LIFEx v7.6.0

Announcement

— LIFEx —

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institut Curie

LITO Laboratoire d'Imagerie Translationnelle en Oncologie

cea

Inserm La science pour la santé From science to health

sfpm

cnrs

UNIVERSITÉ PARIS SUD

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What is new?

LIFEx version 7.6.0

Last update of document: 2024/04/04

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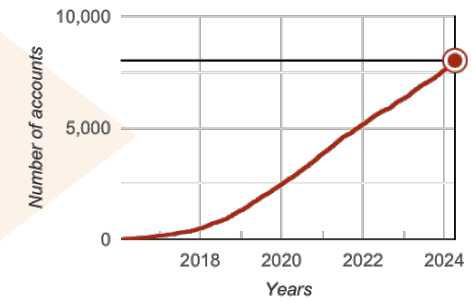
Acknowledgements

Dear LIFEx users,

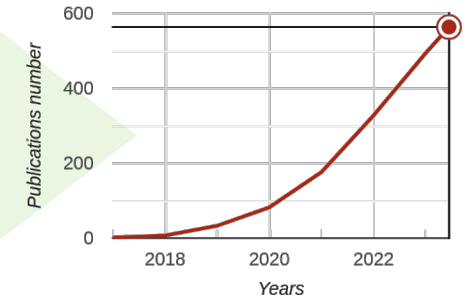
We are pleased to announce the release of **LIFEx v7.6.0**

We would like to take this opportunity **to thank all 8.000 LIFEx users** for their feedback and relevant suggestions. We took into account your comments to enhance the software and produce this version.
We hope you will enjoy it.

Do not hesitate to download this new release and replace your old LIFEx version. Your feedback will always be welcome.



Evolution of the number of accounts (from our site web)



Evolution of Publications referencing LIFEx (from PubMed)

LIFEx is free of charge.

Please help us to keep it free by always quoting the LIFEx reference: (see below)

Please note that the correct reference to be cited is:
C Nioche, F Orlhac, S Boughdad, S Reuzé, J Goya-Outi, C Robert, C Pellot-Barakat, M Soussan, F Frouin, and I Buvat. LIFEx: a freeware for radiomic feature calculation in multimodality imaging to accelerate advances in the characterization of tumor heterogeneity. Cancer Research 2018; 78(16):4786-4789

