

BugSquashing:

Geometry Classes

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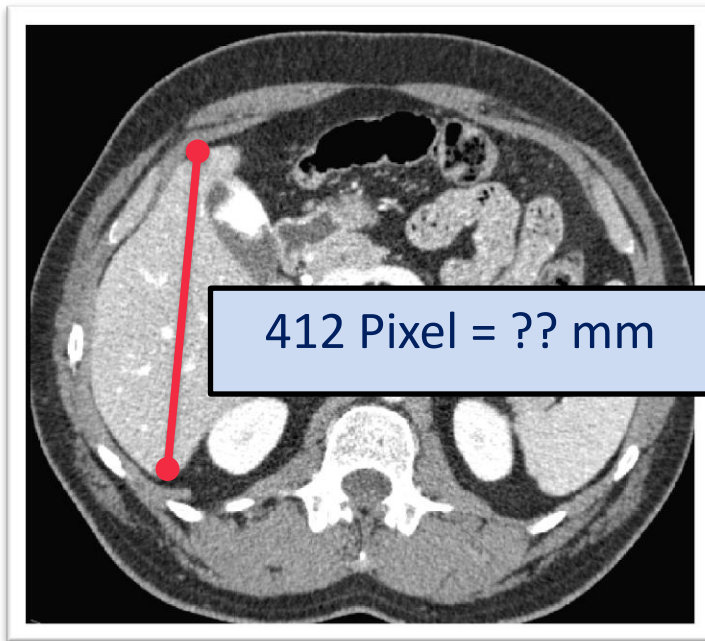
What is a „Geometry“ ?

- jpg, png, bmp, tif, etc
 - **Dimensions:** 1024 x 768
 - **Pixeltype:** 24 bit (RGB, 3 x 8 Bit)



What is a „Geometry“ ?

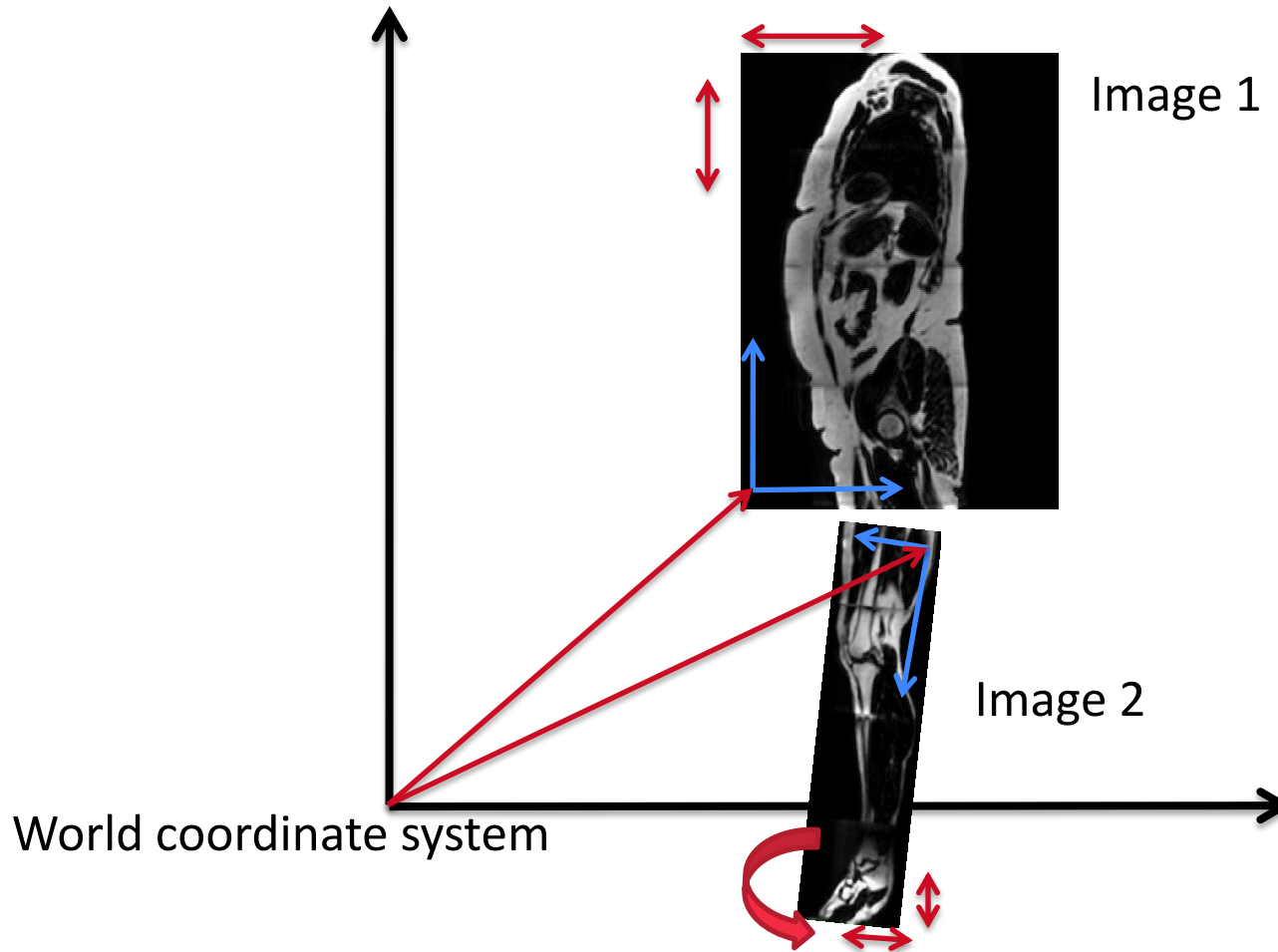
- jpg, png, bmp, tif, etc
 - **Dimensions:** 1024 x 768
 - **Pixeltype:** 24 bit (RGB, 3 x 8 Bit)



