Summary of Competitive overview: ISP 9_Draft

ICAP M2O

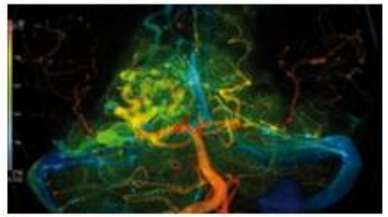
Sources: 2016 pre-RSNA training deck, ISCV+AV training

Competitive overview on Neurology

ISP	GE	Siemens	Toshiba /Vital	Relevant niche players
CT Brain Perfusion (+ summary maps)	CT Perfusion 4D Neuro	Syngo.CT Neuro (Volume) Perfusion	CT Brain Perfusion CT Brain Analysis 4D Olea Sphere	IschemiaView: RAPID
MR Neuro Perfusion (+ mismatch)	BRAIN View	Syngo.MR Neuro Perfusion & Dynamics Syngo.MR Neuro Tumor	Olea Sphere	
MR Diffusion (+ FiberTrak)		Syngo.MR Tractography		
MR iViewBOLD		Syngo.MR Neuro fMRI		
MR SpectroView	PROBE (acquisition, processing, viewing)	Syngo.MR Spectro CSI (and other research app's)		
MR Permeability		Syngo.MR Neuro Perfusion		
MR Subtraction				
MM AVA (for brain)	Autobone Vessel IQ Xpress	Syngo.CT Neuro DSA	CT Circle of Willis MR Vascular	
MMTT (for brain)	Integrated Registration	syngo.PET&CT Onco Multi-time-point syngo.MR OncoCare	Mirada Oncology Fusion MR Brain Tumor Olea Sphere: 4 brain tumor app's	
NM NeuroQ FDG (by Syntermed)	Cortex ID Suite	Syngo.PET Neuro DB Comparison		MIM Neuro
NM NeuroQ Amyloid (by Syntermed)		Syngo.PET Amyloid Plaque		
NM NeuroQ EQuAL (by Syntermed)				
Multi-modality Viewer (MMV)	BRAIN View	Syngo.(MR) General Engine Multimodality 3D Routine Reading	Olea Sphere: Longitudinal Analysis Olea Vision	
LoBI NEW			Olea Sphere Neuro -?	
NeuroQuant NEW	Co-marketing (scanners, cloud)			NeuroReader, Quantib

GE Healthcare

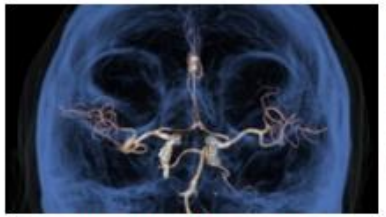
option in READY View



AngioViz

AngioV…s in a single… infor… in a DSA time… under… …cular flow.

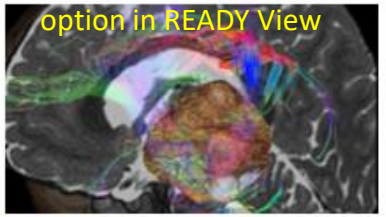
iXR Viewing (in MMV)



Autobone & VesselIQ Xpress

Autobon… Xpress provid… …ly acces… …y tool… with v… …D angiog…

MM Advanced Vessel Analysis (AVA)



BRAIN View

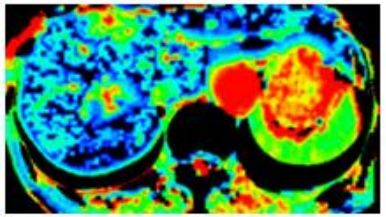
MR Diffusion

MR T2* (Neuro) Perfusion

MR IViewBOLD

MR FiberTrak

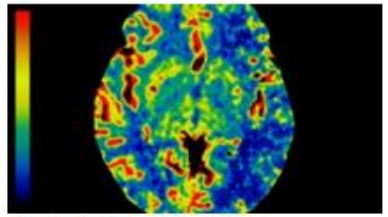
Multi Modality Viewer (MMV)



CT Perfusion 4D Multi-organs

…'s CT Perfus… …ans is a f… …mated …yzing C… …es …ted to sti… …giogenesis.

