

Now with QuickCheck!



# COMPASS Solutions

Treatment Verification & Patient Dose Analysis



**Maximize Efficiency, Minimize Errors, Better Outcomes**

# Maximize Efficiency



# Minimize Errors



## Two-in-One Solution

Workflow efficiency and flexibility with measurement- AND calculation-based verification!

### Independent secondary TPS calculation in 3D:

Independent verification of your TPS – more efficient and powerful than simple MU checks.

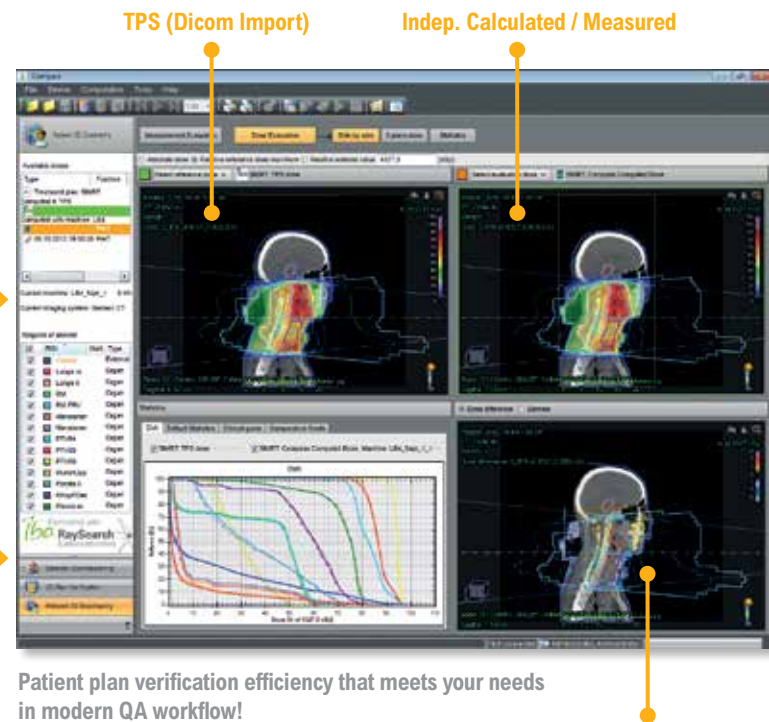
“...QC is performed on the patient’s planned dose distributions by using an independent, secondary composite dose calculation.”<sup>†</sup>

### 4D measurement based verification:

Verification of the whole delivery chain including your Linac

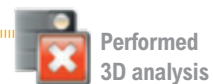
“...verify that the plan delivery is physically achievable by the delivery system...”<sup>†</sup>

COMPASS uses measured **MatriXX** responses to reconstruct dose to patient specific CT for comparison with TPS dose



Patient plan verification efficiency that meets your needs in modern QA workflow!

3D Dose Difference / Gamma (local & global)



## More Efficiency with New QuickCheck!

Measurement? ...Check!  
Calculation? ...Check!  
Quick? ...Check!

### Why QuickCheck?

- Fully automated fluence analysis
- Gamma analysis in just one look
- Pass/Fail based on your protocol
- Replace human subjectivity
- ... and because it is Quick!

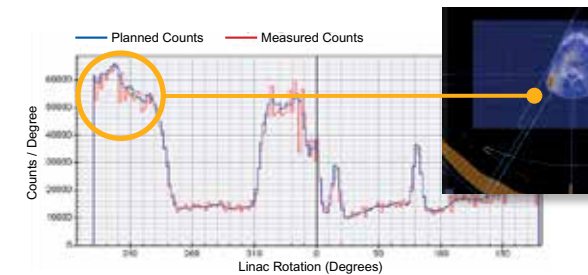
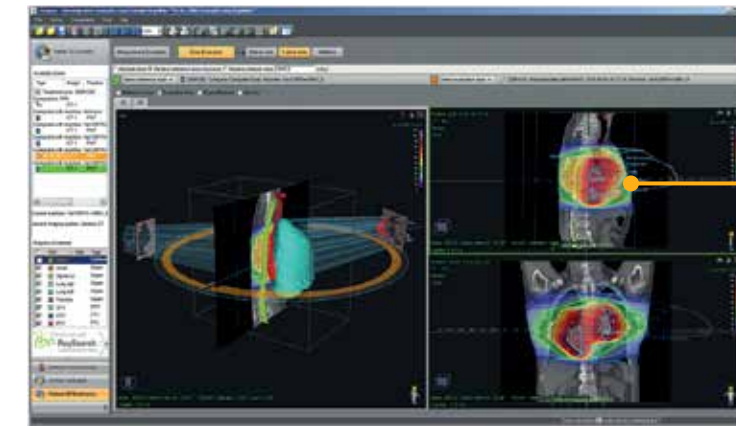


### Patient management flexibility & speed

- Fast patient browser (SQL 2008 R2 / 2012 database)
- Client/Server installation or stand alone SQLExpress



## Patient Dose Accuracy – for your peace of mind



### Powerful Collapsed Cone Algorithm for Independent dose calculations

- TPS-class calculations on real patient CT<sup>††</sup>
- Fast calculation: 7 beam IMRT plan in 1 min; 1 arc VMAT in 3 min!<sup>†††</sup>
- Full 3D calculation on real patient CT, DVH, 3D Gamma

### Independent Beam Modeling of your Linac

- Model as many machines as you want based on data used for your own TPS

### Segment/control point wise analysis

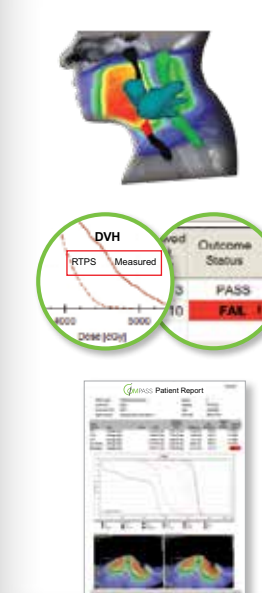
- Compare real linac delivery vs TPS planned linac delivery
- Analyze the effect of segment errors on the total treatment accuracy

“Compass is used to verify every IMRT and VMAT plan fast with 3D computations. A huge advantage compared to other patient QA systems is the possibility of optionally conducting dose reconstructions based on MatriXX measurements. Accidental linac dose delivery deviations from the treatment plan. The user can specify his own criteria for selecting the desired detection level. With the new implemented 2D Quick Check module deviations between expected and measured chamber response result automatically in a pass or fail indication.”

Mark. P. Arends, MSc, medical physicist  
Alle H. Ausma, MSc, physicist  
Radiotherapy Institute Friesland,  
Leeuwarden, the Netherlands

## COMPASS Functionality that makes the difference

- Patient plan verification using proven TPS tools and criteria
- Understand the clinical relevance of dose discrepancies and necessary corrective action
- Analyze 3D patient dose distributions based on DVH and Gamma (local/global)
- PTV & OAR analysis and immediate Pass/Fail alerts for your prescription doses and tolerances
- Comprehensive reporting: Easy protocol template setup according to your needs



<sup>†</sup> Refer to: Siochi RA, Molineu, A.: Patient-specific QA for IMRT should be performed using software rather than hardware. Med. Phys. 40 (7) July 2013; 07061-1 – 07061-2

<sup>††</sup> J Godart et al.: Reconstruction of high-resolution 3D dose from MatriXX measurements: error detection capability of the COMPASS... Phys.Med.Biol 56 (2011) 5029-5043  
F.Hasenbalg et al.: Collapsed cone and analytical anisotropic algorithm dose calculations compared to VMC++ Monte Carlo ...; JoPhysics, Conference Series 74 (2007)

<sup>†††</sup> Recommended Computer Specifications: i7-3840 QM with 16 GB RAM and 1GB NVidia graphics board; Dose calculation time examples stated here are calculated with a standard Notebook, i7-3820QM, 2.7GHz, 8GB. Calculation times can vary depending on patient case, treatment modality and computer hardware

# Clinical Expertise for Better Outcomes



High-end Training for Fast and Safe Clinical Implementation



## IMRT & VMAT 3D Plan Verification

Best practices for your **efficiency and safety** in patient plan QA:

- Plan verification: from phantoms and hybrid plans to advanced 3D/4D plan verification
- Implementation of MatriXX measurement-based 4D verification & calculation-based secondary TPS checks
- The physics of COMPASS
- COMPASS commissioning made fast & easy



Theory and hands-on training in a high-end clinical environment with experienced trainers

**DGMP certified**

More details and training dates at [www.icc-ibadosimetry.com](http://www.icc-ibadosimetry.com)



## Partnering for dosimetry solutions you can trust:

Joint development and close collaboration with leading institutions and partners are the recipe to provide best in class Dosimetry solutions.

The COMPASS alliance that makes the difference:

- In-depth exchange of clinical experience and product and application know-how
- IBA and RaySearch partnership brings together core competencies in Dosimetry and TPS dose calculation



COMPASS users meeting in Nürnberg /Germany near IBA Dosimetry headquarters



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Protect,  
enhance  
and save  
lives