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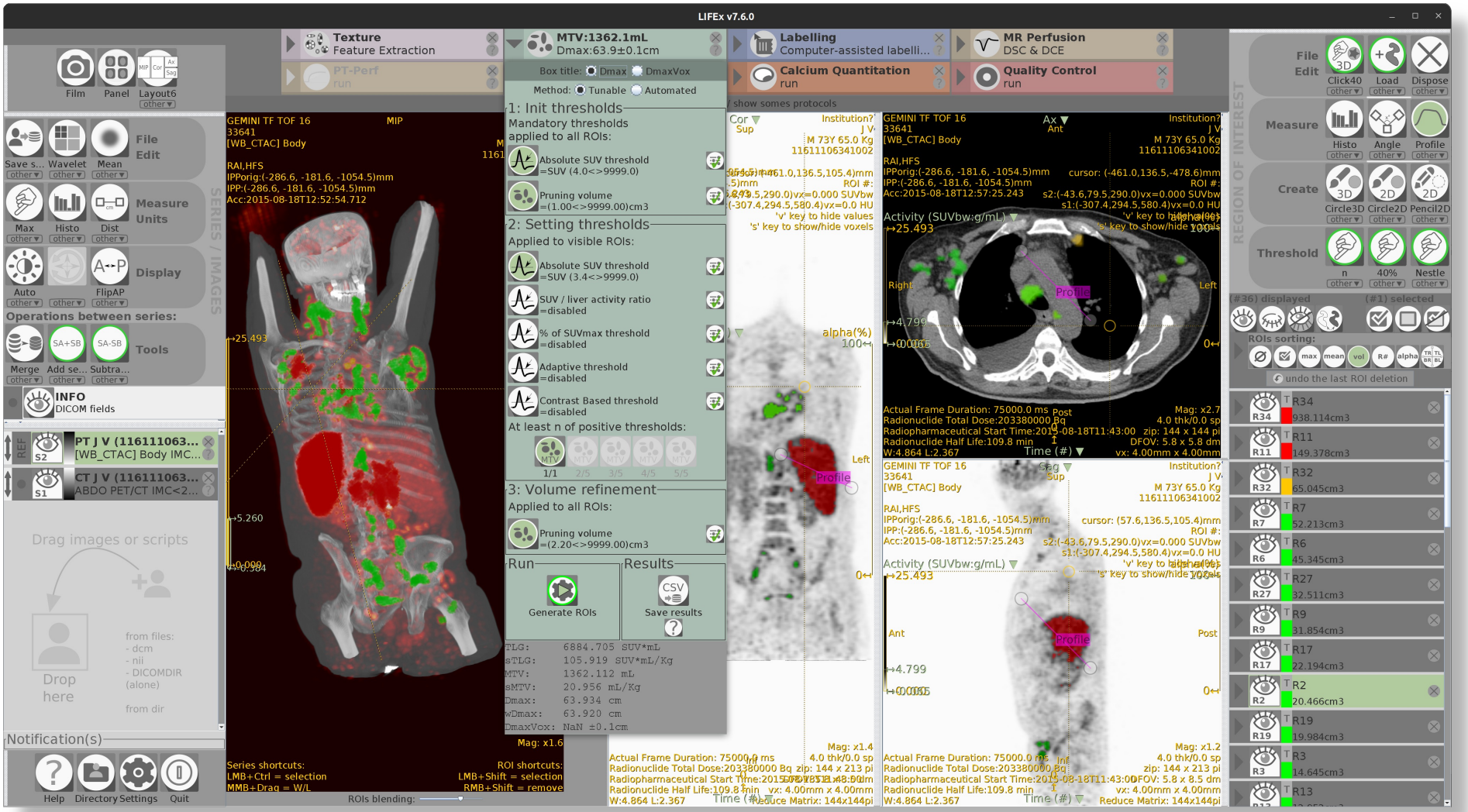
Interface screenshot

Christophe Nioche



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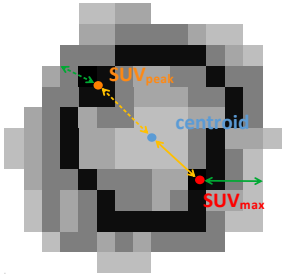
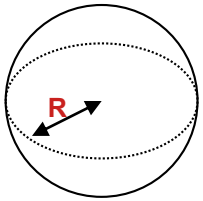
NHOC and NHOP definitions

Narinée Hovhannisyan-Baghdasarian

N. Hovhannisyan-Baghdasarian, M. Luporsi, N. Captier, C. Nioche, V. Cuplov, E. Woff, N. Hegarat, A. Livartowski, N. Girard, I. Buvat, F. Orlhac. **New promising candidate prognostic biomarkers in [18F]FDG-PET images: evaluation in independent cohorts of NSCLC patients**. J Nucl Med 2024 in press



A Tumor
(black is high SUV, white is low SUV)



B Hypothetical sphere of radius R
having the same volume as the tumor

NHOCmax: distance (yellow arrow)
from the voxel with maximum SUV (SUVmax, red cercle)
to the tumor centroid (blue cercle) divided (normalized) by the radius (R)

NHOCpeak: normalized distance (yellow dashed arrow)
from the hotspot with maximum average SUV
(within a 1cm^3 spherical volume, SUVpeak, orange cercle)
to the tumor centroid

NHOPmax: normalized distance (green line)
from the SUVmax
to the tumor perimeter (closest border)

NHOPpeak: normalized distance (green dashed line)
from the SUVpeak
to the tumor perimeter

Corresponding LIFEx features:

NHOCmax:	MORPHOLOGICAL_RadiusSphereNorm_MaxIntensityCoor_RoiCentroidCoor_Dist
NHOCpeak:	MORPHOLOGICAL_RadiusSphereNorm_PeakIntensityCoor_RoiCentroidCoor_Dist
NHOPmax:	MORPHOLOGICAL_RadiusSphereNorm_MaxIntensityCoor_PerimeterCoor_3DSmallestDist
NHOPpeak:	MORPHOLOGICAL_RadiusSphereNorm_PeakIntensityCoor_PerimeterCoor_3DSmallestDist

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Features opened to the public

Narinée Hovhannisyan-Baghdasarian

*MORPHOLOGICAL_** Features:

MaxIntensityCoor_RoiCentroidCoor_Dist
RadiusSphereNorm_MaxIntensityCoor_RoiCentroidCoor_Dist **(NHOCmax)**
RadiusRoiNorm_MaxIntensityCoor_RoiCentroidCoor_Dist
PeakIntensityCoor_RoiCentroidCoor_Dist
RadiusSphereNorm_PeakIntensityCoor_RoiCentroidCoor_Dist (**NHOCpeak**)
RadiusRoiNorm_PeakIntensityCoor_RoiCentroidCoor_Dist
RadiusSphereNorm_CentroidCoor_WcentroidCoor_Dist
RadiusRoiNorm_CentroidCoor_WcentroidCoor_Dist
MaxIntensityCoor_PerimeterCoor_3DSmallestDist
RadiusSphereNorm_MaxIntensityCoor_PerimeterCoor_3DSmallestDist (**NHOPmax**)
RadiusRoiNorm_MaxIntensityCoor_PerimeterCoor_3DSmallestDis
MaxIntensityCoor_PerimeterCoor_2DAxialSmallestDist
RadiusSphereNorm_MaxIntensityCoor_PerimeterCoor_2DAxialSmallestDist
RadiusRoiNorm_MaxIntensityCoor_PerimeterCoor_2DAxialSmallestDist
MaxIntensityCoor_PerimeterCoor_2DCoronalSmallestDist
RadiusSphereNorm_MaxIntensityCoor_PerimeterCoor_2DCoronalSmallestDist
RadiusRoiNorm_MaxIntensityCoor_PerimeterCoor_2DCoronalSmallestDist
MaxIntensityCoor_PerimeterCoor_2DSagittalSmallestDist
RadiusSphereNorm_MaxIntensityCoor_PerimeterCoor_2DSagittalSmallestDist
RadiusRoiNorm_MaxIntensityCoor_PerimeterCoor_2DSagittalSmallestDist
PeakIntensityCoor_PerimeterCoor_3DSmallestDist
RadiusSphereNorm_PeakIntensityCoor_PerimeterCoor_3DSmallestDist (NHOPpeak)
RadiusRoiNorm_PeakIntensityCoor_PerimeterCoor_3DSmallestDist
PeakIntensityCoor_PerimeterCoor_2DAxialSmallestDist
RadiusSphereNorm_PeakIntensityCoor_PerimeterCoor_2DAxialSmallestDist
RadiusRoiNorm_PeakIntensityCoor_PerimeterCoor_2DAxialSmallestDist
PeakIntensityCoor_PerimeterCoor_2DCoronalSmallestDist
RadiusSphereNorm_PeakIntensityCoor_PerimeterCoor_2DCoronalSmallestDist
RadiusRoiNorm_PeakIntensityCoor_PerimeterCoor_2DCoronalSmallestDist
PeakIntensityCoor_PerimeterCoor_2DSagittalSmallestDist
RadiusSphereNorm_PeakIntensityCoor_PerimeterCoor_2DSagittalSmallestDist
RadiusRoiNorm_PeakIntensityCoor_PerimeterCoor_2DSagittalSmallestDist