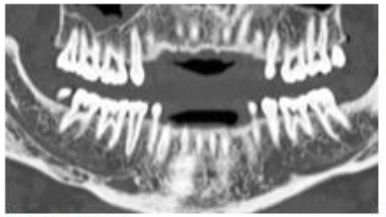
CT Brain Perfusion



CT Perfusion 4D Neuro

GE's CT P… …Neuro is a fast, ea… …nated softw… …T Perfus… …d to stroke a… angiogen…

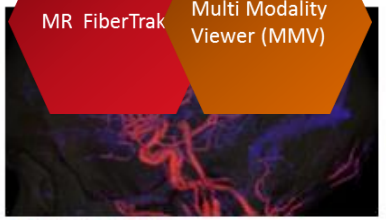
CT Brain Perfusion



DentaScan

DentaScan… …s real time Oblique … reforma… …c to CT dental ima…

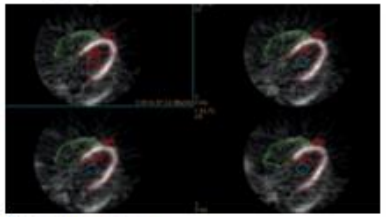
CT Dental Planning



Dynamic Shuttle

Dynami… …vides the ability … visua… …culature in a dy… …raphy exam.

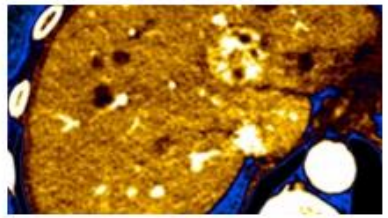
MM Advanced Vessel Analysis (AVA)



Dynamic VUE

Dynamic… …make optimu… …rmation PET ar… …s provid… …amic and gat…

NM Viewer



GSI Viewer

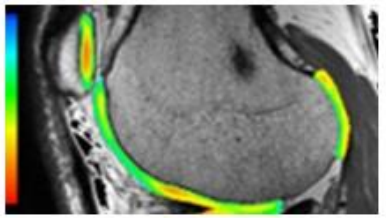
Gemstone S…ectral Imaging (GSI) is a n…vel dual energy applic… …s rapid kV switchi… …the dual energy … …ost simultaneously.

Integrated Registration

Re…

Multi Modality Tumor Tracking

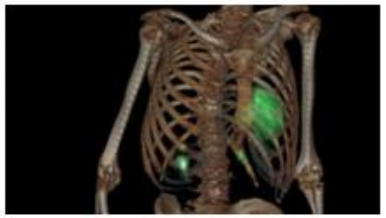
Multi Modality Viewer (MMV)



READY View

READY Vi… …get the most fr… …metric exams… …ysis of MR do… …le images … …ocation.

Multi Modality Viewer (MMV)

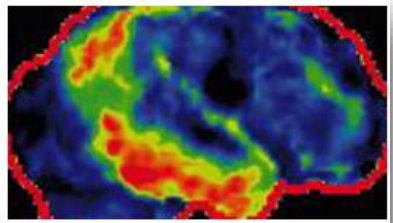


Volume Viewer

Vo… …p… …e-o… …d da…

Multi Modality Viewer (MMV)

CT Viewer

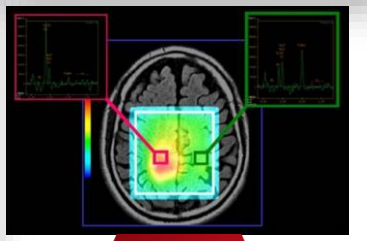


CortexID Suite

F… …ed

NM NeuroQ FDG

NM NeuroQ Amyloid



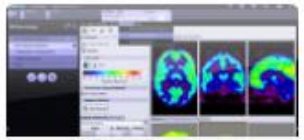
PROB…

Map m… …from single v… …hift imaging … …ocessing and visuali… …ded to help characterize brain lesions.

MR Spectroview

SIEMENS

syngo.via

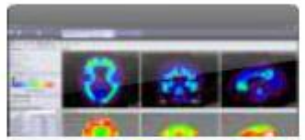


syngo.MI Neuro DB Creation

syngo.SPECT Striatal Analysis

NM Neuro FDG

NM Viewer



syngo.SPECT Neuro DB Comparison

NM NeuroQ Amyloid

syngo.MR Spectroscopy Research

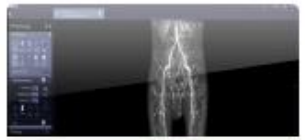
CT Brain Perfusion

MM Advanced Vessel Analysis (AVA)

syngo.CT Dynamic Angio

MM Advanced Vessel Analysis (AVA)

