INSTRUCTIONS FOR FILLING TABLES

------------------------------------------------ MAIN TABLE -------------------------------------------------

1. **Feature\_table.csv**
   1. *PatientID.* Full patient ID as found in the DICOM headers of image files (link with DICOM ontology).
   2. *Patient\_label.* User-defined name to identify a patient for a given radiomics experiment. Example: Lung-MAASTRO-001.
   3. *Feature\_name.* Short notation of feature names as defined for each feature in Chapter 3 of the IBSI reference manual.
   4. *Value.* Number specifying the value of the feature defined in A.3.
   5. *Unit.* Unit of A.4. Leave blank if A.4 is unitless.
   6. *ImageSpace\_name.* User-defined name to specify a given set of image space used for the computation of the feature defined in A.3.
   7. *FeatureParameterSpace\_name.* User-defined name to specify a given set of parameters used for the computation of the feature defined in A.3.
   8. *CalculationRunSpace\_name.* User-defined name to specify a given set of calculation run specification (software, version, etc.) used for the computation of the feature defined in A.3.

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----------------------------------------------- IMAGE SPACE ------------------------------------------------

1. **ImageSpace\_table.csv**
   1. *ImageSpace\_name.* User-defined name corresponding to one of the entry of A.6.
   2. *ImageVolume\_name.* User-defined name to specify the parameters of a given *ImageVolume* of a given *ImageSpace*.
   3. *ROImask\_name.* User-defined name to specify the parameters of a given *ROImask* of a given *ImageSpace*.
2. **ImageVolume\_table.csv**
   1. *ImageVolume\_name.* User-defined name corresponding to one of the entry of B.2.
   2. *ImageVolume\_label.* User-defined name to identify the type of a given *ImageVolume* (e.g. type of imaging scan or MRI sequence).
   3. *VoxelDimensionX\_name.* User-defined name to specify the parameters of a given set of voxel dimensions in the *X* direction of the in-plane dimension of a given *ImageVolume*. \*\* Thus not the direction in the DICOM reference frame, but the direction in the *ImageVolume* reference frame.
   4. *VoxelDimensionY\_name.* User-defined name to specify the parameters of a given set of voxel dimensions in the *Y* direction of the in-plane dimension of a given *ImageVolume*. \*\* Thus not the direction in the DICOM reference frame, but the direction in the *ImageVolume* reference frame.
   5. *VoxelDimensionZ\_name.* User-defined name to specify the parameters of a given set of voxel dimensions in the slice dimension of a given ImageVolume (perpendicular to the in-plane dimension). \*\* Thus not the direction in the DICOM reference frame, but the direction in the *ImageVolume* reference frame. IMPORTANT: this value should be set to the distance between voxel centers of adjacent slices in the original scan, not necessarily the slice thickness.
   6. *Scan\_name.* User-defined name to specify the parameters of a given scan from which a given *ImageVolume* was created.
   7. *PostAcquisitionProcessing\_name.* User-defined name to specify the set of post-acquisition steps performed to create a given *ImageVolume*. Leave blank if no post-acquisition processing was performed.
3. **VoxelDimension\_table.csv**
   1. *VoxelDimension\_name.* User-defined name corresponding to one of the entry of C3, C.4, C.5, G.3, G.4 or G.5.
   2. *Value.* Number specifying the dimension of a voxel in a given direction (XYZ, as defined in C.3, C.4 and C.5) of a given *ImageVolume*. This value relates to the original imaging dimensions of the scan as defined in the DICOM headers of the image files🡪 X: PixelSpacing(2), Y: PixelSpacing(1), Z: distance between voxel centers of adjacent slices in the original scan (i.e. not necessarily SliceThickness).
   3. *Unit.* Unit of D.2. Leave blank if D.2 is unitless.
4. **Scan\_table.csv**
   1. *Scan\_ name.* User-defined name corresponding to one of the entry of C.6.
   2. *PatientID.* Same as A.1.
   3. *Patient\_label.* User-defined name to identify a patient for a given radiomics experiment. Example: Lung-MAASTRO-001.
   4. *ImagingModality.* Name of the imaging modality of the scan from which radiomics data was computed from. Technically, this information could be queried from the Semantic DICOM ontology by looking at the “Modality” field of the DICOM header of any image file. However, in case the radiomics user do not have access to the original DICOM data (but only imaging data in another format such as “.nnrd” format), we want to make sure the imaging modality is reported in the radiomics ontology.

