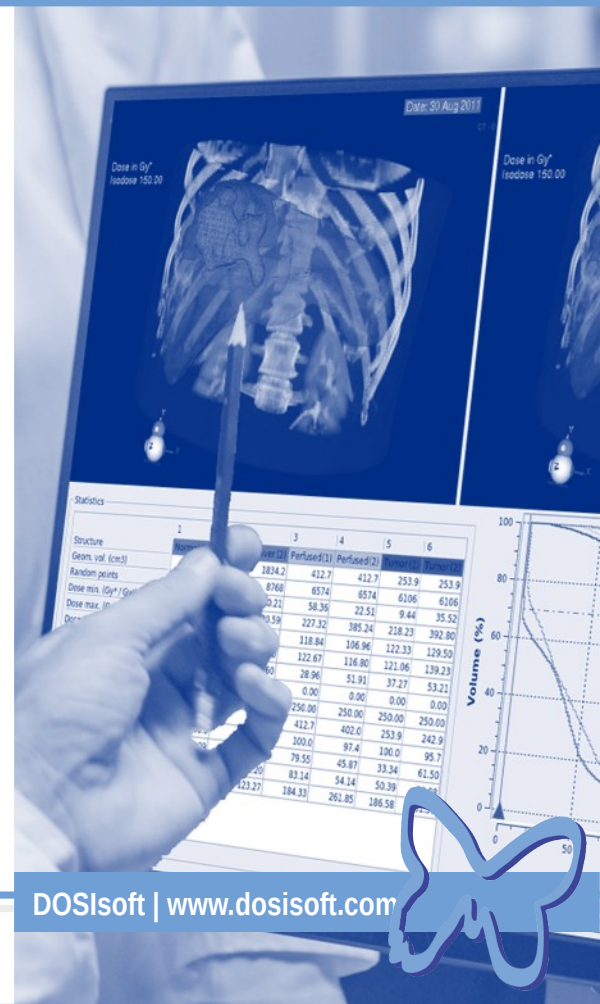


PLANET[®] Dose

SIRT & MRT

**Multi-radionuclide platform
for voxel-based personalized dosimetry**

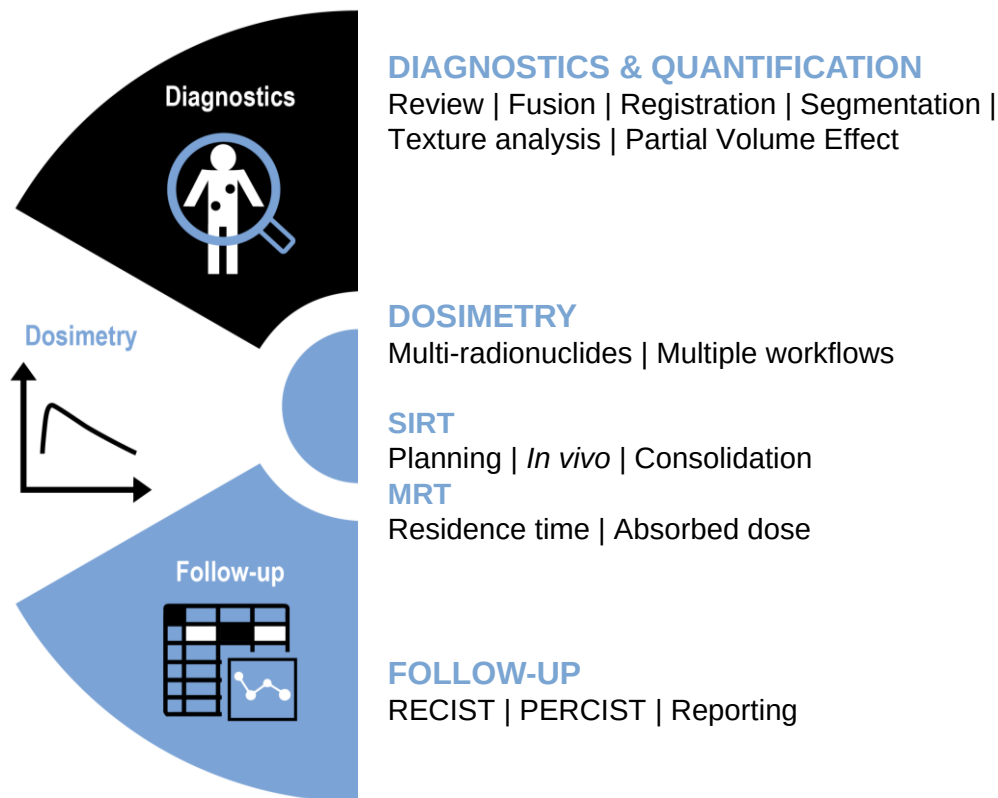




PLANET[®] Dose

All-in-one Dosimetry Solution

All-in-one dosimetry solution for patient-specific theranostics



PLANET[®] Dose



VERSATILE

Adapted to your clinical workflow



END-TO-END

Complete multi-radionuclide platform
for treatment planning & follow-up



VENDOR-NEUTRAL

Full Interoperability: Imaging & Microspheres
DICOM compliance: Images - RT Struct - RT Dose



IIb class **CE marked** | **FDA 510(k)** ⁹⁰Y Post-implantation
European Directive 2013/59/Euratom – Feb, 6th 2018



PLANET[®] Dose



Selective Internal Radiation Therapy

PLANET[®] Dose: end-to-end dosimetry solution

Improving patient's safety & Medical team's confidence

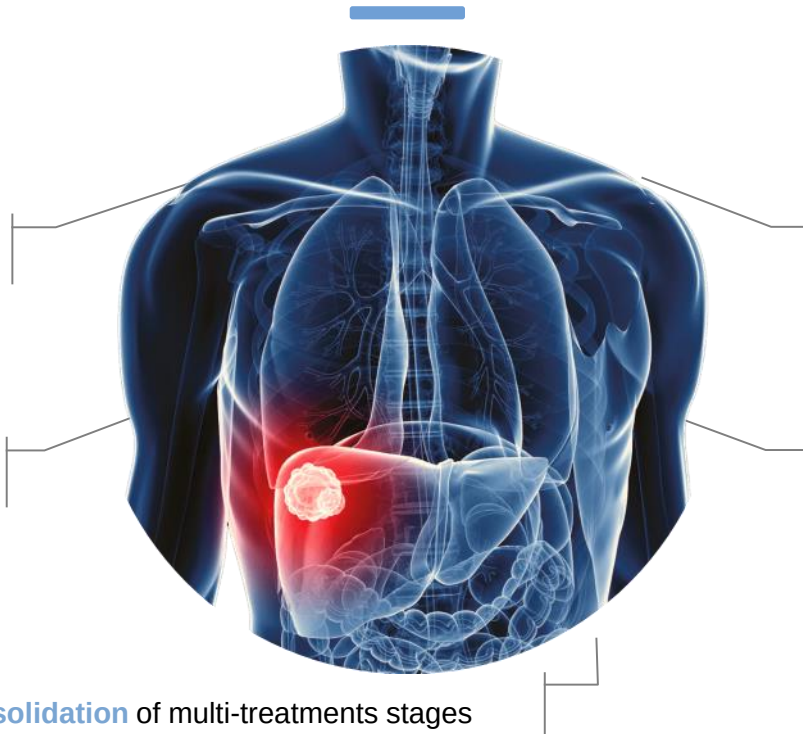
Pre-implantation dosimetry based
on ^{99m}Tc -MAA or $^{166}\text{Ho}^*$ -Scout
SPECT/CT & **liver-lung shunt**
assessment