CT Brain Perfusion



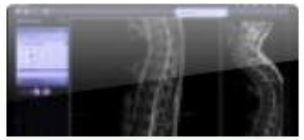
syngo.CT DE Direct Angio

MR Diff

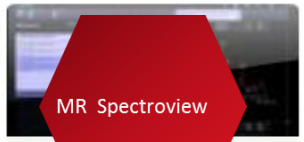
Multi Modality Viewer (MMV)

MR Perfusion Diffusion Mismatch

MR IViewBOLD



syngo.MR Composing



MR Spectroview

syngo.MR Spectro SVS

syngo.MR Spectro Extension

syngo.CT DE Brain Hemorrhage

Multi Modality Viewer (MMV)

T Viewer

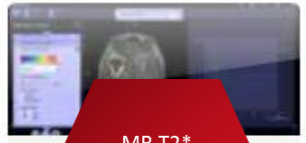
syngo.via General Engine

syngo.via WebViewer

syngo.MI Neuro Subtraction

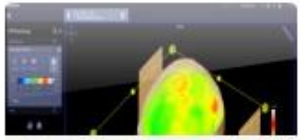
NM NeuroQ EQuAL

MR FiberTrak



MR T2* (Neuro) Perfusion

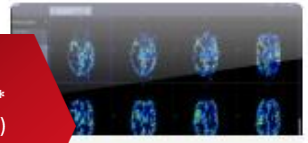
iXR Viewing (in MMV)



syngo.MI Neuro Hybrid 3D

MR T2* (Neuro) Perfusion

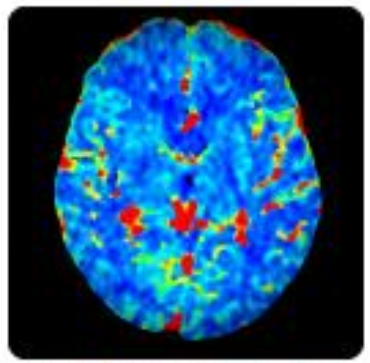
syngo.MR Neuro Perfusion



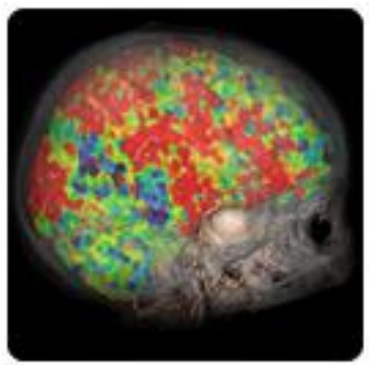
syngo.MR Neuro ynamics (from VB10)

TOSHIBA
Leading Innovation
VITAL
A Toshiba Medical Systems Group Company
VitreaAdvanced
Olea Sphere

CT Brain Perfusion

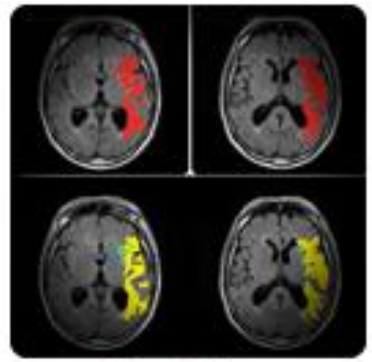


CT Brain Perfusion



CT Brain Analysis 4D for fX

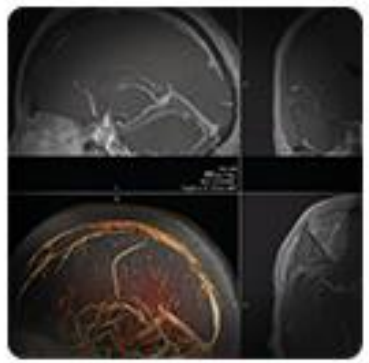
CT Brain Perfusion
MR T2* (Neuro) Perfusion
MR Diffusion
Multi Modality Viewer (MMV)



Olea Sphere

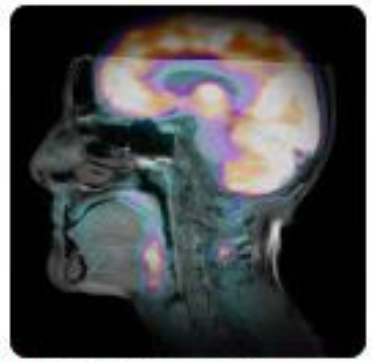
MM Advanced Vessel Analysis (AVA)