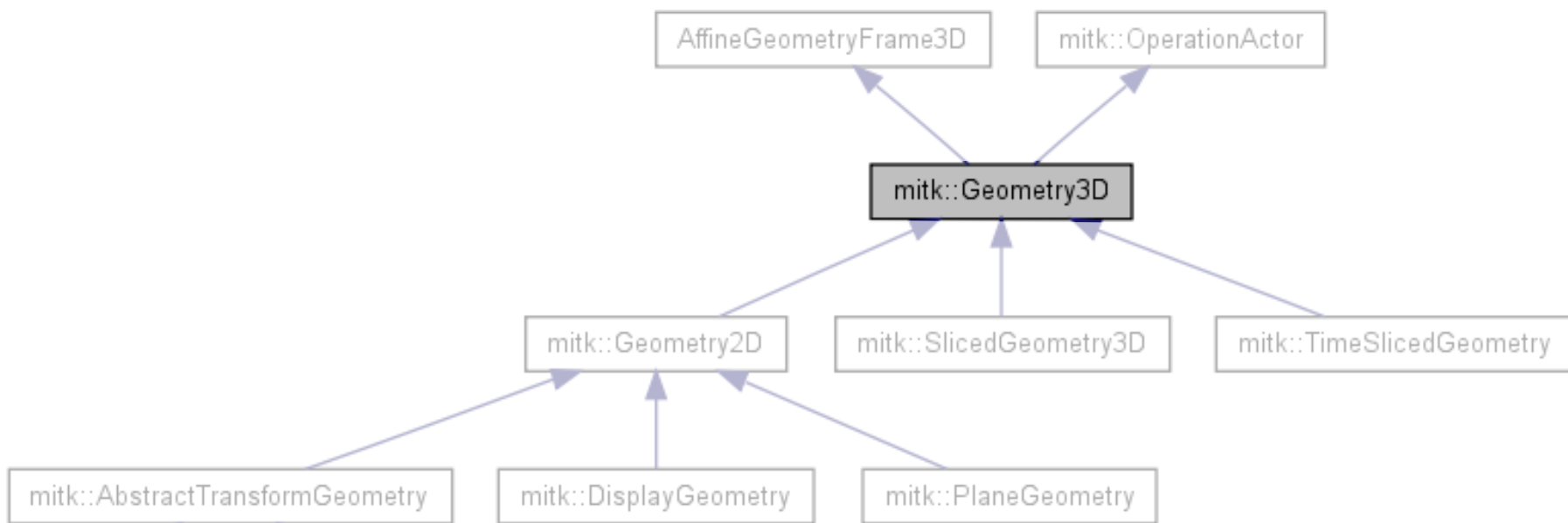
- “Geometry” Information
 - Dimension (2D, 3D, 4D)
 - Bounds (x-Min, x-Max, y-Min, y-Max,..)
 - Spacing (how big is a pixel in mm?)
 - Origin (shift to world coordinate system origin)
 - Rotation (orientation in 3D)

Relations to the “Real World”

What is a „Geometry“ ?

