

# Bloc: a new Morphic framework

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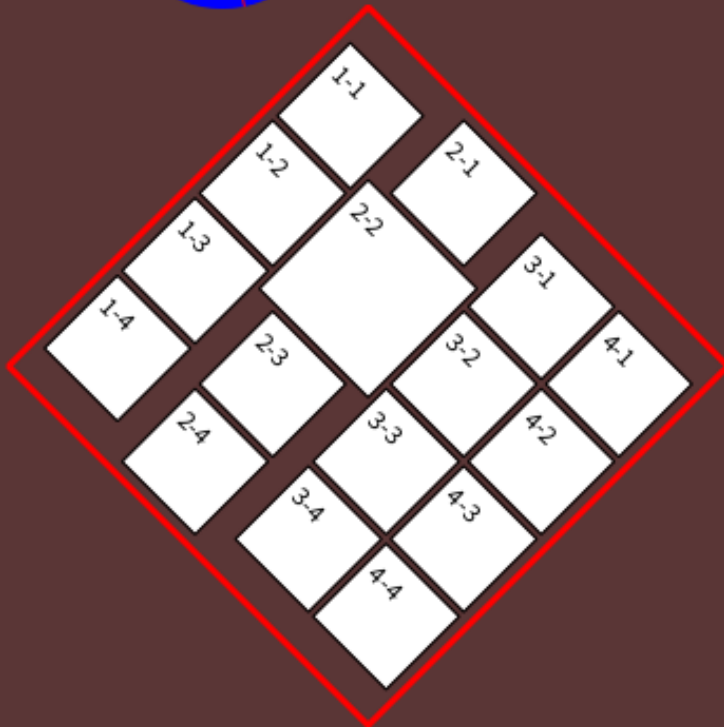
Lab-STICC - University of Brest, France

# 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
- Support
- SystemMorphs
- Tests
- Text
- Traits
- Universe
- Views
- Bloc-Core-MorphCo
- Bloc-Halo
- Class-Halo-MembCo

- BIRectangleView
- BICompositeView
- BIImageView
- BIFormImageView
- BISvgImageView
- BILabelView
- BIMinimalMorphView
- BIPolygonView
- BIStringView

-- all --  
examples

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;
```

A blue-filled morph with a white notch at the bottom center. The morph is labeled "BIMorph".

# Reinvent the UI

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

# Time to revisit Morphic

- 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 :)

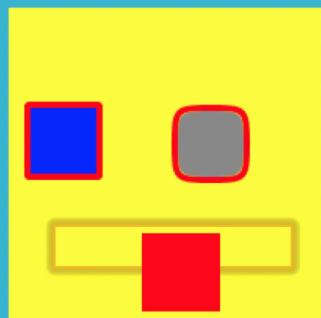
```
BlMorph blackRectangleSample openInWorld.  
BlMorph blueEllipseSample openInWorld.  
BlMorph redRectangleSample openInWorld.  
BlMorph yellowRectangleSample openInWorld. I  
BlMorph whiteRectangleSample openInWorld.  
BlImageViewExamples exampleSvgApplicationIcon.
```

Hello Pharo fans!









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!

