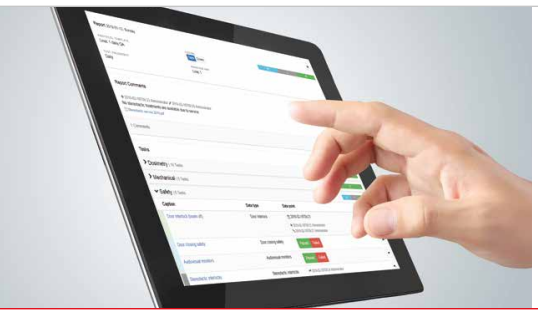
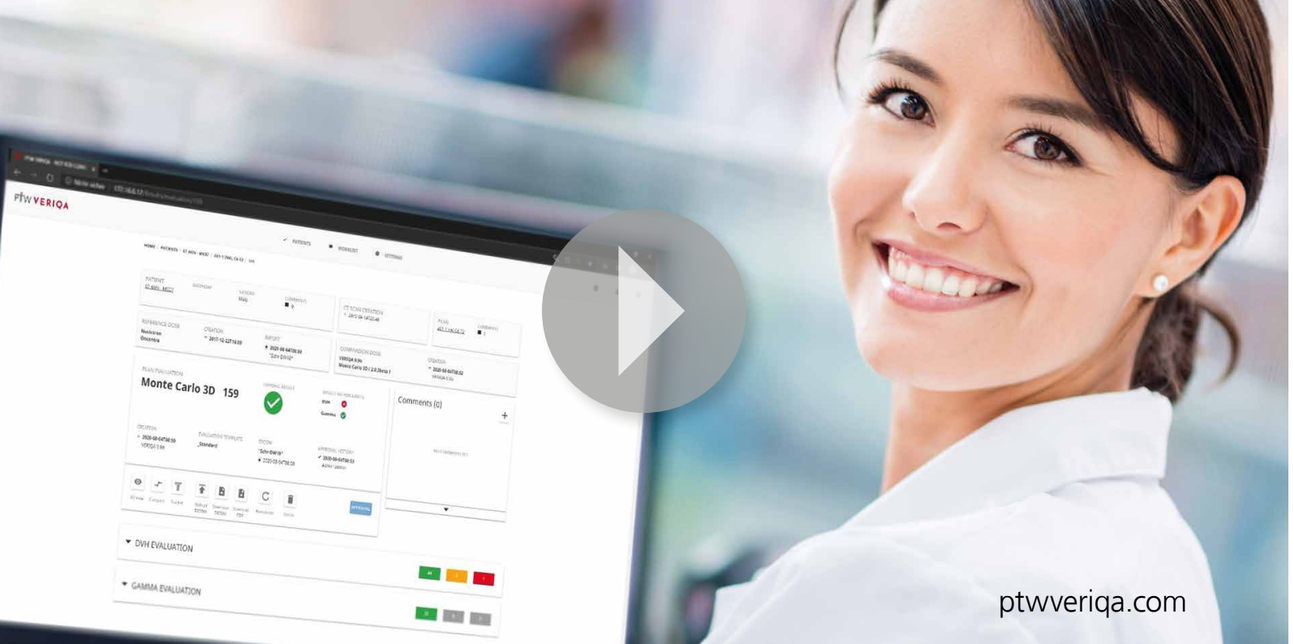
Product Highlights 2022

PTW THE DOSIMETRY COMPANY



ptwdosimetry.com



VERIQA - The Modular Software Platform

For comprehensive Patient QA

- Website
- Brochure

Treatment plan visualization
VERIQA module RT View

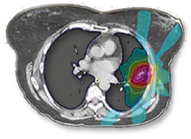
Treatment plan evaluation
VERIQA module RT Evaluate

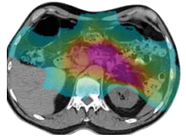
Pre-treatment verification
VERIQA module
RT MonteCarlo 3D