Dosimetry comparison
planning vs. *in vivo* control

Consolidation of multi-treatments stages

Post-implantation dosimetry
based on
 ^{90}Y -microspheres-PET/CT (or
SPECT/CT Bremsstrahlung) /
 $^{166}\text{Ho}^*$ -microspheres SPECT/CT

Voxel S-Values (VSV) kernel
convolution / **Local Energy**
Deposition (LED) method,
density correction



SIRT Dosimetry Workflow

^{166}Ho and ^{90}Y Therapies

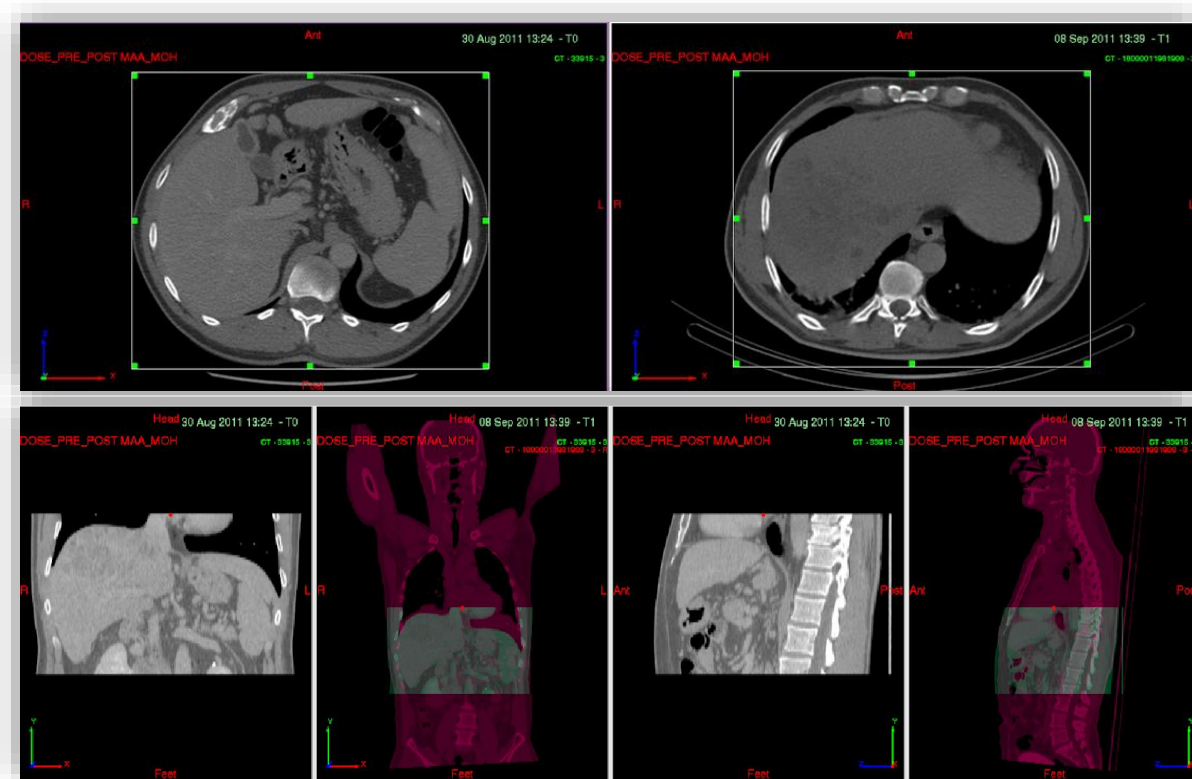
1

Registration

Multi-modality
image support

Registration **check &
adjustment** tools

Manual
Automatic
(Rigid & Deformable)



SIRT Dosimetry Workflow

^{166}Ho and ^{90}Y Therapies

2

Segmentation

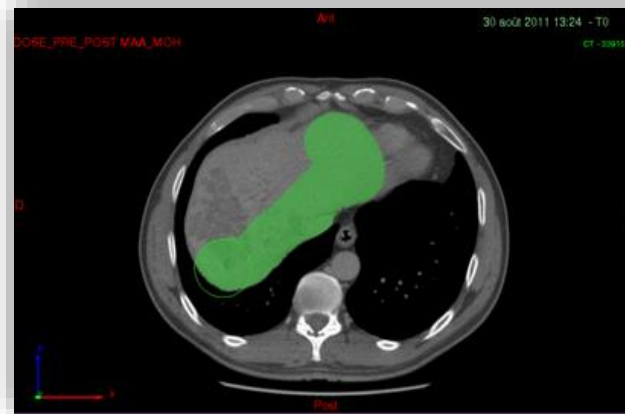
Anatomical & Functional mode

Large variety of contour **delineation & modification** tools

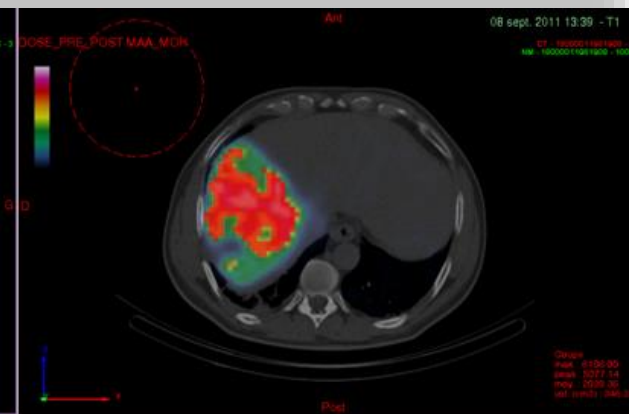
Advanced **automatic** segmentation of **uptake** areas

RT-structure **import** (DICOM format)