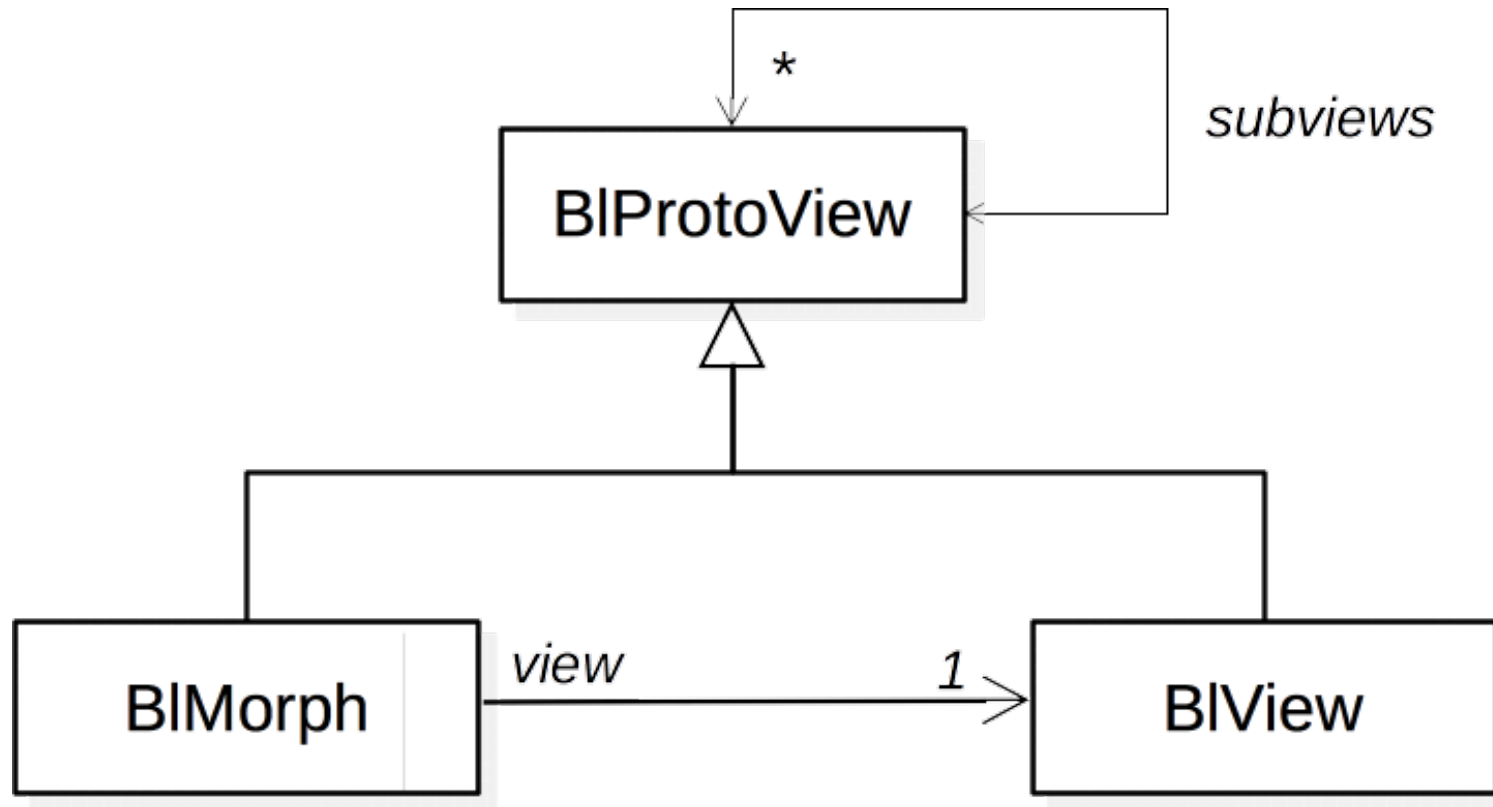




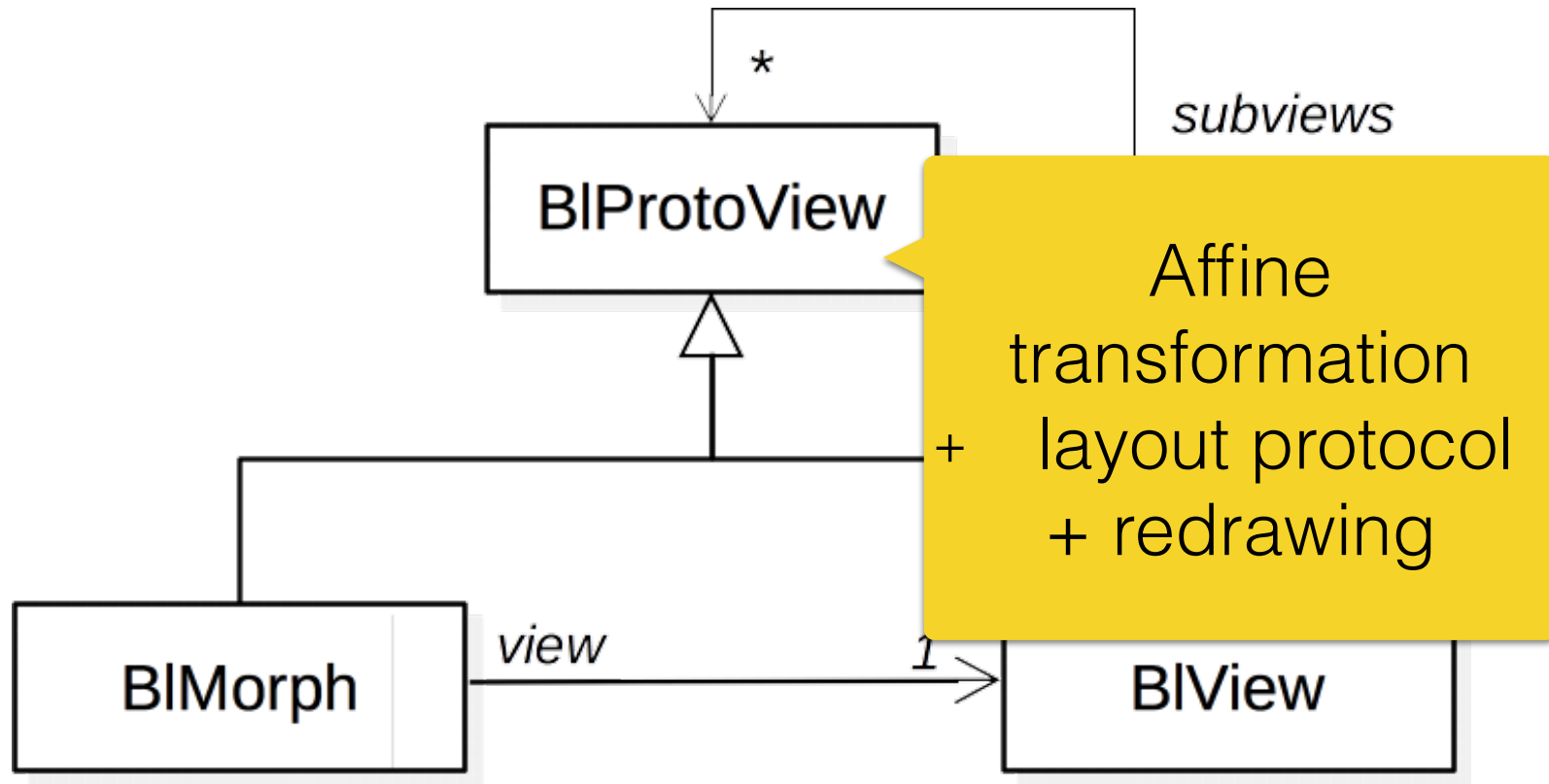


```