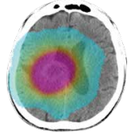
Pre-treatment and in vivo verification VERIQA module
RT EPID 3D

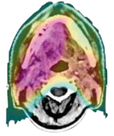
Your advantages

- One platform: From visualization and evaluation to verification and reporting. All in one modular platform, built on future-proof client-server architecture
- Take your workflow efficiency to a next level and automate your processes
- Track and analyse your results with the automated integration of Track-it
- Clinically proven, independent 3D dose verification tools and calculation algorithms for reliable results, independent of treatment complexity









	LUNG SBRT	Pancreas	Brain	Head and neck
	3D / 7 beams 6 MV FFF	VMAT / 2 arcs / 180 CP[1] 6 MV - SIB[2]	VMAT / 1arc / 90 CP[1] 6 MV FFF	VMAT / 2arc / 180 CP[1] 6 MV - SIB[2]
PTV volume	46.45 cm³	589.26 cm³	264.48 cm³	907.74 cm³
Dose grid size	3 x 3 x 3 mm	3 x 3 x 3 mm	2 x 2 x 2 mm	2 x 2 x 2 mm
MC accuracy	1 %	1 %	0.5 %	0.5 %
Calculation time	12 sec	30 sec	46 sec	246 sec

Calculated on a dual 12-core Intel Xeon Silver 4214 2.2 GHz server with hyperthreading (48 logical cores).

VERIQA RT MonteCarlo 3D

3D dose calculation with SciMoCa. Accurate. Fast. Automated.

“Secondary dose calculation systems should be completely independent from primary TPS. Accurate matching between the secondary dose calculational systems and the dosimetric characteristics of the linac is thereby essential for truly independent and valuable dose evaluation.“

Prof. Sotiri Stathakis, Ph.D.
University of Texas Health Science Center, San Antonio

Your advantages

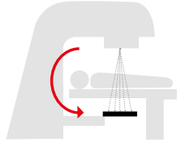
- Monte Carlo simulations are the most accurate method for dose calculation in radiotherapy treatment planning.With its ability to simulate the physics of photons and charged particles transport through matter, Monte Carlo can accurately compute the dose under almost any circumstances
- VERIQA RT MonteCarlo 3D comes pre-installed on a powerful server, allowing for high-speed dose computations. Calculation results are available in less than 2 minutes
- Due to its specific beam modelling process, which is based on water phantom measurements, VERIQA RT MonteCarlo 3D performs truly independent dose calculations for a reliable secondary plan check

Advanced 3D back-projection approach

* For simplicity, the comparison of forward-projection and back-projection approach is explained using the example of in vivo EPID dosimetry. However, the same concept holds true for EPID-based pre-treatment dosimetry.

Forward approach*

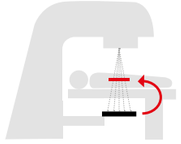
Current standard of commercial products



Treatment plan is used to predict EPID images. Measured EPID images are compared against predictet EPID images.

Back-projection approach*

Used in VERIQA RT EPID 3D



EPID measured dose is back-projected into patient. Dose is reconstructed in patient anatomy and compared against planned dose.

Comparison level	EPID	Patient
Reference	Predicted EPID image/dose distribution	TPS
Visualization	2D only	3D
Comparison metrics	2D Gamma	3D Gamma, GVH, DVH
True composite (TC) as recommended by AAPM TG-218	✗	✓

VERIQA RT EPID 3D

True EPID dosimetry. Pre-treatment. In vivo. Fully automated.

“The EPID dose back-projection algorithm of VERIQA RT EPID 3D will offer a double benefit. It will verify treatment delivery by using in vivo EPID measurements as well as increase efficiency in pre-treat-ment verification by using EPID images acquired “in air”, thus eliminating the need for phantom positioning and re-planning.”