Anatomical



Functional



SIRT Dosimetry Workflow

^{166}Ho and ^{90}Y Therapies

3

Treatment Planning

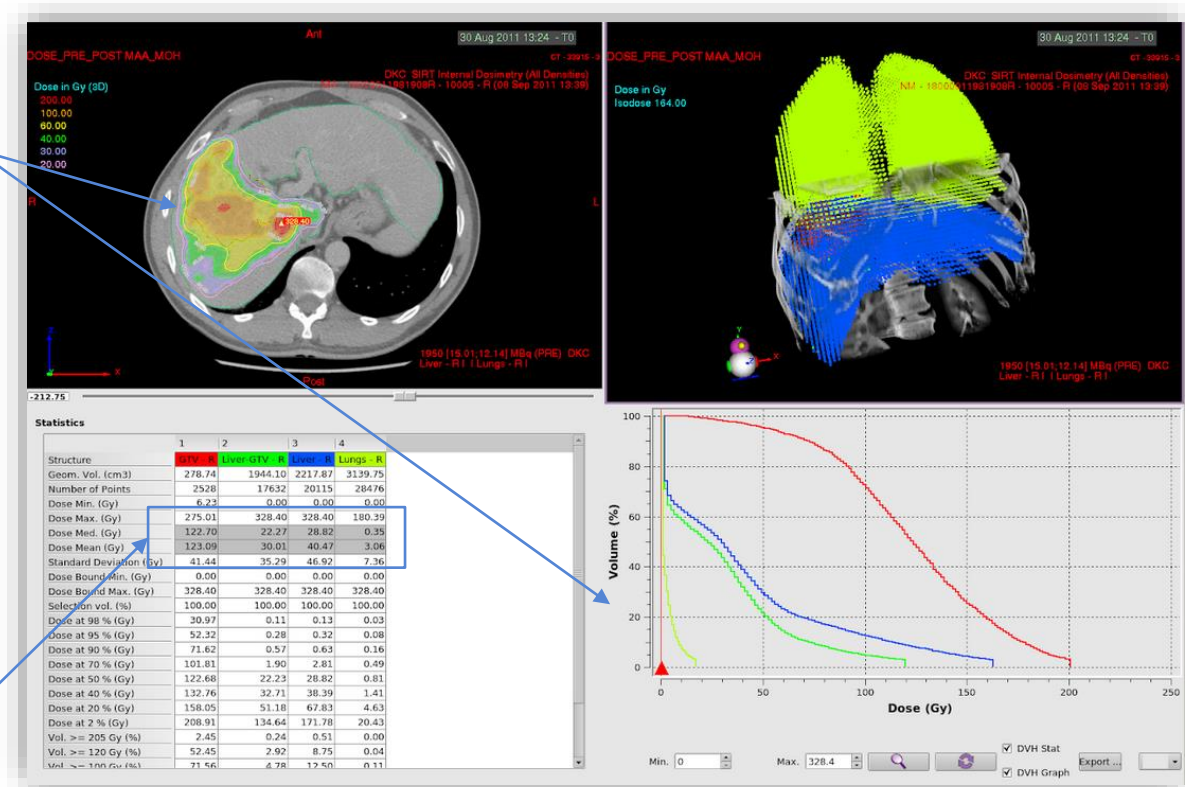
SPECT or PET-CT images
(Tc-99m/Ho-166)

Pulmonary shunt calculation
(Empirical, BSA & Partition)

Pre-implantation absorbed
dose calculation
(VSV & LED)

Dose map & DVH assessment

Interactive activity scaling



SIRT Dosimetry Workflow

^{166}Ho and ^{90}Y Therapies

4

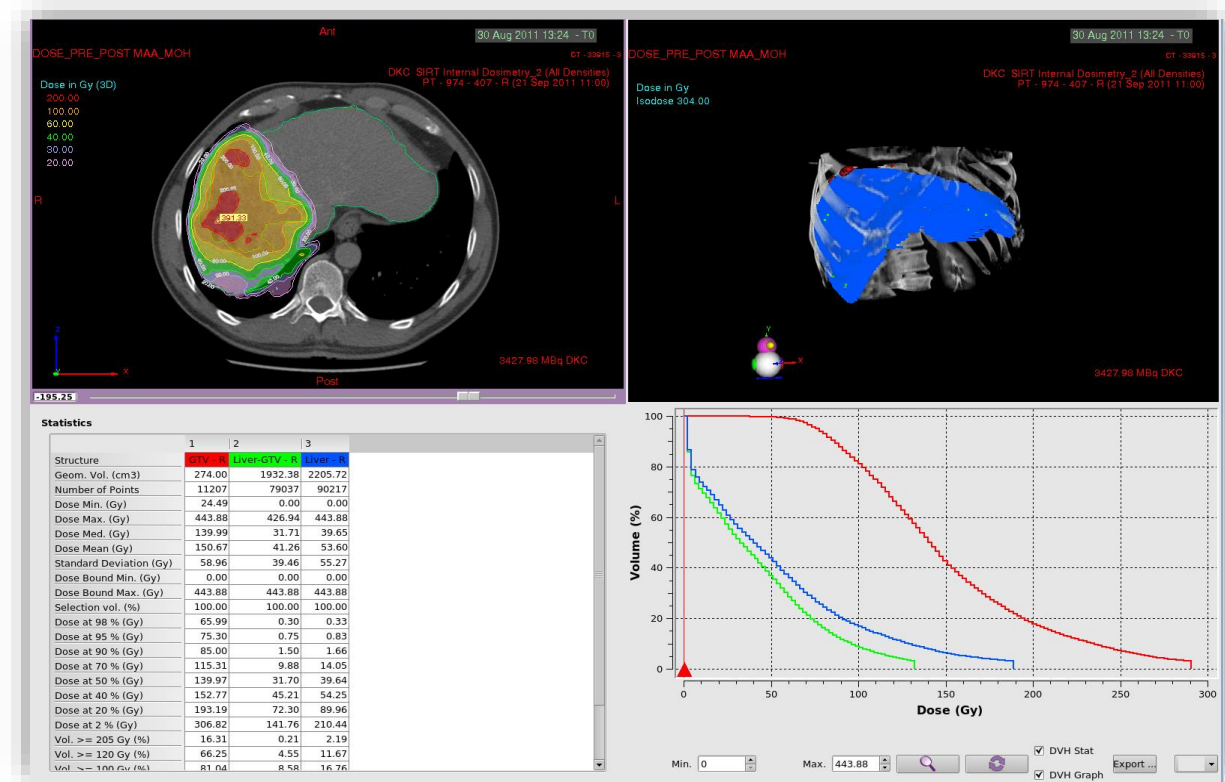
In vivo Control

PET-CT images

Support of all microspheres
(Y-90/Ho-166)

Post-implantation absorbed dose calculation
(VSV & LED)