× - □ Playground    
Page      
BlMorph blackRectangleSample openInWorld.  
BlMorph blueEllipseSample openInWorld.  
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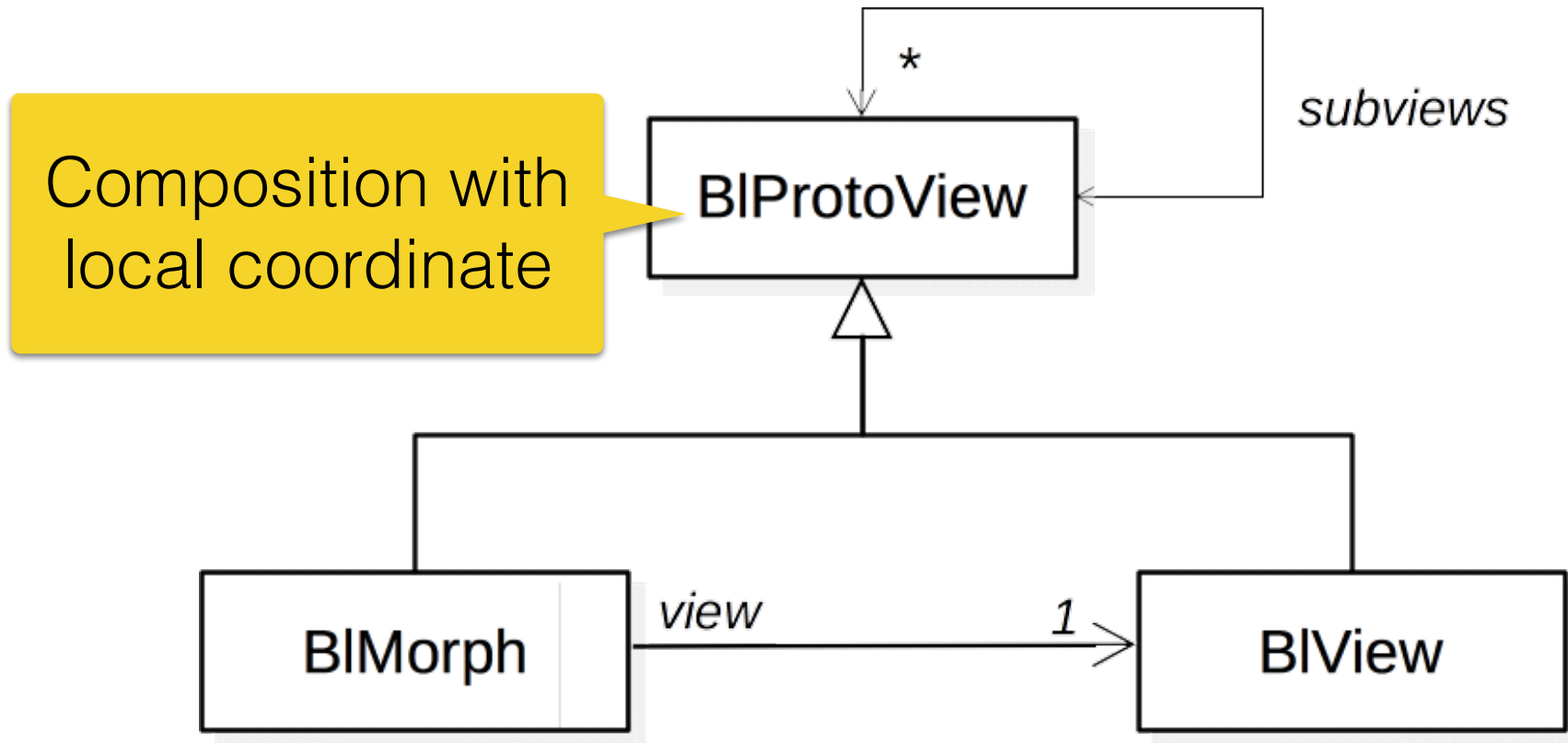
