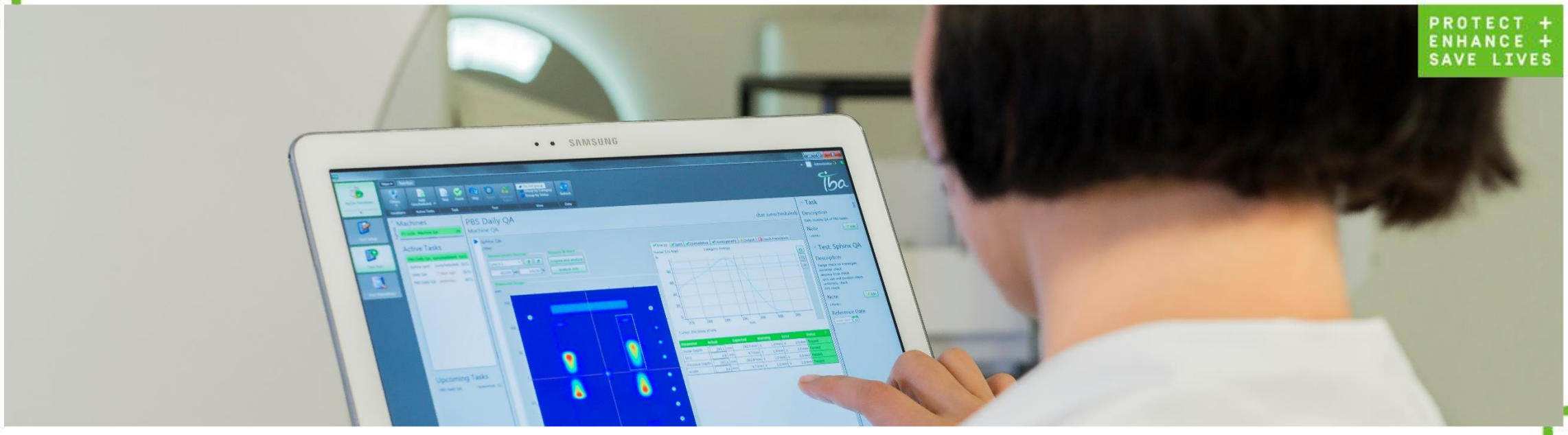


IBA Dosimetry – Herramientas para el control de calidad en dosimetría

Jornada SARH – Antequera 25 de Noviembre 2017

Benito Andía (benito.andia@bioterra.net) – Comercial BIOTERRA SL

SOCIEDAD ANDALUZA DE RADIOFÍSICA HOSPITALARIA
www.sarh.es

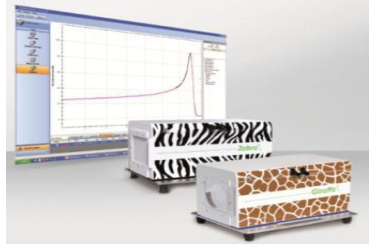
IBA Dosimetry – rango de productos

Dosimetria para RT

Desde el comisionado del acelerador hasta la verificación de paciente

Dosimetria para PT

Soluciones completas para el comisionado, test de aceptación y QA de PT



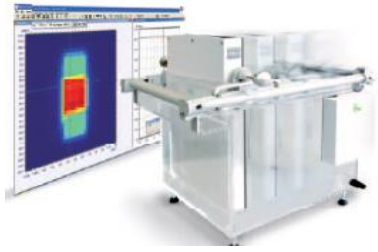
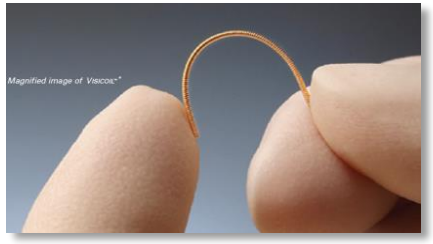


Imagen médica

Soluciones para el control de calidad en imagen médica, para un mejor diagnostico

Marcadores - VISICOIL

Fácil localización del tumor, para mayor precisión



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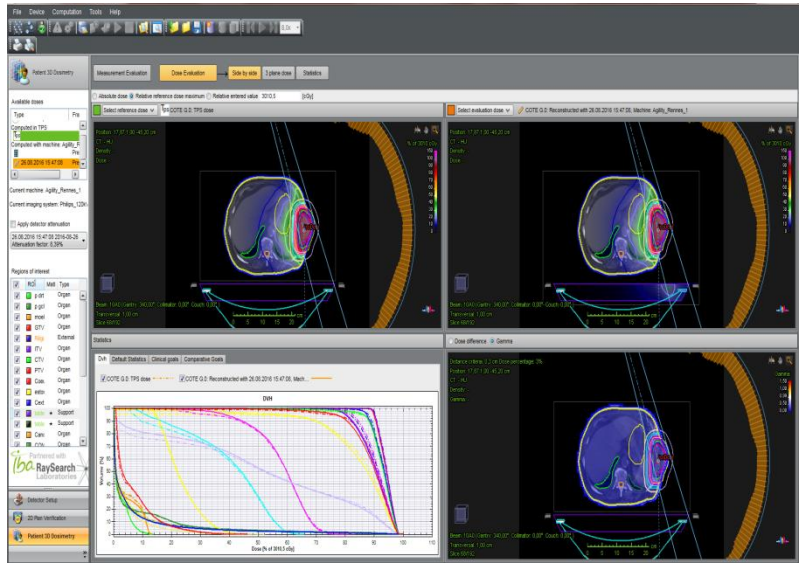
Agenda

- **Herramientas 3D para verificación pacientes**
  - COMPASS
  - MatriXX-Evolution o Dolphin



