

Notes Legend

Units are omitted for simplicity sake.

AnnotationRef: This element always refers to a Comment/ Annotation element as described for Channel. However for simplicity sake most Comment/Annotation elements have been omitted and the AnnotationRef has been inserted in

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This is a graphical representation of a possible extension of the OME data model developed by members of the Imaging Working Group of the 4D Nucleome consortium. The graph utilizes the Entity-Relationship formalism. In this formalism information about a real world situation/thing (in our case a Microscope and an image acquired using that instrument) are represented by three types of model elements:

1) Entities = Boxes; 2) Relationships = lines connecting boxes; 3) Attributes = fields within boxes When describing a real life situation/thing:

1)ENTITIES corresponds to NOUNS = the things we want to collect information about.

2) RELATIONSHIPS corresponds to VERBS = actions/state/occurrence that connect Entities with each other

3) ATTRIBUTES corresponds to ADJECTIVES = the actual information about each Entity we want to collect In order to read the schema please start from INSTRUMENT and from and IMAGE for the Specifications and Settings section respectively. Then follow the lines to the

connected boxes and think something like: 1) An Instrument has a Microscope\_Body, might rest on a Microscope\_Table, and has a Light\_Source etc.; 2) An Image was For questions or comments please contact: produced as part of a specific Experiment, was collected in a specific Imaging\_Environment, was collected using specific Microscope\_Settings etc. **ImagingEnvironment IMAGE** Temperature AirPressure CO2Percent ACQUISITION MicroscopeSettings ID (MicroscopelD) Settings **OptovarMagnification** TotalEffectiveMagnification **TIRFSettings** Description ThroughLens \_ \_ \_ \_ \_ \_ A description for the TIRFsetting [plain-text multi-line string] AnnotationRef **ObjectiveSettings** ID (ObjectiveID CorrectionCollar **ImmersionRefractiveIndex** Description MeasuredRefractiveIndex Temperature A description for the Microbeam [plain-text multi-line string] **Image Data** LightSourceSettings MicrobeamManipulation TiffData ID (LightSourceID) Attenuation **— — — Wavelenght** TiffData WavelengthUnit ExperimenterRef PowerAtSample Plar Firs IFD UUI Firs FirstZ Plar FirstT **Image** UUI FirstC Description PlaneCount Name A description for the experiment AcquisitionDate [plain-text multi-line string] ightSourceCouplingRe SamplePosition SizeT ID (CouplingID) Experiment PhysicalSizeX PhysicalSizeY Planes PhysicalSizeZ SamplePositionX FilterSetRef melncrement SamplePositionY nensionOrder ID (FilterSetID) SamplePositionZ nannelOrder AdditionalLensRef SampleHolderRef ExperimenterRef xelType SignificantBit ID (LensID) terleaved FocalPosition Plane ExcitationFilterRef BigEndian ID (FilterID) Sample mage/Description PrismRef Name trumentRef StagePositionZ ID (PrismID) xperimenterRef FocusingRef Has Timestamp AutoFocusRef And ExposureTime DichroicRef MountingMedium
MountingMediumRefractiveIndex | HashSHA1 AnnotationRef ID (MirrorID) PolarizationOpticsRef LightSourceSettings ID (PolarizationOpticsID) EmissionFilterRef ID (LightSourceID) OpticalCalibration Attenuation AdditionalFilterRef ID (FilterID) **OpticalCalibration** Wavelenght Channels WavelengthUnit ID (FilterID) OutputPower PowerAtSample MedianSpotSize\_FWHM **AdditionalOptics** MedianTheoretical FWHM Channel AdditionalMirrorRef MinSpotSize FWHM MinTheoretical FWHM Channel Name MaxSpotSize\_FWHM ID (MirrorID) AnotationRef MaxTheoretical FWHM Samin CalibrationReportRef Channel ActualMountedAngle ZSpotSize FWHM Illur Nar AnnotationRef ZTheoretical FWHM Acq Illu Name Planarity Children Entities (choose on | OpticalCalibrationSoftware | Con Pin SamplesPerPixel Asymmetry Exc Acq IlluminationType LateralChromaticShift DetectorSettings-APE AxialChromaticShift CameraSettings Flud Exc Acquistion Mode Description ID (DetectorID) NDI Emi ContrastMethod AnnotationRef EffectiveOffset Poc Flue ExcitationWavelenght Integration AnalogToDigitalConverter ColoredBeadsSlide Col ND EmissionWavelength CameraFieldOfView Col NDFilter BeadsConcentration PockelCellSetting OperatingTemperature AnnotationRef OpticalStandard-APE BeadEmissionWavelenght L \_ (AnnotationID) Manufacturer Description PhotoMultiplierSetting CalibrationSlide SerialNumber A description for the annotation PMTGain LotNumber **FieldCalibration** [plain-text multi-line string] PMTVoltage SpecsFile FlatFieldImageRef CalibratedMeasure EffectiveZoom Ref AnnotationRef ID (ImageID) **DNAOrigami** Name Description Description ID (AnnotationID) AnnotationRef AnnotationRef CommentAnnotation Children Entities (choose one Value Namespace [string] ExcitationCalibration Annotator (ExperimenterID) ObservedExcitationWavelength ObservedExcitationPower Observed ExcitationVariance CalibrationMap DetectorCalibration MetricType IlluminationIntensity NrOfImages | Row IS-A Intensity Calibration-APE

Cell

CellNr

CellValue

Description

AnnotationRef

IntensityCalibrationToolRef