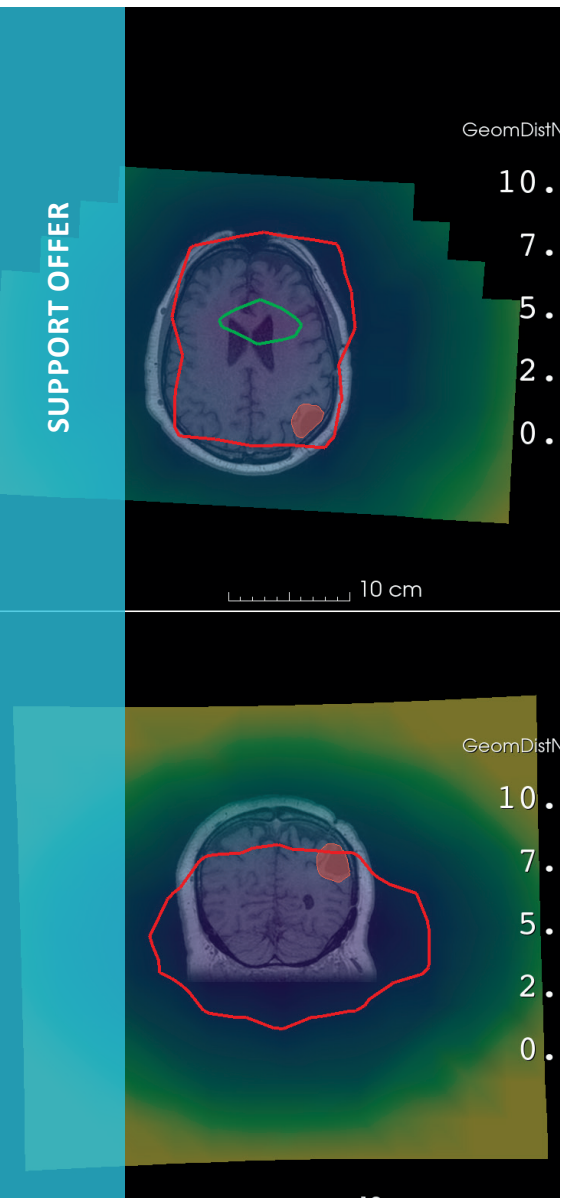


ANALYSIS OF GEOMETRIC DISTORTIONS IN MRI



MRI becomes increasingly accessible in clinical routine, in particular for **stereotactic applications** (surgery, radiotherapy), and in combination with other modalities (PET, linear-accelerators). However, MR images are affected by **geometric distortions** that can reach several centimeters in the most off-centre regions of the field of view.

To ensure optimal patient care, it becomes essential to **quantify** distortions and evaluate their dosimetric impact in radiotherapy. Spin Up helps you master this practice with a simple, turnkey solution.



GEOMETRIC DISTORTIONS PACKAGE

PROVISION OF A TURNKEY SOLUTION

CARTESIAN3D PHANTOM

- Optimized 3D grid for high-resolution
- Available in two versions to adapt to all locations
- Measurement of geometric distortions
- Compliant with AAPM recommendations (Task group 284 report: magnetic resonance imaging simulation in radiotherapy: considerations for clinical implementation, optimization, and quality assurance)

DISTORTION ANALYSIS

- Automated image analysis
- Sending of periodic test images to the Spin Up PACS
- Display of results on a web server (CartesianQA)
- Export of results in PDF and DICOM formats (compatible with the TPS)

CARTESIANRT MODULE

- Overlay of the distortion field on patient images
- Correction of RT Structs for visual evaluation of margins
- Analysis of the dosimetric impact on DVH



Don't wait,
trust experts!

CHOOSING SPIN UP MEANS...

- Meeting international recommendations
- Having a solution that easily integrates with existing technical platforms (MRI, TPS)
- Quantifying the dosimetric impact caused by MRI distortions on radiotherapy plans

A question? A specific request? Contact us!
info@spin-up.fr | +33 3 69 09 21 37

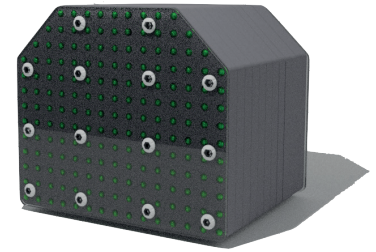
CARTESIAN3D PHANTOM

Cartesian3D phantoms are designed to measure geometric distortions induced by gradient non-linearities static field heterogeneities of a standalone MRI or one coupled with an accelerator (MRLinac) or PET (PET/MR).

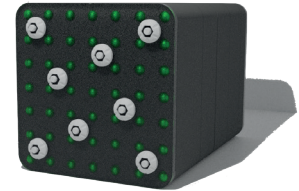
Thanks to its Cartesian structure, each phantom (HEAD or BODY) can be used to measure the distortion field with sub-millimetre accuracy, using over 2,000 spherical markers spaced 3 cm apart in all three spatial directions.