- **myQA: Todo Conectado - Todo en 1 - Seguro**

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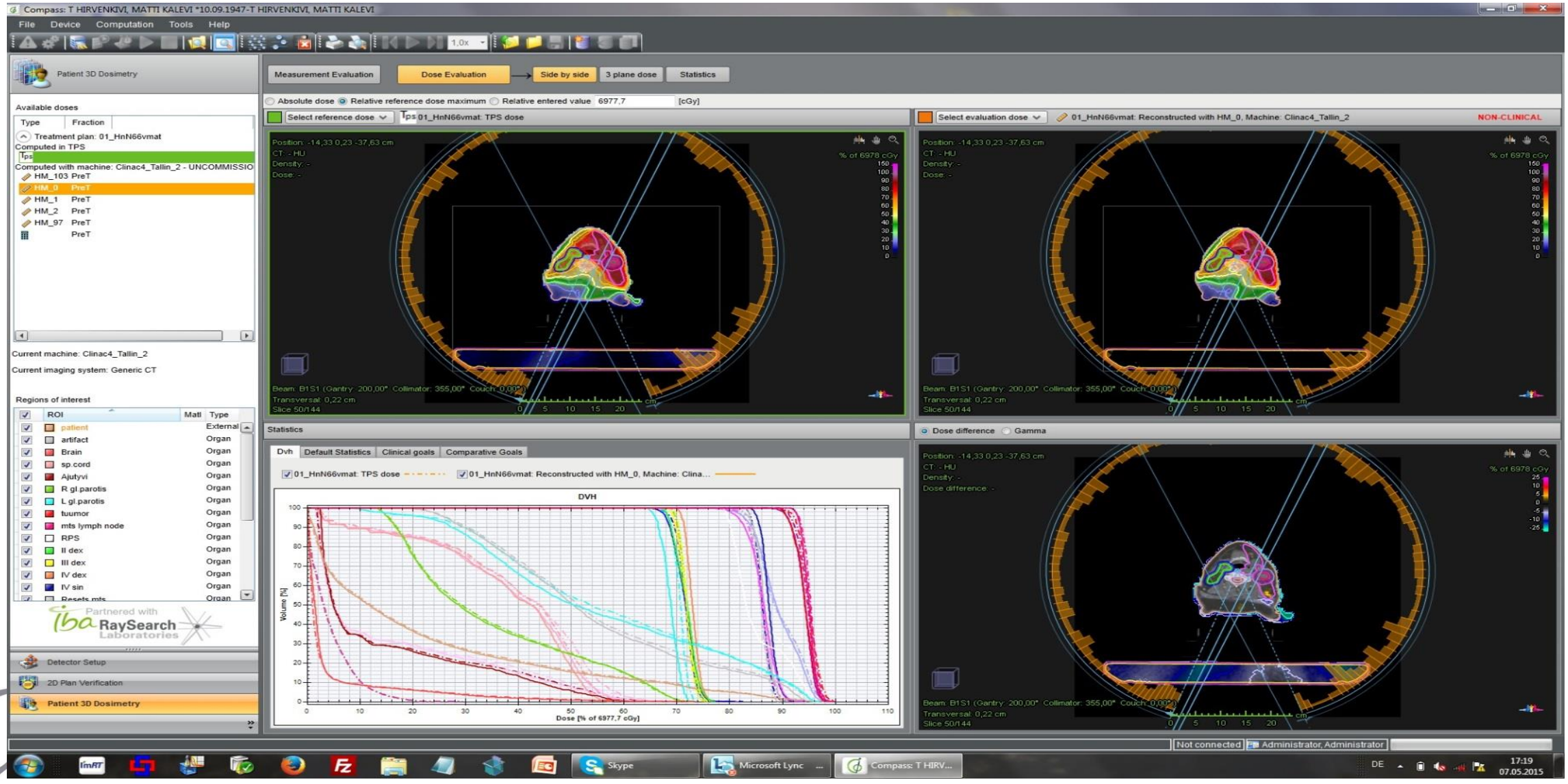
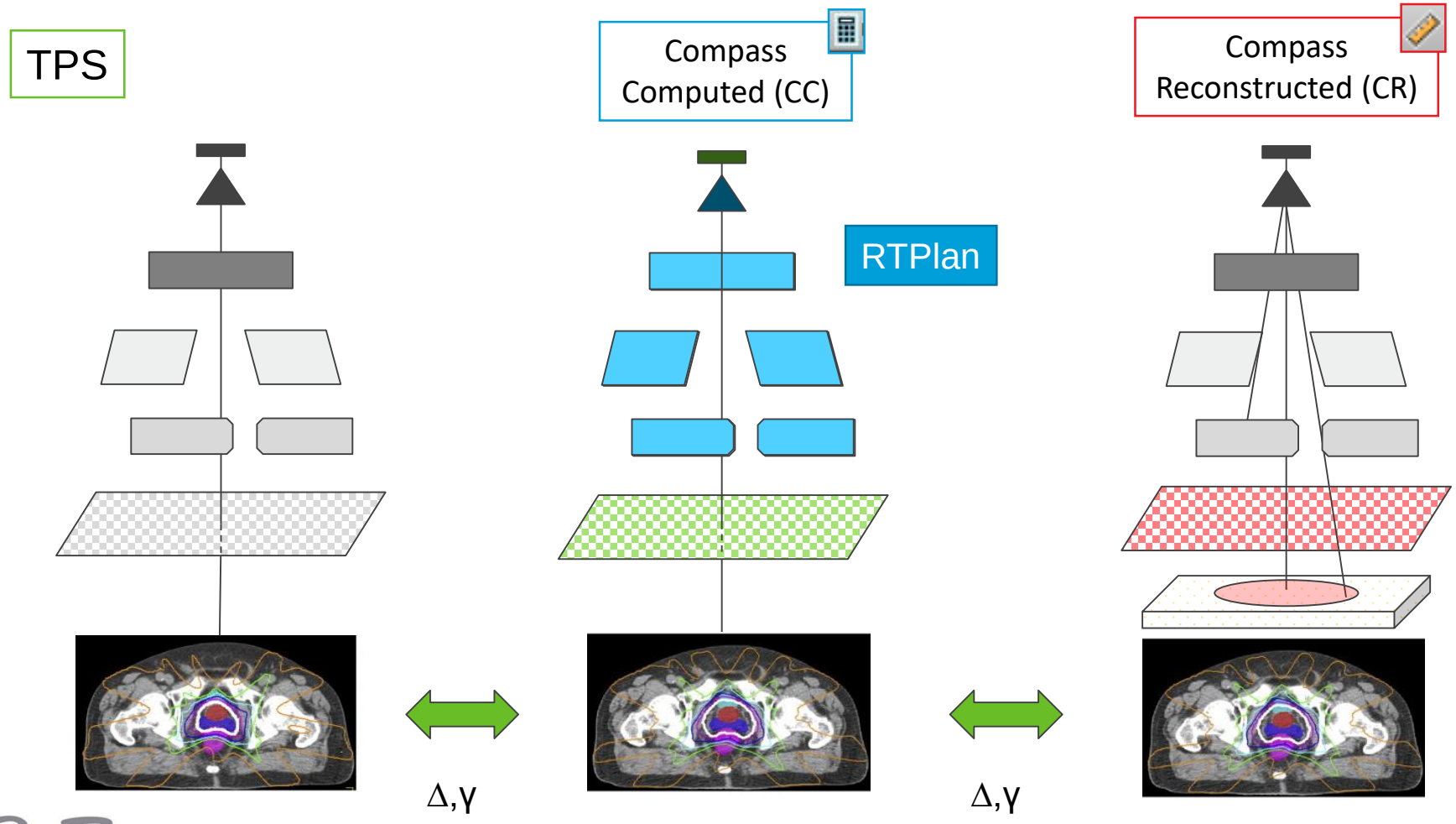
¿Qué es COMPASS?



Evaluación 3D DVH solución 2-1



98% of beam information missed. Point measurements limit predictability*

Dolphin
MatriXX Ion Chamber

Accurate and high-sensitivity measurements

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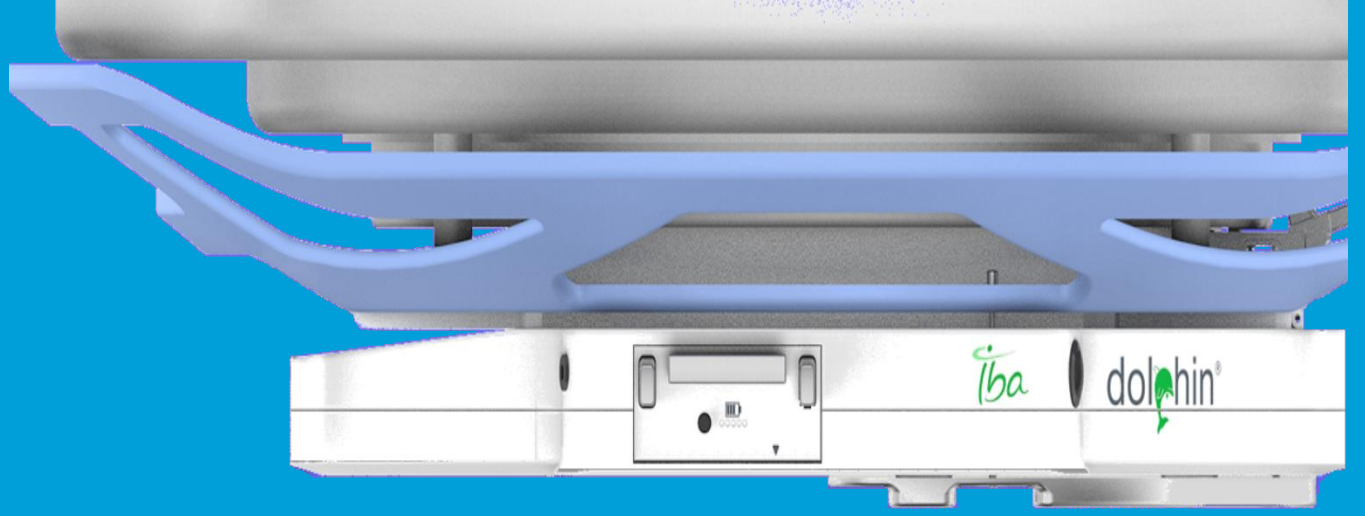