Current mandatory options:

* “PT”: Positron emission tomography scan.
* “CT”: Computed tomography scan.
* “MR”: Magnetic resonance imaging scan.
  1. *DICOMspace\_name.* User-defined name to specify the DICOM parameters of a given *Scan*. Will be used later to create the link with the *Semantic DICOM* ontology. Leave blank if your radiomics data was computed without access to the original DICOM data (but only with access to imaging data in another format such as “.nnrd” format). We however strongly recommend to always keep track of the original DICOM data to be able to report on scanning acquisition parameters.

1. **PostAcquisitionProcessing\_table.csv**

A row of this table contains a minimum of one entry: the name of the PostAcquisitionProcessing to be defined. If a subsequent entry is left blank, that specific post-acquisition processing step was not performed. Then, more than one of the three following post-acquisition processing steps can be defined (each step is to be further expanded in a future version of the *Radiomics Ontology*).

* 1. *PostAcquisitionProcessing\_name.* User-defined name corresponding to one of the entry of C.7.
  2. *PartialVolumeEffectCorrection\_name.* User-defined name to specify the set of parameters for partial volume effect corrections of a given *ImageVolume* (in a future release of the Radiomics Ontology, this name will be used to link to a dedicated parameter table). Example: “partialVolumeEffectCorrection1”. Leave blank if none was performed.
  3. *NoiseReduction\_name.* User-defined name to specify the set of parameters for the noise reduction process of a given *ImageVolume* (in a future release of the Radiomics Ontology, this name will be used to link to a dedicated parameter table). Example: “noiseReduction1”. Leave blank if none was performed.
  4. *ImageNonUniformityCorrection\_name.* User-defined name to specify the set of parameters for image nonuniformity corrections of a given *ImageVolume* (in a future release of the Radiomics Ontology, this name will be used to link to a dedicated parameter table). Example: “imageNonUniformityCorrection1”. Leave blank if none was performed.

1. **ROImask\_table.csv**
   1. *ROImask\_name.* User-defined name corresponding to one of the entry of B.3.
   2. *ROImask\_label.* User-defined name to identify the ROI used for feature computation. If the ROI is coming from a RTstruct file, please use the name as found in the DICOM header of the RTstruct file (link with DICOM ontology). Othwerwise, use a name to identiy the ROI (e.g. “GTV1”). The lable may be encompassed by brackets to identify addition/subtraction operations between different labels. For a single ROI, one may use “{GTV1}”. For the subtraction between two ROIs, one may use “{CTV1}-{GTV1}” 🡪 the brackets allows to unambiguously define a ROI name.
   3. *ROItype.* Name of the type of ROI.

Current mandatory options:

* “GTVp”: gross tumour volume 🡪 primary
* “CTVp”: clinical target volume 🡪 primary
* “PTVp”: planning target volume 🡪 primary
* “GTVn”: gross tumour volume 🡪 nodal
* “CTVn”: clinical target volume 🡪 nodal
* “PTVn”: planning target volume 🡪 nodal
* “phantom”: For example, using an experimental phantom or the digital phantom of the IBSI
* “OAR”: organ at risk.
* Leave blank if unknown or other.
  1. *ROItype\_label.* User-defined name specifying the type of ROI analyzed in a given study. If agreed upon across multiple institutions, could provide useful queries among the same ROI types across institutions. Example: “GTV+edema”.
  2. *VoxelDimensionX\_name.* User-defined name to specify the parameters of a given set of voxel dimensions in the *X* direction of the in-plane dimension of a given *ROImask*. \*\* Thus not the direction in the DICOM reference frame, but the direction in the *ImageVolume* reference frame.
  3. *VoxelDimensionY\_name.* User-defined name to specify the parameters of a given set of voxel dimensions in the *Y* direction of the in-plane dimension of a given *ROImask*. \*\* Thus not the direction in the DICOM reference frame, but the direction in the *ImageVolume* reference frame.
  4. *VoxelDimensionZ\_name.* User-defined name to specify the parameters of a given set of voxel dimensions in the slice dimension of a given ImageVolume (perpendicular to the in-plane dimension). \*\* Thus not the direction in the DICOM reference frame, but the direction in the *ImageVolume* reference frame. IMPORTANT: this value should be set to the distance between voxel centers of adjacent slices in the original scan, not necessarily the slice thickness.
  5. *SegmentationMethod\_name.* User-defined name to specify the set of parameters for a given segmentation method.

1. **SegmentationMethod\_table.csv**
   1. *SegmentationMethod\_Name.* User-defined name corresponding to one of the entry of G.8.
   2. *Method.* An entry of this column defines a given type of method used for segmenting/creating a given *ROImask*. These methods are to be further expanded in a future version of the *Radiomics Ontology*. Current options are:

* “InPolygon” Method usually used to convert a set of contour points from a manually delineated RTstruct into a binary mask. More details can be found in the MATLAB function inpolygon.m.
* “RayCasting”. See the IBSI documentation.
* “RegionGrowing”:Semi-automatic segmentation method.
* “DeepLearning”: Automatic segmentation method.
* “CMeansFuzzy”: Automatic segmentation method.
* “AtlasModel”: Automatic segmentation method.

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------------------------------------ FEATURE PARAMETER SPACE -------------------------------------

* Preliminary: Please see section 4.2 of the IBSI reference manual for abbreviations.

1. **FeatureParameterSpace\_table.csv**
   1. *FeatureParameterSpace\_name.* User-defined name corresponding to one of the entry of A.7.
   2. *AggregationParameters.* Feature aggregation method as defined in section 4.2.2 of the IBSI reference manual. Options:

* “2D”: Averaged over slices.
* “2.5D”: Merged over all slices.
* “3D”: Calculated over the volume (default) and/or from a single 3D matrix.
* “2Davg”: Averaged over slices and directions.
* “2Dmrg”: Merge directions per slice and averaged.
* “2.5Davg”: Merge per direction and averaged.
* “2.5Dmrg”: Merged over all slices.
* “3Davg”: Averaged over 3D directions.
* “3Dmrg”: Merged 3D directions.
* Leave blank if unknown.
  1. *ImageFilterSpace\_name.* User-defined name to specify a given image filter space. Leave blank if no filtering is performed.
  2. *InterpolationParameters\_name.* User-defined name to specify a given set of interpolation parameters. Leave blank if no interpolation is performed.
  3. *ReSegmentationParameters\_name.* User-defined name to specify a given set of re-segmentation parameters. Leave blank if no re-segmentation is performed.
  4. *DiscretisationParameters\_name.* User-defined name to specify a given set of discretisation parameters. Leave blank if no discretisation is performed.
  5. *FeatureSpecificParameters\_name.* User-defined name to specify a given set of specific feature specific parameters. Feature specific parameters only apply to MORPH, IVH, GLCM, GLRLM, GLDZM, NGTDM and NGLDM features. For other features, leave this entry blank.

