

Bloc: a new Morphic framework

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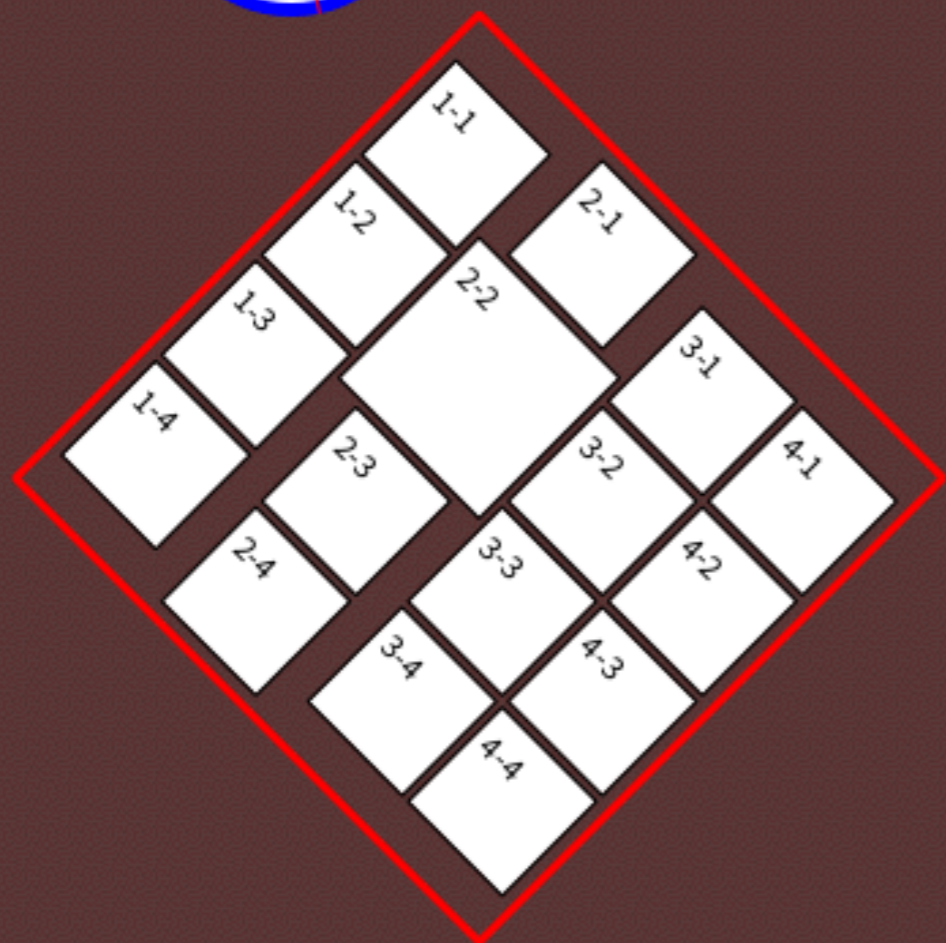
Lab-STICC - University of Brest, France

Bloc in aNutshell

- Every morph has an affine matrix (zoom/rotation)
- A morph dynamically assembles listeners and has views.
- Views and morphs can be composed via layout
- A morph lives in a space / universe
- It can schedule alarms
- Close to JavaFX



+ Bloc

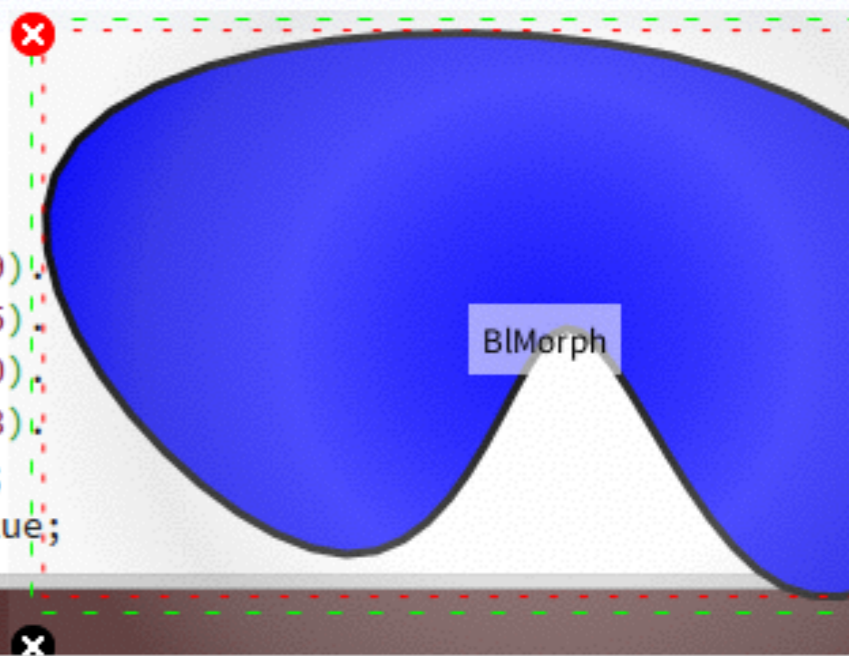


BIPolygonView class>>#example2

Bloc	BIRectangleView	-- all --	▶ exa
Support	BICompositeView	examples	▶ exa
SystemMorphs	BIImageView		▶ exa
Tests	BIFormImageView		▶ exa
Text	BISvgImageView		
Traits	BILabelView		
Universe	BIMinimalMorphView		
Views	BIPolygonView		
▶ Bloc-Core-MorphCo	BIStringView		
▶ Bloc-Halo			
▶ Bloc-UI-MorphCo			

Groups Hierarchy Class side Comments History Navigator

```
example2
<example>
^ (self new
  vertices:
    {(227 @ 0).
     (354 @ 119).
     (268 @ 195).
     (188 @ 100).
     (107 @ 183).
     (0 @ 44)});
fillStyle: Color blue;
lineWidth: 2;
```



Reinvent the UI

- Be in par with Javascript and Java graphical frameworks
- A foundation for upper-layers (widgets...)

Time to revisit Morphtic

- Flexible
- Malleable
- But
 - global coordinates
 - complex protocol / code and logic are often unclear
 - too much inheritance-based

Bloc

- Based on Miro and Miro2 experience
- Now at its fourth iteration
- Vector from the ground (rotation, zoom, translation)
- One constraint: morphic should be able to run inside :)

```
Playground
```

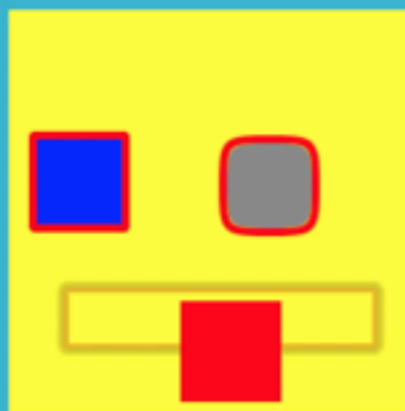
```
Page
```

```
BlMorph blackRectangleSample openInWorld.  
BlMorph blueEllipseSample openInWorld.  
BlMorph redRectangleSample openInWorld.  
BlMorph yellowRectangleSample openInWorld. I  
BlMorph whiteRectangleSample openInWorld.  
BlImageViewExamples exampleSvgApplicationIcon.
```



1-1	2-1	3-1	4-1
1-2	2-2	3-2	4-2
1-3	2-3	3-3	4-3
1-4	2-4	3-4	4-4

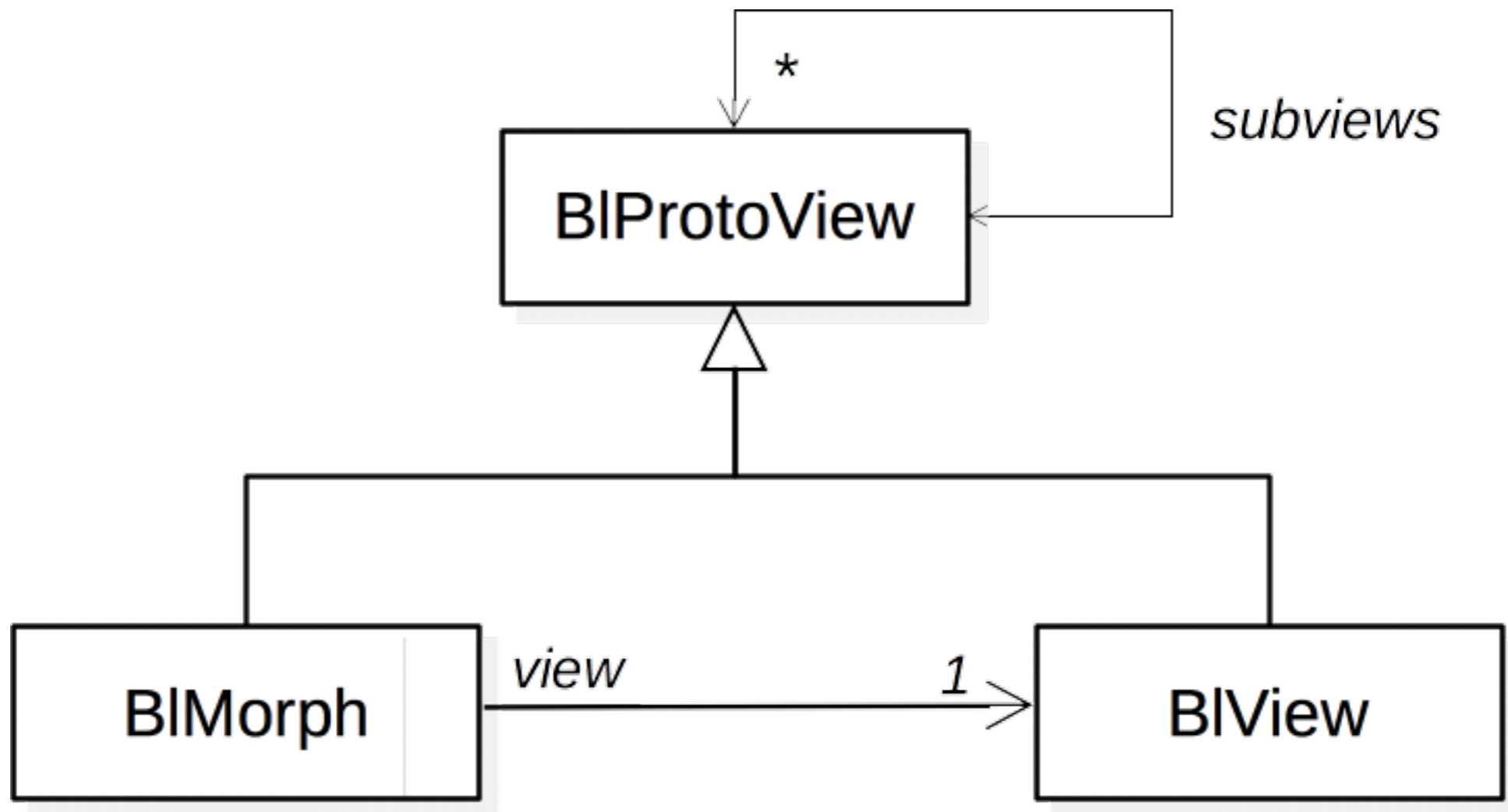
Hello Pharo fans!



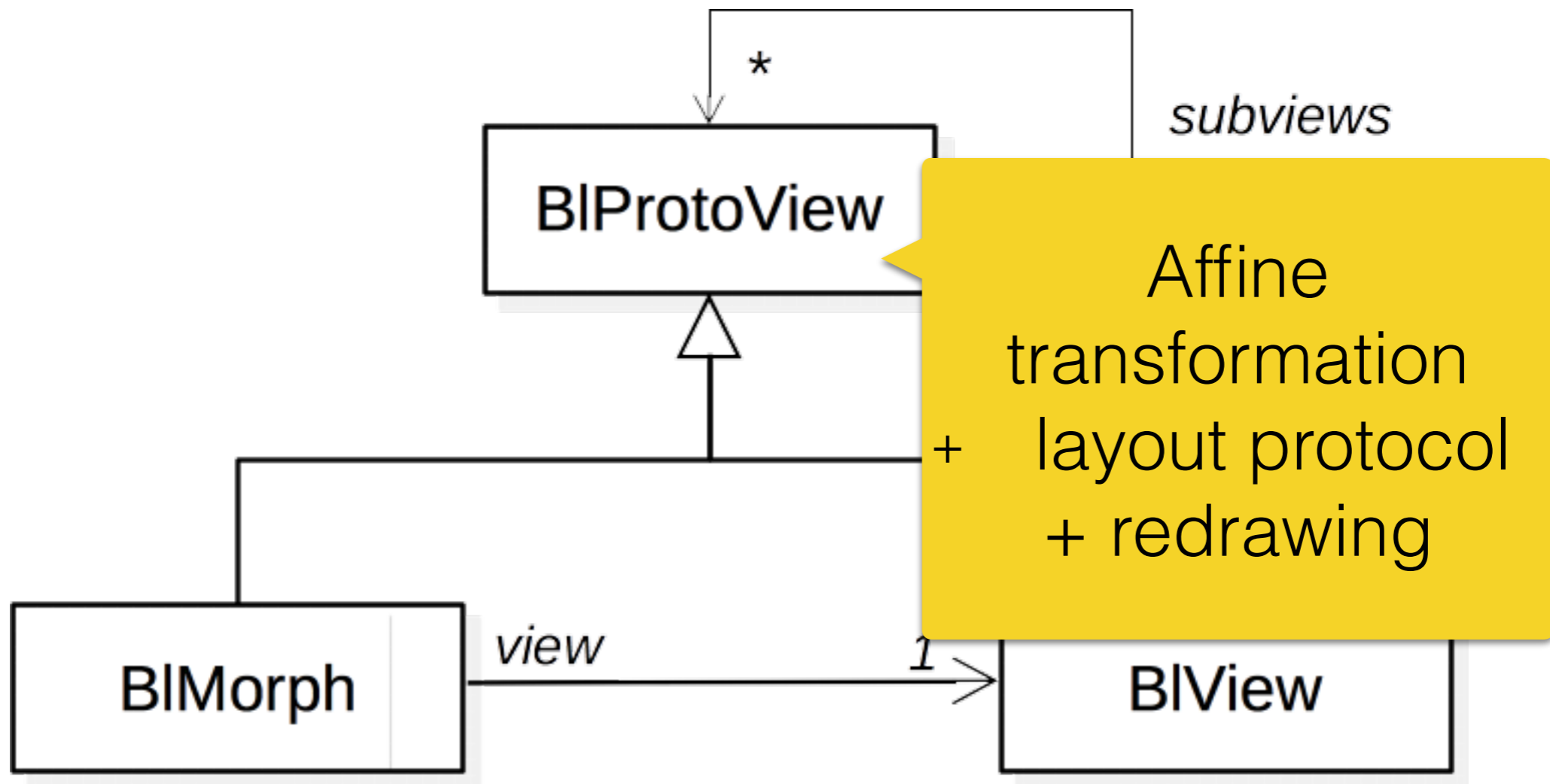


```
Playground
Page
BLMorph blackRectangleSample openInWorld.
BLMorph blueEllipseSample openInWorld.
BLMorph redRectangleSample openInWorld.
BLMorph yellowRectangleSample openInWorld.
BLMorph whiteRectangleSample openInWorld.
BLImageViewExamples exampleSvgApplicationIcon.
```

Morph + View

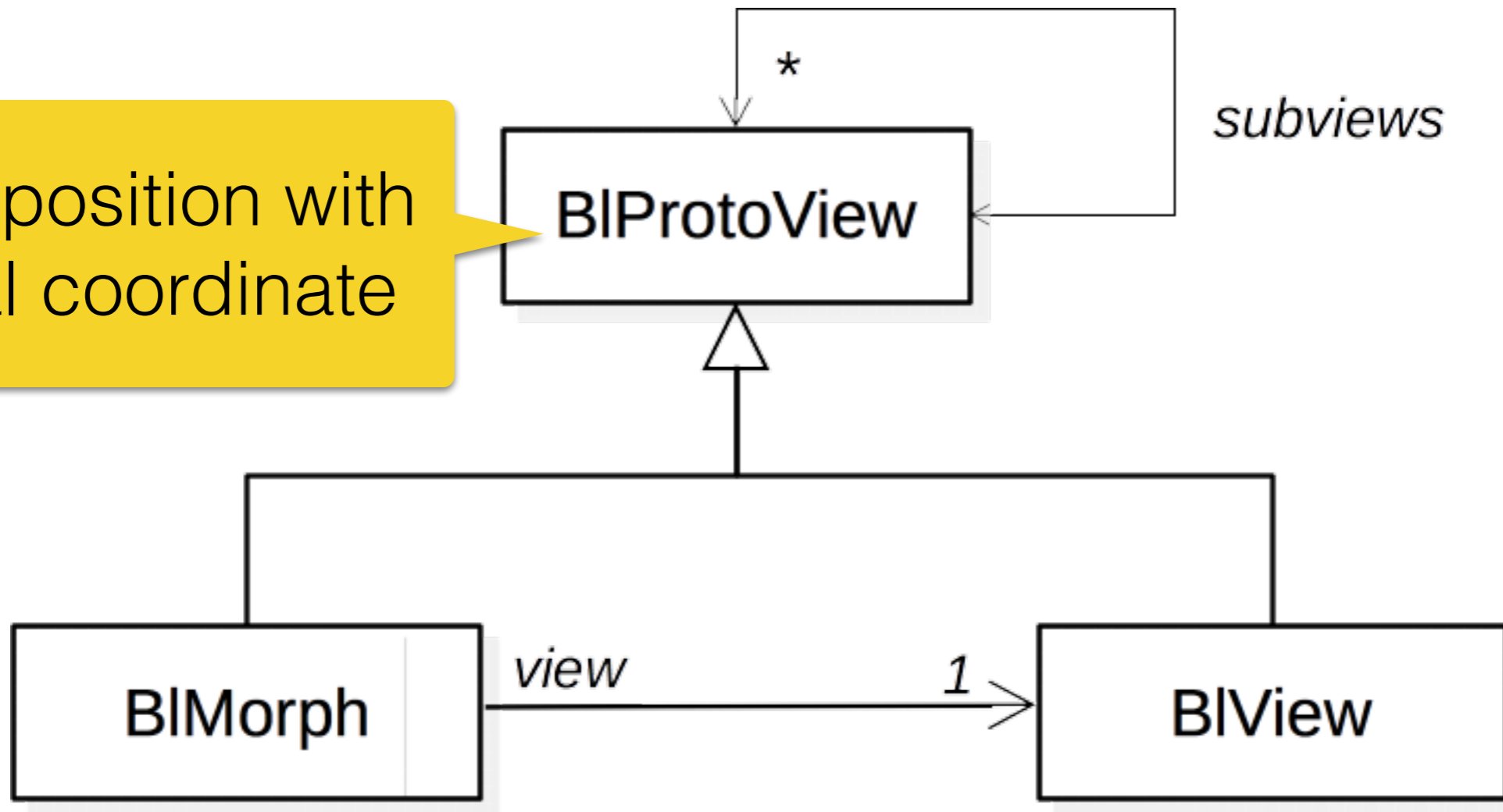


Morph + View

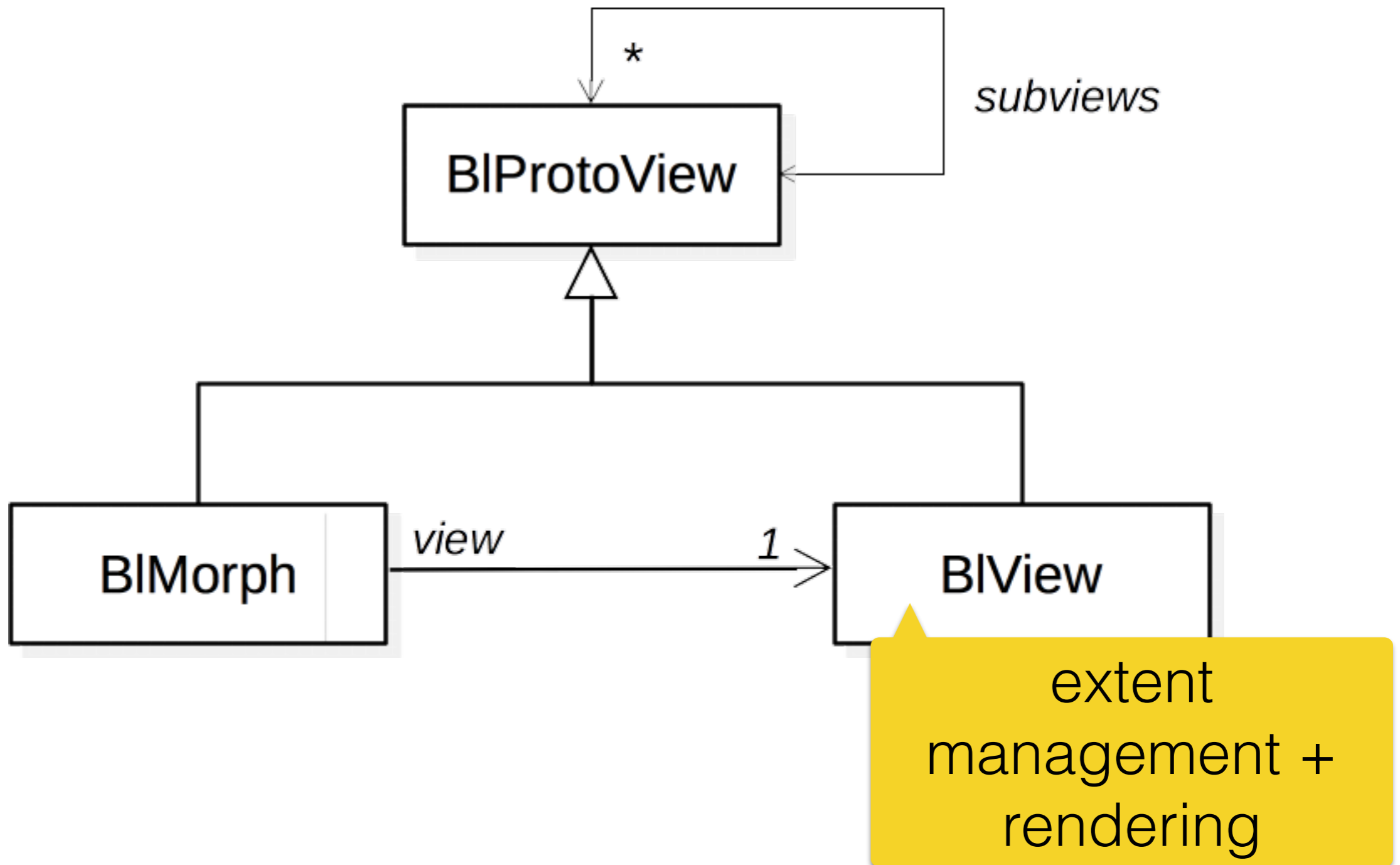


Morph + View

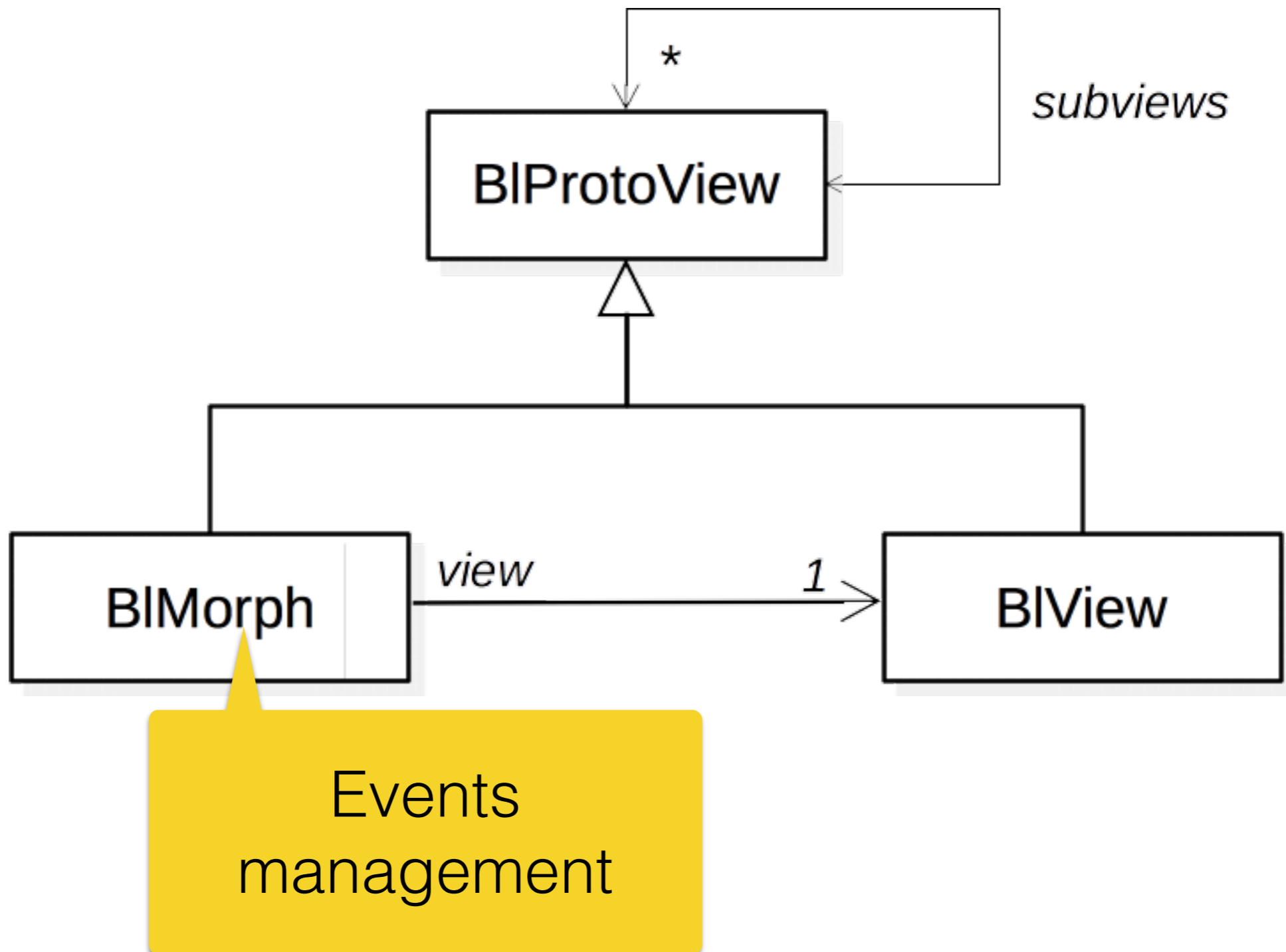
Composition with
local coordinate



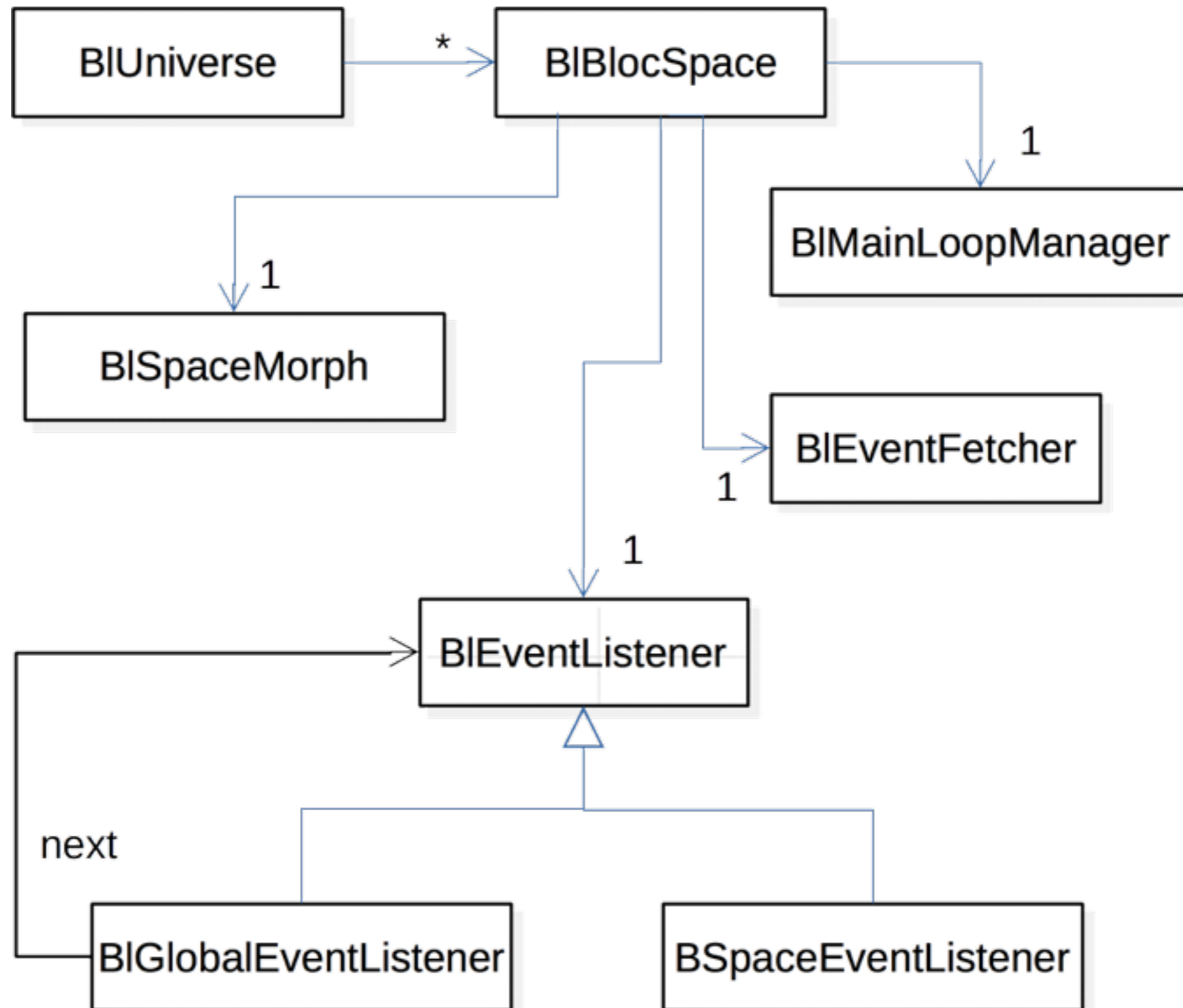
Morph + View



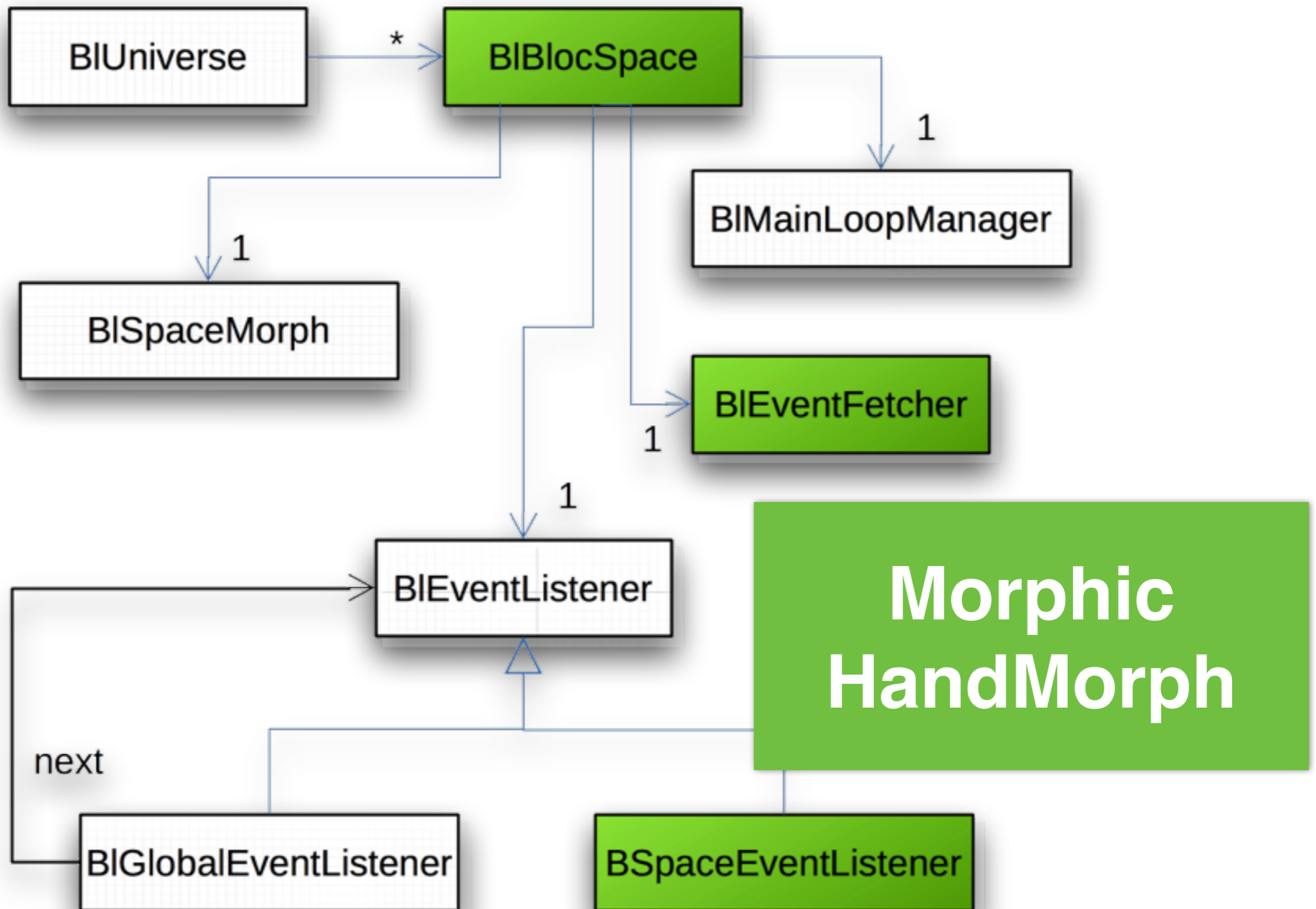
Morph + View



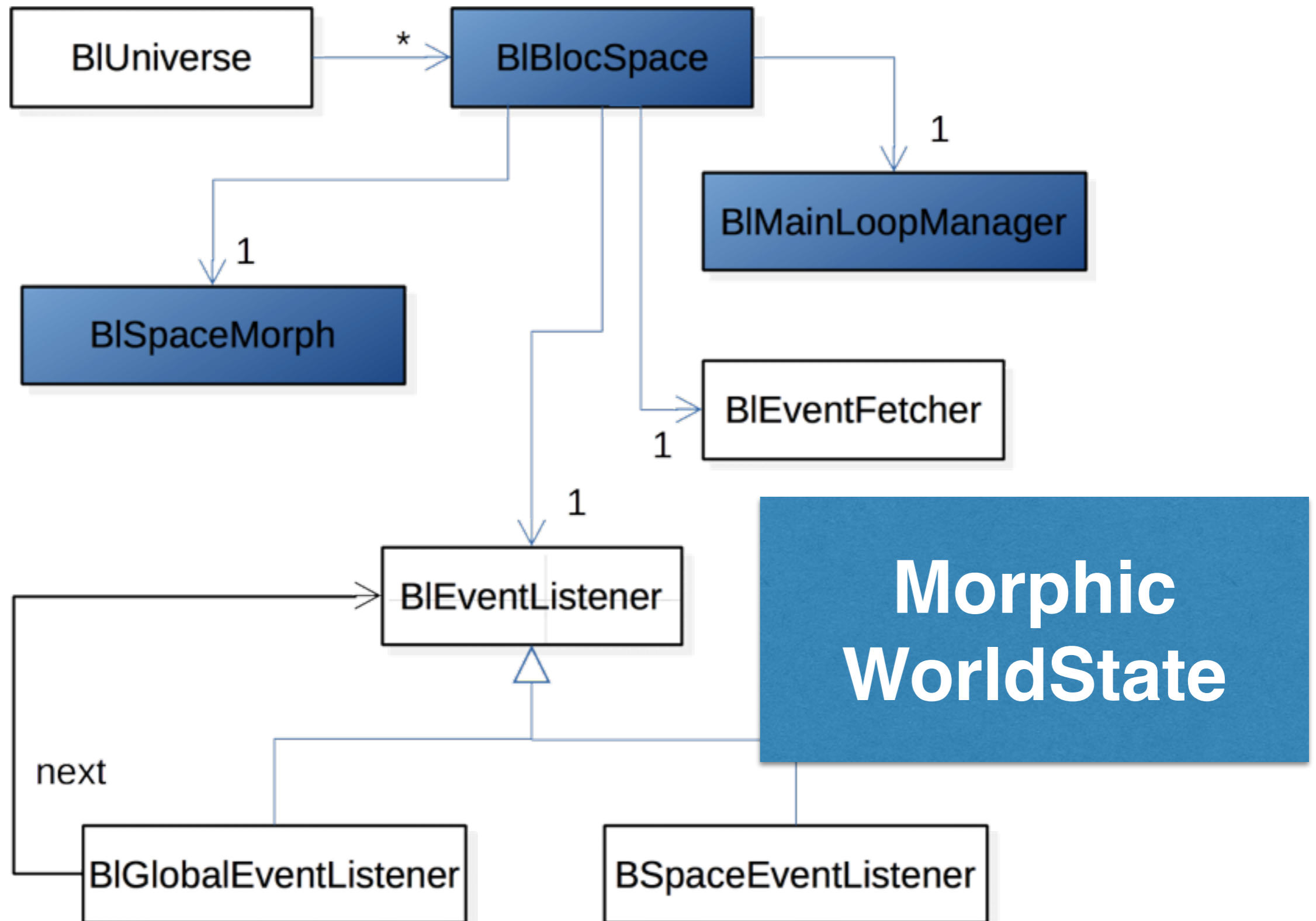
The Bloc infrastructure



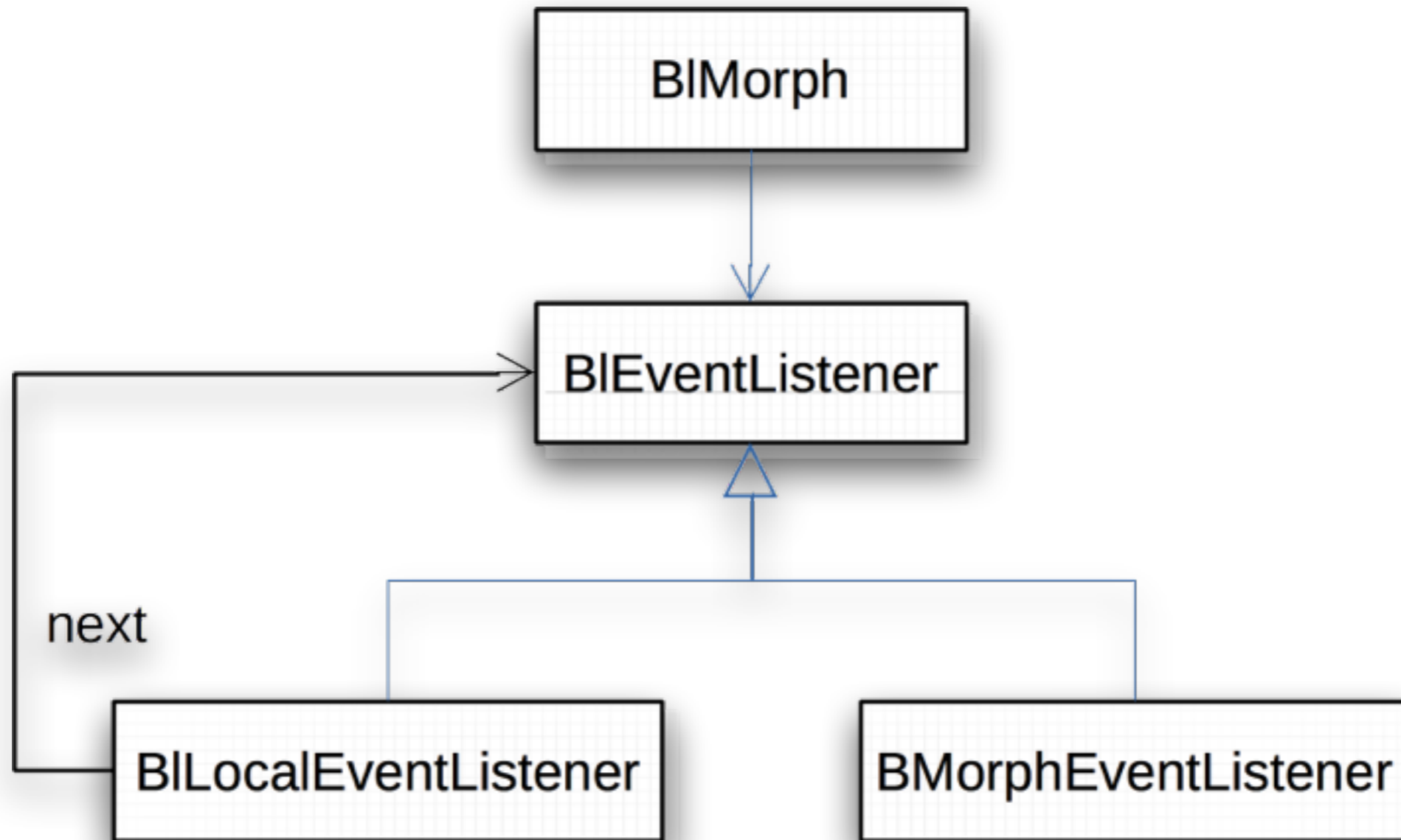
The Bloc infrastructure



The Bloc infrastructure



Event listeners



Alarms

[self inform: 'Pharo is great'] asAlarm schedule.

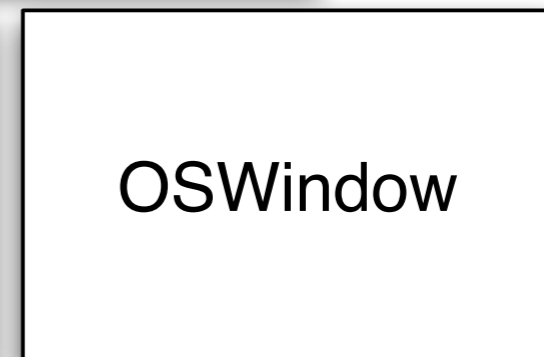
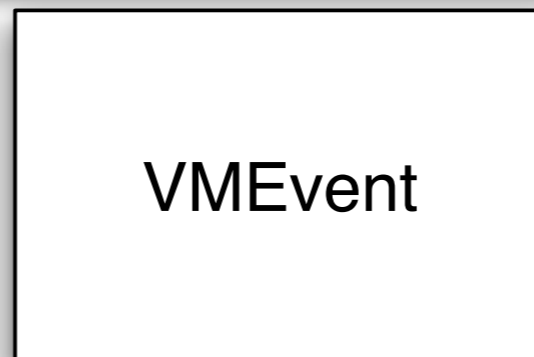
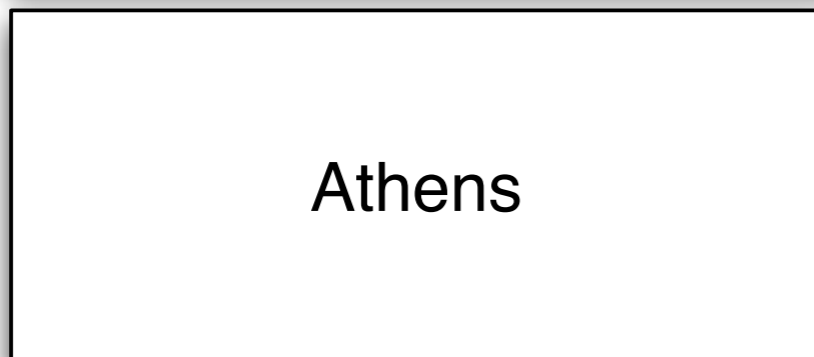
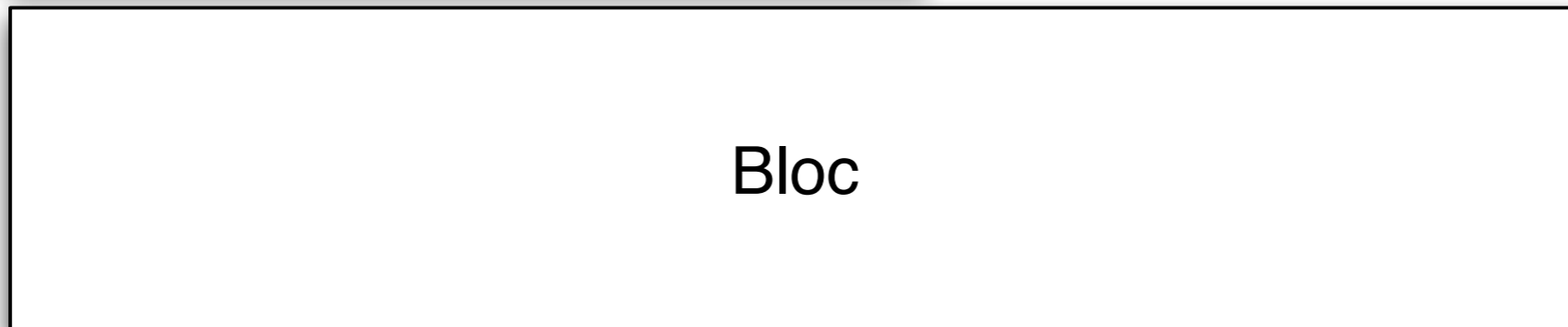
Alarms

```
| alarm |  
alarm := [ self inform: 'Pharo is great' ] asAlarm.  
alarm delay: 300.  
alarm period: 100.  
alarm schedule.  
[ (Delay forSeconds: 5) wait.  
  alarm unschedule ] fork
```

Alarms

```
| alarm morph |  
morph := BIRectangleView new asMorph.  
morph openInWorld.  
alarm := (WeakMessageSend receiver: morph selector: #color:) asAlarm.  
alarm period: 100.  
alarm argument: [Color random].  
alarm schedule.  
[ (Delay forSeconds: 5) wait.  
  morph delete ] fork
```

Architecture



Glimpse @ Brick

The screenshot displays the Glimpse IDE interface. On the left, a class browser shows a project structure with folders like 'Last Modified Classes', 'Most Viewed Classes', 'Work', 'Brick-Core', 'Brick-List', 'Announcements', 'Examples', 'Layouts', 'Listeners', 'Models', 'Morphs', 'Tests', 'Utils', 'Brick-Scrollpane', 'Glamour-Morphic-Brick', and 'Glamour-Morphic-Brick-Tests'. The 'Examples' folder is selected. On the right, a class list shows 'BrListExamples', 'BrListLabeledModelForIconsExample', and 'BrListModelForTxTextExample'. The 'Class side' tab is active, showing the following code:

```
listTxTextPanels
<gtExample: '1000 resizable TxText edit panes in a list'>
|strings|
"generates 1000 random loremIpsum strings"
strings := self generateTexts: 1000.

^ BrListMorph new
  listModel: (BrListModelForTxTextExample new elements: strings);
  yourself
```

Bloc roadmap

- New graphic core of “Pharo 6.0”
- New foundation for new widgets (Brick)

Conclusion

- New framework with split responsibilities
 - Dynamic addition of behavior and views
- Rethought event loop
- Multispaces



Blot

- Examples
- Fills
- LayoutStrategy
- LayoutStrategy-Anchor-Supp
- LayoutStrategy-Box-Support
- Obsolete
- Popups
- Scrolling
- Scrolling-Announcements
- Support
- System Morphs
- Tests
- Foot

Groups Hierarchy Class side

- ! BlImageViewExample
- ! BlKeyboardEventList
- ! BlListenerToTestDou
- ! BlMouseDownEventL
- ! BlMouseOverEventLi
- ! BlMouseStillDownEv
- ! BlMouseStillOverEve
- ! BlPluggableEventLis
- ! BlPolygonViewExam
- ! BlSimpleMorphExam
- ! BlStackLayoutStrate
- ! BlTxTextViewExampl



ampleSvgApplicationIcon

<example>

```
^ BlMorph new  
  view: self svgApplicationIconView;  
  openInWorld
```