CT Circle of Willis



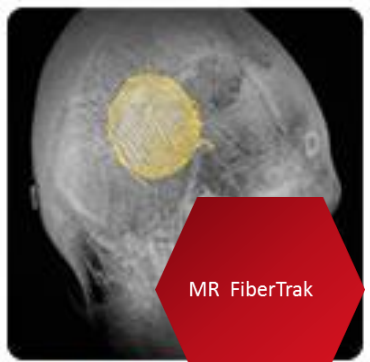
MR Vascular

MM Advanced Vessel Analysis (AVA)



Mirada Oncology Fusion

Multi Modality Tumor Tracking



MR Brain Tumor

MR FiberTrak

Multi Modality Tumor Tracking

Summary: ISP v.9 NEURO portfolio

ISP v.9 Neuro Portfolio

- Stroke
- Brain tumors
- Vascular interrogations
- Traumatic Brain Injuries
- Dementia
- Epilepsy (TLE)
- Surgical planning

Diagnosis | Treatment decision | Treatment assessment | Longitudinal follow-up

ISP v.9 Neuro Portfolio

- **Stroke**
- Brain tumors
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ISP v.9 Neuro Portfolio

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- Dementia
- **Epilepsy (TLE)**
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Diagnosis | Treatment decision | Treatment assessment | Longitudinal follow-up

Additional neuro-focused materials

1. This presentation
2. LoBI video clip (for internal use only!!!)
3. LoBI: White Paper on clinical utility
4. NeuroQuant™: Marketing Pack
5. Neurology Brochure
6. Neurology messaging guide
7. Two customer testimonials
8. RSNA: CME symposium by Dr. Wolansky (LoBI)
9. Webinar from March 2016







- And also: Neurology is highlighted in all marketing materials

Competitive overview on NQ against others

Feature	NeuroQuant®	MSmetrix by Icometrix	Cliniscan by Picofemto	Neuroreader by Brainreader	Quantib
General Morphometry Information	Yes	No	Unknown	No	No
Hippocampal Atrophy Information	Yes	Yes	Yes	Yes	No
Hippocampal Occupancy Score	Yes	No	No	No	No
Hippocampal Volume Asymmetry Information	Yes	No	Unknown	No	No
Whole Brain Atrophy	Yes	Yes	No	No	Unknown
Multi-Structure Atrophy Report	Yes	Lesion Load only	No	No	No
Triage Brain Atrophy Report	Yes	No	No	No	No
Brain Development Report	Yes	No	No	No	Unknown
Longitudinal analysis	Yes – multi-time point reports with follow up volume measurements	Yes	Unknown	No	Unknown
Cortical thickness measurements	No	No	Unknown	No	Unknown
Age range for norms	3-100	18-96	No comparison to normative data known	Unknown Claim “FDA approved norms”	No comparison to normative data known
Predictive atlas					Unknown
Dynamic atlas					
Number of subjects in atlas					nown
Number of subjects in normative database					comparison to mative data known
Scanner independence					imitations known
Quantitative data					
Fully automatic – no user interaction required					
Ease of use					nown
Speed of volumetric calculations					nown
Reports addressing a broad range of brain struc					ted – only tissue sification
510(k) cleared					s
CE marked					Yes
Reimbursement/CPT code	Yes	Yes	No FDA clearance	Yes	Assumed

NeuroQuant’s main competitive advantages:

1. Greater body of scientific evidence and is much more tried & tested
2. Faster
3. Automatic reports, tailored to specific clinical questions/indications
4. Automatic longitudinal analyses
5. Normative age range 3-100y
6. Dynamic atlas (more accurate)
7. Integrated in ISP, not a stand-alone niche solution

LoBI: competition

Integrated Registration

Integrated Registration provides you with the capability to fuse and register two volumetric acquisitions from either the same or different acquisition

Olea Sphere

LONGITUDINAL ANALYSIS

Embedded with unparalleled 3D registration between different time points, different modalities or different series within the same study, the Longitudinal Analysis plug-ins provide the optimum interface to efficiently track lesions and assess their progression over time.

Longitudinal analysis plug-in includes temporal subtraction, the advanced tool to assess the evolution of lesions between different time points, for an efficient follow-up of chronic conditions, i.e. tumors, multiple sclerosis, etc.