1. **InterpolationParameters\_table.csv**
   1. *InterpolationParameters\_name.* User-defined name corresponding to one of the entry of I.4.
   2. *Value.* Number corresponding to the isotropic voxel size (3D) at which both the *ImageVolume* and *ROImask* are interpolated. IMPORTANT: interpolation for the original z-axis dimension of the *ImageVolume* reference frame should always be performed using the actual distance between voxel centers of adjacent slices in the original scan. This value is not necessarily equal to the slice thickness.
   3. *Unit.* Unit of J.2 (e.g. “mm”).
   4. *ImageVolume\_method.* Method used to interpolate the *ImageVolume* as defined in section 4.2.3 of the IBSI reference manual. Options:

* Leave blank if no interpolation is performed.
* “NNB”: Nearest neighbor interpolation.
* “LIN”: Linear interpolation.
* “CCI”: Cubic convolution interpolation.
* “CSI” Cubic spline interpolation.
  1. *ImageVolume\_GreyLevelRound\_value.* Number specifying the (possible) grey level rounding performed after interpolation. See section 2.4 of the IBSI reference manual for more details. Leave blank if no grey level rounding is performed.
  2. *ImageVolume\_GreyLevelRound\_unit.* Unit of J.5 (e.g. HU). Leave blank if J.5 is unitless or if no grey level rounding is performed.
  3. *ROImask\_method.* Method used to interpolate the *ROImask* as defined in section 5.2.3 of the IBSI reference manual. Options are the same as defined above for the *ImageVolume* (J.4).
  4. *ROImask\_PartialVolumeCutoff\_value.* Number specifying the (possible) cutoff used to define if a voxel is part of the ROImask after interpolation (e.g. 0.5). Leave blank if no cutoff is used, for example if the NNB method was used. See section 2.4 of the IBSI reference manual for more details.

1. **ReSegmentationParameters\_table.csv**
   1. *ReSegmentationParameters\_name.* User-defined name corresponding to one of the entry of I.5.
   2. *ReSegmentationRange\_min\_value.* Number specifying the lower bound of the re-segmentation range. Leave blank if the lower bound of the range is or if no re-segmentation range is used. See section 2.5 of the IBSI reference manual for more details.
   3. *ReSegmentationRange\_min\_unit.* Unit of K.2 (e.g. HU). Leave blank if K.2 is unitless.
   4. *ReSegmentationRange\_max\_value.* Number specifying the upper bound of the re-segmentation range. Leave blank if the upper bound of the range is +or if no re-segmentation range is used. See section 2.5 of the IBSI reference manual for more details.
   5. *ReSegmentationRange\_max\_unit.* Unit of K.4 (e.g. HU). Leave blank if K.4 is unitless.
   6. *OutlierRemoval\_threshold.* Number specifying the  threshold in the expression µ ±  used for outlier removal. Leave blank if no outlier removal is performed. See section 2.5 of the IBSI reference manual for more details.
2. **DiscretisationParameters\_table.csv**
   1. *DiscretisationParameters\_name.* User-defined name corresponding to one of the entry of I.6.
   2. *Equalisation\_NumberOfBins\_value.* Integer specifying the number of bins used in the histogram of the intensities of the ROI of the *ImagingVolume* to be (possibly) equalised prior to discretisation. Leave blank if no equalization process is performed. See section 2.7 of the IBSI reference manual for more details.
   3. *Algorithm.* Algorithm used to discretise the intensities of the ROI of the *ImagingVolume* as defined in section 4.2.5 of the IBSI reference manual. See section 2.7 of the IBSI reference manual for more details. Current options:

* “FBS”: Fixed bin size discretisation.
* “FBN”: Fixed bin number discretisation.
* “LM”: Lloyd-Max discretisation.
  1. *Value.* Number specifying the number of bins (FBN or LM) or the bin size (FBS) in the discretisation algorithm defined in L.3.
  2. *Unit.* Unit of I.4 (e.g. HU). Leave blank if L.4 is unitless (FBN or LM cases).
  3. *Discretisation\_min\_value.* Number specifying the minimum value used when performing FBS discretisation for definite intensities (e.g. PET, CT, etc.). The recommendation from IBSI is to set this value to the lower bound of the re-segmentation range. Leave blank if another algorithm is used.
  4. *Discrestisation\_min\_unit.* Unit of L.6 (e.g. SUV, HU). Leave blank if L.6 is unitless or not present.

