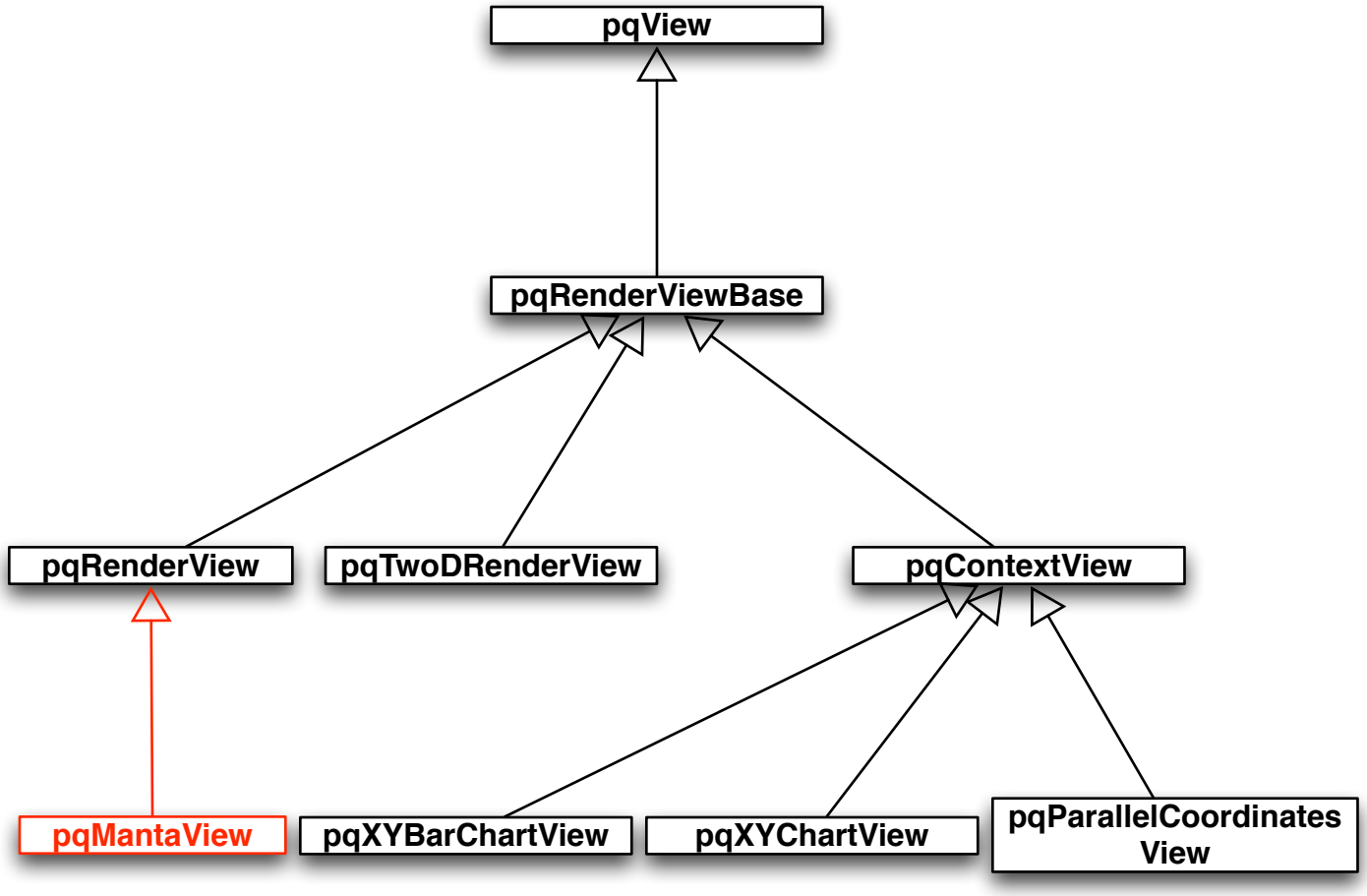
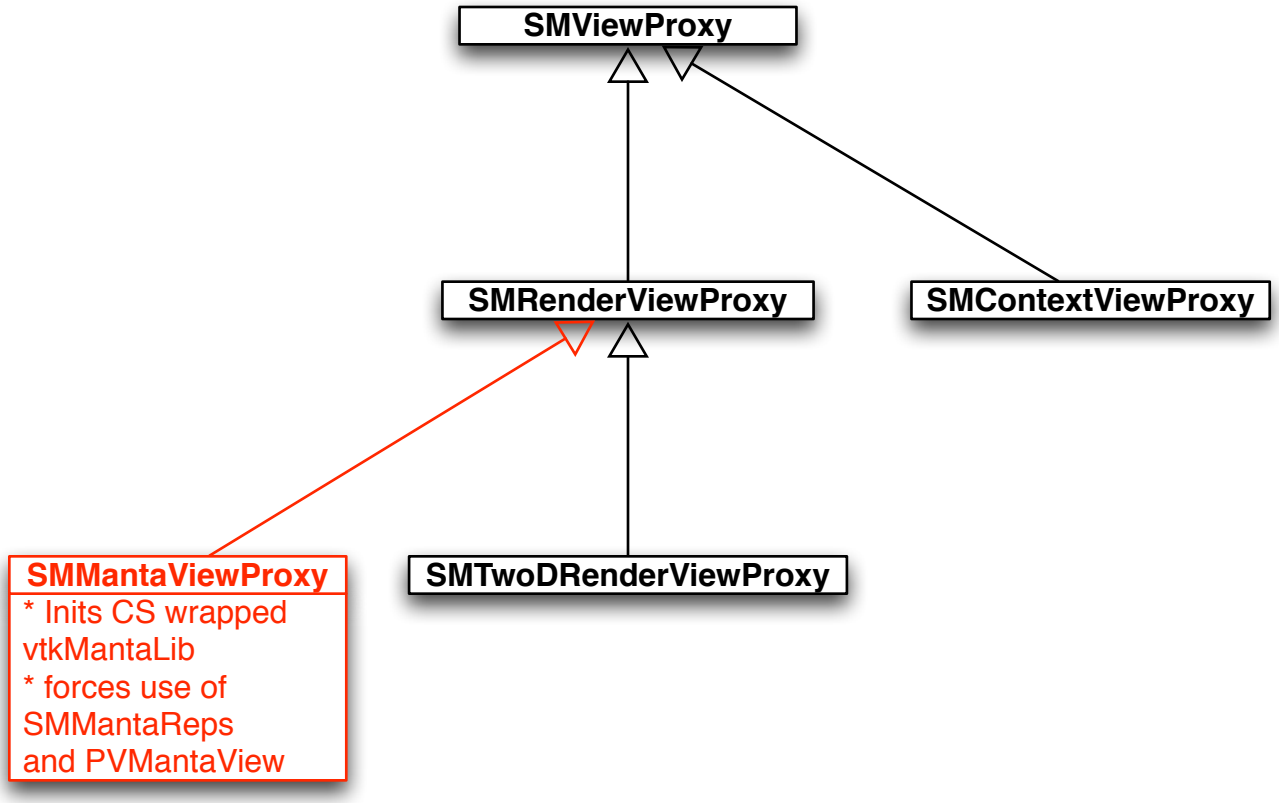
