promotion
- Sales Promotion under Smart Service Contract

Standalone
- Sales to Hospitals with existing CT Scanners
- Operation time Reduction by 70-80% than CT Console

Set-up Target Customer (Short-term)

1. Sales to Existing INFINITT PACS User
2. Sales to Customers looking for mid or entry level 3D Solution at Community Hospitals with Low Level Application
3. Sales to Customers with Max. 64ch CT Scanners
   - Partnership with CT Vendors / Local Dealers
   - Sales of Rapidia to Customers with 16 or less channel CT Scanners
4. Seminars / Exhibitions / Hands-on Workshop Participation
   - Specialty Seminars (Thoracic & Cadiovascular, Coloproctology, Nuclear medicine, etc.)

Community Hospital

GBU

Dealer

Hospital Survey List

Hospital		XXX Hospital	YYY Hospital
Hospital	Name	XXX Hospital	YYY Hospital
	No. of Beds	833	480
	Hospital Type	Medical Center	Regional Hosp.
CT modality	Number of CT	2	1
	Vendor	Toshiba / Siemens	Philips
	Channel	Toshiba 640ch / Siemens 256ch	64ch
	Installation year	Toshiba : 2010. 6 Siemens : 2011. 1	2009. 6
	Console W/S	Siemens / Toshiba / Philips	Philips W/S
	3D W/S	Aze / Vitrea / Terarecon	No
	Number of users	5 (Radiologist 1 / CT Team 4)	3 (Radiologist 1 / CT Team 2)
3D	3D Lab	No	No
	Main Operator	Radiographer (Vitrea) Radiologist (Siemens Syngo via)	Radiographer
	Number of Case (Per Day)	40 case	30~40 case
	Main Sub-Specialty	Abdomen+Lung 50%, Brain 30%	Brain 50% Abdomen 25% Lung 20%
General Information on CT / 3D Industry	MDCT Society	No	
	MDCT of 3D Society	No	
	CT Market share per Vendor	GE 31%, Philips 26%, Siemens: 22%, Toshiba: 19% Others: 2%	
	Medical cost of national health insurance	No	
	Popular CT Channel in XXX	16 (non Cardiac), 64 (Cardiac)	

Sales Point

1. **Seamless Integration with INFINITT PACS**
   - Execution Xelis from INFINITT PACS Worklist
   - Secure & Easy management of CT Raw Data with INFINITT PACS
   - Powerful 2D Viewer & Worklist
   - Support Hanging Protocol

2. **Price**
   - Flexible License Type (Full Package / Specialized Module(s) only)
   - Concurrent User Access
   - Price Competitiveness

3. **Regular Upgrade**
   - Minor update service 2-3 times per year
   - Product Roadmap open for commitment of free Gx upgrade to customer

4. **Smart Service**
   - Smart Service package with INFINITT PACS and Xelis

Quotation

> **Full Package** > Separate Module(s)

Product No.	Product		Quantity	Unit Price	Sub Total	Description
INFTG3-DS1	3D Dedicated Solution	Xelis Colon	X	$xx,xxx	$xx,xxx	
INFTG3-DS2		Xelis Cardiac	X	$xx,xxx	$xx,xxx	Ca Scoring, CT Cardiac, Cardiac FA
INFTG3-DS3		Xelis Lung	X	$xx,xxx	$xx,xxx	
INFTG3-DS4		Xelis Fusion	X	$xx,xxx	$xx,xxx	
INFTG3-DS7		Xelis 3D	X	$xx,xxx	$xx,xxx	
INFTG3-DSF		Xelis Full Package	X	$xxx,xxx	$xxx,xxx	Inclusive All Xelis features
	Subtotal				$xxx,xxx	

Xelis software can be packaged in either separate module(s) or a full package.