MatriXX-Evolution & Dolphin®

Advanced Technology

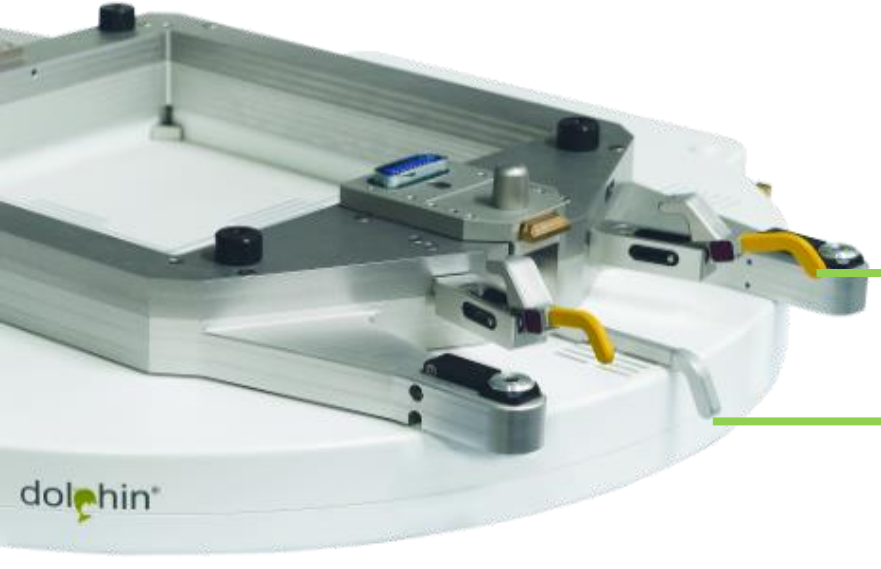
- **Array 2D de cámaras de ionización**
  - 1020 cámaras de ionización en una matriz de 32 × 32 cm
  - Cámara de ionización ventilada al aire:
    Ø = 4.5 mm, d = 5 mm, V = 0.07 cm³
  - Lectura en paralelo, sin tiempo muerto en la lectura.

- **Acople al gantry a 100cm SSD**
  - Área activa 24x24 cm
- **Acople al gantry a 76cm SSD**
  - Área activa 32x32 cm

Fluencia adquirida perpendicularmente a los cámaras de ionización

- Sin dependencia angular en los detectores
- Permite medir independientemente de la posición de la mesa.
- Medida de campos no-coplanares
- Capacidad de detectar errores de Isocentro.
- ɔilidad de detectar errores de gantry (sensor con precisión 0,4º)

dolphin® Diseño Avanzado



Diseño compacto

- ➤ Máxima apertura
- ➤ Compatible con casos SRS / SBRT de haces no coplanares
  - Independencia con la orientación de la mesa
  - Mayor rango que el EPID

Sin cables

- ➤ Conexión inalámbrica
- ➤ Funcionamiento con batería
- ➤ Sensor de ángulos integrado y calibrado en fábrica

Fácil montaje

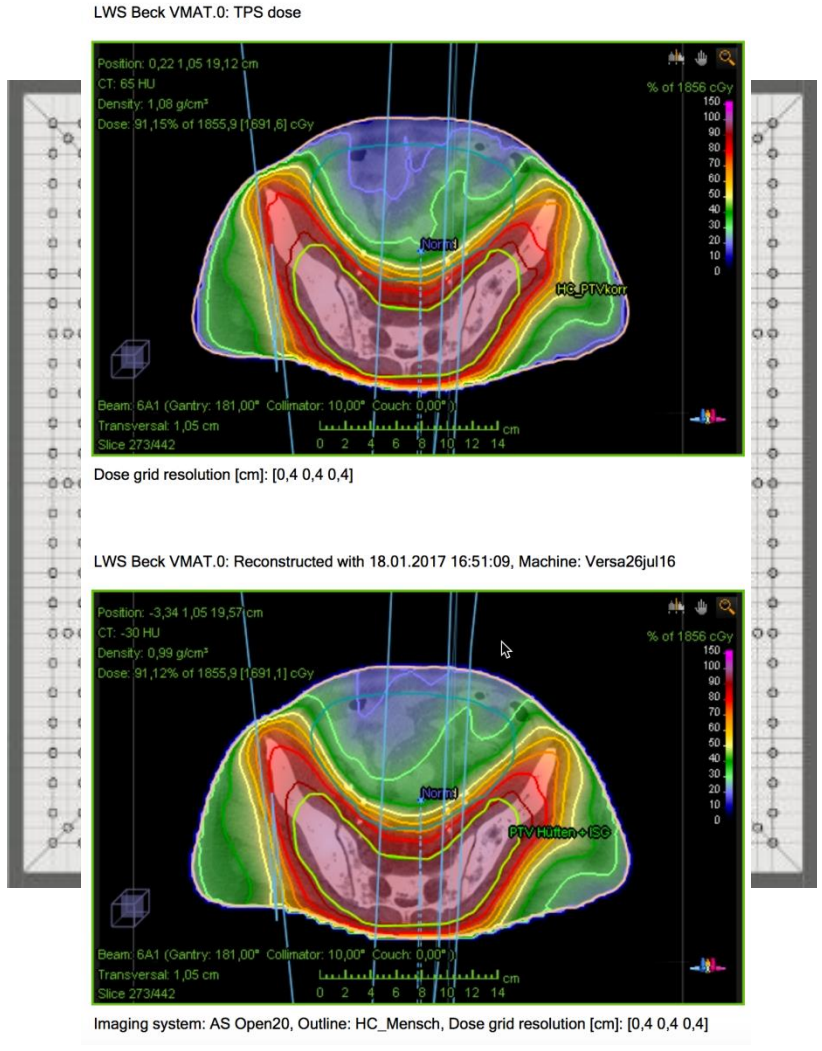
- ➤ Compatible con las bandejas de máquina
- ➤ Accesorio codificado
- ➤ Cierre doble para máxima seguridad

Diseño Avanzado

- 1513 cámaras de ionización plano-paralelas
- 5 mm de resolución espacial (15 x 15 cm² área central)
- Volumen de cámara reducido
  - 3.2 mm de diámetro, 2 mm gap de electrodos
- **Cubre todo el campo de tratamiento 40 x 40 cm²**

- Equipo preparado para medidas **online.**
  - Reducida atenuación
  - Aplicación factor de atenuación o re escalado de UM

