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TimeGeometry

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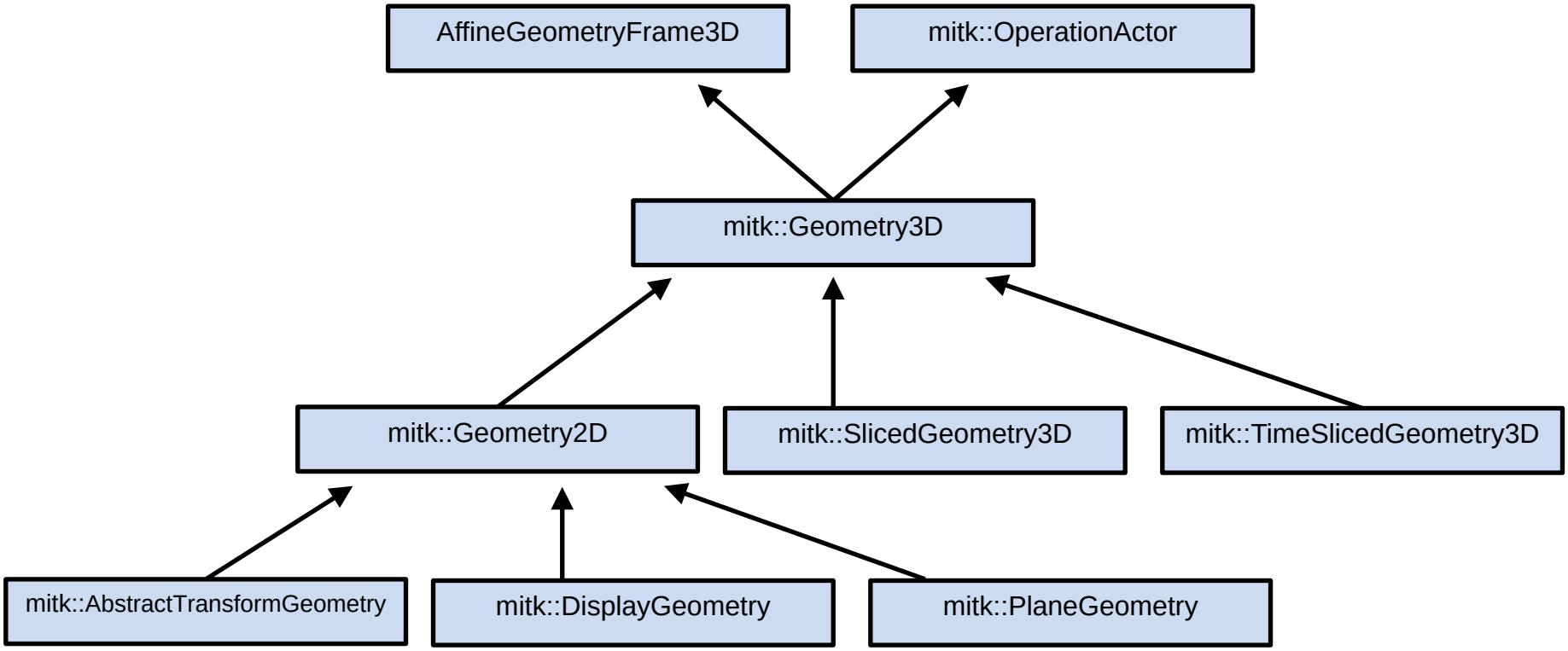
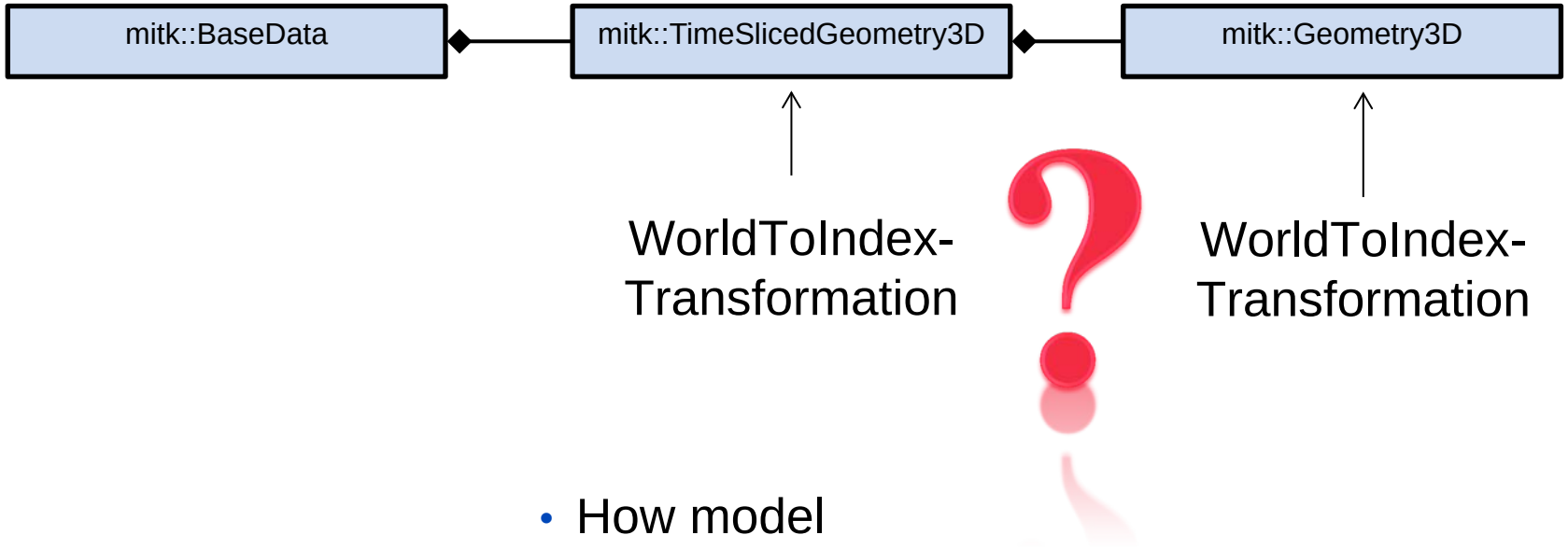
Old Class Structure