Dose map & DVH assessment



SIRT Dosimetry Workflow

^{166}Ho and ^{90}Y Therapies

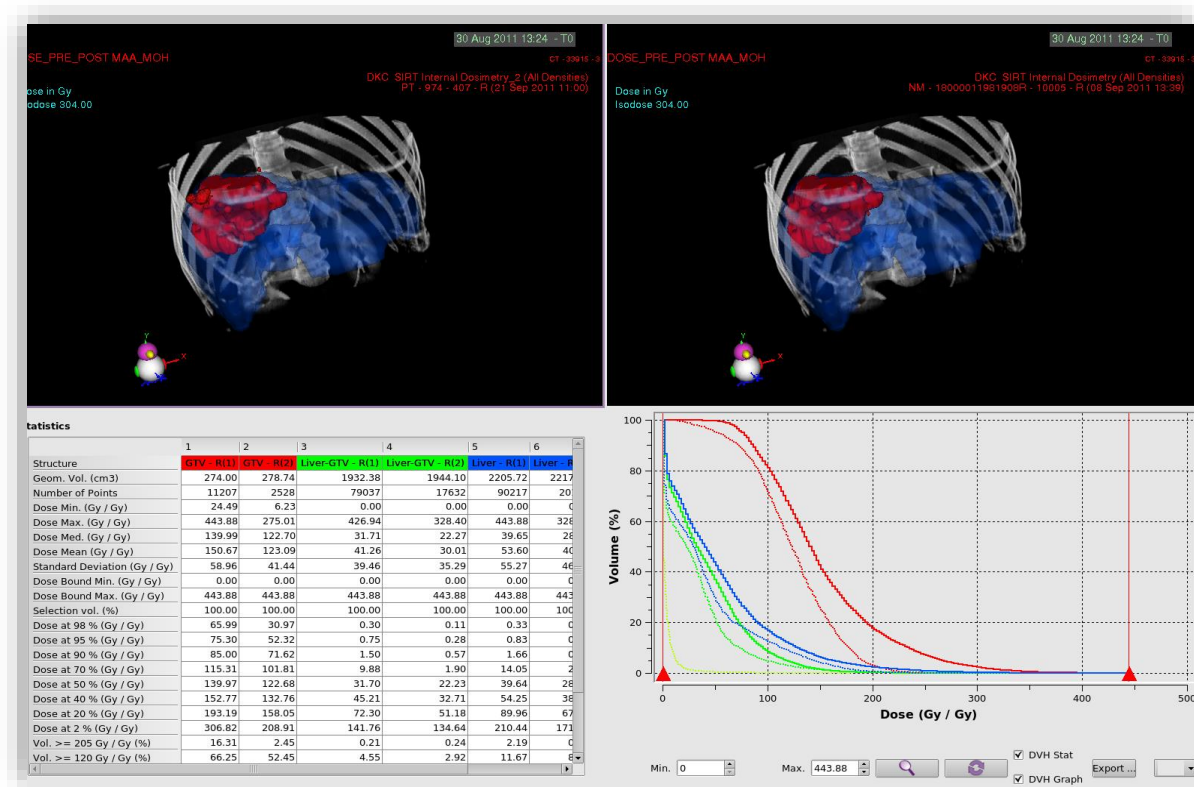
5

Comparison & Dosimetry cumulation

Treatment planning **vs.** *in vivo* control

Dose map & DVHs comparison

Cumulate treatment stages
(cumulative dosimetry)



SIRT Dosimetry Workflow

^{166}Ho and ^{90}Y Therapies

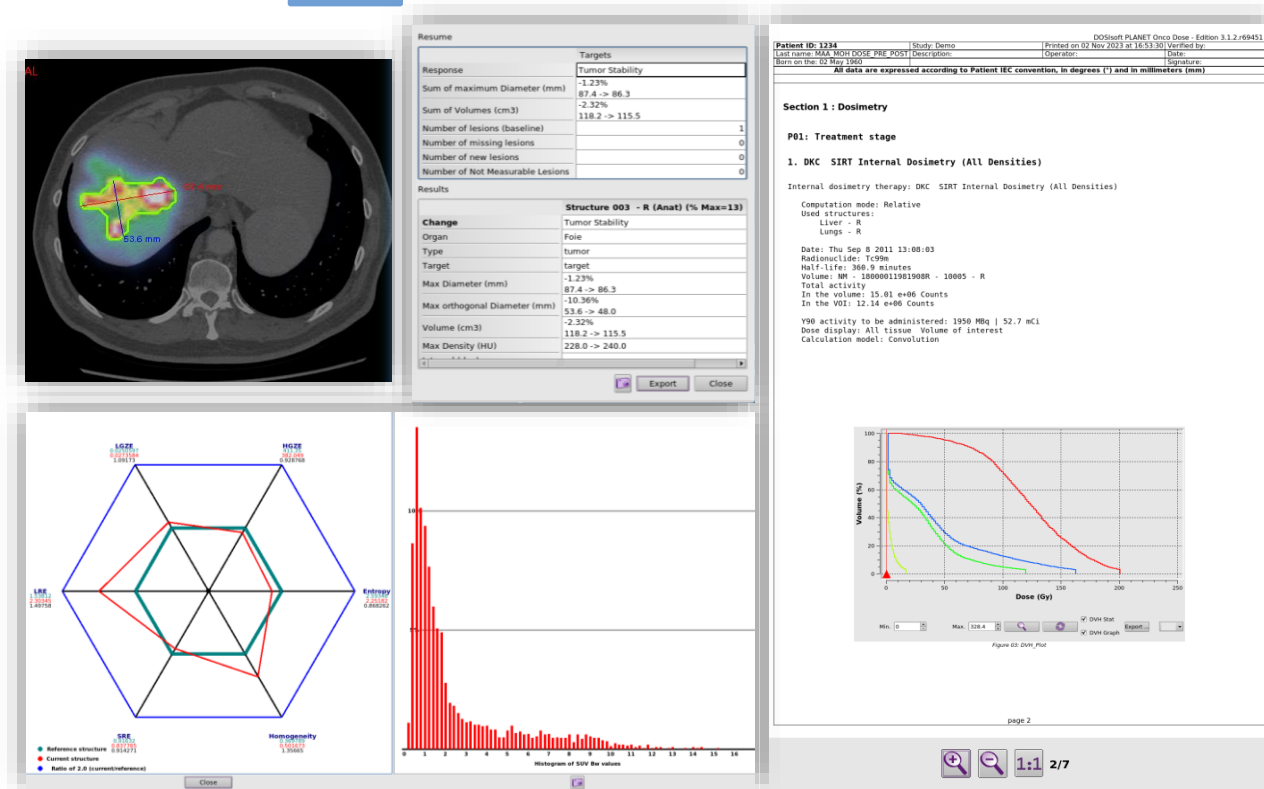
6

Follow up & Reporting

Therapy response assessment
(RECIST/PERCIST methods)

Texture analysis
(Evolution over time, features,
radiomics studies...)

DICOM & PDF Report





PLANET[®] Dose

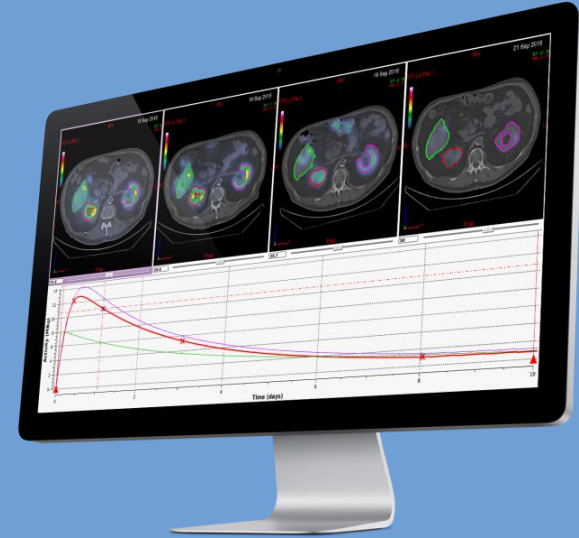


Molecular Radiation Therapy

Systemic therapies

Key features

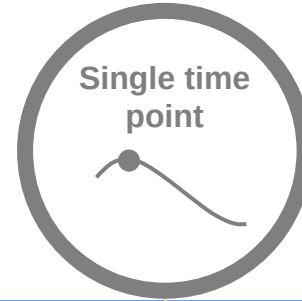
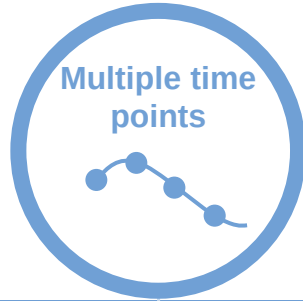
- Adapted to ^{177}Lu (**PSMA, PRRT**) & $^{131}\text{I}^*$ (**mIBG, thyroid**) therapies
- **Unlimited** number of time points
- Support of **other radionuclides** on request
- Partial Volume Effect (**PVE**) correction



Systemic therapies

Multiple workflow

*Adapted to your
clinical workflow*



Hybrid 2D/3D

Full 3D

Prior cycle

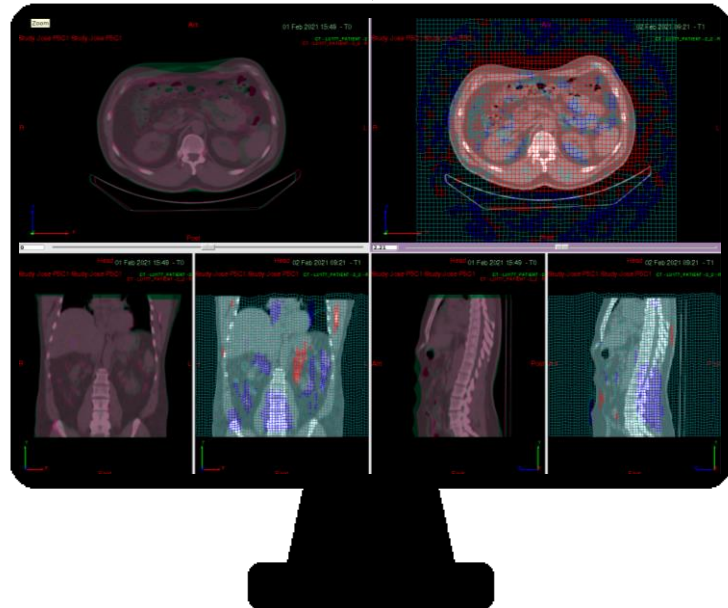
User-defined
/ Hänscheid

MRT Dosimetry Workflow

^{177}Lu and ^{131}I Therapies

1

Registration



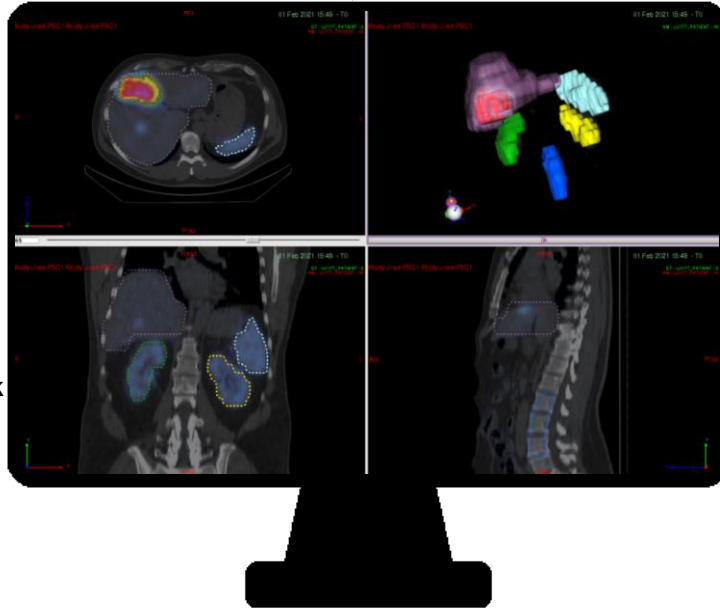
Manual

Rigid
&
Deformable

Registration check
tools

2

Segmentation



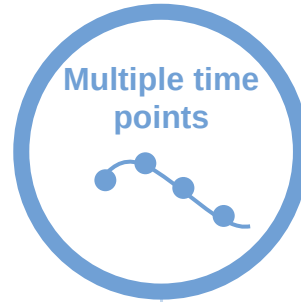
Anatomical
&
Functional mode

RT-structure
import
(DICOM format)