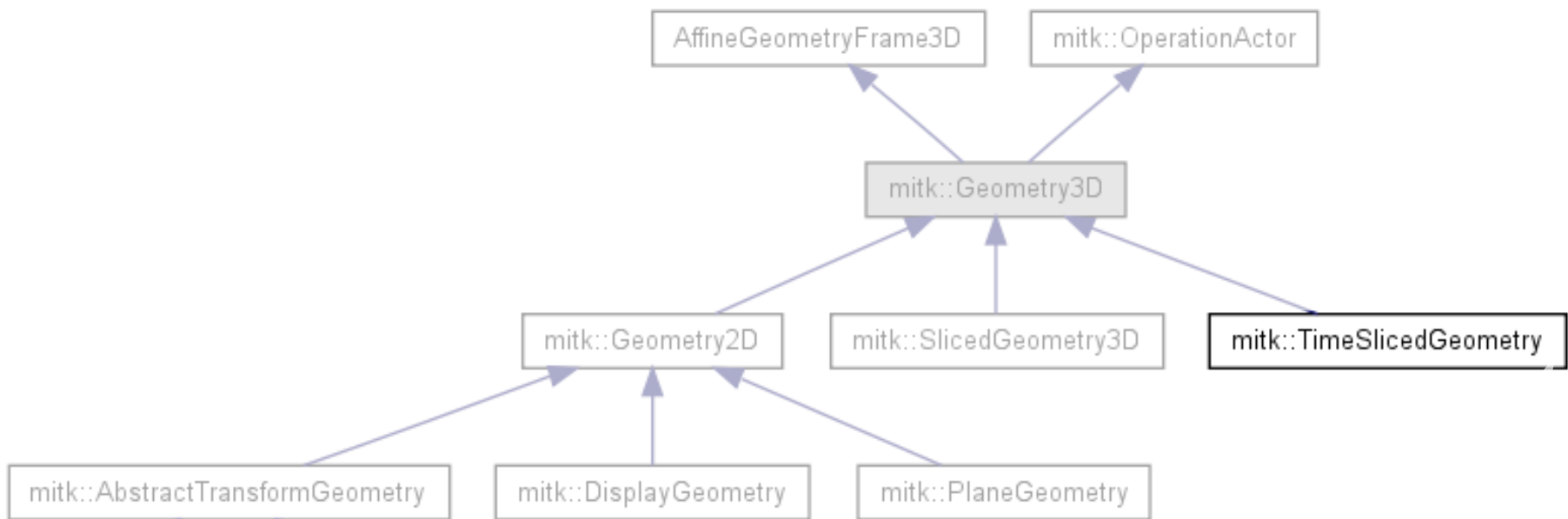


The essential “base class”