Igor Olaciregui
Software & Physics Lead, The Netherlands Cancer Institute - Antoni van Leeuwenhoek Hospital (NKI-AVL), Amsterdam

Your advantages

- Detect unnoticed clinically relevant errors during pre-treatment verification and quantitatively assess their dosimetric impact
- True 3D patient dosimetry: Compare the EPID-reconstructed dose directly to the planned patient dose as well as the calculation of patient dose-volume histograms (DVHs) for both pre-treatment and in vivo dosimetry
- Phantomless, efficient and fully automated
- Clinically proven back-projection algorithm: Successfully used at The Netherlands Cancer Institute - Antoni van Leeuwenhoek Hospital (NKI-AVL) in more than 75,000 patient treatments since 2005

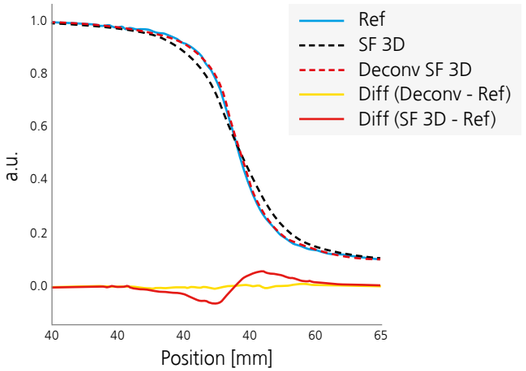
BEAMSCAN Software 4.5 offers a function to compensate the volume effect of ionization chambers[1] based on Artificial Intelligence.

[1] Available for Semiflex 3D.

ptwbeamscan.com

NEW: BEAMSCAN® Software 4.5

Introducing Artificial Intelligence in dosimetry



Compensation of the volume effect

Your advantages

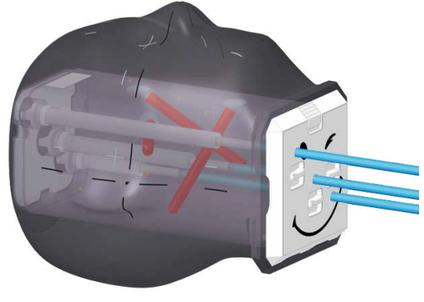
- Data processing based on Artificial Intelligence
  - Compensation of the volume effect for transversal profiles of photon beams (deconvolution)
  - Denoising[2] of photon and electron PDDs and transversal profiles
- Advanced analysis features
  - Real time beam data analysis
  - Smart comparison of multiple scans
  - Support of Elekta 2020 Customer Acceptance Test Protocol
  - Task ‘Output Factors’ for Beamscan MR

[2] For data measured with microDiamond.

As flexible as your needs.
The new modular phantom platform
for high-precision radiotherapy and
SRS/SBRT QA.

RUBY - The Modular QA Phantom

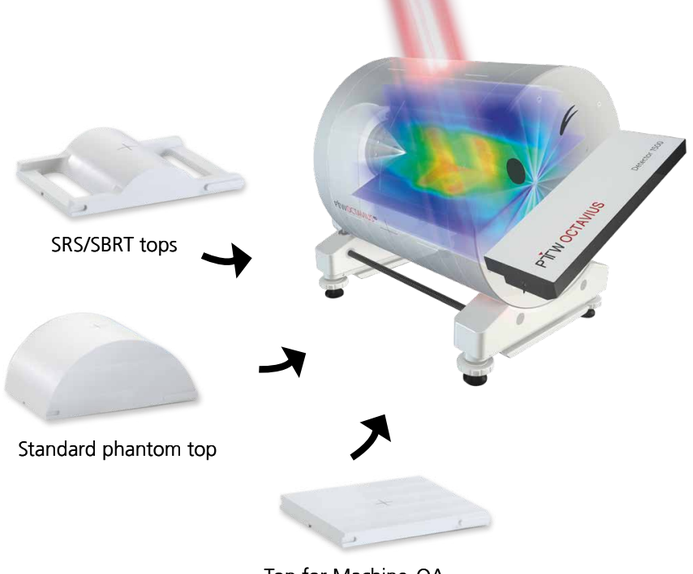
One Phantom. Multiple Inserts. System QA. Linac QA. Patient QA.