Systemic therapies

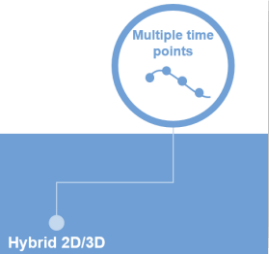
Multiple workflow

*Adapted to your
clinical workflow*



Hybrid 2D/3D

Full 3D



MRT Multiple time point Workflow

^{177}Lu and ^{131}I Therapies

3

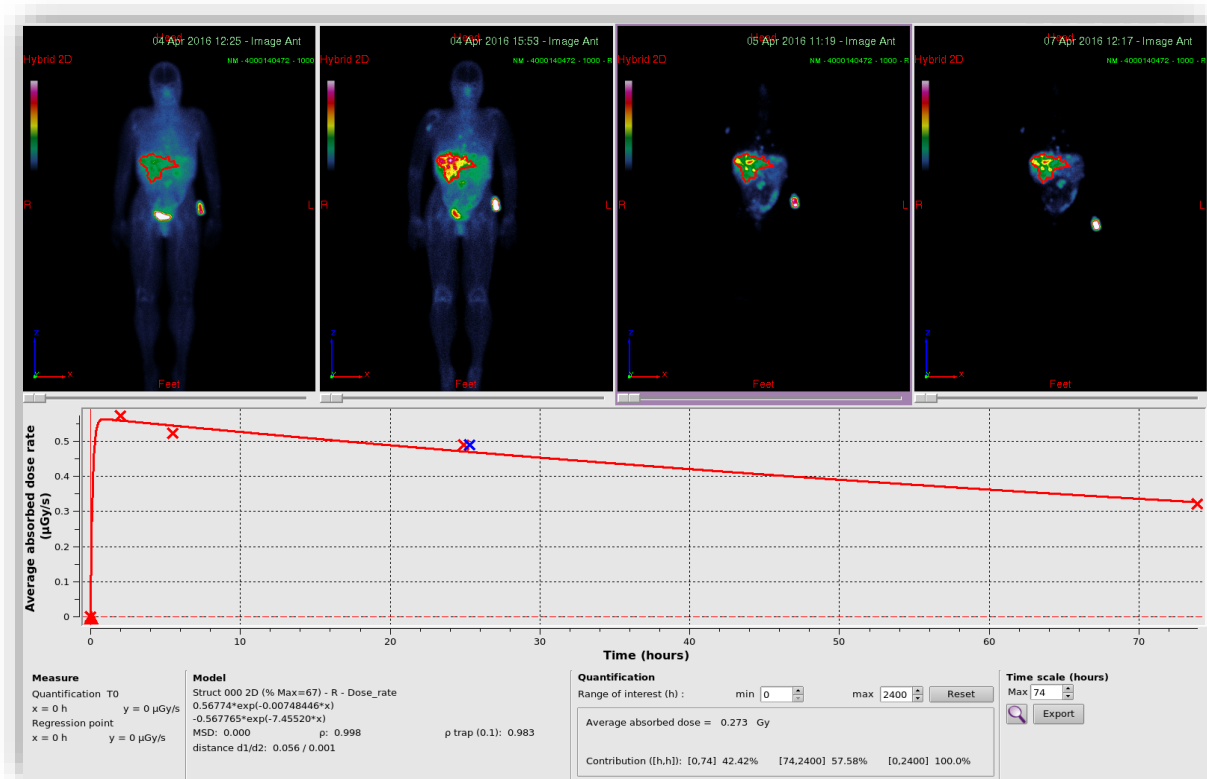
Pharmacokinetics

Multiple time point 2D images & one 3D image

Voxel-level activity or absorbed dose rate calculation (VSV & LED)

Pharmacokinetics following multiple fitting models & extrapolation methods

Residence time, cumulated activity & average absorbed dose assessment



MRT Multiple time point Workflow

^{177}Lu and ^{131}I Therapies

3

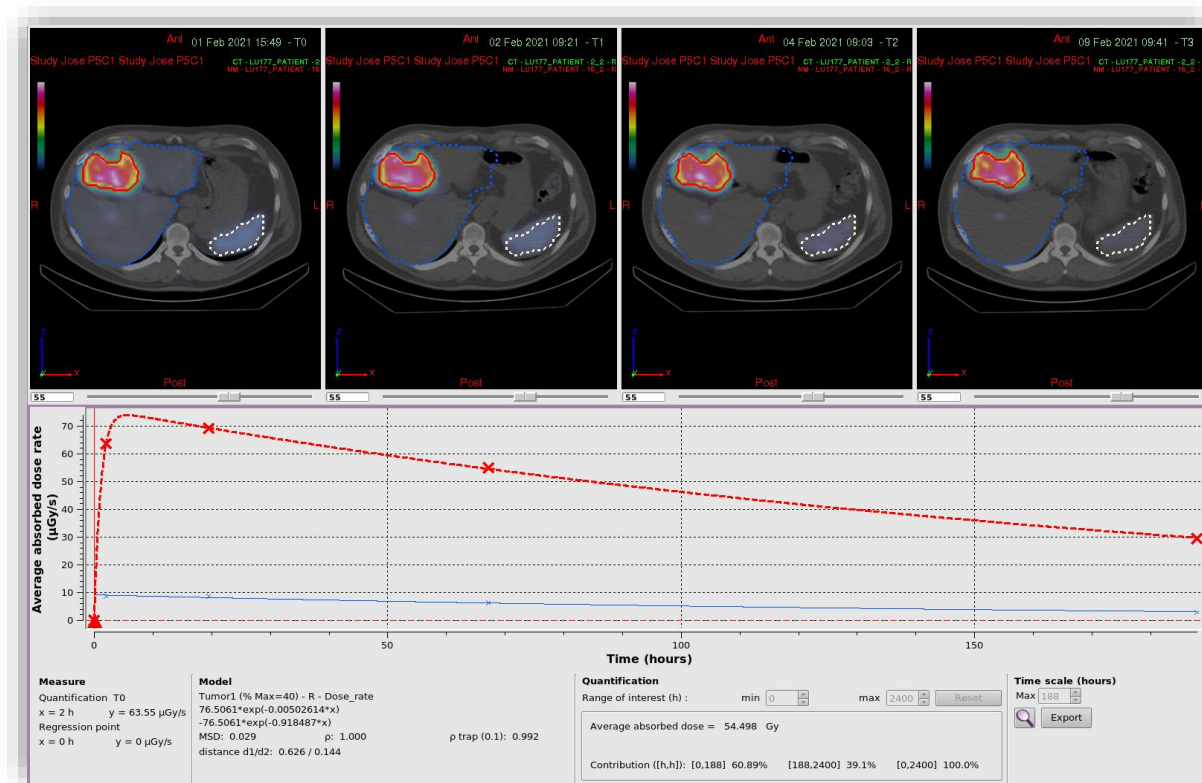
Pharmacokinetics

Multiple time point 3D images

Voxel-level activity or absorbed dose rate calculation (VSV & LED)