  - Preparado para QA de máquina con myQA



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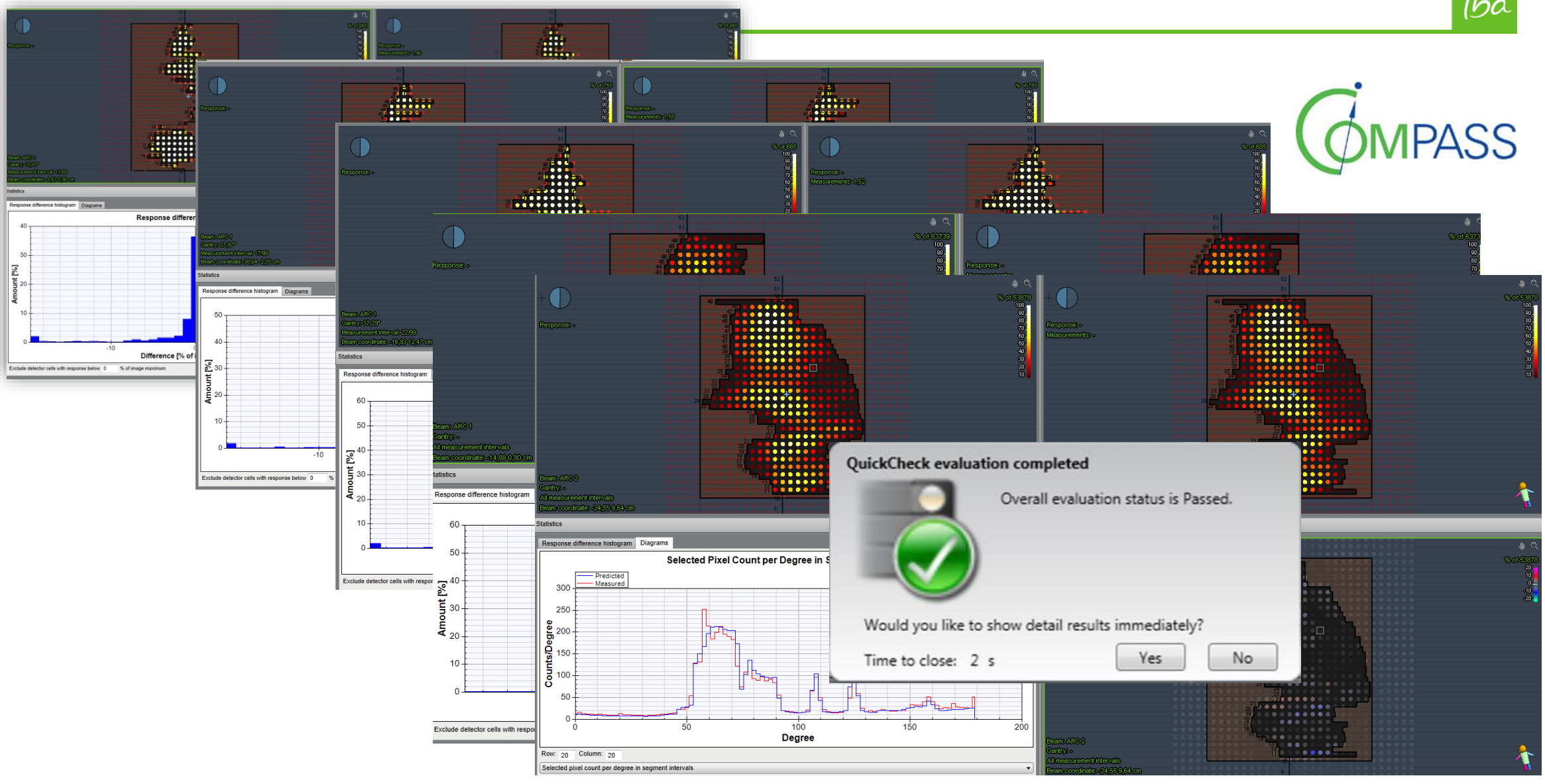
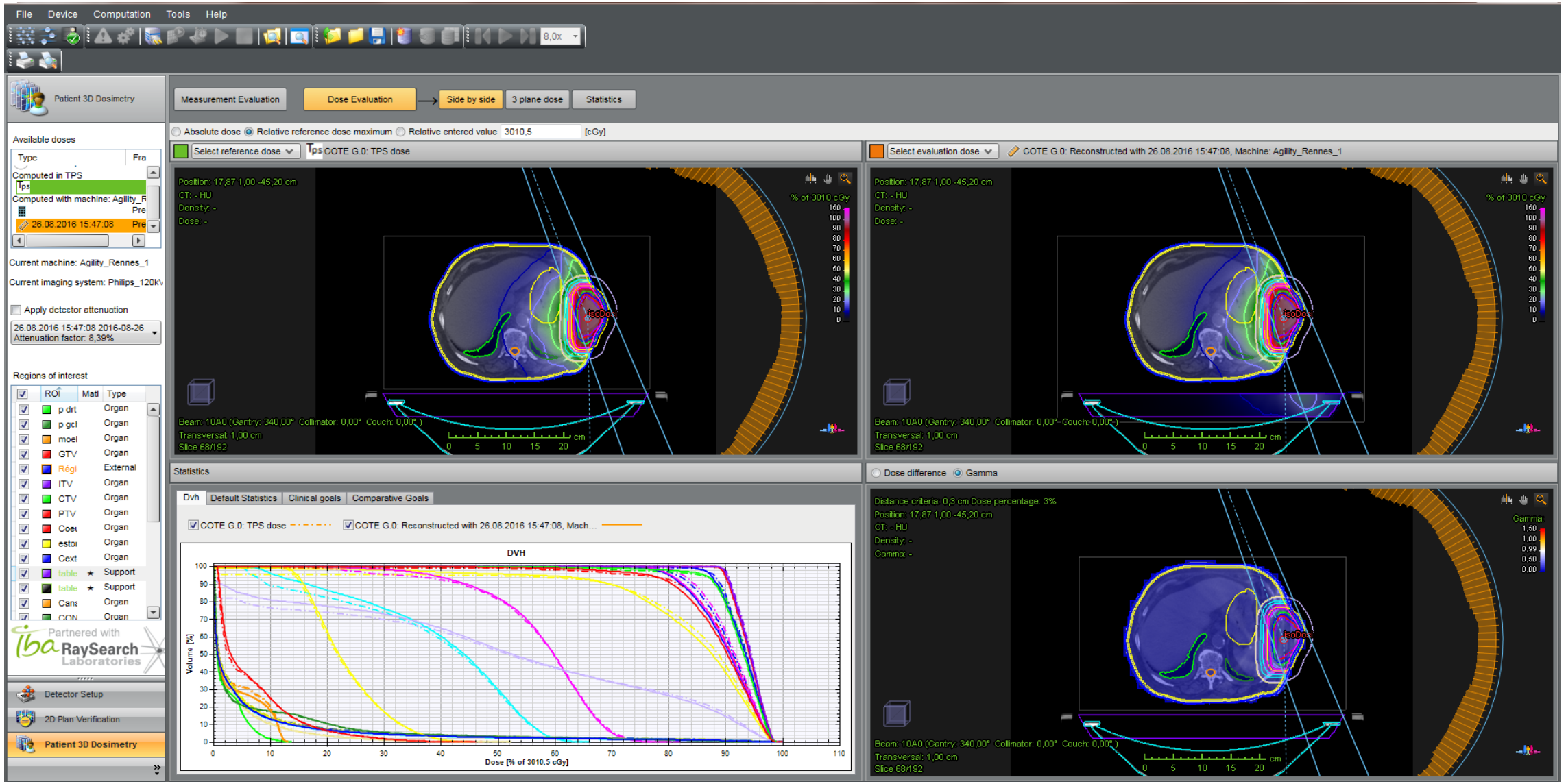
Instant check on the actual delivered fluence



Evaluación dosis 3D (basado en la medida y chequeo TPS)

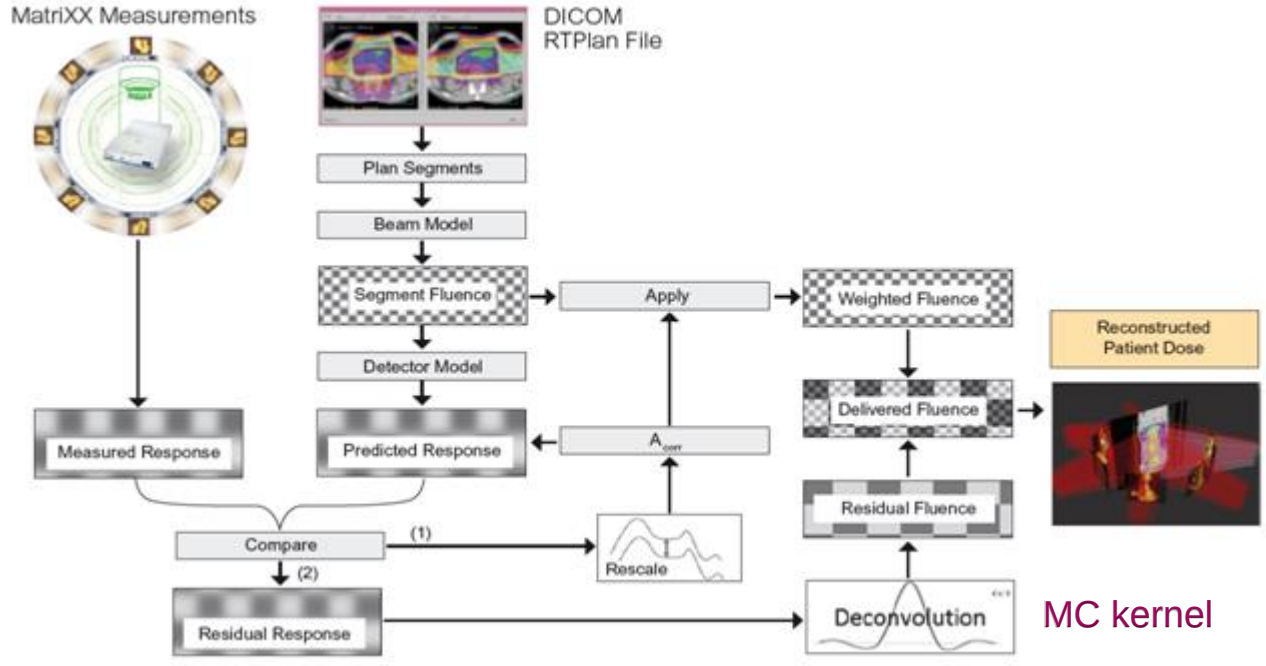


¿Puedo medir campos pequeños?

