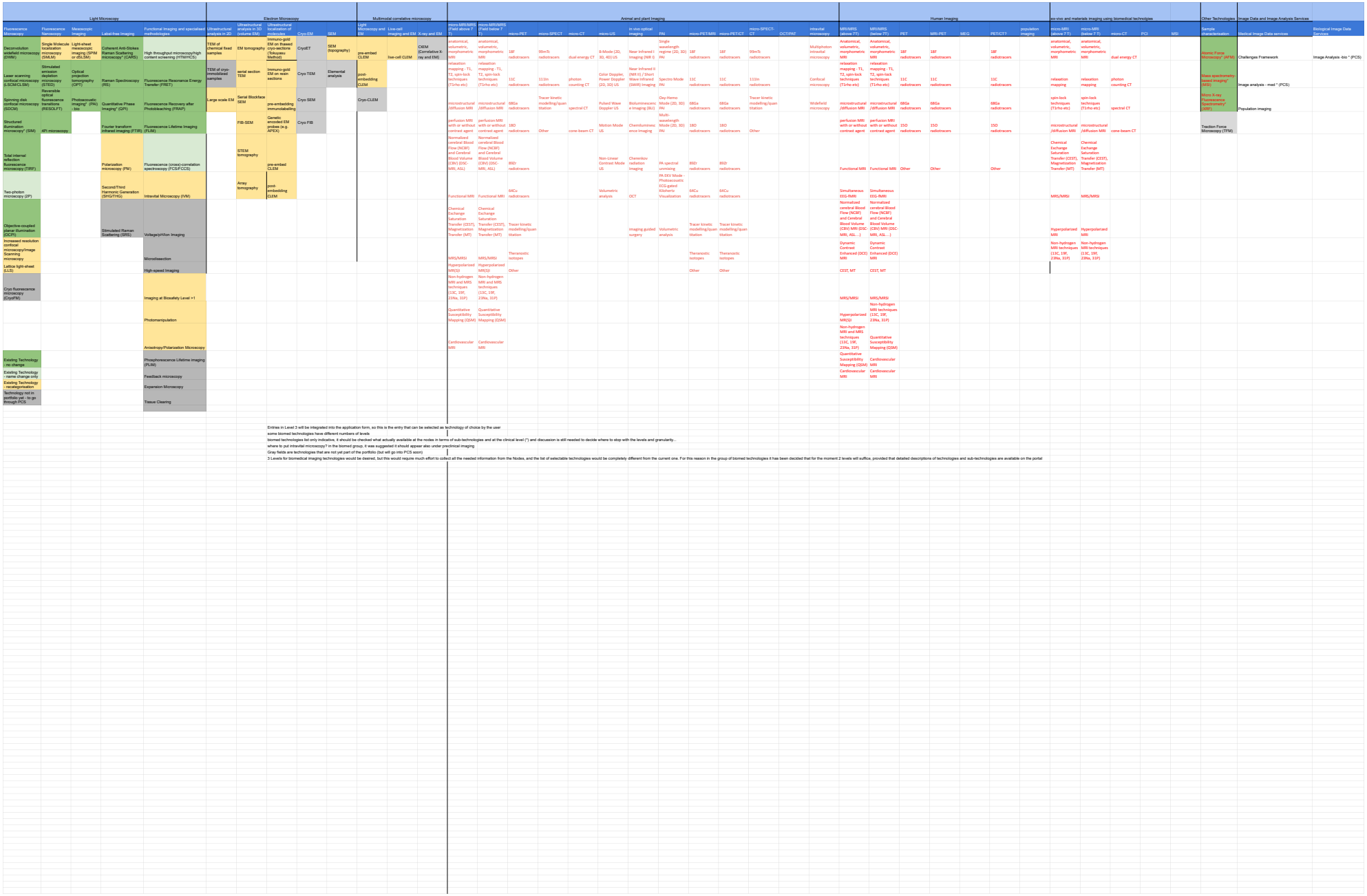

Light Microscopy
Fluorescence Microscopy
Deconvolution widefield microscopy (DWM)
Laser scanning confocal microscopy (LSCM/CLSM)
Spinning disk confocal microscopy (SDCM)
Structured illumination microscopy* (SIM)
Total internal reflection fluorescence microscopy (TIRF)
Two-photon microscopy (2P)
Objective-coupled planar illumination (OCPI)
Increased resolution confocal microscopy/Image Scanning microscopy
Lattice light-sheet (LLS)
Cryo-fluorescence microscopy (CryoFM)
Fluorescence Nanoscopy
Single Molecule localization microscopy (SMLM)
Stimulated emission depletion microscopy (STED)
Reversible optical fluorescence transitions (RESOLFT)
4Pi microscopy
Mesoscopic Imaging
Light-sheet microscopy (SPIM or dSLSM)
Optical projection tomography (OPT)
Photoacoustic imaging* (PAI) - bio
Label-free Imaging
Coherent Anti-Stokes Raman Scattering microscopy* (CARS)
Raman Spectroscopy (RS)
Quantitative Phase Imaging* (QPI)
Fourier transform infrared imaging (FTIR)
Polarization microscopy (PM)
Second/Third Harmonic Generation (SHG/THG)
Stimulated Raman Scattering (SRS)
Functional Imaging and specialised methodologies
High throughput microscopy/high content screening (HTM/HCS)
Fluorescence Resonance Energy Transfer (FRET)
Fluorescence Recovery after Photobleaching (FRAP)
Fluorescence Lifetime Imaging (FLIM)
Fluorescence (cross)-correlation spectroscopy (FCS/FCCS)
Intravital Microscopy (IVM)
Voltage/pH/Ion Imaging
Microdissection
High-speed Imaging
Imaging at Biosafety Level >1
Photomanipulation
Anisotropy/Polarization Microscopy
Phosphorescence Lifetime Imaging (PLIM)
Feedback microscopy
Expansion Microscopy
Tissue Clearing
Existing Technology - no change
Existing Technology - name change only
Existing Technology - recategorisation
Technology not in portfolio yet - to go through PCS

Electron Microscopy
Ultrastructural analysis in 2D
TEM of chemical fixed samples
TEM of cryo-immobilized samples
Large scale EM
Ultrastructural analysis in 2D (volume EM)
EM tomography
serial section TEM
Serial Blockface SEM
FIB-SEM
STEM tomography
Array tomography
Ultrastructural localization of molecules
Immuno-gold EM on thawed cryo-sections (Tokuyasu Method)
Immuno-gold EM on resin sections
pre-embedding immunolabelling
Genetic encoded EM probes (e.g. APEX)
pre-embed CLEM
post-embedding CLEM
Cryo-EM
CryoET
Cryo SEM
Cryo FIB
SEM
SEM (topography)
Elemental analysis

Multimodal correlative microscopy
Light Microscopy and EM
pre-embed CLEM
post-embedding CLEM
Cryo-CLEM
Live-cell imaging and EM
live-cell CLEM
X-ray and EM
CXEM (Correlative X-ray and EM)