Pharmacokinetics following multiple fitting models & extrapolation methods

Residence time, cumulated activity & average absorbed dose assessment





Full 3D

MRT Multiple time point Workflow

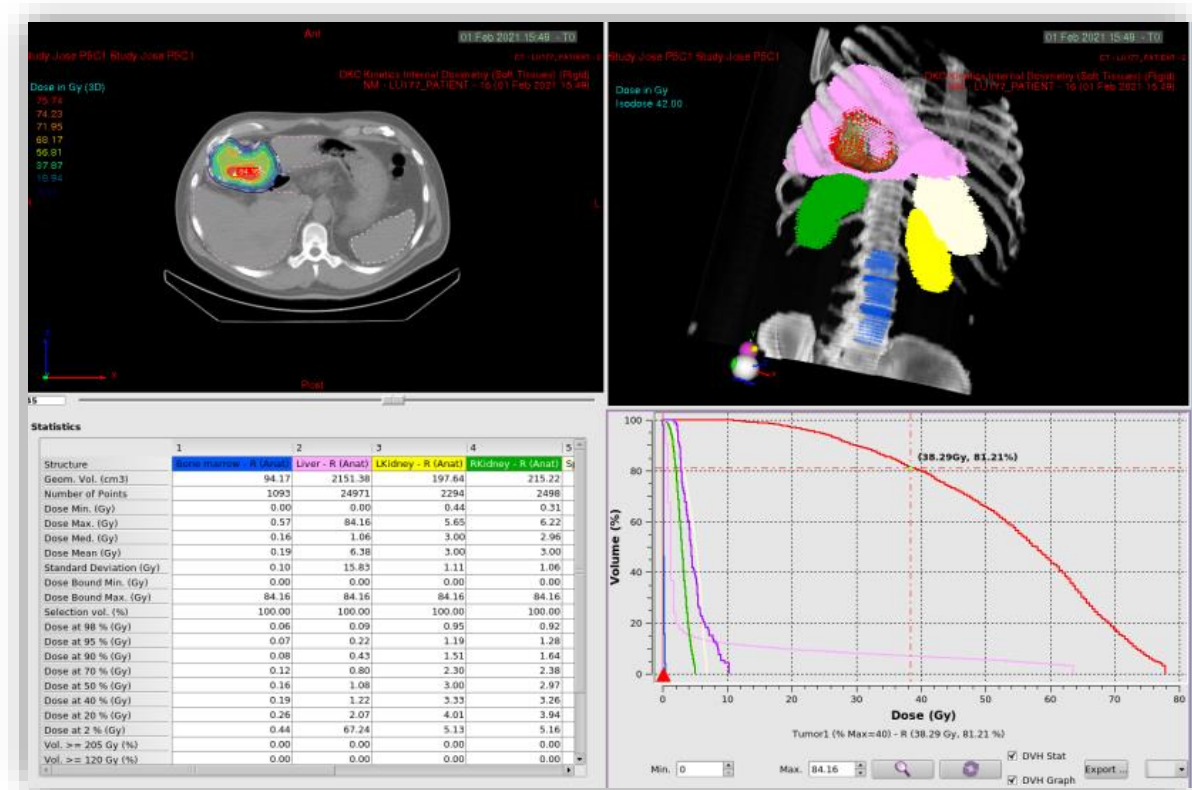
^{177}Lu and ^{131}I Therapies

4

Dosimetry

Voxel-based absorbed dose calculation

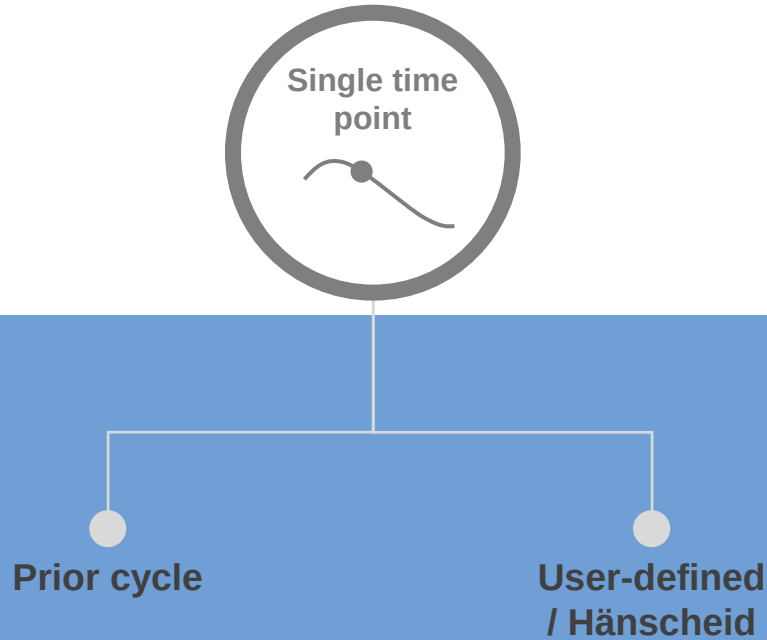
Dose map & DVHs assessment



Systemic therapies

Multiple workflow

*Adapted to your
clinical workflow*





MRT Single time point Workflow

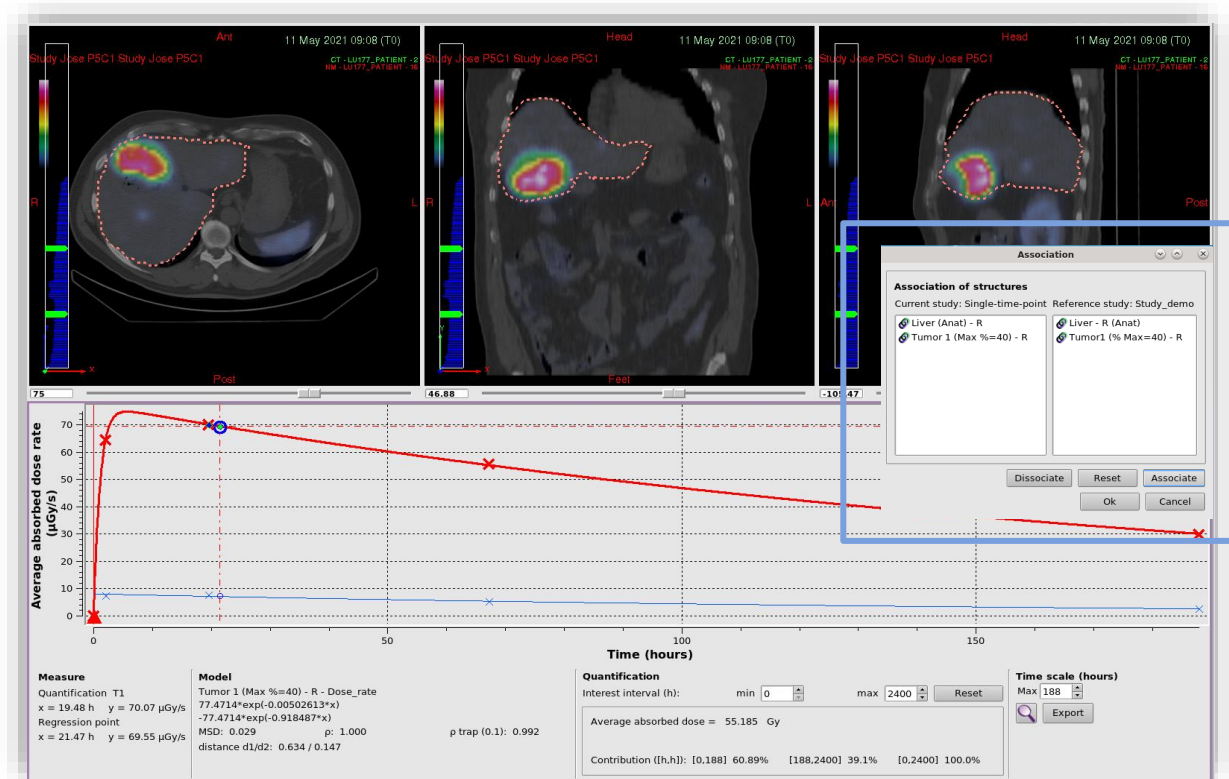
^{177}Lu and ^{131}I Therapies

Prior cycle

4

A “Prior Cycle” model

Pharmacokinetics following
the trend of a prior model
(Multiple time points)



MRT Single time point Workflow