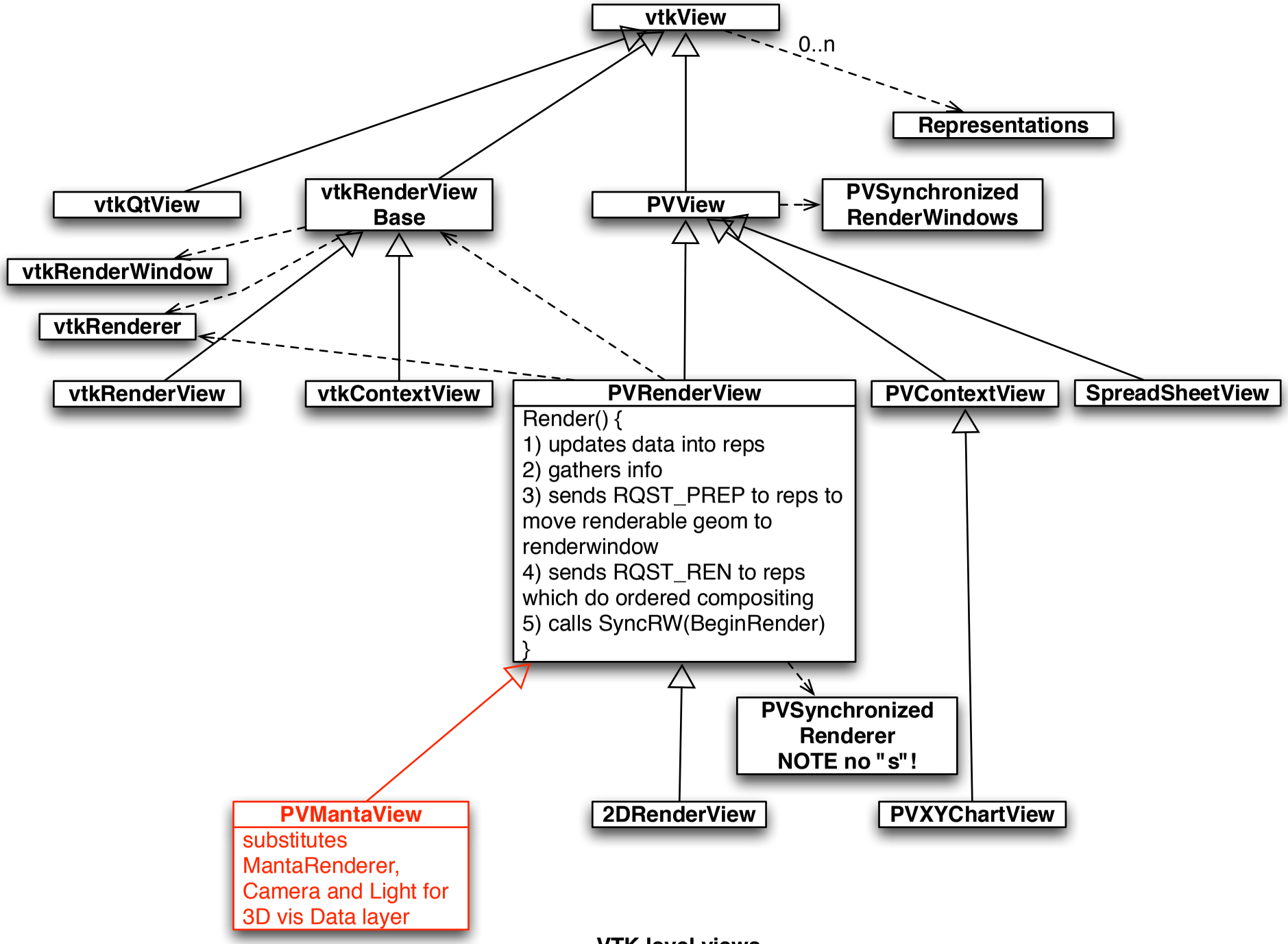