# Morph + View



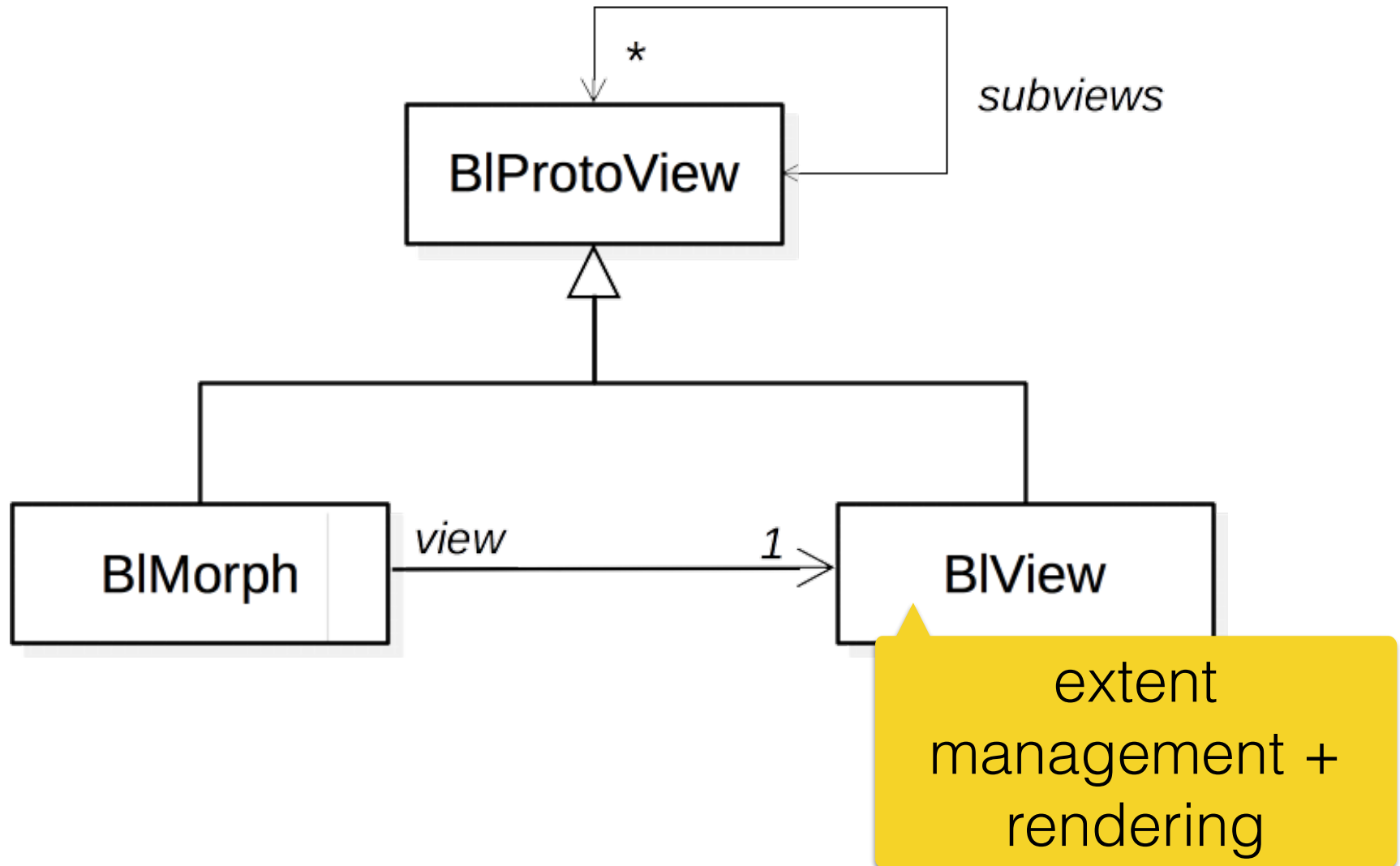
# Morph + View