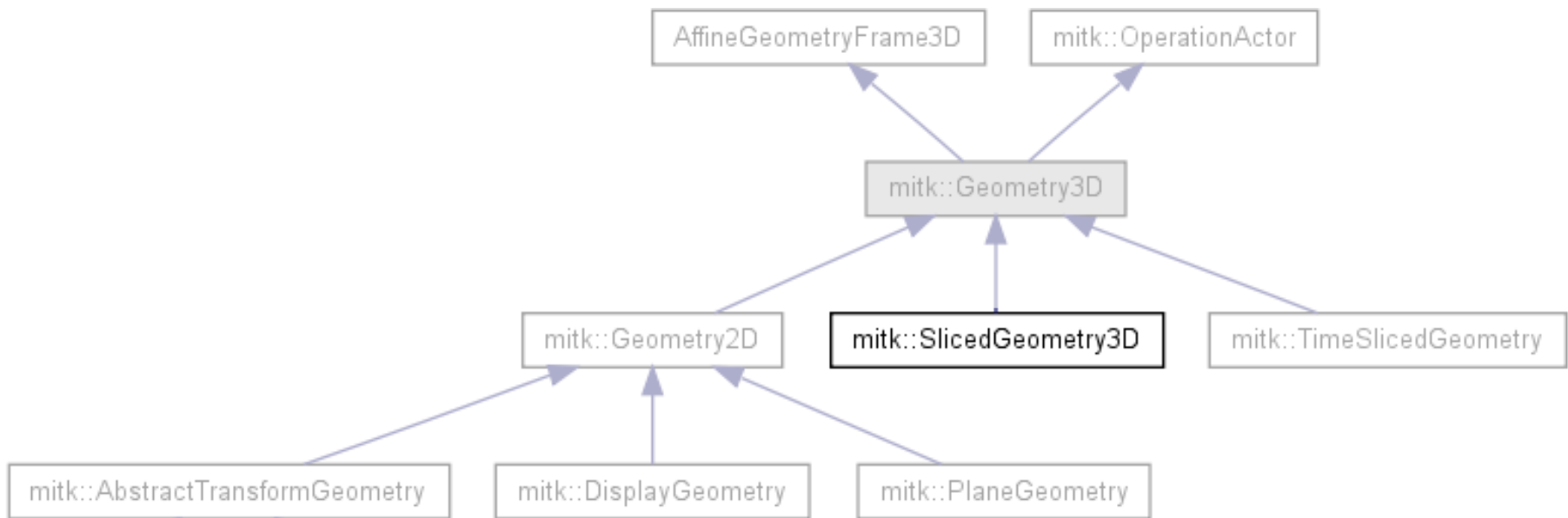
Geometry Classes in MITK

4D



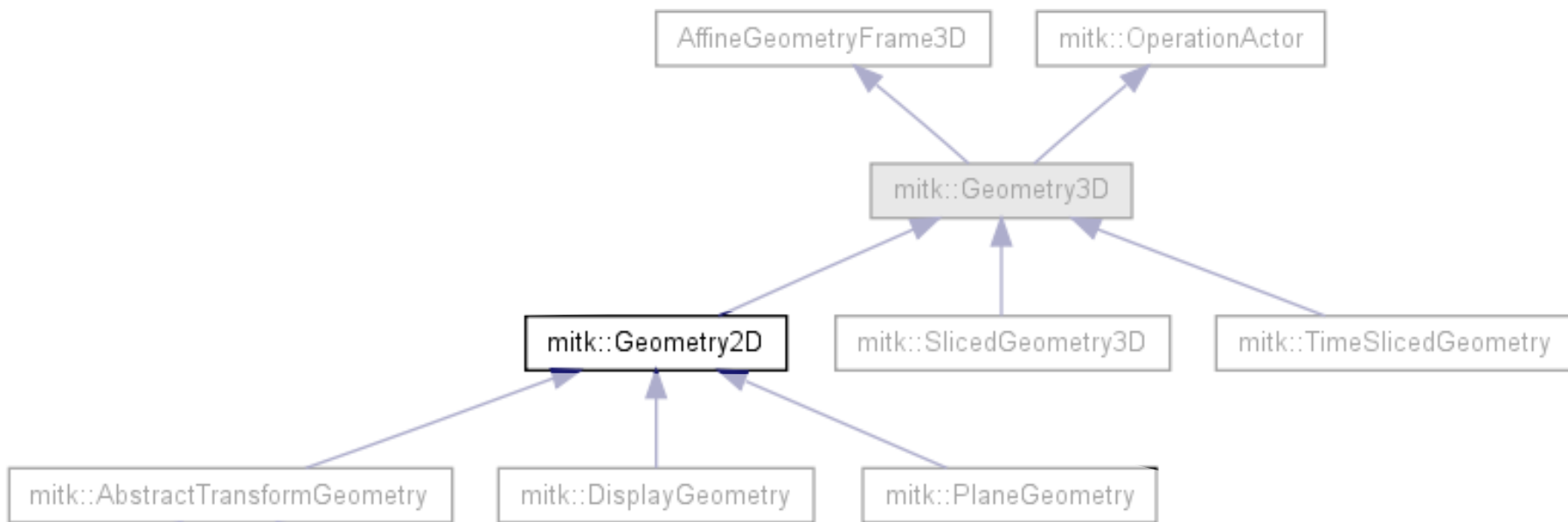
Geometry Classes in MITK

3D

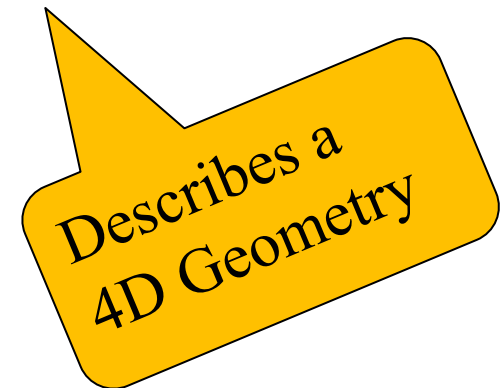


Geometry Classes in MITK

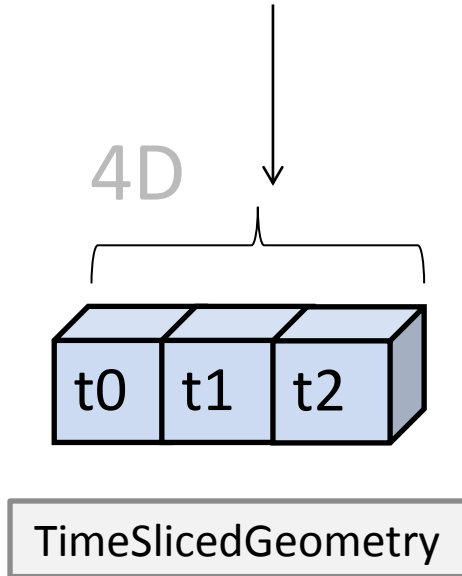