ParaQ level view classes that interface to GUI



ServerManager View classes to control the remote/parallel vtk views



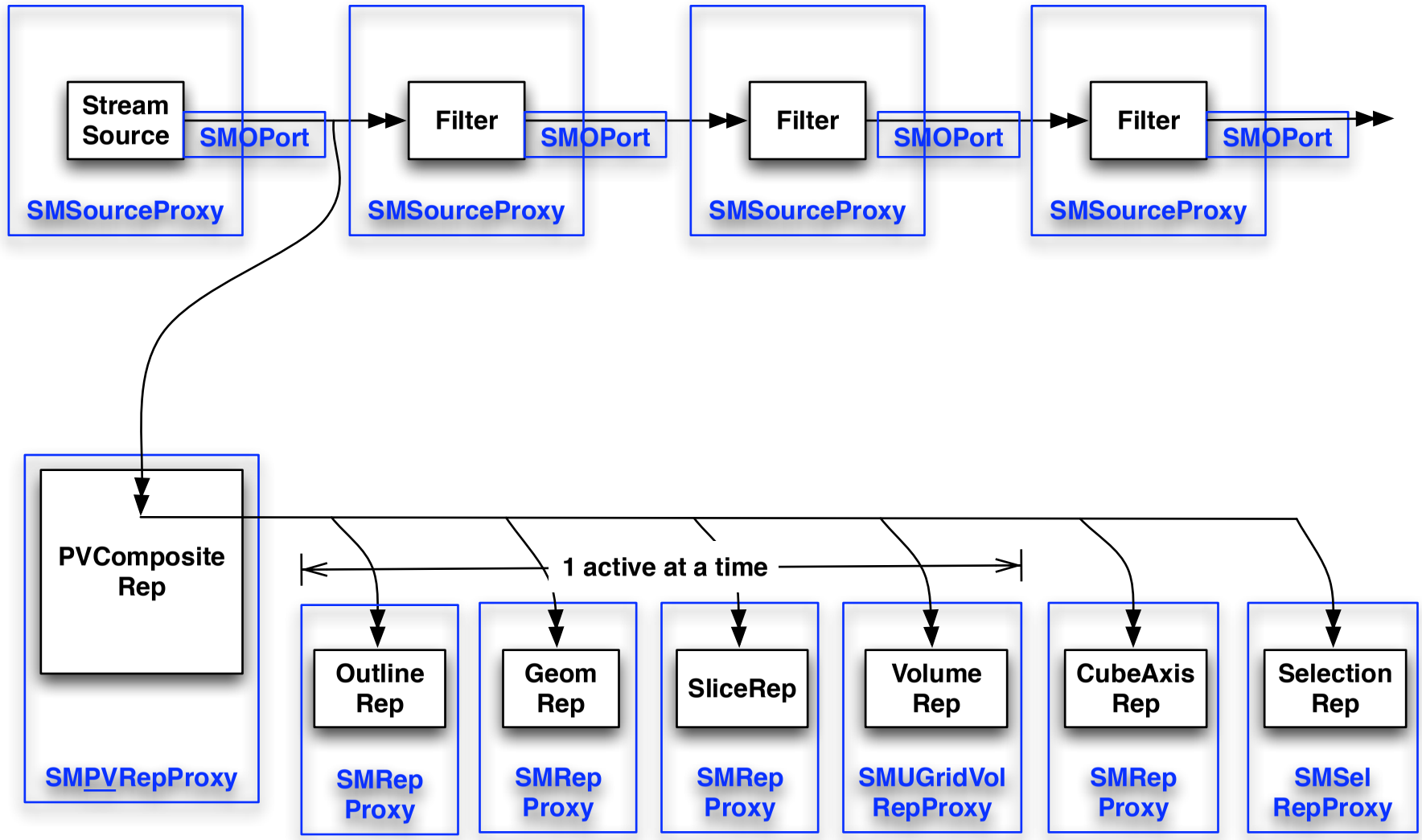
VTK level views

GeometryRepresentation, UnstructuredGridRepresentation, UniformGridRepresentation,
MantaGeometryRepresentation
MantaRep uses MantaSurfaceRep for pts, lines, surface rendering