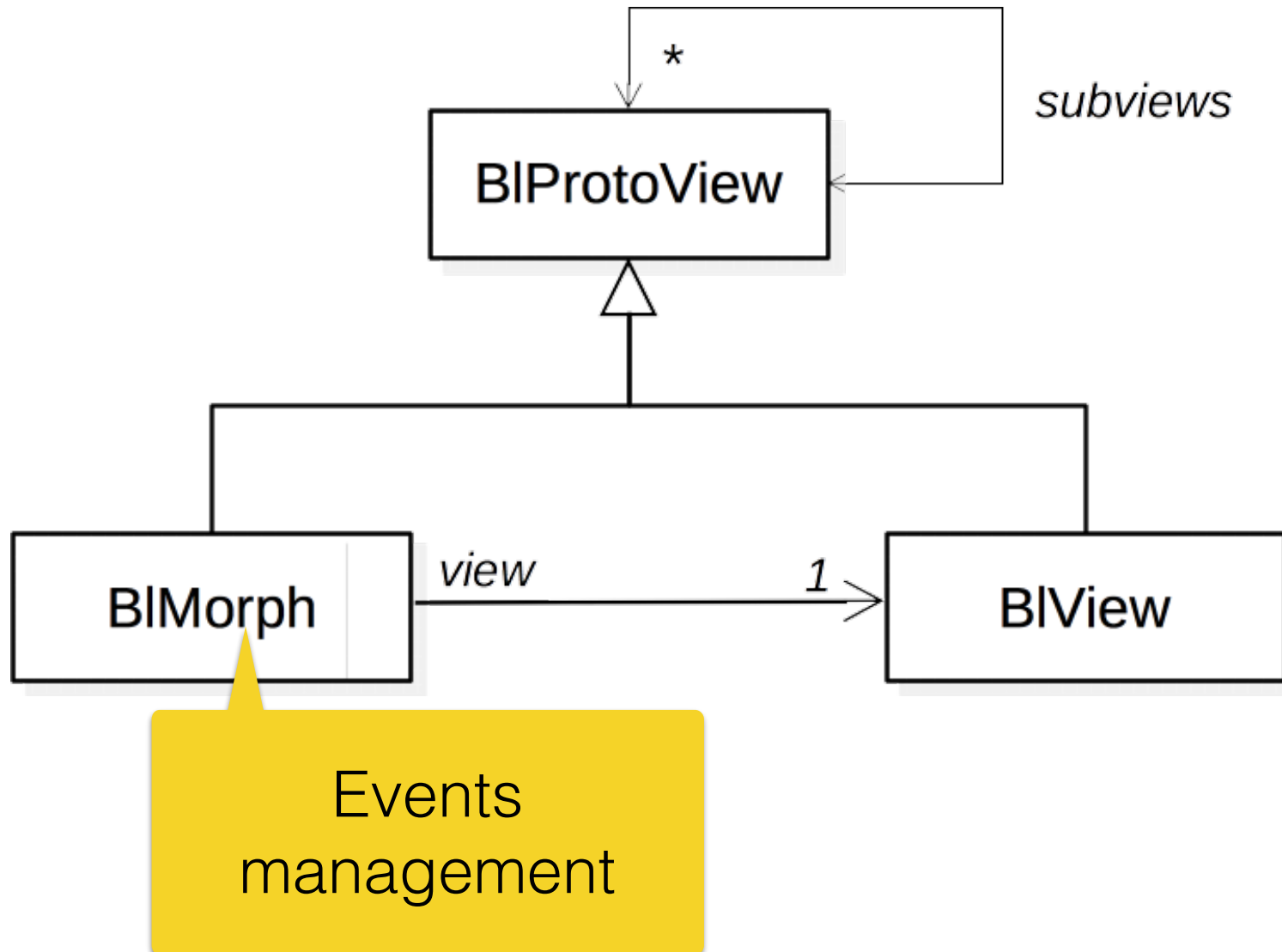
# Morph + View



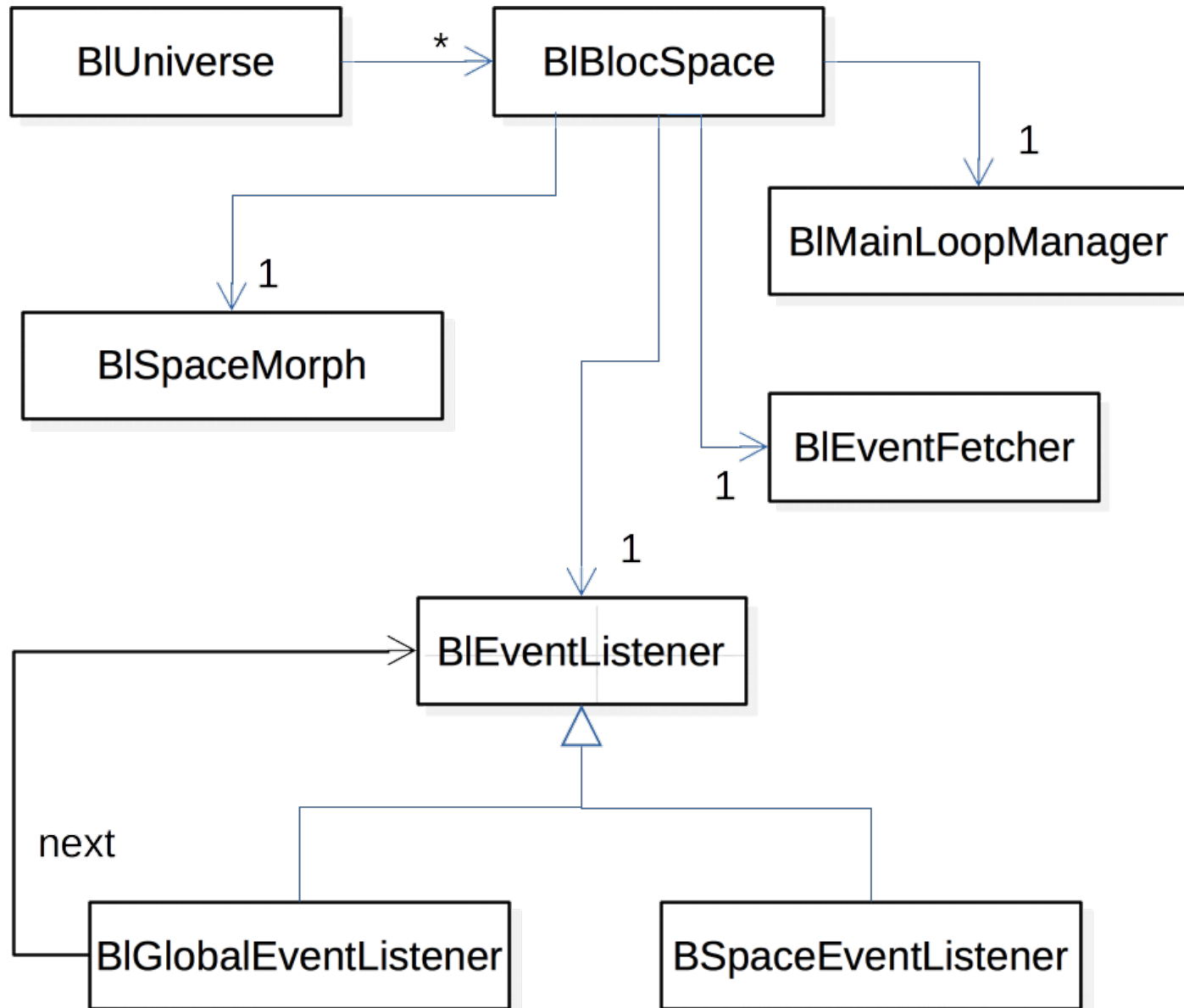