^{177}Lu and ^{131}I Therapies

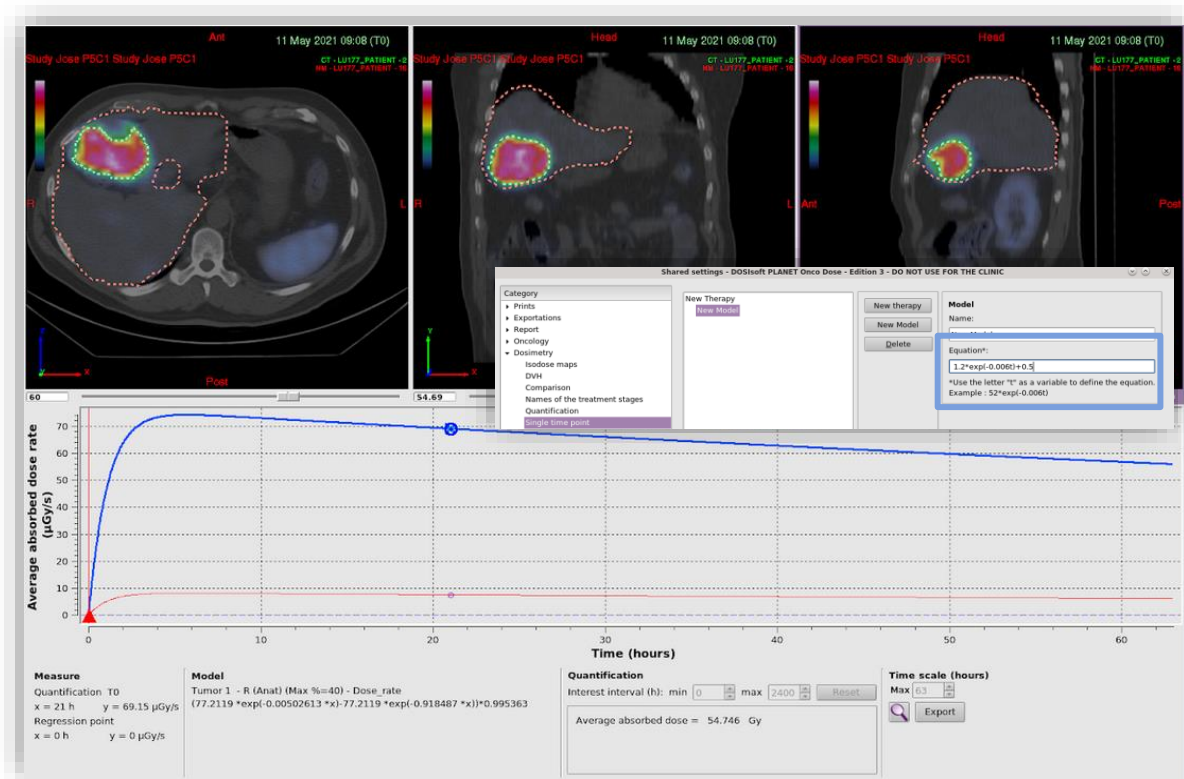
Single time point

User-defined
/ Hänscheld

4

A “User-defined” model

Pharmacokinetics following
an **equation** from the
literature



Planet Dose an « All-In-One » dosimetry solution

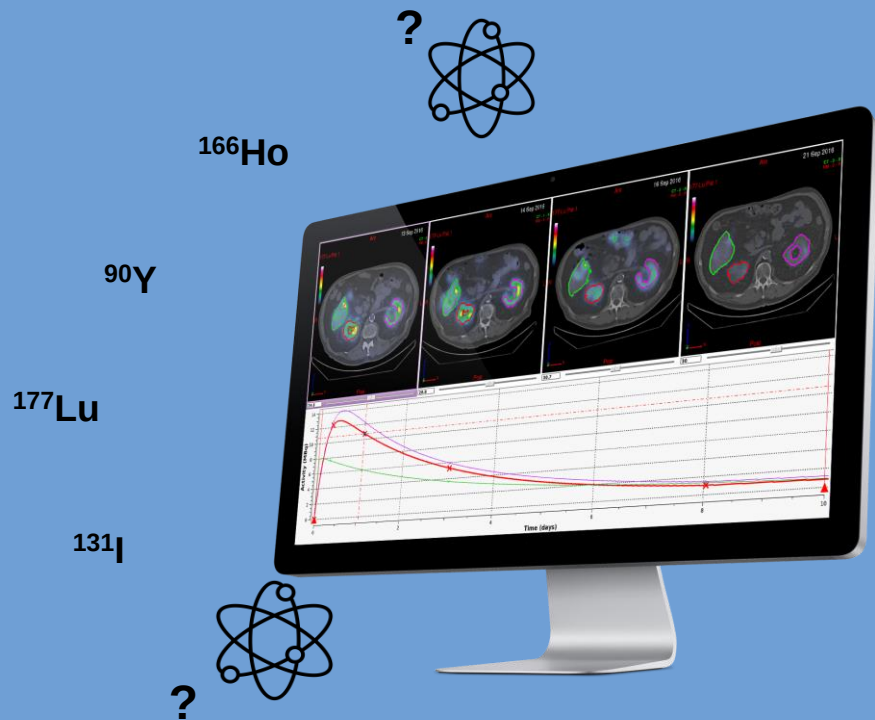
Multi-modality image support

Image **quantification** and **Partial Volume Effect (PVE)** correction

Multi-radionuclide platform (kernels can be added on request)

Multiple workflows (SIRT & MRT)

Follow-up & **Texture** analysis



Thank you!

For more information,

<https://www.dosisoft.com/our-solutions/nuclear-medicine>



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www.dosisoft.com

