

## Why choose QUALIMAGIQ®?

- **Interface without pull-down menus:** only buttons and tabs organized to guide and accompany you in your work.
- In the **automatic mode 3 mouse clicks and 10 seconds is all it takes:**
  - ➔ **1<sup>st</sup> click**, select the images to be analyzed,
  - ➔ **2<sup>nd</sup> click**, analyze the selected images,

## Precise & fast calculations

Developed with the "Image Video and Communication Team" of the Research Institute in Communication and Cybernetics of Nantes (IRCCyN), **our analysis methods** have associated scientific projects and **international publications**.

## Fluid & intuitive workflow

QUALIMAGIQ automatically:

- retrieves, decodes and stores the Quality Control (QC) measurements (DICOM images and dose measurements),
- verifies that the measurements received are in conformity with the protocol programmed by the user, sorts them, retaining only those required for QC,

## Adaptable to your needs

**It is you who decides just what kind of quality control you wish to implement, as you can fully parameterize and customize QUALIMAGIQ to meet your particular needs:** settings of protocols, analysis methods, tolerances, target values and pdf reports.

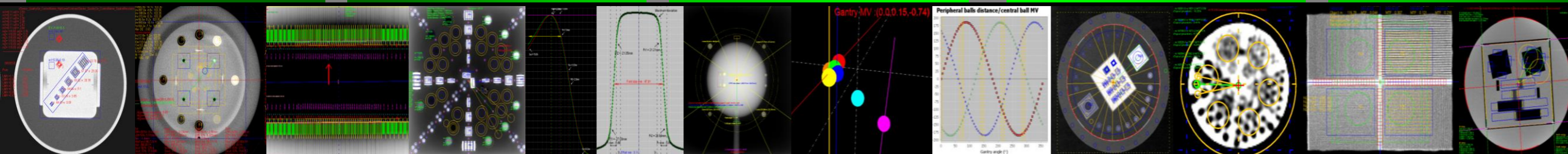
**You can also use templates of protocols**

## Start up & training

- Hands-on training begins with basic use of the software (1-2 hours).
- Together we complete prescriptions for representative patients associated with your quality analyses (1-2 hours).
- We walk you through image acquisition for the first QA (1-3 hours).

## Optimized architecture

To facilitate assisting you, you may grant us **remote access** to your host station directly from a QUALIMAGIQ interface. In addition, a simple right click on any exam **automatically sends an email request for assistance on this exam to our After Sales Service and deposits your faulty exam and all your program**



➔ **3<sup>rd</sup> click**, validate the analysis to generate 3 pdf reports for this analysis, create a statistics point and archive the analyzed images.

➔ **It's no longer necessary to manually – and tediously – associate images with tests!**

■ In the «**Step-by-Step**» mode: you can **customize the measurement masks and the calculation methods to meet your needs**. Even if it is "MAGIQ" (!) the software is not a mysterious black box. **You remain Master of your quality control as it is you to set parameters and decide about the methods QUALIMAGIQ® uses for analysis**. This «step-by-step» mode is also a **wonderful tool to familiarize oneself with and train on quality controls**.

■ The «**Protocol**» mode helps you to **define for each installation the QC protocols which you want to apply**. Further, when importing QC measurements, QUALIMAGIQ sorts them automatically and verifies their accordance with your declared protocols. **QUALIMAGIQ thus eliminates all risk of false positive or negative results**.

All signal extraction masks can be customized by the user, as can the calculation methods. **These masks are automatically realigned on the images to be analyzed**, ensuring correct results, even if the test objects have not been strictly aligned with the imager.

**You save precious time during image acquisition by avoiding a successive and laborious iteration of verifying and adjusting phantom alignment on the imager.**

## Safe functioning

■ When modifying program parameters, the software automatically safes the previous one and archives it while mentioning date, timer and author of this modification. **All you do in QUALIMAGIQ is traced and reversible**.

■ A «**Test**» mode is available which enables you to follow the evolution of the analysis results as the software versions evolve.

- analyzes all measurements associated with a QC in just one mouse click,
- displays a report listing all of the analysis results as well as a recap of the faulty results,
- edits 3 QC reports in pdf format (a complete report including the analysis results, associated images or dose measurements annotated with the related measurements, a simplified report containing only the results without images, and a recap of all faulty results),
- saves the QC (images or dose measurements, analyses and pdf reports).

## Consultation & traceability

Here as well everything is easy, **no need to manipulate files**: just select the installation and the parameter which you wish to study over a given period. **The system then presents the time evolution curve for this parameter** with the associated "alert" and "out of tolerance" levels. **Click on any point of the curve for immediate access to the 3 pdf reports linked to this measurement**.