COMPASS dispone de un kernel pre calculado realizado mediante Montecarlo que permite una deconvolución precisa de la respuesta de las cámaras.

De esta manera podemos detectar errores de posicionamiento en el **MLC de hasta 1 mm y permitiéndonos medir campos de hasta 3x3cm²**

Godart et al. Med. Phys. Biol, 56 (2011)



***Implementation of Stereotactic Ablative Body Radiotherapy (SABR) for early stage medically inoperable lung cancer: An experience from a medium size clinical centre**, UKRO conference 2015*

Stereotactic Radiation Therapy (SRS/SBRT) pre-treatment QA: two different approaches, 3rd ESTRO Forum (Barcelona 2015).

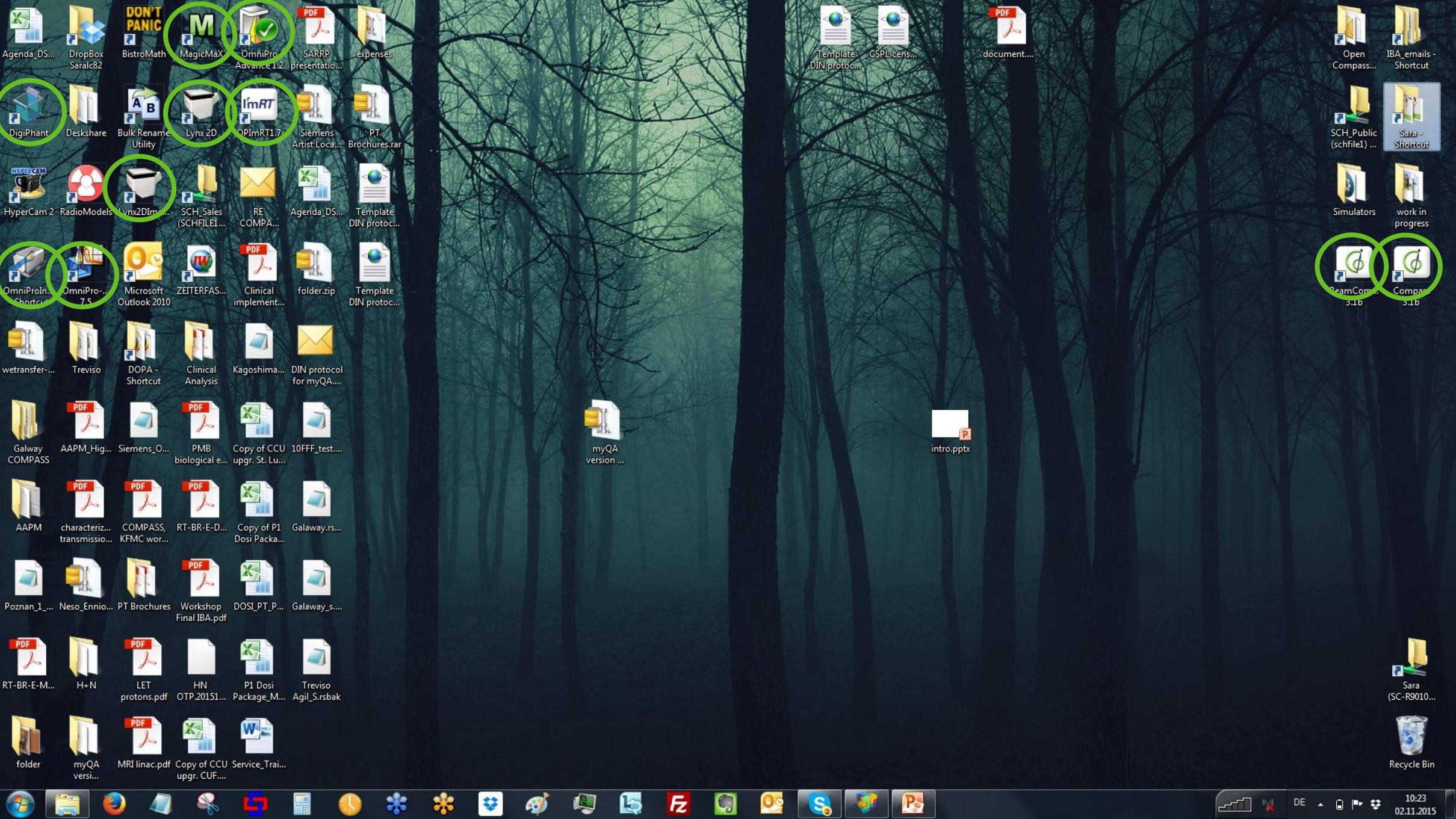
Lung SBRT treatment verification with a transmission detector system, ESTRO2017

4CongresoConjunto Sociedad Española de Física Médica (SEFM) y la Sociedad Española de Protección Radiológica (SEPR) Valencia, del 23 al 26 de junio de 2015

Sistema Compass para la verificación de campos pequeños sin filtro aplanador.

E. Pardo Pérez,[1*] J. Castro Novais[1], MY. Molina López[1], S. Ruiz Maqueda[1] y F. Marcos[2]
(1) S° de Radiofísica y Protección Radiológica, Hospital Universitario Quirón, Madrid.
(2) S° Radioterapia, Hospital Universitario Quirón, Madrid.

¿qué es myQA?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02.11.2015

Control de calidad **integrado**

« ¿Qué hago con mi equipamiento existente? »

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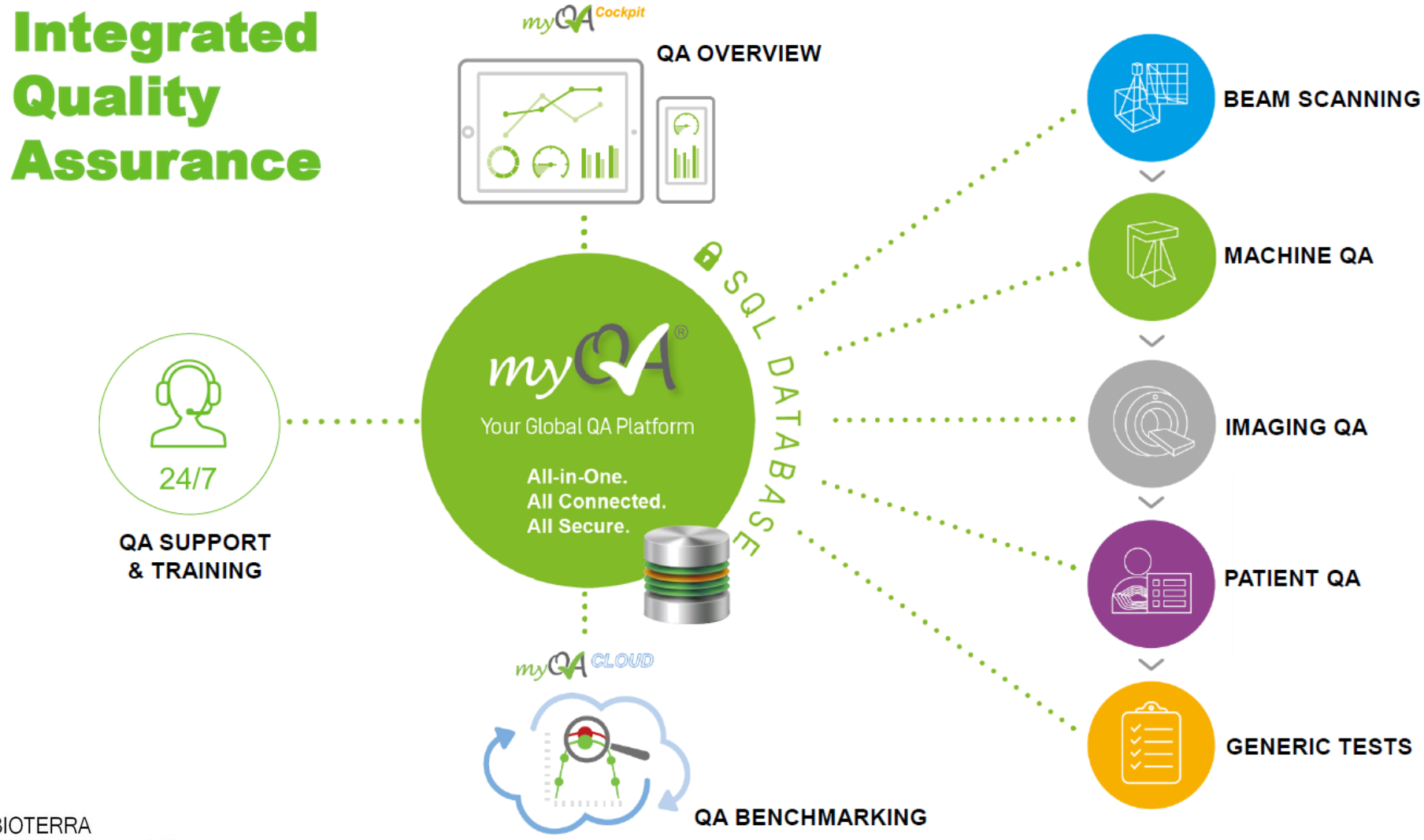
myQA platform: control de calidad **integrado**