2D



- Displayable objects must inherit from **mitk::BaseData**
 - mitk::Image
 - mitk::PointSet
 - mitk::Surface
 -
- BaseData holds a member „TimeSlicedGeometry“

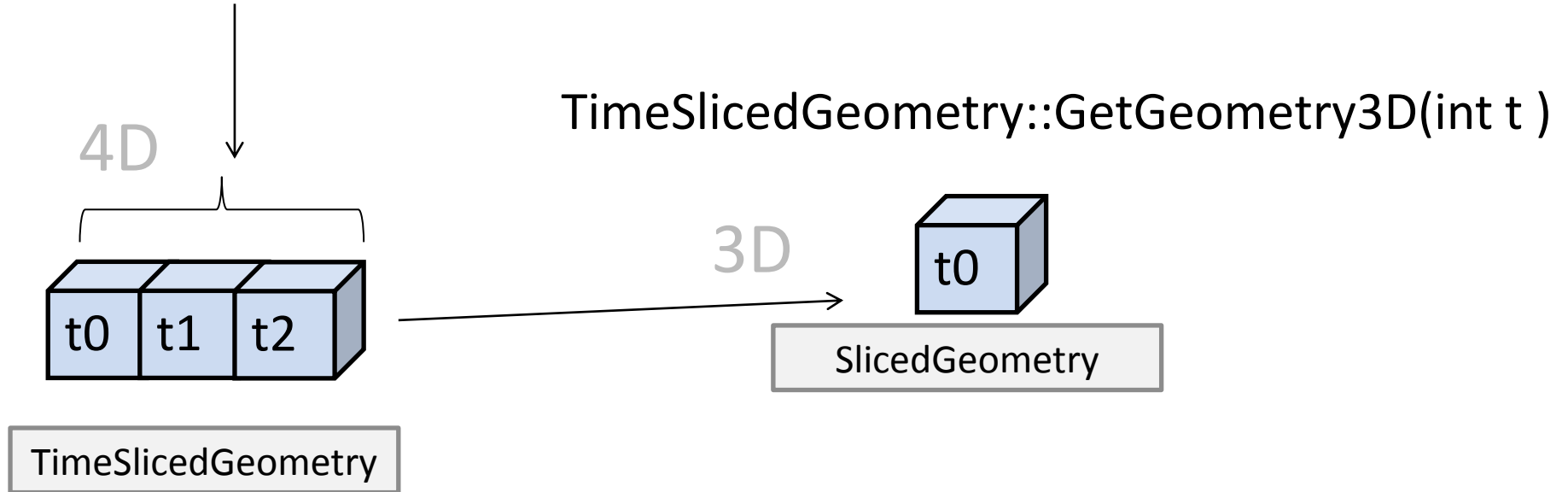


BaseData::GetTimeSlicedGeometry()