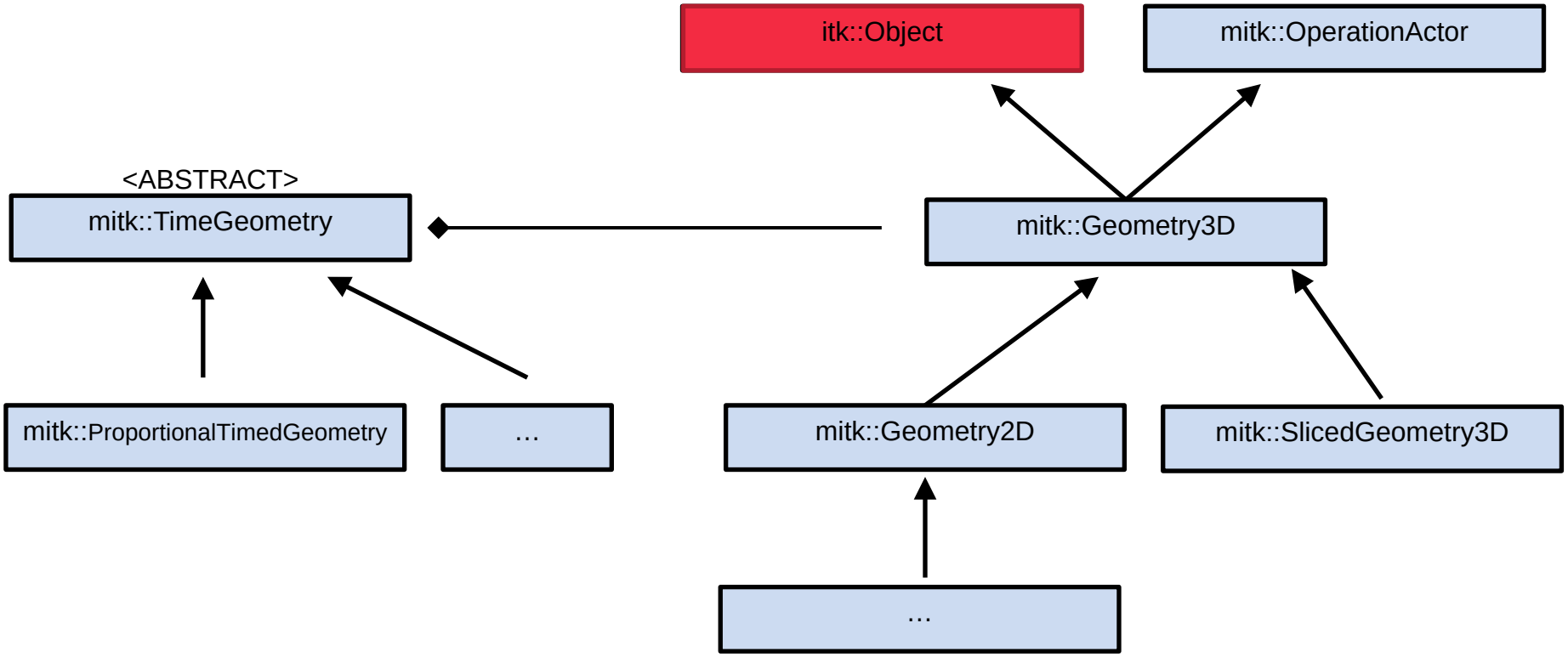


mitk::BaseData Geometry



- How model Different Time-Models:
  - Fixed Timesteps
  - Variable Timesteps
  - Always same Geometry
  - …

New Geometry Structure



Time-Information

Space-Information

Changes (1)

- (Get)TimeSlicedGeometry is removed!
  - Use (Get)TimeGeometry instead

```
data->GetTimeSliced...metry()->
        WorldToIndex(...Point, point);
```

- TimeGeometry has no IndexToWorld etc…
  - Think about the right TimePoint

```
TimeStep step = 3;
data->GetGeometry(step)->
        WorldToIndex(worldPoint, point);
```

- Differenciate between TimePoint and TimeStep
  - TimeStep = [0,1,2 …] (std::size_t)
  - TimePoint = Time in ms (float)
    (NO reference time point!)
  - No fixed conversion between TimePoints of two different TimeGeometries

```
data->GetTimeSli...try()
    ->TimeStepToTi...p
                (...Geometry, time );
```

```
TimeStepType tStep = time;
TimePointType tPoint = data1->
        GetTimeGeometry()->
        TimePointToTimeStep(tStep);
tStep = data2->GetTimeGeometry()
        ->TimeStepToTimePoint(tPoint);
```

Changes (2)

- InitializeEvenlyTimed (…) is not working!
  - Time Model is defined by TimeGeometry Object
  - Use ProportionalTimeGeometry instead

```
data->InitializeEvenlyTimed(slicedGeometry, m_Dimensions[3]);
```

```
ProportionalTimeGeometry::Pointer timeGeometry = ProportionalTimeGeometry::New();
timeGeometry->Initialize(slicedGeometry, m_Dimensions[3]);
data->SetTimeGeometry(timeGeometry)
```

```
dynamic_cast<ProportionalTimeGeometry *> (data->GetTimeGeometry())
                ->Initialize(slicedGeometry, m_Dimensions[3]);
```

- AffineGeometryFrame3D is no longer necessary
  - Geometry3D::Clone returns Geometry3D::Pointer
  - TimeGeometry::Clone returns TimeGeometry::Pointer

```
AffineGeometryFrame3D::Pointer affine = data->GetTimeSlicedGeometry()->Clone();
Geometry3D::Pointer geom = dynamic_cast<Geometry3D *>(affine.GetPointer() );
```

```
TimeGeometry::Pointer geom= data->GetTimeGeometry()->Clone();
```

Further Informations:

For further informations see:

http://www.mitk.org/Development/GeometryRefactoring