Animal and plant Imaging
micro-MRI/MRS (Field above 7 T)
anatomical, volumetric, morphometric MRI
relaxation mapping - T1, T2, spin-lock techniques (T1rho etc)
microstructural /diffusion MRI
perfusion MRI with or without contrast agent
Normalized cerebral Blood Flow (NCBF) and Cerebral Blood Volume (CBV) (DSC-MRI, ASL)
Functional MRI
Chemical Exchange Saturation Transfer (CEST), Magnetization Transfer (MT)
MRS/MRSI
Hyperpolarized MR(S)I
Non-hydrogen MRI and MRS techniques (13C, 19F, 23Na, 31P)
Quantitative Susceptibility Mapping (QSM)
Cardiovascular MRI
micro-MRI/MRS (Field below 7 T)
anatomical, volumetric, morphometric MRI
relaxation mapping - T1, T2, spin-lock techniques (T1rho etc)
microstructural /diffusion MRI
perfusion MRI with or without contrast agent
Normalized cerebral Blood Flow (NCBF) and Cerebral Blood Volume (CBV) (DSC-MRI, ASL)
Functional MRI
Chemical Exchange Saturation Transfer (CEST), Magnetization Transfer (MT)
MRS/MRSI
Hyperpolarized MR(S)I
Non-hydrogen MRI and MRS techniques (13C, 19F, 23Na, 31P)
Quantitative Susceptibility Mapping (QSM)
Cardiovascular MRI
micro-PET
18F radiotracers
99mTc radiotracers
11C radiotracers
111In radiotracers
68Ga radiotracers
15O radiotracers
18O radiotracers
82Rr radiotracers
64Cu radiotracers
Tracer kinetic modelling/quantitation
Theranostic isotopes
Other
micro-SPECT
99mTc radiotracers
111In radiotracers
Tracer kinetic modelling/quantitation
Other
micro-CT
dual energy CT
photon counting CT
spectral CT
cone-beam CT
micro-US
B-Mode (2D, 3D, 4D) US
Color Doppler, Power Doppler (2D, 3D) US
Pulsed Wave Doppler US
Motion Mode US
Non-Linear Contrast Mode US
Volumetric analysis
In vivo optical imaging
Near Infrared I Imaging (NIR I)
Near Infrared II (NIR II) / Short Wave Infrared (SWIR) Imaging
Bioluminescence Imaging (BLI)
Chemiluminescence Imaging
Cherenkov radiation Imaging
OCT
Imaging guided surgery
PAI
Single wavelength regime (2D, 3D) PAI
Spectro Mode PAI
Oxy-Hemo Mode (2D, 3D) PAI
Multi-wavelength Mode (2D, 3D) PAI
PA spectral unmixing
PA EKV Mode - Photoacoustic ECG-gated Kilohertz Visualization
Volumetric analysis
Tracer kinetic modelling/quantitation
Theranostic isotopes
micro-PET/CT
18F radiotracers
99mTc radiotracers
11C radiotracers
111In radiotracers
68Ga radiotracers
18O radiotracers
82Rr radiotracers
64Cu radiotracers
Tracer kinetic modelling/quantitation
Theranostic isotopes
Other
micro-SPECT-CT
99mTc radiotracers
111In radiotracers
Tracer kinetic modelling/quantitation
Other
OCT/PAT
intravital microscopy
Multiphoton intravital microscopy
Confocal microscopy
Widefield microscopy