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myQA CLOUD

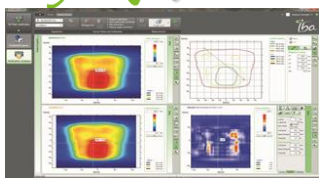
myQA Platform

SQL DATABASE

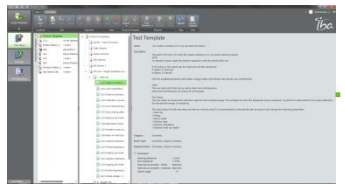
myQA Cockpit

myQA Modules

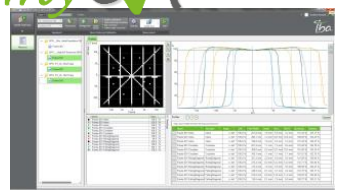
myQA Patients



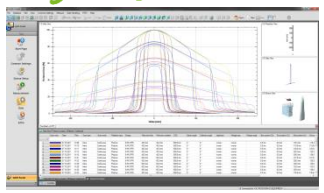
myQA Machines



myQA FastTrack



myQA Accept

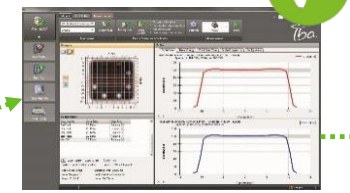


myQA Plug-ins

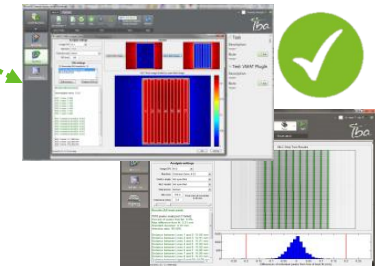
Generic Tests

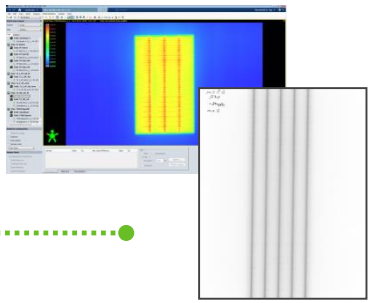
Check lists, pass/fail, functional tests, numeric tests...

DosimetricTests

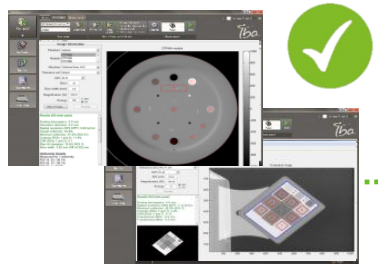


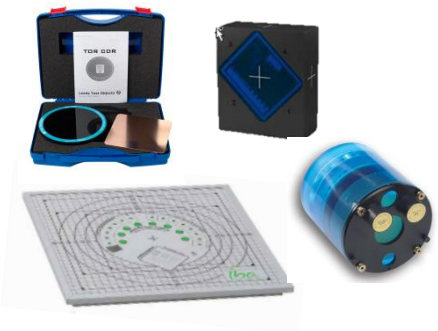
MLC/VMAT tests





EPID/KV/CBCT Tests/WL test





Main ▾

Poznan

myQA Platform

- ✓ myQA Platform
- myQA Patients
- myQA Machines
- myQA FastTrack
- myQA Accept

Equipment Setup

User Administration

Options

Data Import

Compare

Stop Watch

Welcome Poznan

You are assigned to Poznan Oncology Center

myQA®

All-in-One. All Connected. All Secure.

Cockpit
Patients
Machines
FastTrack
Accept
CLOUD

myQA RSS Feed

Register now for myQA User Meeting on November 23+24 in Germany — 13.09.2017

Register now for a myQA User Meeting on November 23 and 24 in our ICC in Schwarzenbruck, Germany. Want to learn more about this event? Then just click above link.

myQA Patients - Technical Notes published on Support Portal — 05.09.2017

Information for users of myQA Patients: two relevant technical notes have been published on our Support Portal. These are: "myQA Patients_TN008_170808 01_myQA Patients_Normalization lost" and "myQA Patients_TN009_170818 01_Align Cube on Isocenter". The latter applies to OP-ImRT+ as well. The technical notes are available from the "Useful Technical Materials" and connected to the product "myQA Patients".

Release of myQA 2017_001 - Distribution via Support Portal — 22.06.2017

We are happy to announce the release of myQA® Version 2017-001 (Build 2.8.18). This version will be distributed via the IBA Support Portal. Eligible customers who have registered themselves in the portal will receive a download ticket in the coming days by email from mailer@iba-portal.com. Key features of this release include: Support of Windows 10 and Virtual Machines, simplified initial setup and significantly speed up "going

Training

TRAINING COURSES FOR HEALTHCARE PROFESSIONALS

ICC [INTERNATIONAL COMPETENCE CENTER]