Sales Package I

INFINITT PACS(MiniPACS) + Xelis

		Configuration	Std. Price (Price is subject to change as per local market price)
MiniPACS	H/W	**HP ML350** - CPU : 2GHz - RAM : 4GB **HP MSA D2600** - 10TB (Available) Rack (22U) - 17" LCD Monitor - SMART-UPS 1500RM USB(1.5K Rack Type UPS)	-
	S/W	INFINITT PACS Server Storage Management System INFINITT PACS Acquisition Manager INFINITT PACS Network Gateway INFINITT PACS Archive Manager INFINITT PACS Purge Manager	-
		3D Solution - Xelis Colon - Xelis Cardiac - Xelis Fusion - Xelis 3D - Xelis Full Package	-
	3rd Party S/W	DBMS	-
	Service	On call	-
Overall			H/W + 3rd Party S/W + INFINITT S/W

MiniPACS Network Diagram
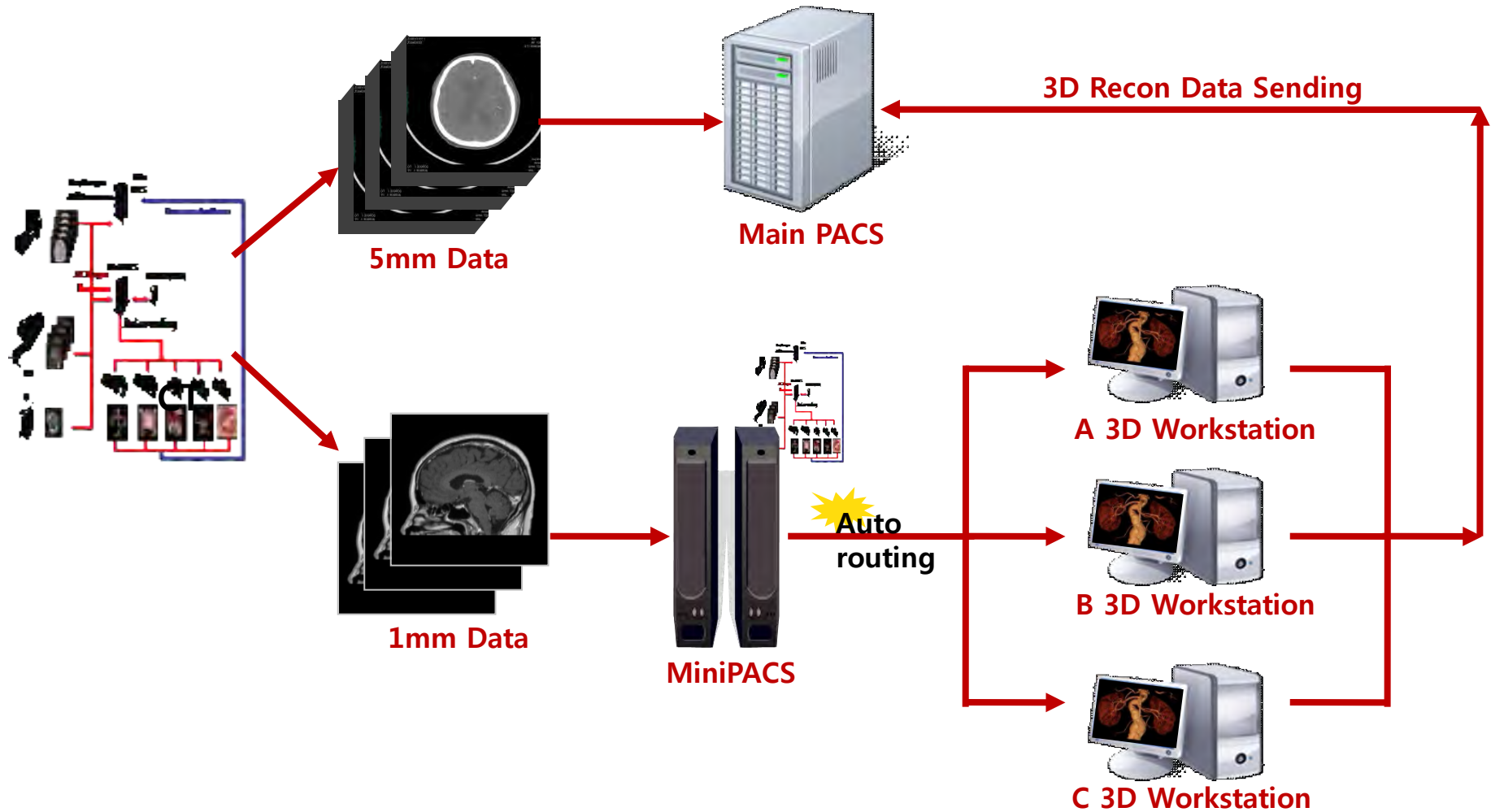
5mm Data

Main PACS

3D Recon Data Sending

1mm Data

MiniPACS

Auto routing

A 3D Workstation

B 3D Workstation

C 3D Workstation

Sales Package II

		Configuration	Std. Price (Price is subject to change as per policy)
Stand-alone	H/W	**HP Z400** 6-DIMM Workstation - CPU : 3Ghz - RAM : 8GB - HDD : 500 GB - OS : Windows 7 Professional 64-bit - Etc.	-
	S/W	3D Solution - Xelis Colon - Xelis Cardiac - Xelis Fusion - Xelis 3D - Xelis Full Package	-
	Service	On call	-
Overall			H/W + Xelis Package