The new insert for multiple
metastases applications

Your advantages

- Perform integrated tests of the entire treatment chain with one basic phantom by adding and expanding QA capabilities as and when you need them
- Technologically advanced, new modular phantom platform with powerful, ready-to-use application-specific inserts
- Comprehensive end-to-end testing of the entire SRS/SBRT treatment process with one single insert
- Measurement-based patient-specific plan verification, including non-coplanar treatments, with film and different detector types
- CT markers in phantom and all inserts for enhanced visibility



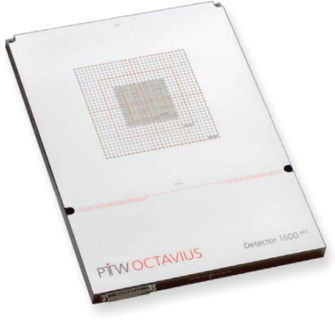
TPS independent 3D dose

Detector modularity
Three different detectors covering a full range of applications: from simple treatment plans to complex stereotactic procedures.

ptwoctavius.com

OCTAVIUS 4D

One phantom - modular solutions for 4D patient and machine QA



New high resolution detector for for multiple metastases applications: OCTAVIUS Detector 1600 SRS

Your advantages

- Time dependent and angular dependent dose measurement
- Synchronous phantom rotation with the linac gantry
- Detector array always perpendicular to the beam - no angular dependence
- Only 4D dose verification system that measures dose in the entire phantom volume
- Verification of treatments including non-coplanar beams, off-axis target volumes, large fields and treatment plans with multiple energies

DESIGN AWARD 2021

ptwunidos.com

UNIDOS® Tango

Reference class electrometer exceeding IEC 60731 and IPEM standards

UNIDOS 100 years limited special edition

Your advantages

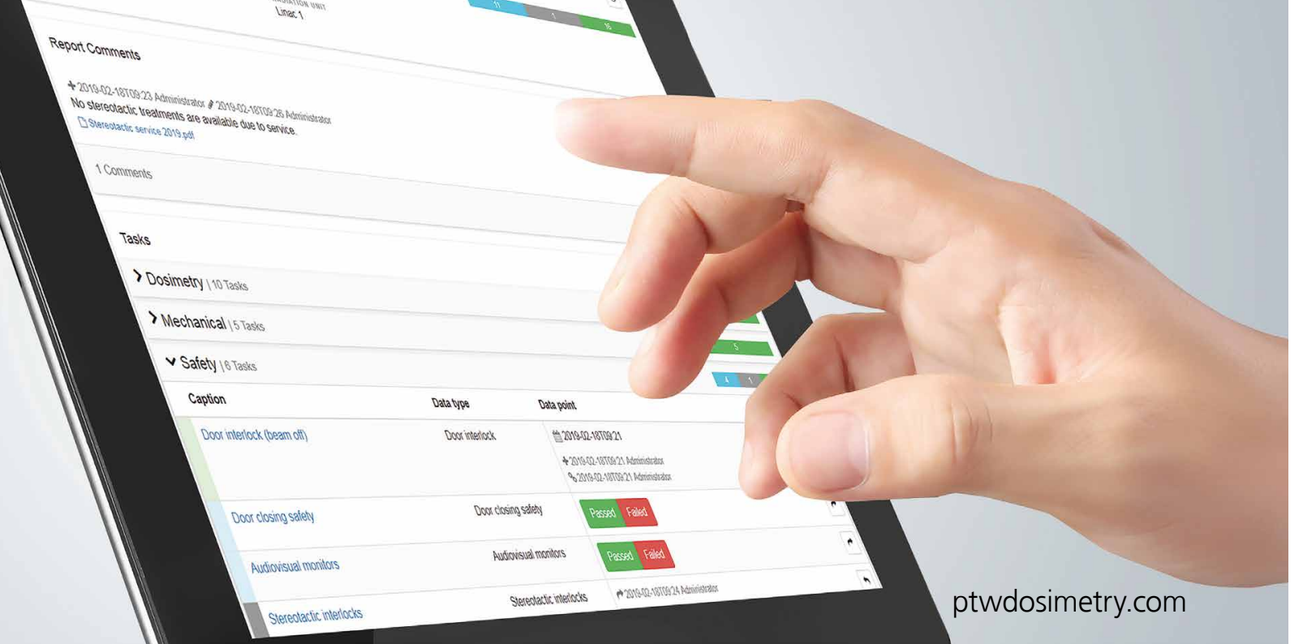
- Perform reliable measurements with highest precision and accuracy
- Automated detector management with Intelligent Detector Recognition (IDR)
- Control UNIDOS Tango via smart device or PC (WLAN and LAN)
- Create individual and password protected profiles for improved measurement consistency
- Capacitive touchscreen with excellent readability from any viewing angle
- Intuitive, multi-lingual GUI with high usability