Service

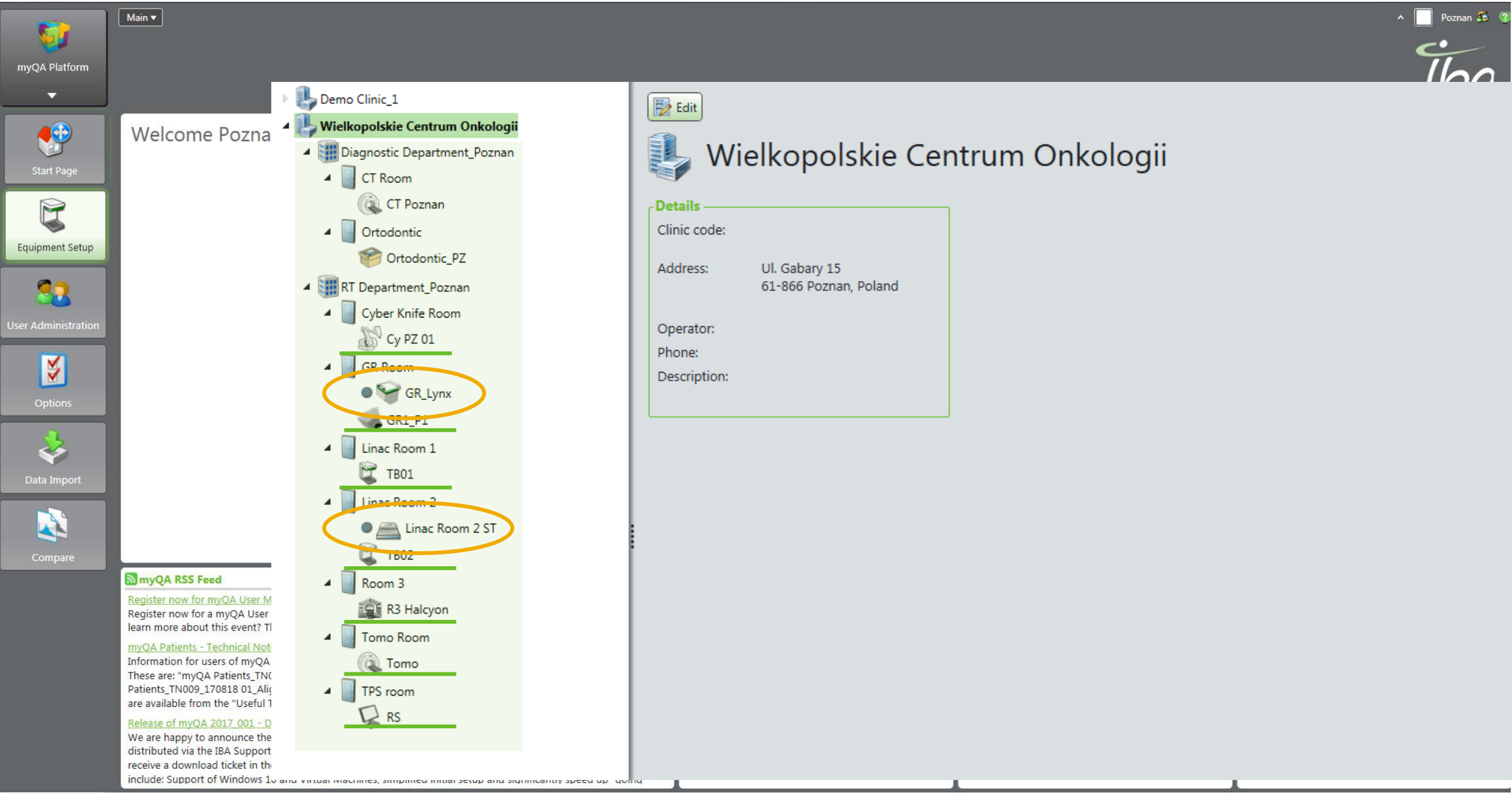
SUPPORT PORTAL

Your 24/7 access to IBA service

CAREprogram

CARE

At IBA, our mission is to "***Protect, Enhance and Save Lives.***"


myQA Platform
Main
Poznan
Start Page
Equipment Setup
User Administration
Options
Data Import
Compare
Welcome Pozna
Demo Clinic_1
Wielkopolskie Centrum Onkologii
Diagnostic Department_Poznan
CT Room
CT Poznan
Ortodontic
Ortodontic_PZ
RT Department_Poznan
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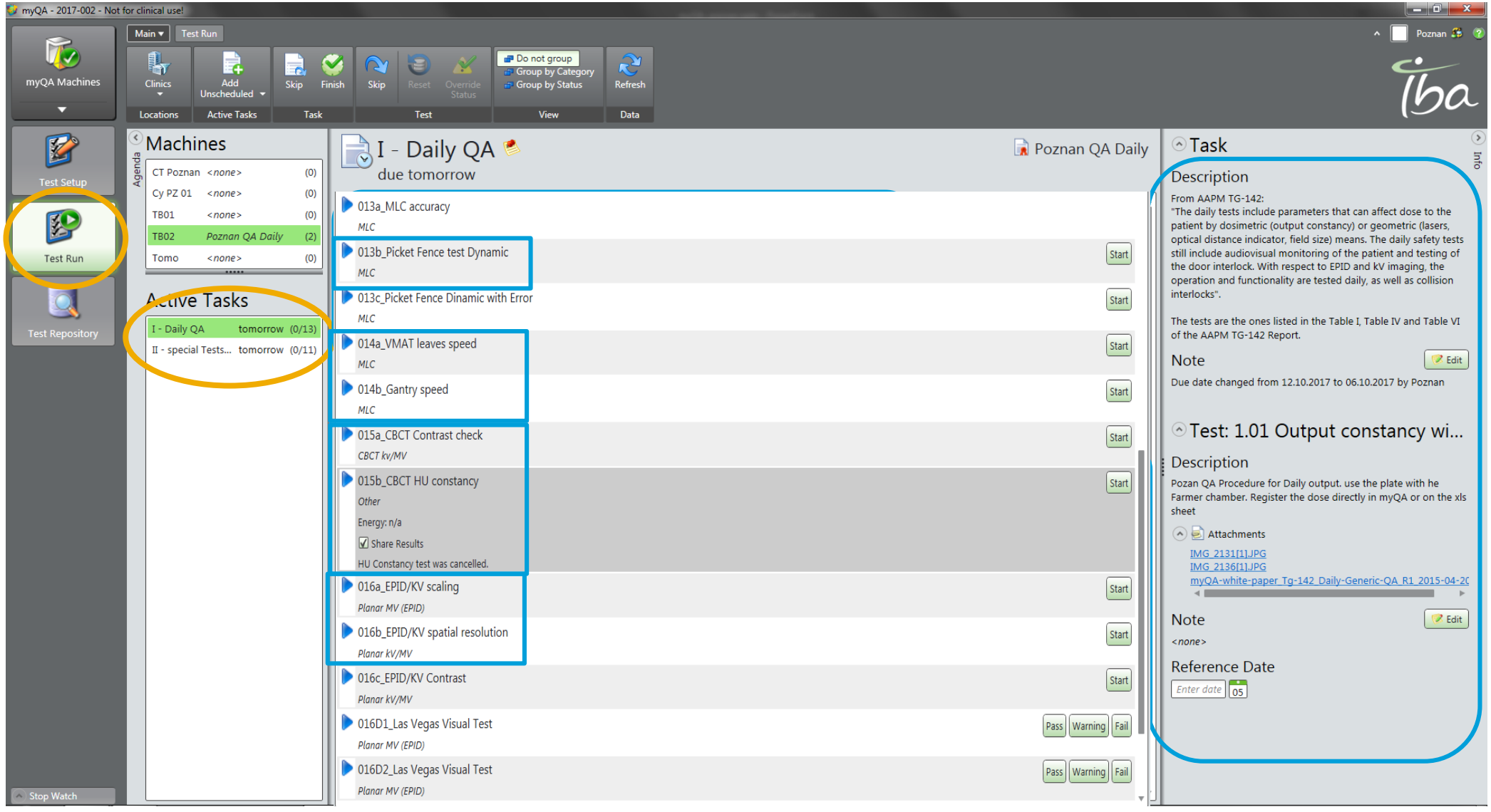
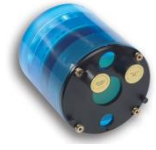
Agenda de controles de calidad

myQA Machines





myQA: TG-66

myQA - 2016-002 - Not for clinical use!

Main | Test Setup | Administrator

myQA Machines | Test Setup | Test Run | Test Repository

Clinics | Edit | Save | Cancel | Paste | Cut | Copy | New | Delete | Import | Export | From Template | Set Active | Refresh | Sort by Category

Locations | Edit | Clipboard | Item | Protocol Template | Protocol | Data | View

Machines & Templates

- Protocol Templates
- CT-dedicated <none>
- Elekta Demo Protocol
- P1 <none>

- Protocols: CT-dedicated
  - TG-66
    - Annual QA
      - 1.0 Gantry Tilt Accuracy (...
      - 1.1 Table Indexing and Po...
      - 1.2 Scan Localization (Me...
      - 2.0 CTDI (Dosimetry)
    - Daily QA
    - Monthly QA

Test Definition

Mechanical
Numeric

Name: 1.0 Gantry Tilt Accuracy

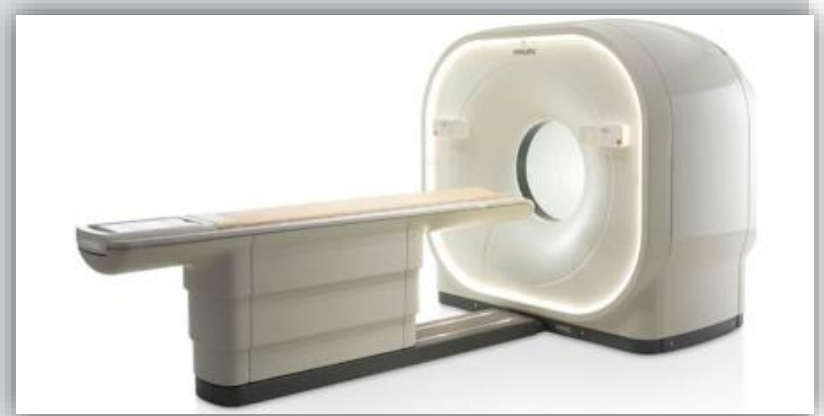
Description:
This test will verify the accuracy of the gantry tilt indicators
1. Setup gantry with digital level or inclenometer on face of gantrry near control module
2. Tilt the gantry to the desired angle and record the reading
3. Bring the gantry back to 0 degrees and record the reading