Standalone Network Diagram

CT

1mm Data

3D Workstation

3D Recon Data Sending

5mm Data

Main PACS
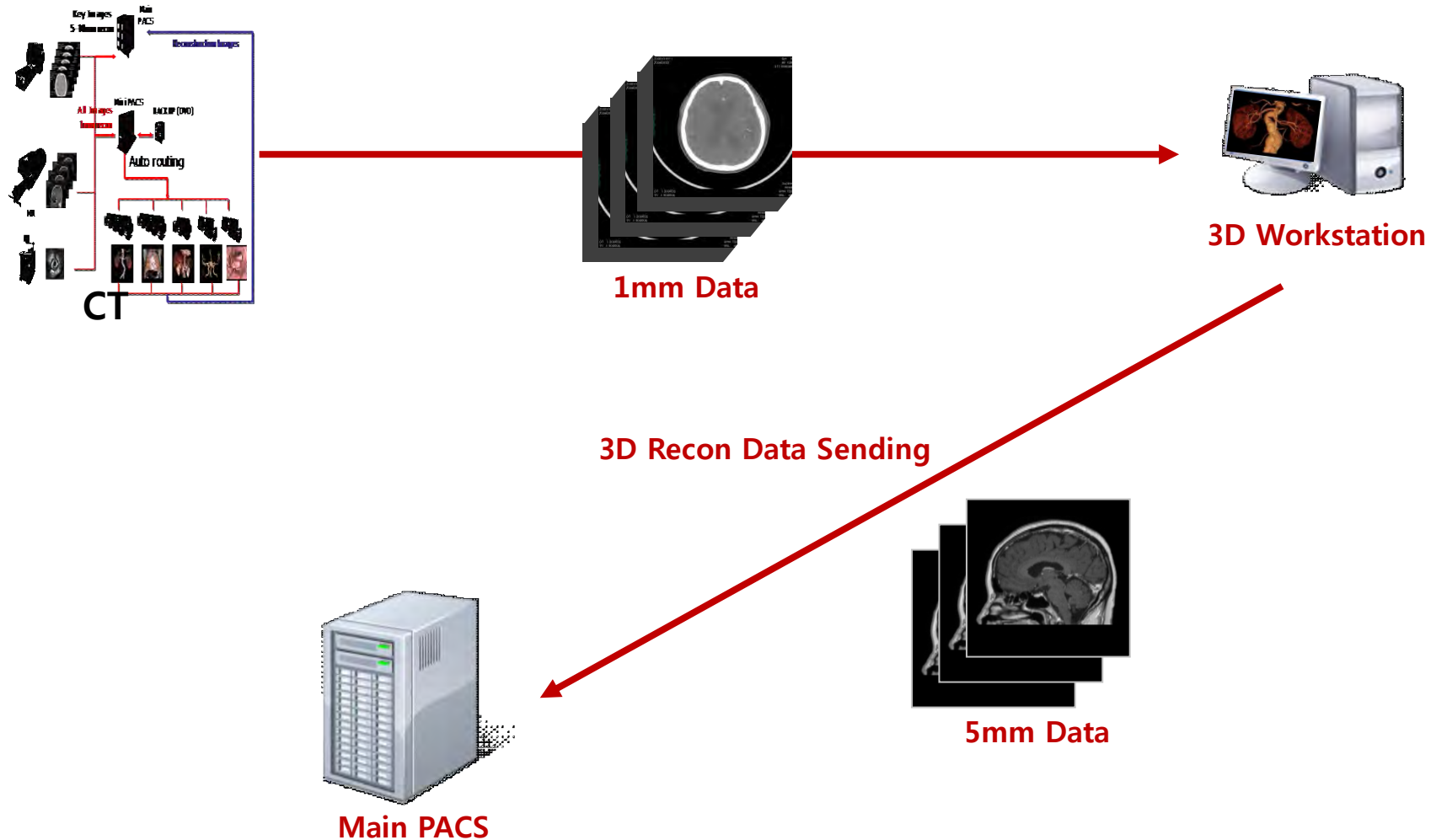
Appendices

Advanced 3D visualization

Top Advanced Visualization Customer Considerations

Advanced Visualization and Clinical Applications End-user Research: Top Considerations (North America), 2009 (N=103)

Legend: ■ Strongly Agree   ■ Slightly Agree   ■ Neither Agree Nor Disagree   ■ Slightly Disagree   ■ Strongly Disagree

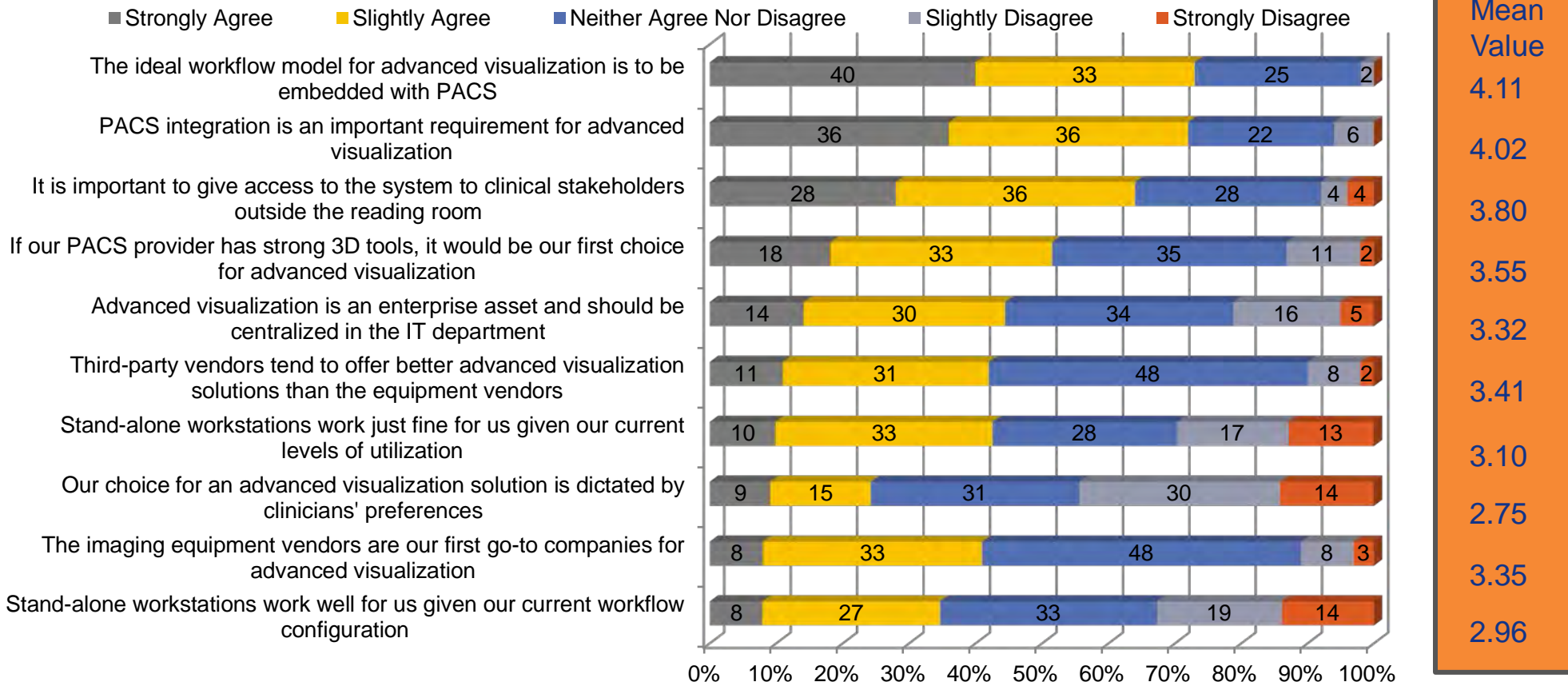| Statement	Strongly Agree	Slightly Agree	Neither Agree Nor Disagree	Slightly Disagree	Strongly Disagree	Mean Value
The ideal workflow model for advanced visualization is to be embedded with PACS	40	33	25	2		4.11
PACS integration is an important requirement for advanced visualization	36	36	22	6		4.02
It is important to give access to the system to clinical stakeholders outside the reading room	28	36	28	4	4	3.80
If our PACS provider has strong 3D tools, it would be our first choice for advanced visualization	18	33	35	11	2	3.55
Advanced visualization is an enterprise asset and should be centralized in the IT department	14	30	34	16	5	3.32
Third-party vendors tend to offer better advanced visualization solutions than the equipment vendors	11	31	48	8	2	3.41
Stand-alone workstations work just fine for us given our current levels of utilization	10	33	28	17	13	3.10
Our choice for an advanced visualization solution is dictated by clinicians' preferences	9	15	31	30	14	2.75
The imaging equipment vendors are our first go-to companies for advanced visualization	8	33	48	8	3	3.35
Stand-alone workstations work well for us given our current workflow configuration	8	27	33	19	14	2.96