1. **FeatureSpecificParameters\_table.csv**

Each row of this table always contains two entries: the name of the FeatureSpecificParameters to be defined, and the name of a set of parameters for a corresponding feature category (MORPH, IVH, GLCM, GLRLM, GLDZM, NGTDM and NGLDM; the rest of feature categories do not have specific parameters and their respective table do exists). The rest of the entries are left blank. For example, if a given feature is part of the ngtdm category, only *FeatureSpecificParameters\_name* and *ngtdmParameters\_name* are present in the table. the See section 5.2.6 of the IBSI reference manual for more details.

* 1. *FeatureSpecificParameters\_name.* User-defined name corresponding to one of the entry of I.7.
  2. *morphParameters\_name.* User-defined name to specify a given set of parameters for the computation of MORPH features.
  3. *glcmParameters\_name.* User-defined name to specify a given set of parameters for the computation of GLCM features.
  4. *glrlmParameters\_name.* User-defined name to specify a given set of parameters for the computation of GLRLM features.
  5. *gldzmParameters\_name.* User-defined name to specify a given set of parameters for the computation of GLDZM features.
  6. *ngtdmParameters\_name.* User-defined name to specify a given set of parameters for the computation of NGTDM features.
  7. *ngldmParameters\_name.* User-defined name to specify a given set of parameters for the computation of NGLDM features.
  8. *intVolHistParameters\_name.* User-defined name to specify a given set of parameters for the computation of intensity-volume histogram features.

1. **morphParameters\_table.csv**

See section 4.2.6 of the IBSI reference manual for more details.

* 1. *morphParameters\_name.* User-defined name corresponding to one of the entry of M.2.
  2. *Method.* Method used for the meshing algorithm. See section 3.1 of the IBSI reference manual for more details. Options:
* “VOX”: Voxel-based representation is used, i.e. no meshing algorithm is used.
* “MC”: Marching cubes algorithm.
* “ISO”: Iso-value algorithm.
  1. *Value.* Number specifying the iso-level used in the MC and ISO algorithms defined in N.2. Leave blank if N.2 is “VOX”.

1. **glcmParameters\_table.csv**

See section 4.2.6 of the IBSI reference manual for more details.

* 1. *glcmParameters\_name.* User-defined name corresponding to one of the entry of M.3.
  2. *glcm\_symmetry.* This string specifies if symmetrical GLCM (co-directional) or asymetrical GLCM (one direction) are produced. Options:
* “SYM”: Symmetrical GLCM.
* “ASYM”: Asymetrical GLCM.
  1. *DistanceNorm\_method.* Definition of distance in the calculation of the GLCM. See sections 3.6 of the IBSI reference manual for more details. Options:
* “Chebyshev”: Chebyshev norm.
* “Euclidean”: Euclidean norm.
* “Manhattan”: Manhattan norm.
  1. *DistanceNorm\_value.* Number specifying the norm of the type of distance defined in O.3.
  2. *DistanceNorm\_unit:* Unit of O.4. Leave blank if O.4 is unitless.
  3. *DistanceWeighting\_function.* Function weighting used to correct for directional length differences in voxel discretisation the calculation of the GLCM. Leave blank if no distance weighting is used. See section 4.1 of the IBSI reference manual for more details. Current options:
* “Inverse”: Function defined as 1/distance.
* “Exponential”: Function defined as exp[-distance2].

1. **glrlmParameters\_table.csv**

See section 4.2.6 of the IBSI reference manual for more details.

* 1. *glrlmParameters\_name.* User-defined name corresponding to one of the entry of M.4.
  2. *DistanceWeighting\_function.* Function weighting used to correct for directional length differences in voxel discretisation the calculation of the GLRLM. Leave blank if no distance weighting is used. Current options:
* “Inverse”: Function defined as 1/distance.
* “Exponential”: Function defined as exp[-distance2].