top level representation for something shown in a view

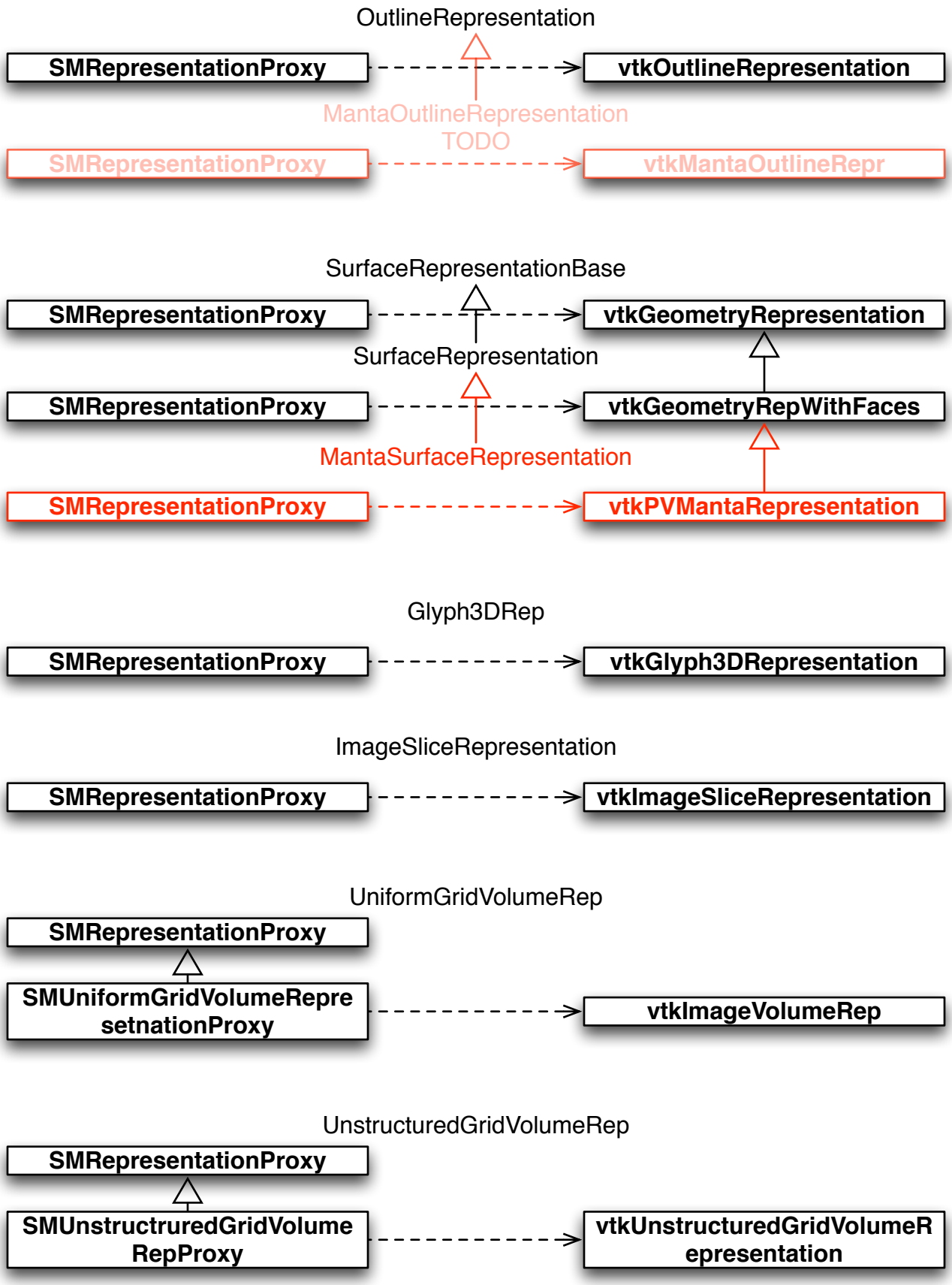
it holds many internal representations (see next three pages)
each sub representation shows the thing in a different way (volume render/surface/outline etc)
this will show 1 subrepresentation from that set
and at the same time show the selection and cube axis sub representations

3 "class" hierarchies, SM classes, XML configurations of those, and VTK level

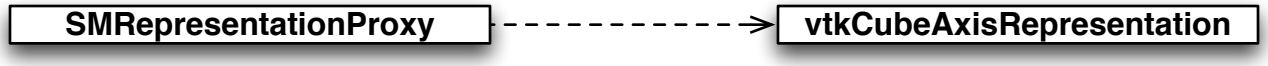


PV pipeline and display of one filter in it into one RenderView

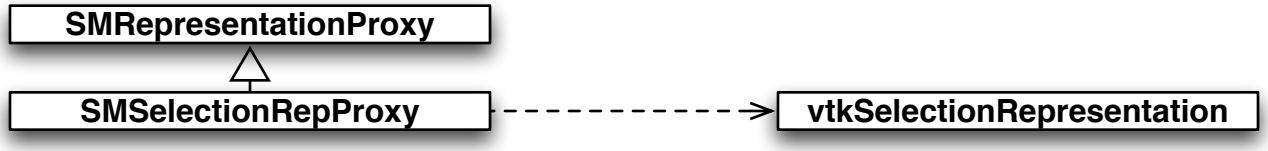
blue boxes are SM wrappers that ParaView uses for control
black boxes are VTK classes possibly instantiated remotely and in parallel


OutlineRepresentation
SMRepresentationProxy
vtkOutlineRepresentation
MantaOutlineRepresentation
TODO
SMRepresentationProxy
vtkMantaOutlineRepr
SurfaceRepresentationBase
SMRepresentationProxy
vtkGeometryRepresentation
SurfaceRepresentation
SMRepresentationProxy
vtkGeometryRepWithFaces
MantaSurfaceRepresentation
SMRepresentationProxy
vtkPVMantaRepresentation
Glyph3DRep
SMRepresentationProxy
vtkGlyph3DRepresentation
ImageSliceRepresentation
SMRepresentationProxy
vtkImageSliceRepresentation
UniformGridVolumeRep
SMRepresentationProxy
SMUniformGridVolumeRepresetnationProxy
vtkImageVolumeRep
UnstructuredGridVolumeRep
SMRepresentationProxy
SMUnstructruredGridVolumeRepProxy
vtkUnstructuredGridVolumeRepresentation

CubeAxisRep



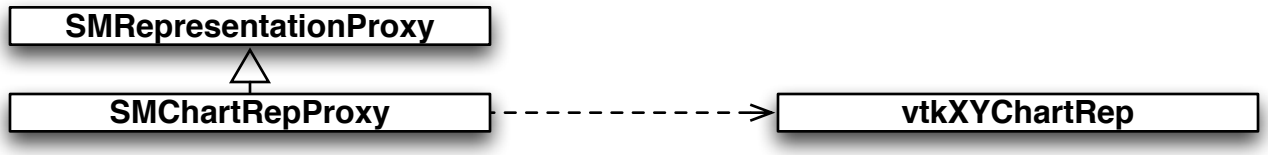
SelectionRepresentation



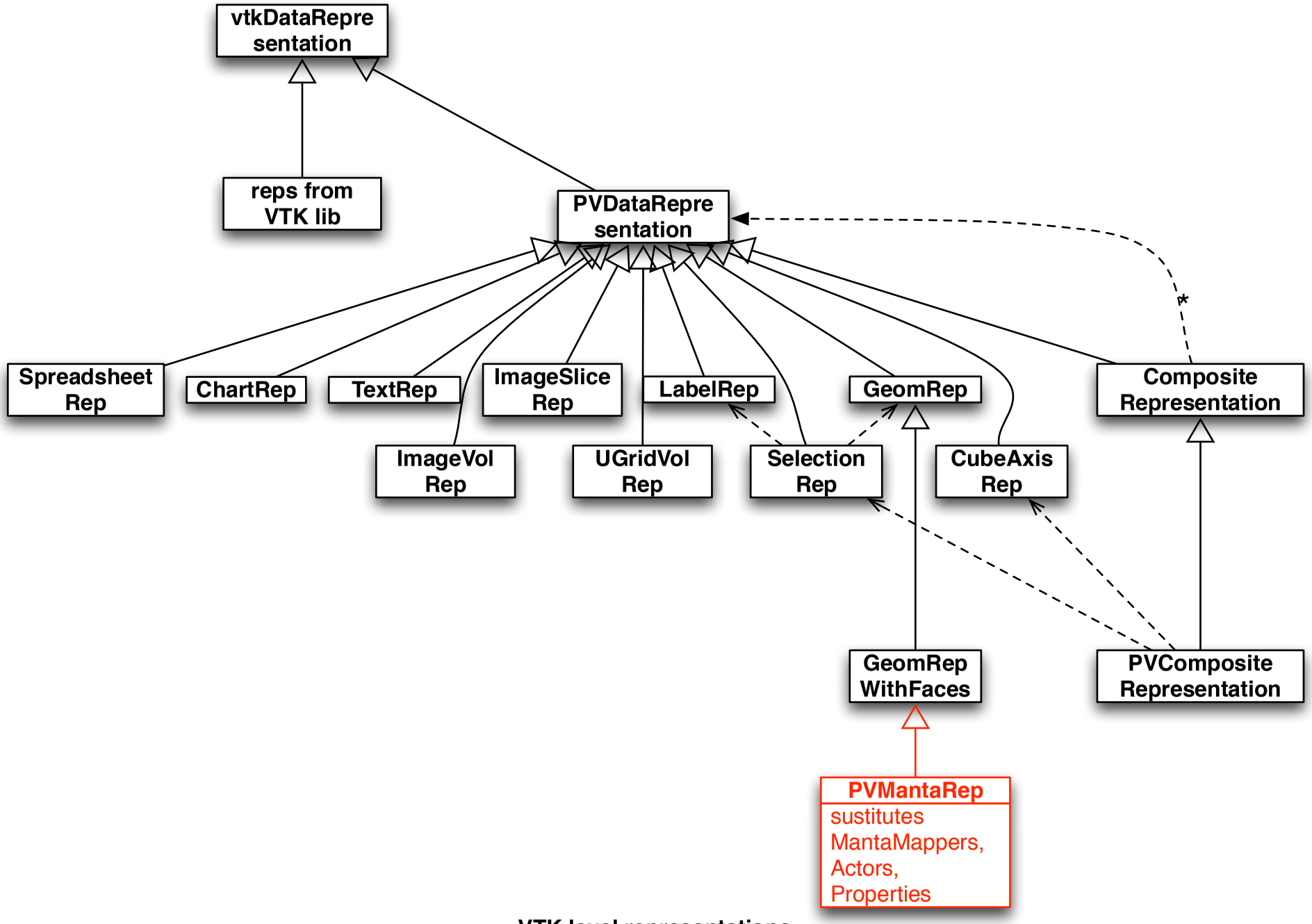
selection internally has a
text representation for labels and
a geometry representation to highlight selected entities

TextSourceRepresentation

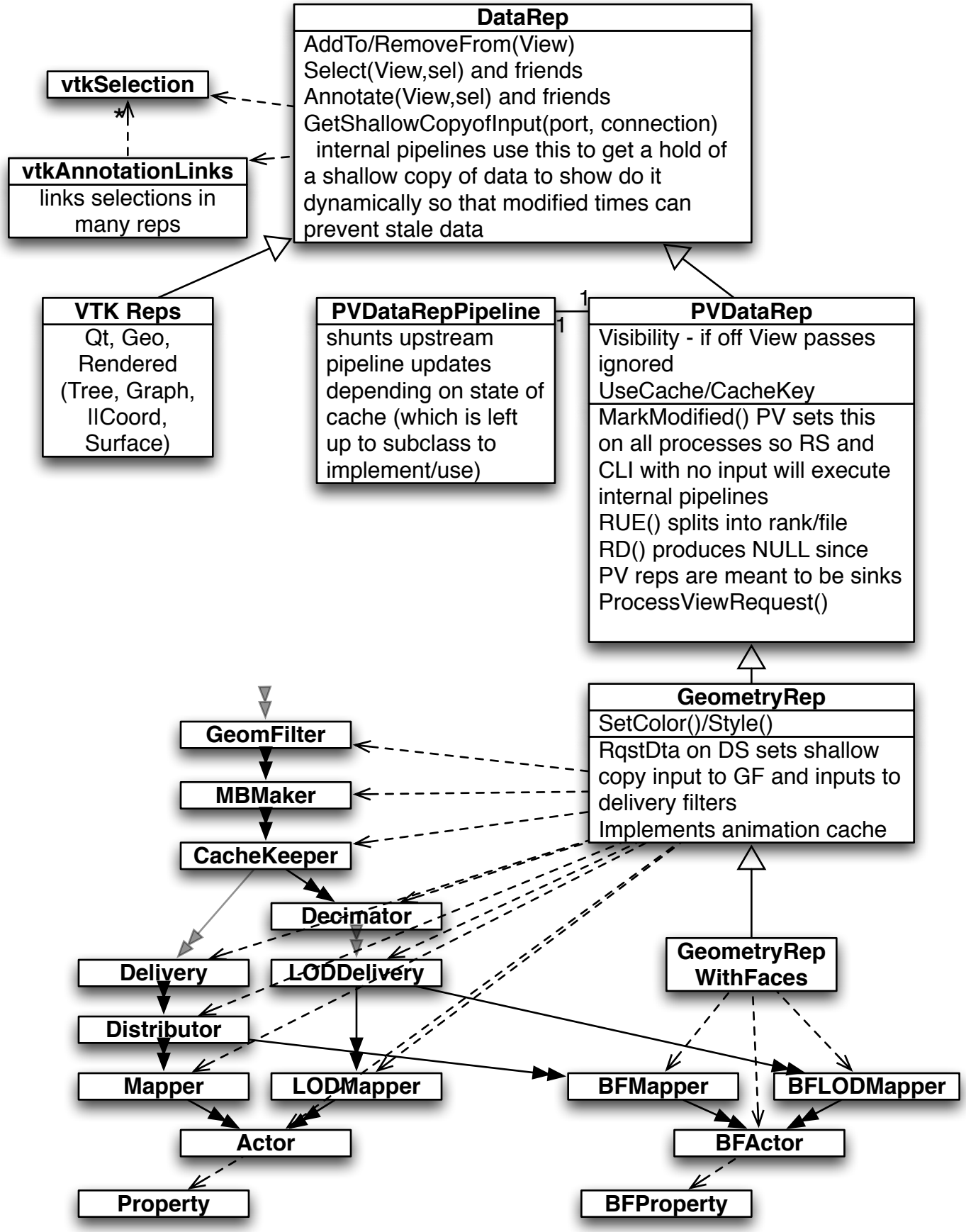
XYChartRep, XYBarChartRep

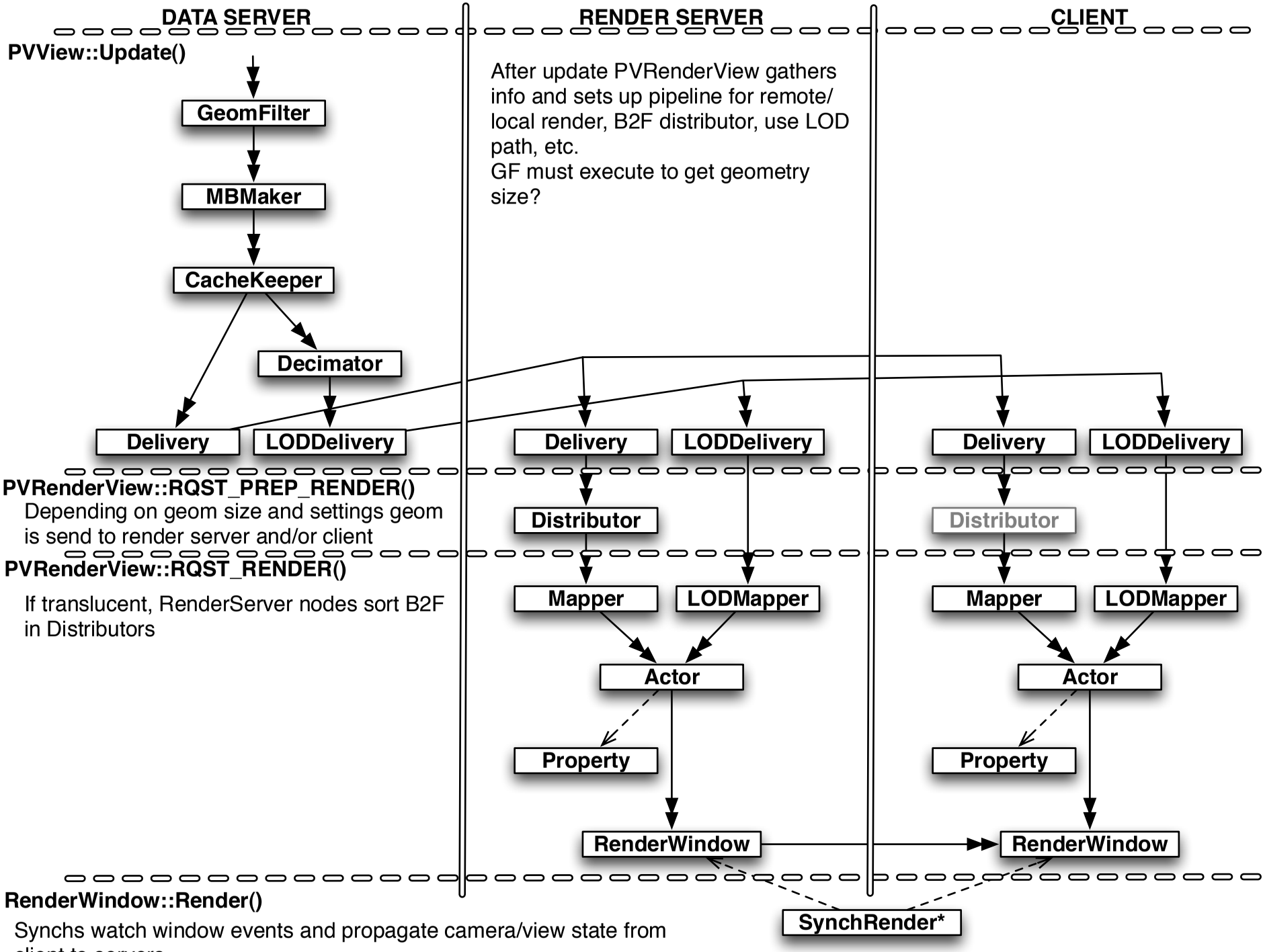


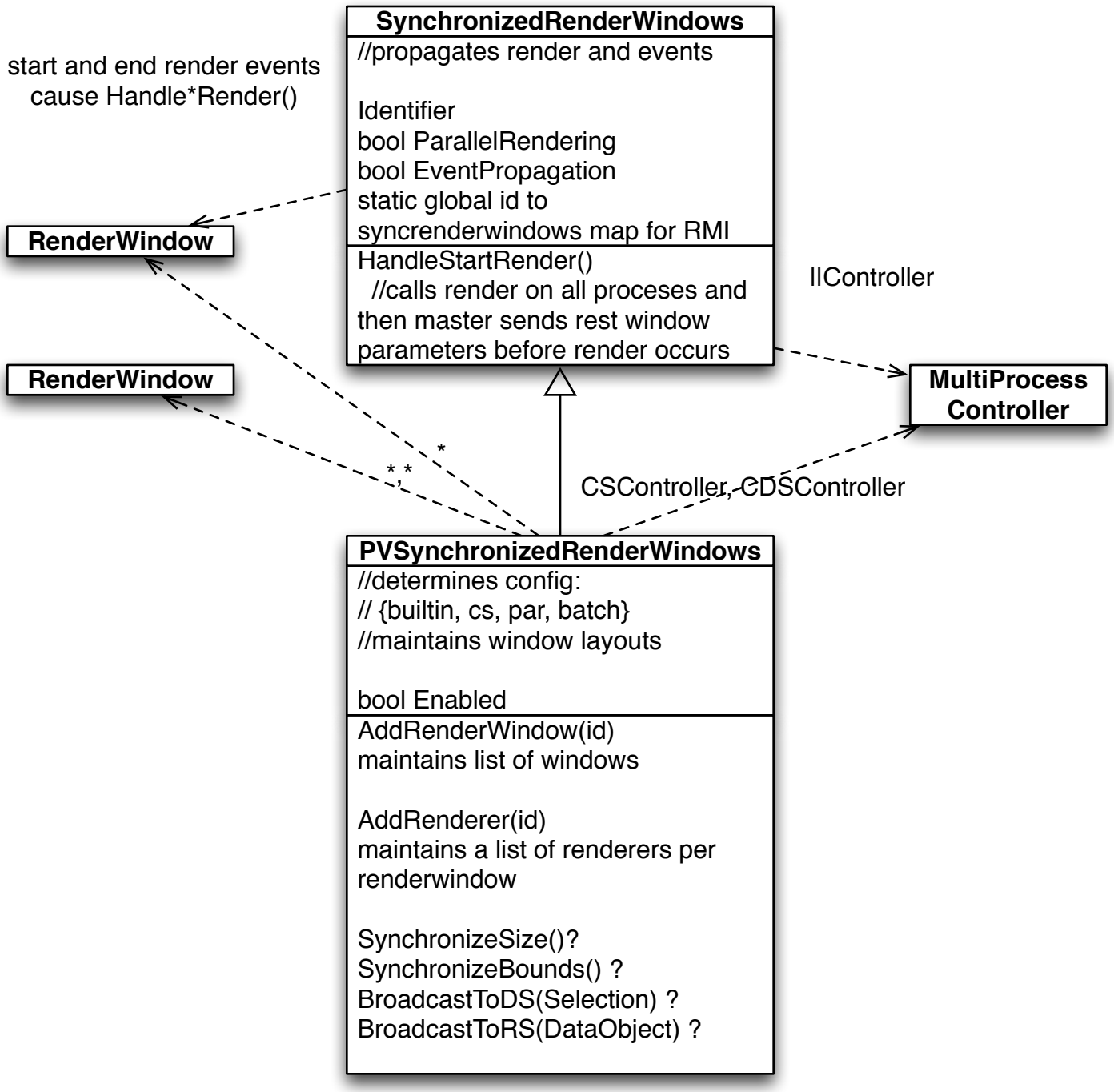
SpreadsheetRepresentation



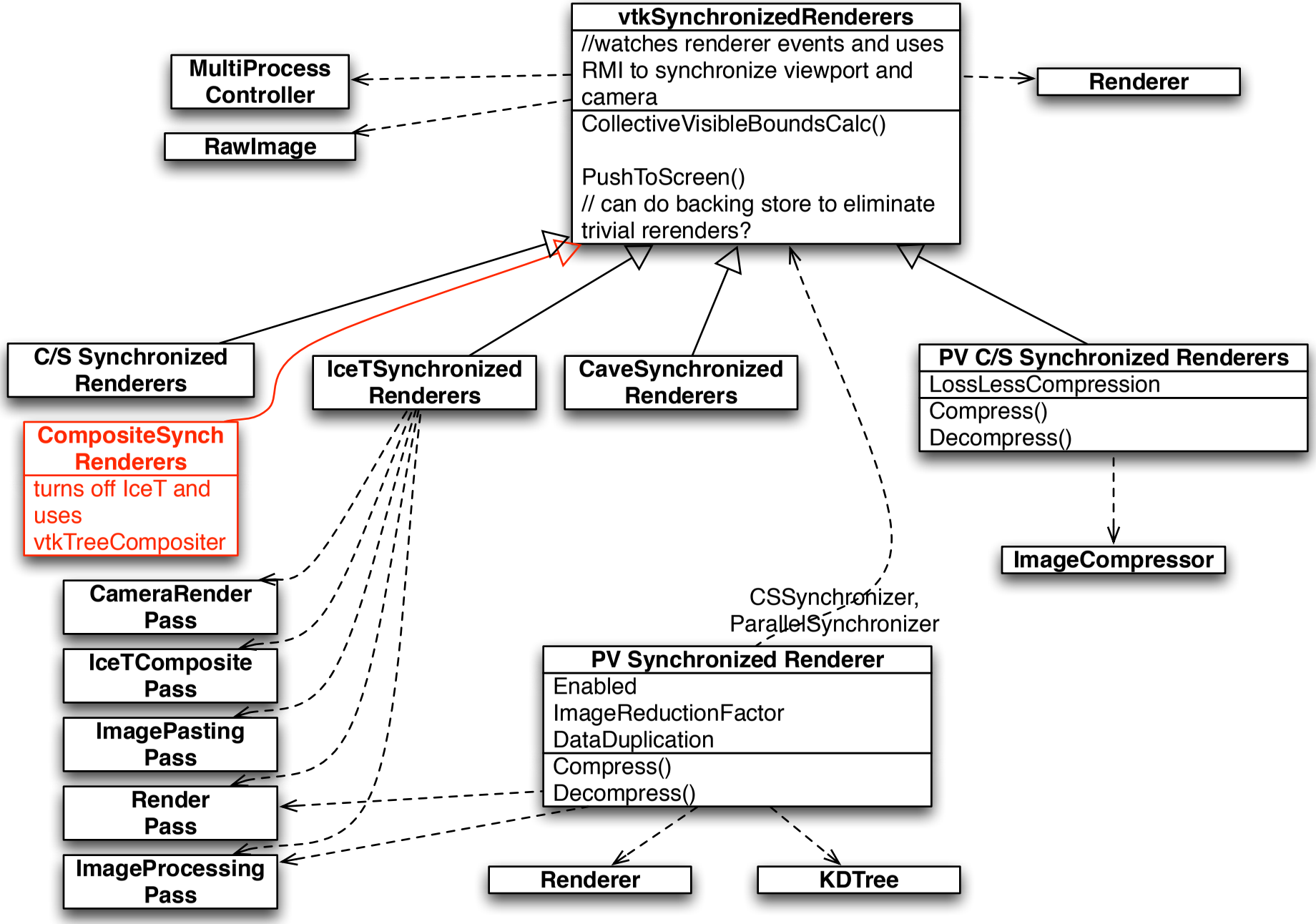
VTK level representations


DataRep
AddTo/RemoveFrom(View)
Select(View,sel) and friends
Annotate(View,sel) and friends
GetShallowCopyofInput(port, connection)
internal pipelines use this to get a hold of a shallow copy of data to show do it dynamically so that modified times can prevent stale data
vtkSelection
*
vtkAnnotationLinks
links selections in many reps
VTK Reps
Qt, Geo, Rendered (Tree, Graph, llCoord, Surface)
PVDataRepPipeline
shunts upstream pipeline updates depending on state of cache (which is left up to subclass to implement/use)
1
1
PVDataRep
Visibility - if off View passes ignored
UseCache/CacheKey
MarkModified() PV sets this on all processes so RS and CLI with no input will execute internal pipelines
RUE() splits into rank/file
RD() produces NULL since PV reps are meant to be sinks
ProcessViewRequest()
GeometryRep
SetColor()/Style()
RqstDta on DS sets shallow copy input to GF and inputs to delivery filters
Implements animation cache
GeomFilter
MBMaker
CacheKeeper
Decimator
Delivery
LODDelivery
Distributor
Mapper
LODMapper
Actor
Property
GeometryRep WithFaces
BFMapper
BFLODMapper
BFActor
BFProperty


DATA SERVER
RENDER SERVER
CLIENT
PVView::Update()
GeomFilter
MBMaker
CacheKeeper
Decimator
Delivery
LODDelivery
After update PVRenderView gathers info and sets up pipeline for remote/ local render, B2F distributor, use LOD path, etc.
GF must execute to get geometry size?
Delivery
LODDelivery
Delivery
LODDelivery
PVRenderView::RQST_PREP_RENDER()
Depending on geom size and settings geom is send to render server and/or client
Distributor
Distributor
PVRenderView::RQST_RENDER()
If translucent, RenderServer nodes sort B2F in Distributors
Mapper
LODMapper
Mapper
LODMapper
Actor
Actor
Property
Property
RenderWindow
RenderWindow
RenderWindow::Render()
Synchs watch window events and propagate camera/view state from client to servers.
In SS rendering, synchs also watch events to composite on server and then deliver pixels from server to client
SynchRender*



parallel window synchronization



parallel renderer synchronization, composite and s->c delivery