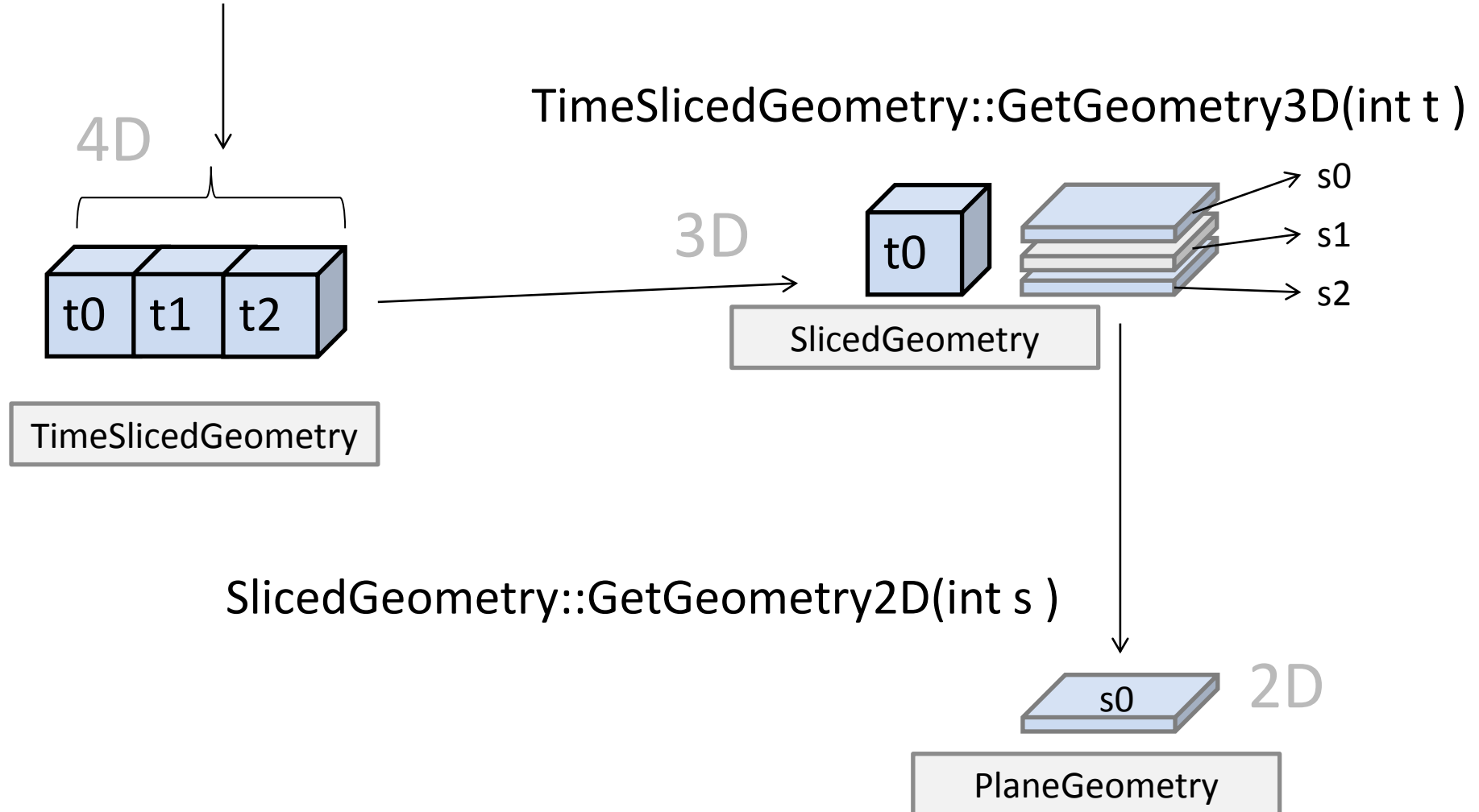


Image, Surfaces, 3D,4D... whatever.
They all got this!