FEATURES

- Volumetric coverage adapted to practices
- Lightweight (HEAD = 2,5kg ; BODY = 9,1kg)
- Easy centering during periodic tests
- Compliant with AAPM recommendations (TG 284)
- Phantom available in HEAD version to avoid modifying clinical sequences sequences exploring the brain (fov 21x21x30 cm)



Cartesian3D « BODY »
(45 x 36 x 38 cm)



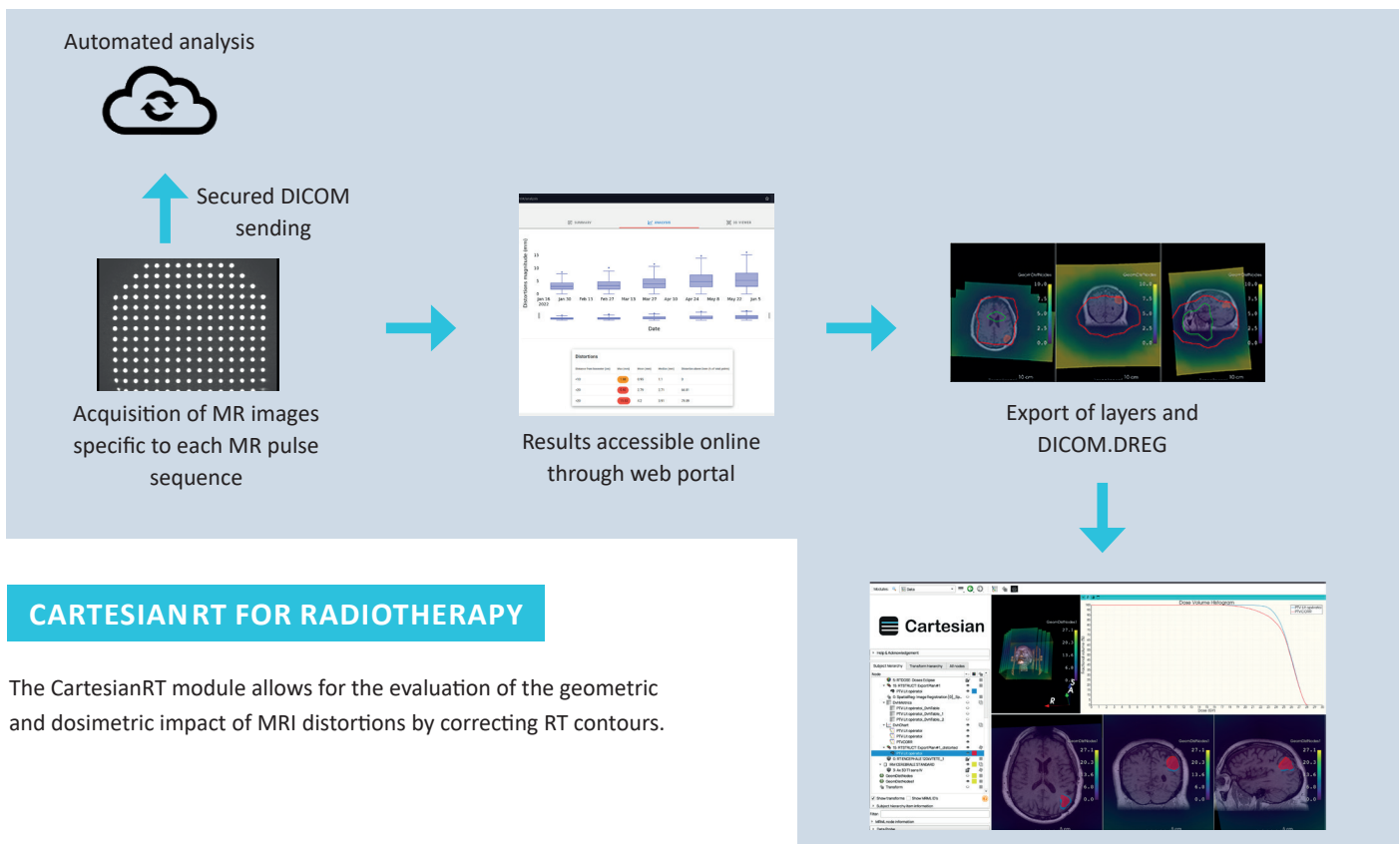
Cartesian3D « HEAD »
(21 x 21 x 30 cm)

DISTORTION ANALYSIS

For each test performed, the phantom images are processed on a web server. Results can be viewed online and downloaded in PDF or TPS-compatible DICOM.REG format.

FEATURES

- Automatic software with submillimeter accuracy
- Interactive 3D distortions viewer
- Follow-up of distortion stability over time
- DICOM exports for software integration



CARTESIANRT FOR RADIOTHERAPY

The CartesianRT module allows for the evaluation of the geometric and dosimetric impact of MRI distortions by correcting RT contours.