If you lasers are mounted directly in front of the gantry that would inhibit gantry tilt do not proceed with this test
If you have a ceiling mounted power injector make sure it is clear of the gantry prior to start of test

Acceptance Criteria

Add | Edit | Delete

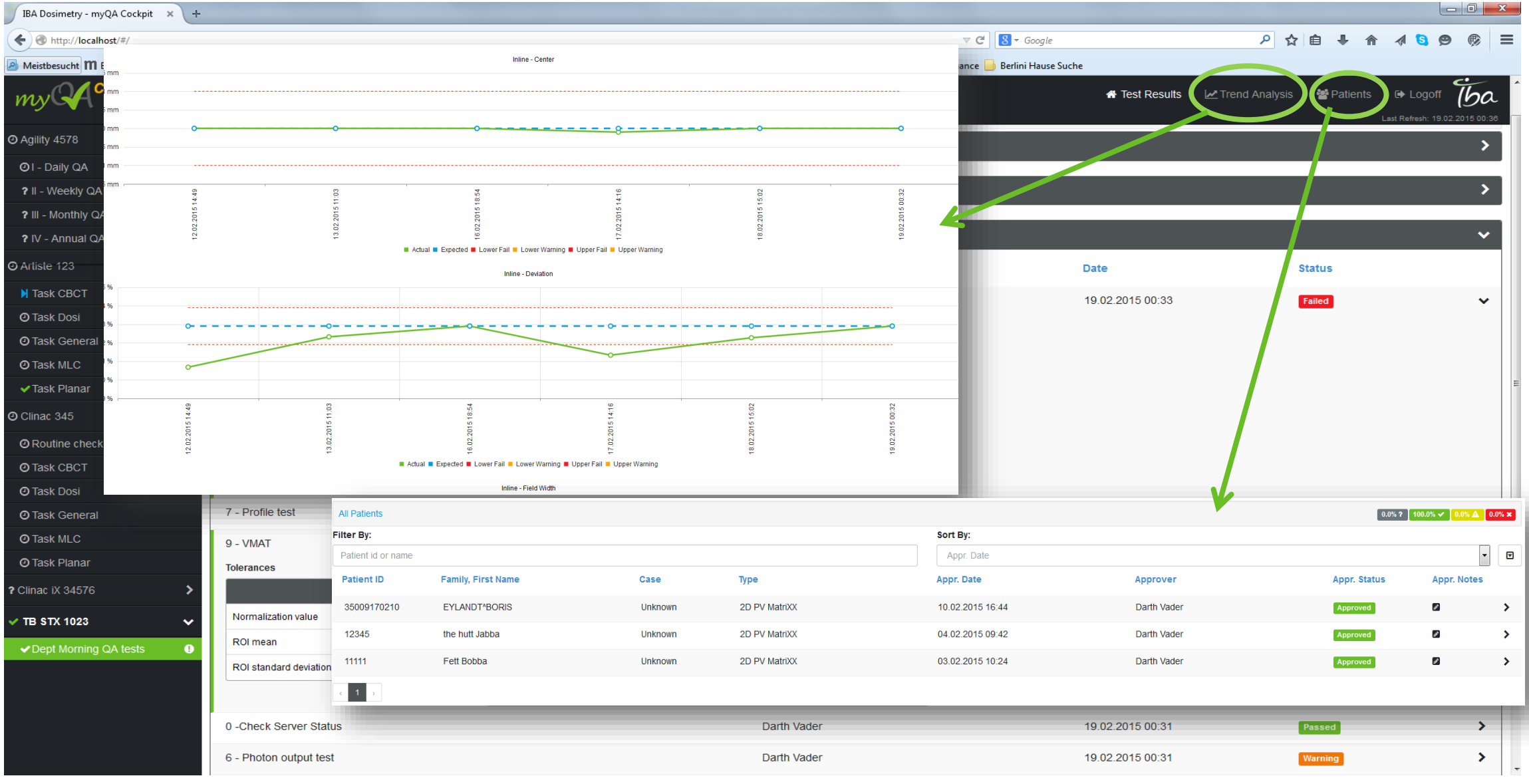
Name	Expected / Ref	Warn	Fail	Type	Relative
10 degree Offset	10,0 °	± 0,5 °	± 1,0 °	Tolerance	No
20 degree offset	20,0 °	± 0,5 °	± 1,0 °	Tolerance	No
Return to 0 degree	0,0 °	± 0,5 °	± 1,0 °	Tolerance	No



Stop Watch

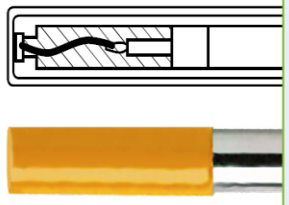
DE 17:04 29.08.2016

myQA Cockpit



Soluciones IBA para medida de campos pequeños

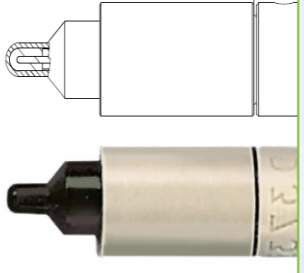
RAZOR DETECTOR



High-performance diode detector

- ✓ Chip size: 0.95 x 0.95 mm; t = 0.5 mm
- ✓ Sensitive area: Ø 0.6 mm
- ✓ For Photon and Electron beams in RT

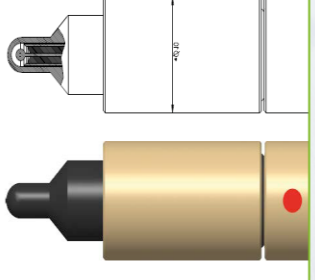
RAZOR™ CHAMBER



Compact air ionization chamber

- ✓ Cavity volume: 0.01 ccm
- ✓ Central electrode material: graphite
- ✓ For Photon and Electron beams in RT

RAZOR NANOCHAMBER



Smallest available ionization chamber

- ✓ Cavity volume: 0.003 ccm
- ✓ Central electrode material: graphite
- ✓ For Photon and Electron beams in RT

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Stealth Chamber

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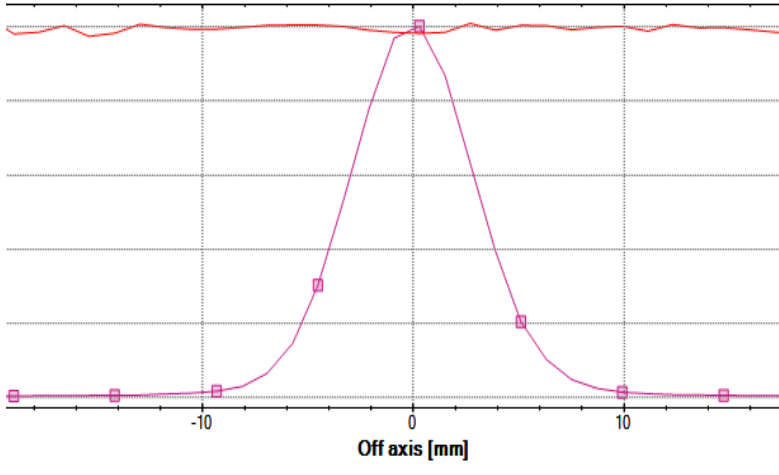
Tamaño de campo:
5 mm x 5 mm, medido en modo continuo



BIOTERRA
BIOLOGÍA Y TÉCNICA DE LA RADIACIÓN S.L.

¿Alguna pregunta?

GRACIAS