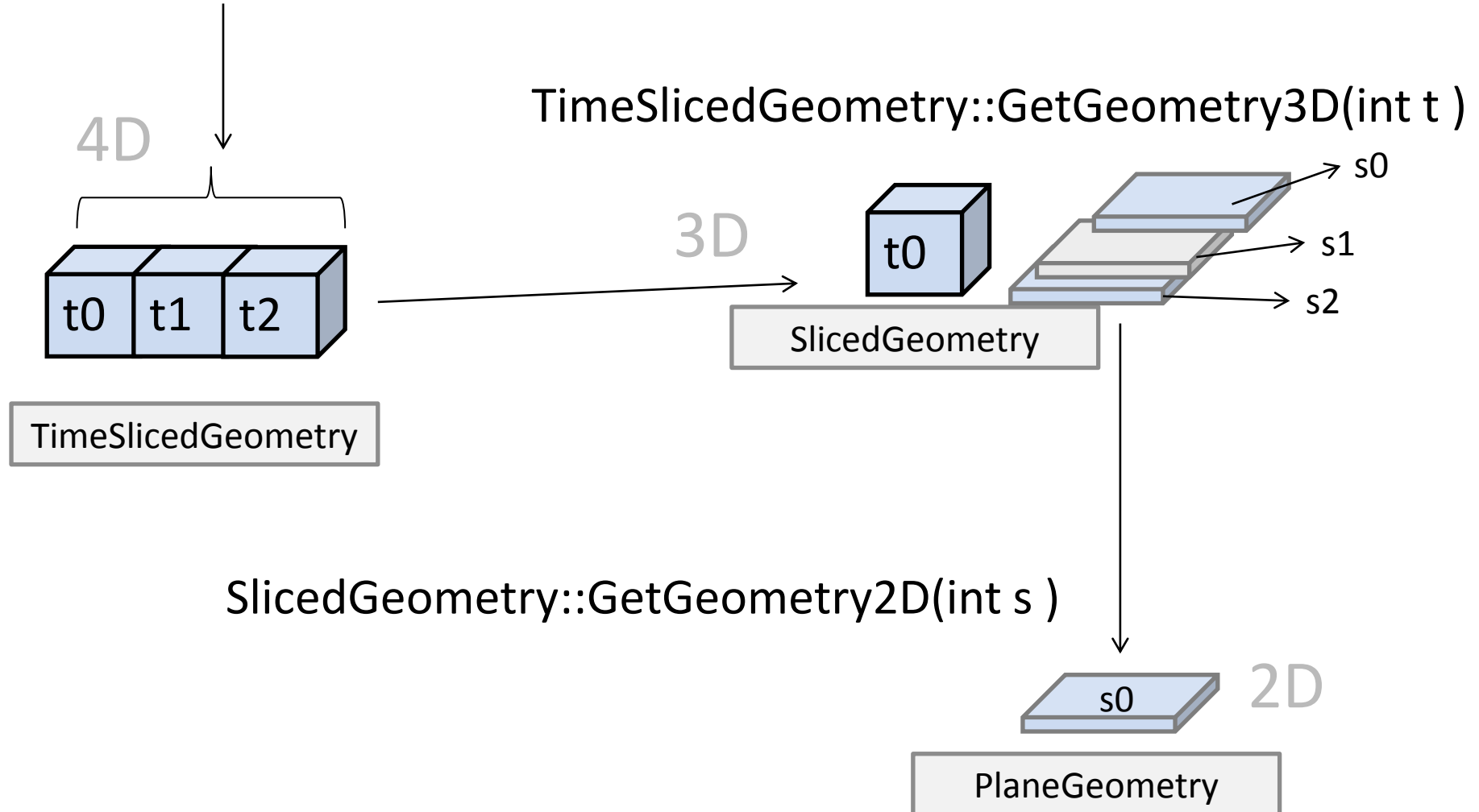
BaseData::GetTimeSlicedGeometry()



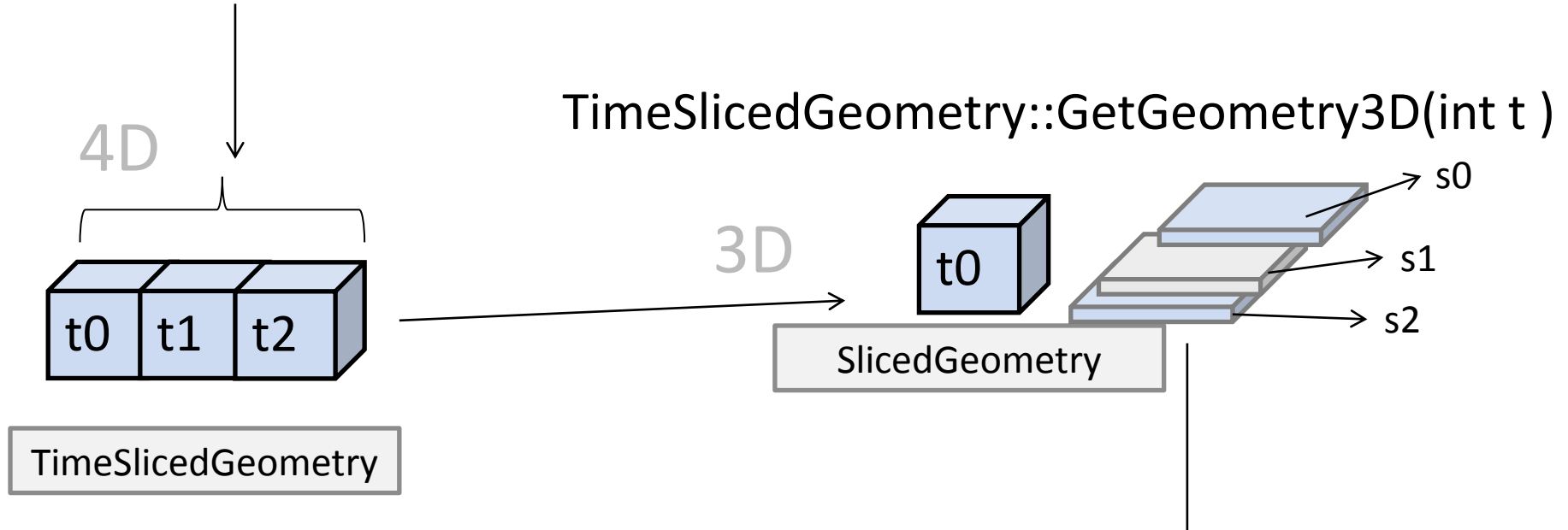
BaseData::GetTimeSlicedGeometry()