1. **gldzmParameters\_table.csv**

See section 4.2.6 of the IBSI reference manual for more details.

* 1. *gldzmParameters\_name.* User-defined name corresponding to one of the entry of M.5.
  2. *DistanceNorm\_method.* Definition of distance in the calculation of the GLCM. See sections 3.9 of the IBSI reference manual for more details. Options:
* “Chebyshev”: Chebyshev norm.
* “Euclidean”: Euclidean norm.
* “Manhattan”: Manhattan norm.
  1. *DistanceNorm\_value.* Number specifying the norm of the type of distance defined in Q.2.
  2. *DistanceNorm\_unit:* Unit of Q.3. Leave blank if Q.3 is unitless.

1. **ngtdmParameters\_table.csv**

See section 4.2.6 of the IBSI reference manual for more details.

* 1. *ngtdmParameters\_name.* User-defined name corresponding to one of the entry of M.6.
  2. *DistanceNorm\_method.* Definition of distance in the calculation of the NGTDM. See sections 3.10 of the IBSI reference manual for more details. Options:
* “Chebyshev”: Chebyshev norm.
* “Euclidean”: Euclidean norm.
* “Manhattan”: Manhattan norm.
  1. *DistanceNorm\_value.* Number specifying the norm of the type of distance defined in R.2.
  2. *DistanceNorm\_unit:* Unit of R.3. Leave blank if R.3 is unitless.
  3. *DistanceWeighting\_function.* Function weighting used to correct for directional length differences in voxel discretisation the calculation of the NGTDM. Leave blank if no distance weighting is used. Current options:
* “Inverse”: Function defined as 1/distance.
* “Exponential”: Function defined as exp[-distance2].

1. **ngldmParameters\_table.csv**

See section 4.2.6 of the IBSI reference manual for more details.

* 1. *ngldmParameters\_name.* User-defined name corresponding to one of the entry of M.7.
  2. *Dependence\_coarseness\_value.* Non-negative integer corresponding to the *coarseness* parameter of the NGLDM (e.g. 0). See sections 3.11 of the IBSI reference manual for more details.
  3. *DistanceNorm\_method.* Definition of distance in the calculation of the NGLDM. See sections 3.11 of the IBSI reference manual for more details. Options:
* “Chebyshev”: Chebyshev norm.
* “Euclidean”: Euclidean norm.
* “Manhattan”: Manhattan norm.
  1. *DistanceNorm\_value.* Number specifying the norm of the type of distance defined in S.3.
  2. *DistanceNorm\_unit:* Unit of S.4. Leave blank if S.4 is unitless.

1. **intVolHistParameters\_table.csv**

See section 3.5 of the IBSI reference manual for more details.

* 1. *intVolHistParameters\_name.* User-defined name corresponding to one of the entry of M.8.
  2. *intVolHist\_MinBound\_value.* Number specifying the minimum value used for the computation of intensity-volume histogram metrics. When intensities are definite (e.g. PET, CT, etc.) and/or integers and/or a FBS discretisation algorithm is used, the IBSI recommendation is to set this value to the lower bound of the re-segmentation range. Leave blank if a FBN algorithm is used (e.g. MRI).
  3. *intVolHist\_MinBound\_unit.* Unit of T.2 (e.g. HU). Leave blank if T.2 is unitless or not present.
  4. *intVolHist\_MaxBound\_value.* Number specifying the maximum value used for the computation of intensity-volume histogram metrics. When intensities are definite (e.g. PET, CT, etc.) and/or integers and/or a FBS discretisation algorithm is used, the IBSI recommendation is to set this value to the upper bound of the re-segmentation range. Leave blank if this value is +, or if a FBN algorithm is used (e.g. MRI).
  5. *intVolHist\_MaxBound\_unit.* Unit of T.4 (e.g. HU). Leave blank if T.4 is unitless or not present.