CT Brain perfusion: competitive overview

	PHILIPS	GE	SIEMENS	VITAL A Toshiba Medical Systems Group Company / Olea medical	iSchemaView RAPID
Auto vessel					
Volumetric					
Automatic ROI's					
Validated thresholds					
Delay insensitive					
Fully automatic maps – direct to PACS					
Gray/White Matter separation					

Competitive overview on Cardiology

Cardiovascular AV Competition landscape

Scanner vendors:

Syngo.via

Cardiac MR focus:

Enterprise AV, CT focus:

Cardiac CT procedure planning:

By Pie Medical

Siemens, Vital, GE

Philips main value points:

1. **Integration to ISCV**
2. **Clinical Depth & Breadth**
3. **Continuous Improvements:** in house Philips solution. More control than on 3rd party like.

- AW (advanced workstation)
- Collaboration with Vioswork for 4D Qflow cloud service
- Cardiac MR: by Circle CMR42

- No decent MV support
- TAVI – Basic; no automatic measurements
- No DMP (Dynamic Myocardial Perfusion)
- NM: No Corridor
- CT AVA: no stent planning, no ASC
- MR AVA: nice solution, available only on workstation. Separate MR\CT app

- syngo.via
- Released new CT Myocardial Perfusion (like DMP)

- CMR: Partial. No T1 mapping in Syngo.Via, only on scanner
- TAVI: no automatic measurements, only annulus detection; subtraction of aortic calcifications
- Plaque analysis- only on Research environment
- AVA CT: good preprocessing mechanism; results are hard to edit.
- AVA MR: only viewing; separate app

- Vitrea
- 3D printing collaboration with Stratasys
- Cardiac MR: by Medis QMass/QFlow

- TAVI: only Aorta segmentation, no auto measurements
- No DMP
- Vascular: nice one click extraction, no Auto bone removal; Use subtraction (2 scans)
- NM: No Corridor & Emory
- No NM planar cardiac applications

Careful here!
Be proud here with ISP!

PHILIPS

Tera, 3mensio

Philips main value points:
1.Integration to ISCV
2.Clinical Depth & Breadth
3.Continuous Improvements

TERARECON

- Focusing on Enterprise viewing, IT proposition

- Committing for full MV support
- TAVI: no automatic measurements
- Limited MR Cardiac, simple analysis (coronaries), no segmentation
- No DMP
- Vascular: Considered a very strong solution, but mostly for interactive; for MR only basic viewing
- NM: No Corridor & Emory
- No NM planar cardiac applications

3mensio MEDICAL IMAGING

- Focused solution for procedure planning for Vascular and SHD (structural heart disease)
- Strong SHD solution; Strong TAVI solution; Semi-automatic Tools for Mitral and LAAO
- Business corporation with Medtronic
- Vascular: No Automatic bone removal; Nice Stent planning workflow and templated reporting
- pre-op simulation of the optimal C-arm

HeartFlow®

- FDA 510k approved
- Offers CT-FFR as off-site service
- Pay per use ~USD 1500/case

Careful here!
Be proud here with ISP!

PHILIPS

Dedicated CMR Competitors

Philips main value points:
1. Modality business
2. Broader clinical coverage
3. IT horizontal strength

Medis is:

- Medis Suite: QMass, QFlow
- User-friendly interface
  - Tab-like
- More research oriented and numerous publications
- Broader quantification portfolio
  - Myocardial salvage calculation
  - Validated T2* measurement
  - VN ECV measurement
  - More background corrections in QFlow
- Advanced research module: Qstrain (Feature Tracking)
- Structural report
- Efficient multi-vendor support

But we are:

- Better hanging protocol for viewing
- Superior 3D heart scene.
- Strong MRA analysis capabilities
- CTA in Medis is only in research module.
- Enterprise configuration; scalability

Circle is:

- CMR42
- More advance quantifications
  - Scar 3D visualization
  - More background corrections in flow
- Advance research modules:
  - Tissue Tracking (Strain)
  - 4D Flow
- Comprehensive reporting module
- Efficient multi-vendor support
- iOS supported
- Team up with GE

But we have:

- Automatic LV segmentation with auto propagation
- Rich viewing environment and comparison of series
- Automatic whole heart segmentation & editing tools
- More comprehensive MRA tools
- Stronger CT CV tools
- Enterprise configuration; scalability

Thank you !