See LIFEx-features for a fuller explanation of features

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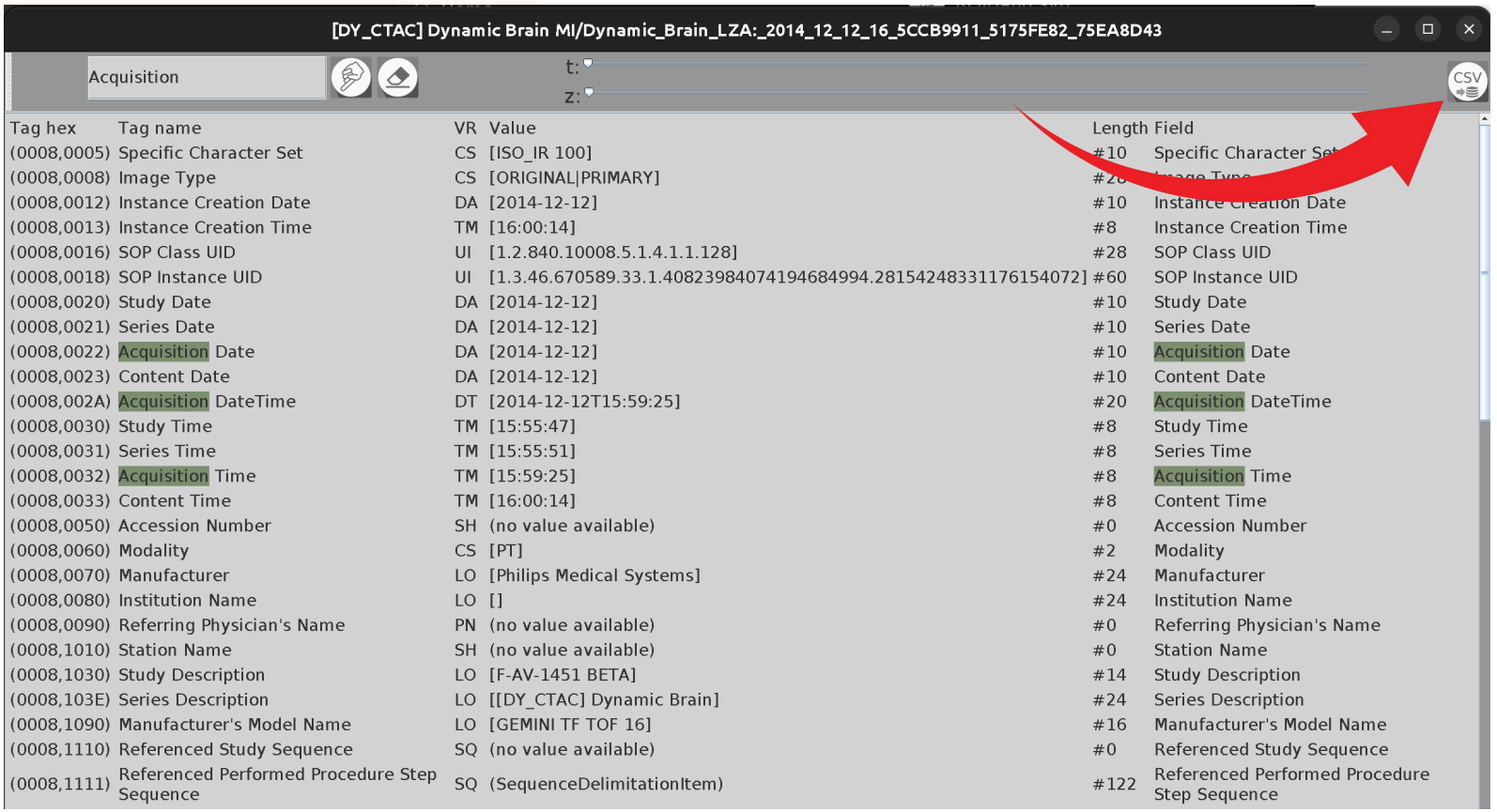
Interface screenshot

Christophe Nioche

Main:

- added: export Dicom header as a CSV file



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(0008,0013)	Instance Creation Time	TM	[16:00:14]	#8	Instance Creation Time
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(0008,0080)	Institution Name	LO	[]	#24	Institution Name
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LIFEx is still evolving

Christophe Nioche

Other functionalities are being added every week.
Stay tuned !
We hope you go on enjoying LIFEx !

Awards

2018 — The Best of THE AACR JOURNALS

2020 — Prix unicancer de l'innovation 6e édition

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