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----------------------------------------- IMAGE FILTER SPACE -------------------------------------------

1. **ImageFilterSpace\_table.csv**

Each row of this table contains only two entries:

* 1. *ImageFilterSpace\_name.* User-defined name corresponding to one of the entry of I.3.
  2. *$Filter$Parameters\_name.* User-defined name to specify a given set of parameters for one (and only one per row) of the $Filter$ column of the ImageFilterSpace\_table.csv (Example: WaveletFilterParameters\_name).

1. **WaveletFilterParameters\_table.csv**
   1. *WaveletFilterParameters\_name.* User-defined name corresponding to one of the entry of U.2.
   2. *BasisFunction.* Name of the wavelet basis function used to filter the image. Currently available options:

* “haar”: Haar wavelet basis function.
* “coif1”. Wavelet basis function of the *Coiflet* family.
* “bior3.5”. Wavelet basis functions of the *BiorSplines* family.

In preparation (not yet described):

* “db1”, “db2”, “db3”, “db4”, “db5”, “db6”, “db7”, “db8”¸ “db9” or “db10”: Wavelet basis functions of the *Daubechie* family.
* “sym2”, “sym3”, “sym4”, “sym5”, “sym6”, “sym7” or “sym8”: Wavelet basis functions of the *Symlet* family.
* “coif1”, “coif2”, “coif3”, “coif4” or “coif5”: Wavelet basis function of the *Coiflet* family.
* “bior1.1”, “bior1.3”, “bior1.5”, “bior2.2”, “bior2.4”, “bior2.6”, “bior2.8”, “bior3.1”, “bior3.3”, “bior3.5”, “bior3.7”, “bior3.9”, “bior4.4”, “bior5.5” or “bior6.8”: Wavelet basis functions of the *BiorSplines* family.
* “rbio1.1”, “rbio1.3”, “rbio1.5”, “rbio2.2”, “rbio2.4”, “rbio2.6”, “rbio2.8”, “rbio3.1”, “rbio3.3”, “rbio3.5”, “rbio3.7”, “rbio3.9”, “rbio4.4”, “rbio5.5” or “rbio6.8”: Wavelet basis functions of the *BiorSplines* family.
  1. *WaveletDirection.* 3 letters specifying if the high-pass (H) or low-pass (L) version of the wavelet basis function is applied in the *XYZ* directions of a given ImageVolume. The *X* direction corresponds to the *X* direction of the in-plane dimension of a given *ImageVolume*. The *Y* direction corresponds to the *Y* direction of the in-plane dimension of a given *ImageVolume*. The *Z* direction corresponds to the slice direction of a given *ImageVolume*, perpendicular to the in-plane dimension. Options:
* “LLL”, “LLH”, “LHL”, “LHH”, “HLL”, “HLH”, “HHL” or “HHH”.

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-------------------------------------- CALCULATION RUN SPACE ---------------------------------------

1. **CalculationRunSpace\_table.csv**
   1. *CalculationRunSpace\_name.* User-defined name corresponding to one of the entry of A.8.
   2. *TimeStamp.* Time at which the calculation run was started. Format: yyyy-mm-dd\_hh:mm:ss.
   3. *Software\_name.* User-defined name to specify a given set of parameters that defines the software used for feature computation.
2. **Software\_table.csv**
   1. *Software\_name.* User-defined name corresponding to one of the entry of W.3.
   2. *Software\_label.* User-defined name to identify the software used for feature computation in a given calculation run.
   3. *Version.* String specifying the version of the software used in a given calculation run. Example: “1.2.1”.
   4. *ProgammingLanguage.* String specifying the programming language of the software used in a given calculation run.
   5. *Institution.* User-defined name specifying the programming language of the research institution/commercial software that have designed the software used in a given calculation run.

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