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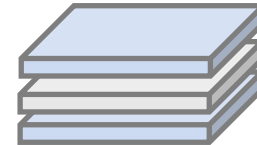
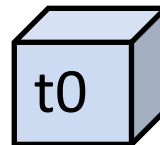
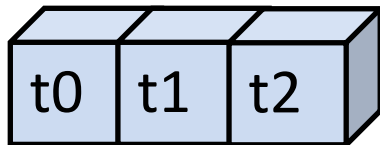


BaseData::GetTimeSlicedGeometry()



- Advantages
 - Missing Planes, Unequal Plane Geometries, Tilted Gantry ...

- Every „BaseData“ Object has a TimeSlicedGeometry (4D)
- Geometries are nested
 - One 4D geometry contains a number of 3D geometries **and** is itself a bounding geometry
 - One 3D geometry contains a number of 2D geometries **and** is itself a bounding geometry



83 bugs found.

ID ▼	Summary	Comp	Sev ▲	Status	Changed
13975	Application is chrashing when accepting an invisible 3d-s...	Segmenta	cri	CONF	2012-12-18
13652	MITK susceptible to crash after using screenshotmaker	ExtApp P	cri	CONF	2012-11-27
13613	Crash on loading same DICOM Image two times	Renderin	cri	IN_P	2012-12-18
13499	Possible crash caused by unremoved observer in mitkLevelW...	Core	cri	IN_P	2012-12-18
12730	[Dashboard] mitkNavigationToolStorageSerializerAndDeseria...	IGT	cri	IN_P	2012-12-28
8165	Improve performance of ImageVtkMapper2D	Renderin	cri	IN_P	2013-01-09
14179	Hide LevelWindowSlider if a lookuptable is set.	Qt GUI M	maj	CONF	2013-01-10
14108	Plugins within install folder cannot resolve their depend...	Build sy	maj	CONF	2012-12-31
13931	Flip images provided by range cameras correctly	ToF	maj	IN_P	2012-12-20
13889	mitkLevelWindowManagerTest does not work	Core	maj	IN_P	2012-12-11
13817	Volumerendering is very slow on Mac OS X	Renderin	maj	IN_P	2012-12-18
13810	Crash when loading images (from remote location)	Core	maj	CONF	2012-12-18
13767	Planar figures bahve strangely if drawn close to an image...	Measurem	maj	CONF	2012-12-18
13546	level window widget does strange things	Qt GUI M	maj	CONF	2012-12-20
13102	Dicom Plugin has no documentation	Document	maj	IN_P	2012-12-18
11948	ComputeBoundingGeometry3D grid wrong (world geometry calc...	Core	maj	CONF	2012-11-27
10959	image spacing is not restored correctly after project sav...	Core	maj	CONF	2012-12-18
10488	Pixel value on the status bar with segmentation	Core	maj	CONF	2012-12-18
8108	DICOM tests fail on MacOS dart clients	Other	maj	CONF	2012-12-18
14030	SegmentationInterpolationObserver does not remove observer	Segmenta	nor	IN_P	2012-12-17
14024	3D regiongrowing is not working for binary images	Segmenta	nor	CONF	2012-12-17
14023	Blueberry view overlapping each other on Mac OS X	BlueBerr	nor	CONF	2012-12-17
13992	CreateDistanceImageFromSurfaceFilter does not work correc...	Modules	nor	IN_P	2012-12-13
13980	mitkUIDGenerator generates equal UID's	Core	nor	IN_P	2013-01-09
13966	Strange behavior of segmentation paint tool	Segmenta	nor	CONF	2012-12-18