Human Imaging
MRI/MRS (above 7T)
Anatomical, volumetric, morphometric MRI
relaxation mapping - T1, T2, spin-lock techniques (T1rho etc)
microstructural /diffusion MRI
perfusion MRI with or without contrast agent
Functional MRI
Simultaneous EEG-fMRI
Normalized cerebral Blood Flow (NCBF) and Cerebral Blood Volume (CBV) MRI (DSC-MRI, ASL…)
Dynamic Contrast Enhanced (DCE) MRI
CEST, MT
MRS/MRSI
Hyperpolarized MRSI
Non-hydrogen MRI and MRS techniques (13C, 19F, 23Na, 31P)
Quantitative Susceptibility Mapping (QSM)
Cardiovascular MRI
MRI/MRS (below 7T)
Anatomical, volumetric, morphometric MRI
relaxation mapping - T1, T2, spin-lock techniques (T1rho etc)
microstructural /diffusion MRI
perfusion MRI with or without contrast agent
Functional MRI
Simultaneous EEG-fMRI
Normalized cerebral Blood Flow (NCBF) and Cerebral Blood Volume (CBV) MRI (DSC-MRI, ASL…)
Dynamic Contrast Enhanced (DCE) MRI
CEST, MT
MRS/MRSI
Hyperpolarized MRSI
Non-hydrogen MRI techniques (13C, 19F, 23Na, 31P)
Quantitative Susceptibility Mapping (QSM)
Cardiovascular MRI
PET
18F radiotracers
11C radiotracers
15O radiotracers
68Ga radiotracers
82Rr radiotracers
64Cu radiotracers
18O radiotracers
MRI-PET
18F radiotracers
11C radiotracers
15O radiotracers
68Ga radiotracers
Other
MEG
PET/CT?
18F radiotracers
11C radiotracers
15O radiotracers
68Ga radiotracers
Other
population imaging

ex-vivo and materials imaging using biomedical technologies
micro-MRI (above 7 T)
anatomical, volumetric, morphometric MRI
relaxation mapping
spin-lock techniques (T1rho etc)
microstructural /diffusion MRI
Chemical Exchange Saturation Transfer (CEST), Magnetization Transfer (MT)
MRS/MRSI
Hyperpolarized MRI
Non-hydrogen MRI techniques (13C, 19F, 23Na, 31P)
micro-MRI (below 7 T)
anatomical, volumetric, morphometric MRI
relaxation mapping
spin-lock techniques (T1rho etc)
microstructural /diffusion MRI
Chemical Exchange Saturation Transfer (CEST), Magnetization Transfer (MT)
MRS/MRSI
Hyperpolarized MRI
Non-hydrogen MRI techniques (13C, 19F, 23Na, 31P)
micro-CT
dual energy CT
photon counting CT
spectral CT
cone-beam CT
PCI
MSI

Other Technologies
Sample characterisation
Atomic Force Microscopy* (AFM)
Mass spectrometry-based imaging* (MSI)
Micro X-ray Fluorescence Spectrometry* (MXF)
Traction Force Microscopy (TFM)

Image Data and Image Analysis Services
Medical Image Data services
Challenges Framework
Image analysis - med * (PCS)
Population imaging

Biological Image Data Services
Image Analysis -bio * (PCS)

Entries in Level 3 will be integrated into the application form, so this is the entry that can be selected as technology of choice by the user
some biomed technologies have different numbers of levels
biomed technologies list only indicative, it should be checked what actually available at the nodes in terms of sub-technologies and at the clinical level (*) and discussion is still needed to decide where to stop with the levels and granularity…
where to put intravital microscopy? in the biomed group, it was suggested it should appear also under preclinical imaging
Gray fields are technologies that are not yet part of the portfolio (but will go into PCS soon)
3 Levels for biomedical imaging technologies would be desired, but this would require much effort to collect all the needed information from the Nodes, and the list of selectable technologies would be completely different from the current one. For this reason in the group of biomed technologies it has been decided that for the moment 2 levels will suffice, provided that detailed descriptions of technologies and sub-technologies are available on the portal