Rating Scale Anchors: 1=Strongly Disagree, 5=Strongly Agree

The two statements that resonate best in the mind of U.S. customers is that the advanced visualization solution ought to be either embedded(4.11), or at least closely integrated (4.01) with PACS. If PACS vendors offered the same level of functionality as the specialized vendors, they would be in the best position to deliver this component of the imaging IT ecosystem (3.55), however it is the independent advanced visualization vendors that are in highest regard for delivering the best solutions, higher than the equipment vendors (3.41), even thought the latter are the often the customers' first go-to-companies (3.35). Further, advanced visualization is increasingly viewed as an enterprise asset (3.80) that should not be confined to the realm of the imaging department and as such, it seems suitable to be a function that is centralized in the IT department (3.32).

Configuration

❖ Recommended Hardware

INFINITT Xelis 3D software has been optimized through multi-threaded technology and special GPU computing power. Although Xelis 3D runs on the standard PC equipment, we highly recommend installing the software on a recent system to maximize your experience. The recommended hardware specifications are as follows:

- CPU: **Intel Core2Quad CPU** (Q6600, Q6700, Q9300, or higher)
- Memory: **DDR2 PC2-6400 8GB**
- HDD: **SATA/SATA2** HDD (Faster is better), 2 separate physical drives are recommended. (10GB for spool disk, More than **500GB** for image storage)
- VGA: **ATI Radeon HD 3850 512MB** (or higher)
- LCD Monitors: **1600 x 1200 x 32bpp** display (Dual monitor configuration recommended)

❖ Operating System (OS)

INFINITT Xelis 3D software has been released with 2 editions in a single installation package, win32 edition and x64 edition. We recommend installing the x64 edition if possible, since the win32 edition of INFINITT Xelis 3D is not able to handle more than 2GB of memory regardless of the physical memory available. To install the x64 (64bit) edition, you have to install one of the 64bit Windows on your system.

- 32bit Windows
  Microsoft Windows XP Home/Professional
  Microsoft Windows Vista Home/Professional/Business/Ultimate
  Windows 7
- **64bit Windows**
  Microsoft Windows XP Professional 64bit Edition
  Microsoft Windows Vista Home/Professional/Business/Ultimate (x64 Edition)
  Windows 7 (64bit)