**and analysis methods provided as a basis to facilitate startup of the solution:**

- You can copy and paste these templates **which are generally in conformity with international standards**, or save all of your own personalized templates.
- **You can parameterize the QC reports in pdf format:** your logo, parameters displayed or not, highlighted or not, number of decimal places on the numerical results ...

## 4 User levels

- users with basic rights can analyze QC measurements,
- intermediate users can analyze images and validate or reject an analysis,
- super-users can further adjust protocols, analysis methods, target values and tolerances,
- the administrator can declare users and software paths.

■ We parameterize the software with you, adapting it to your exact QA needs: we set protocols, analysis methods, tolerances and target values together (1-3 hours).

**By the end of the training session, overall quality analysis (not just QUALIMAGIQ) is operational: you need only to continue routine application!**

To complete your training with the software, you can use it in «**Demo**» mode i.e. with a special database containing sample measurements for all types of installations and quality controls managed by QUALIMAGIQ.

**customization into your personal FTP server account**. All such program customization is contained in a single directory automatically compressed and sent by QUALIMAGIQ.

**Even without an internet connection we can continue to assist you** by using your program customization directory, thereby allowing us to work in our office as if we were right alongside you.

**QUALIMAGIQ is designed to update itself with no need of intervention**. A «**Test**» mode is available which enables you to follow the evolution of the analysis results as the software versions evolve on a set of typical measurements of your choice.

**OUR PANEL OF SOFTWARE MODULES FOR RADIATION THERAPY:**

- EPID+:** QC of MV portal imagers using PTW, QUALIFORMED or LASVEGAS phantoms
- ISO+:** Size and position of the X-ray isocenter (MV and/or KV) using ELEKTA, BRAINLAB or QUALIFORMED test-object. QC of gantry, collimator & table rotation angles
- MLC-stat:** QC of all types of multi-leaf collimators used in the static mode
- MLC-dyn:** QC of all types of multi-leaf collimators used in the dynamic mode
- FIELD:** QC of the correspondence between X-ray, light and prescribed field limits for all fields (symmetric/asymmetric), using QUALIFORMED test objects
- 18FG+:** QC of KV portal imager used in 2D mode with the LEEDS 18FG or FL patterns
- CTP:** CBCT image quality of IGRT in use with a CATPHAN 500, 503, 504 or 600 phantom
- DOSE-R:** Automatic analysis of depth dose curves and profiles coming from PTW and IBA water tanks or matrix or scanning systems.
- TOMOT-IQ:** Automatic analysis of "Cheese phantom" images for an evaluation of image quality of a TOMOTHERAPY installations.

**OUR PANEL OF SOFTWARE MODULES FOR CT IMAGING:**

- CTR:** Image quality using a manufacturer test object (GE, PHILIPS, SIEMENS, TOSHIBA)
- CTP:** Image quality using a CATPHAN 500 or 600 phantom
- DE:** QC of the conversion curve CT numbers to electronic density using the CIRS test objects: 062 for CT and CIRS062A for CBCT
- LAS:** Routine QC of the alignment of the external lasers isocenter onto the CT scanner isocenter using LAP or QUALIFORMED test objects
- PLAN:** Advanced QC of the complete alignment of the external lasers, the couch level & the respect of the distances by the CT scanner using a QUALIFORMED test object.

**OUR PANEL OF SOFTWARE MODULES FOR NUCLEAR MEDICINE:**

- PLANAR:** QC of SPECT cameras used in planar mode (4-quadrant pattern & rectilinear sources)
- TOMO:** QC of SPECT cameras used in tomography mode (3D-LINE and JASZCZAK test objects)
- BODY:** QC of SPECT cameras used in total body mode
- PET:** QC of PET cameras

**OUR PANEL OF SOFTWARE MODULES FOR MRI:**

- MRI-ES2:** QC of MRI installations using Eurospin II phantoms
- MRI-MP:** QC of of MRI installations using MAGPHAN phantoms

**New modules are currently being developed, so feel free to request an updated list.**

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QUALITY CONTROL SOFTWARE FOR RADIOTHERAPY AND MEDICAL IMAGING

# QUALIMAGIQ

## The QUALIMAGIQ<sup>®</sup> platform and its modules

An optimal software solution for automatic analyses and traceability of quality control measurements in radiation therapy and medical imaging

For an easy, fast, organized, comprehensive and accurate QA!



QualiFormeD SARL  
 14, Rue de la Vieille Horloge  
 85000 La Roche Sur Yon, France  
 www.qualiformed.com

Phone +33 (0)9 77 00 91 29  
 Fax +33 (0)2 51 24 85 79  
 Mobile +33 (0)6 61 57 69 11  
 info@qualiformed.com

Your local distributor: