

Overview

Software platform dedicated to molecular imaging series management. It includes a set of tools for cancer diagnosis and staging, lesion management, assessment of therapy response and disease follow up.

PLANET® Onco is a vendor-neutral solution for multimodality image review and analysis.

Image Reviewing

Display

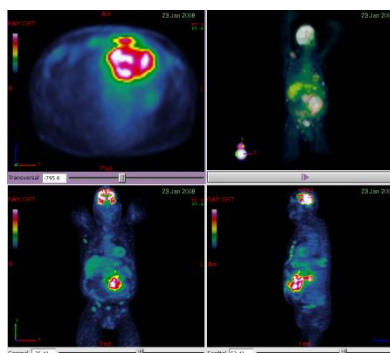
- Visualization and display of:
 - Anatomical series: CT, CTA, CBCT, 3D XA, MRI
 - Functional series: PET, SPECT
- Dedicated layouts for multimodality series review - single and dual screen configurations
- Powerful fusion of anatomical and functional series
- 2D and 3D visualization of fused series, 3D MIP display
- Adjustable fusion display parameters to highlight differences between functional series
- Set of interactive navigation and exploration tools: sensor, LUT, distance, contrast luminosity, zoom, SUV tools
- Simultaneous display of any number of exam time points
- Interactive display navigation between 2D and 3D display

Co-Registration

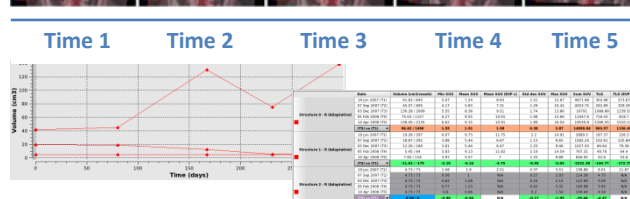
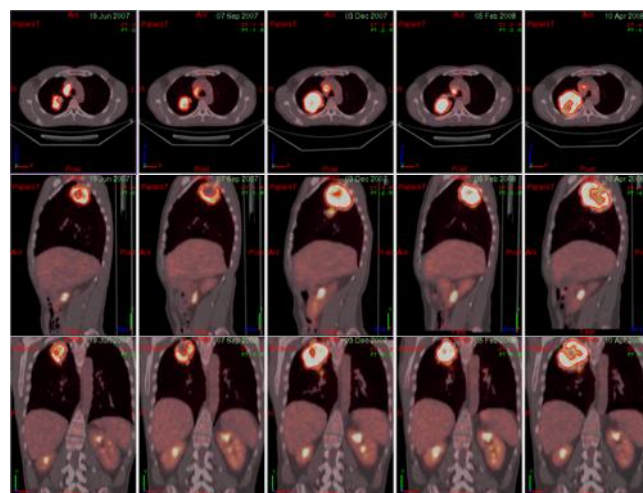
- Co-registration to the reference series
- Co-registration between series on same time point (e.g. SPECT vs. CT and PET/SPECT vs. MRI)
- Fully automatic rigid registration (mutual information based on optimization, block matching) and semi-automatic registration (user-defined anatomical landmarks)
- Registration focused on dedicated ROI (specific organ) to avoid positioning differences (arms, head, ...)
- Visual tool-set for registration assessment: checkerboard, adjustable magnifying glass overlapping and image fusion transparency
- Deformable registration (WIP)

Export – Archiving

- Registered series saved as DICOM format
- Export to any DICOM compliant system (e.g. PACS, archiving system, TPS)
- 3D display movie export



2D and 3D rendering of SPECT series



Therapy response evaluation workflow (series registration, segmentation, quantification and follow-up).

Quantification, Segmentation

Contouring Tools

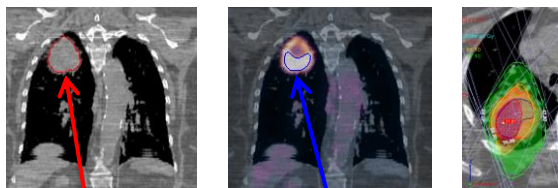
- Real-time contour drawing and edition within multiple views on series involving several modalities
- Semi-automatic advanced contouring tools
- Contour duplication and interpolation capabilities between time points and different modalities
- Unlimited number of structure definition with customizable rendering
- Boolean operator (AND, OR, XOR, NOT) for creating new structures
- User selectable contour rendering: 2D line transparency and 3D solid representation
- Intensity-based contour delineation (e.g. bones, external body contour extraction)
- 3D margin calculation
- Structures agreement quantification (Dice, Jaccard, overlap fraction, sensibility, specificity indices)

Segmentation

- One click and automatic segmentation of uptake areas on PET series: Maximum intensity, Nestle, Black, Fitting, Adaptive methods
- Partial volume effect correction for functional modalities
- Fully automatic segmentation for whole body PET/CT series
- Lesion quantification of metabolic activity: volume, SUV mean (including partial volume correction), SUV max, SUV peak and TLG
- SUV bw, SUV lbm and SUV bsa quantification available
- Automatic lung segmentation
- Semi-automatic segmentation on anatomical series: CT, MRI

Contouring for Radiotherapy

- GTV definition using PET segmentation
- DICOM RT Structures import/export from/to any DICOM compliant system (e.g. PACS, archiving system, TPS)



CT contours
for initial planning

PET contours
for boost

Treatment plan
including boost
dose optimization

Sarcoidosis

- Automatic lung volume extraction using CT and PET
- Disease invasion quantification

Therapy Response Assessment and Treatment Follow-up

Reviewing

- Highlight color-coded difference to track evolution over time
- Global automatic advanced methods for disease change assessment using a parametric imaging approach – 2D and 3D – without a priori knowledge of contouring

Segmentation

- Contour duplication and interpolation capabilities between time points series and different modality series
- Automatic correlation of tumors, segmentation and follow-up across time points
- Segmentation results displayed within result table and graph
- Result table export for advanced analysis (Excel spreadsheet compatibility)

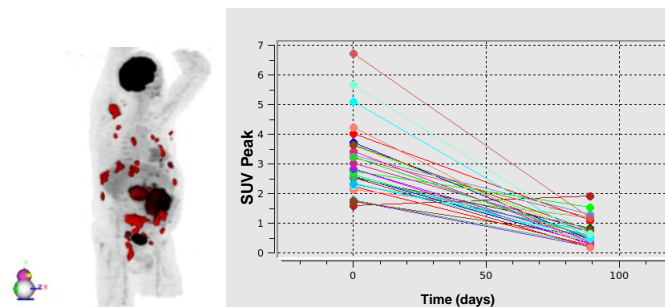
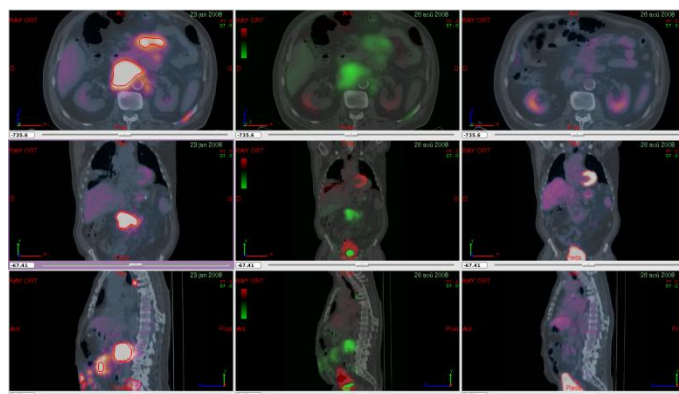
RECIST 1.1 and PERCIST 1.0 format reports

ABAS* (Atlas-Based Auto Segmentation)

- Fully automatic contouring process from Atlas
- Head-and-neck atlas made by Professor Vincent GREGOIRE (MD, PhD from UCL, Belgium)
- Fast identification and labeling: 20 structures within minutes

Report and Export

- Report preview and printing capabilities
- Creation of new DICOM objects (images, charts, screen saves) exportable to any DICOM compliant system
- DICOM encapsulated PDF reports managed in database



Follow-up of therapy response: two time points
segmentation/quantification and parametric imaging display

Connectivity

DICOM Compatibility

- DICOM CT, CTA, 3D XA, MRI, PET and SPECT image series
- DICOM Query Retrieve Import/Export (SCP/SCU)
- DICOM RT-Struct Import/Export
- Network, PACS and external device (CD, DVD, USB) supported

Series management

- Long-lasting local database for series and studies management
- Unlimited number of time points including anatomical and functional series for each study

Host System

Minimum System Requirements

- Six core processor - Red Hat Linux OS 64 bits
- 3 * 1 To HDD (system/data, backup) - Memory RAM 16 Go
- 3D NVIDIA® graphic card - Flat screen 24" (1920x1080)