BEAMSCAN® MR - more than 40 installations worldwide

First motorized 3D water phantom suitable for clinical use in up to 1.5 T MR environment

Your advantages

- Complete solution for commissioning and QA of MR-Linacs: From beam data acquisition, processing and analysis to protocol-based documentation
- All-in-one, ready to use system with comfortable touch panel for fast setup – incredibly versatile and straightforward in its operation
- Reference-class Semiflex 3D ionization chambers for precise dose measurements in small and standard fields up to 40 x 40 cm
- Two models with vendor-specific water tanks for optimized scanning ranges for Elekta Unity and ViewRay® MRIdian®
- Auto alignment - no lasers or light field needed



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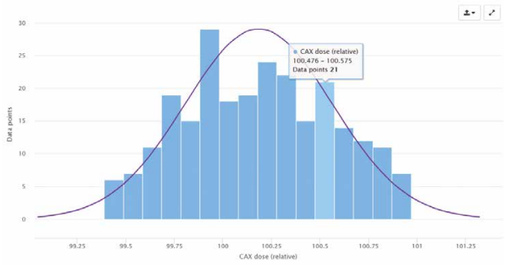
Track-it QA Data Management Software

New version 3.0 including statistical evaluation with box plots and histograms.



- Click here to see how Marienhospital Düsseldorf uses Track-it to optimize their QA procedures.

Your advantages

- Efficiently manage all QA data on one single platform
- Web based application using desktop or mobile devices
- User-defined protocol templates to customize the application to the specific needs of your QA workflows
- Online or offline QA report generation, e.g. in vaults without wireless network
- Compliance with DIN 6847-5/-6, 6875-4 and TG-142 through predefined templates
- Traceability - recording of all main steps in the workflows, such as data entry, modification and linking to reports
- Trend analysis over time and across your treatment devices with versatile display options

100 YEARS PTW

Happy Birthday PTW!

Making radiation safer since 1922.

- In 1922, PTW started being a pioneer in medical radiation measurement. Since then PTW has always been – and will continue to be – at the forefront of advancing patient safety through innovation and cutting-edge measurement technology.
- This year, PTW turns 100 years old! We are proud that we've gotten a little better every day at making radiation safer over the last 100 years!
- We are still family-owned, now in the third generation.

Be quick and secure one of only 100 UNIDOS Tango electrometers

from our exclusive Anniversary Edition, showing the skyline of the city of Freiburg, where PTW is headquartered since 1922.

Thank You for Being Part of PTW´s Success Story!

We are looking forward to celebrate with you!

First PTW electrometer in 1922

We cordially invite you to experience a unique interactive science show with your colleagues and family. And best of all, you don't even need to travel to see it.

You can log in from the comfort of your home or office on June 1, 2022, 4:00 p.m. (CET) to join the live event:

Please click here to join our live event on June 1.

Please click here to participate in the live quiz.

From June 10 on you will find a link to the recording on our anniversary website: **ptwdosimetry.com/en/100-years-of-ptw**

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