# Morph + View



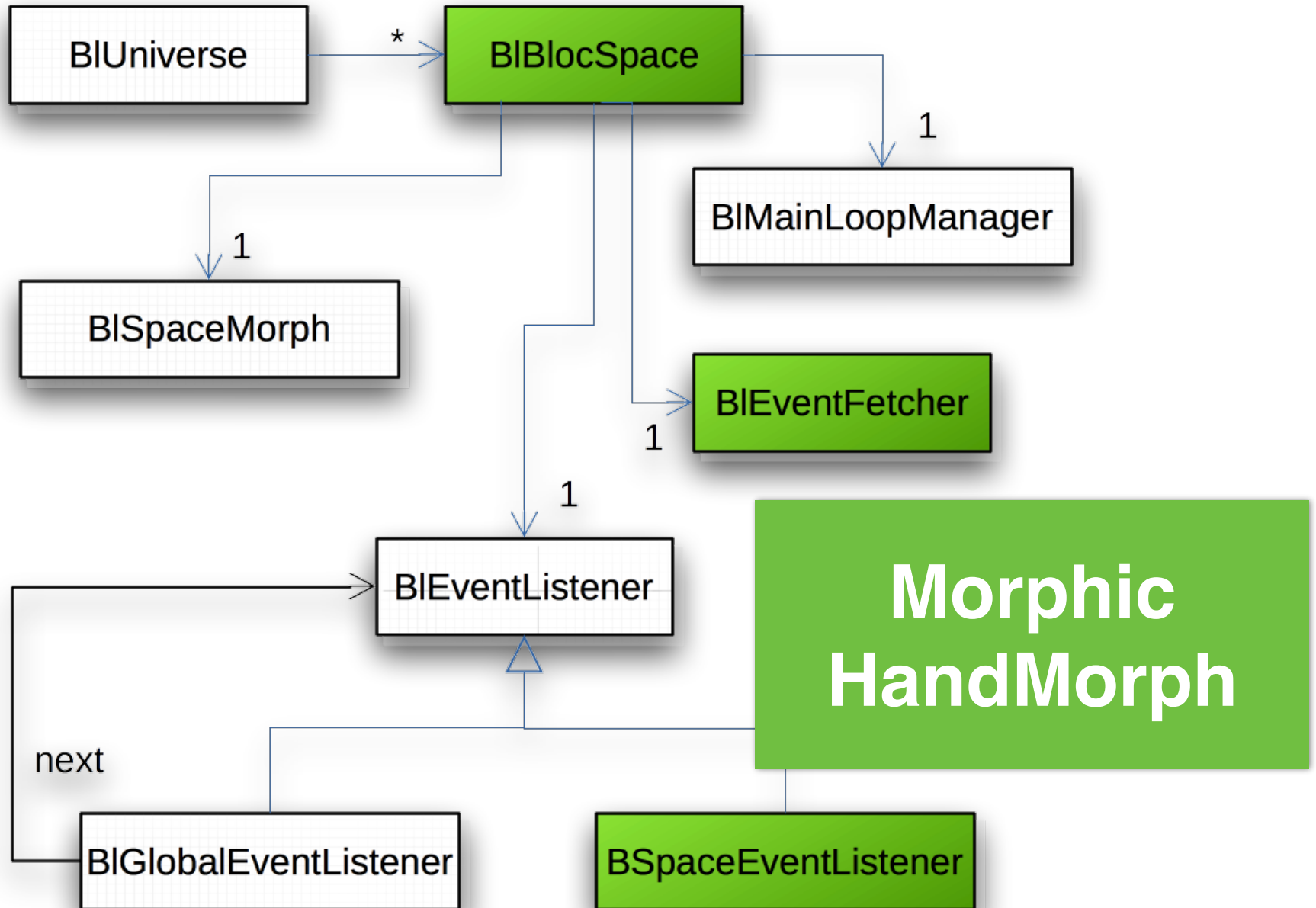
# Morph + View



# The Bloc infrastructure

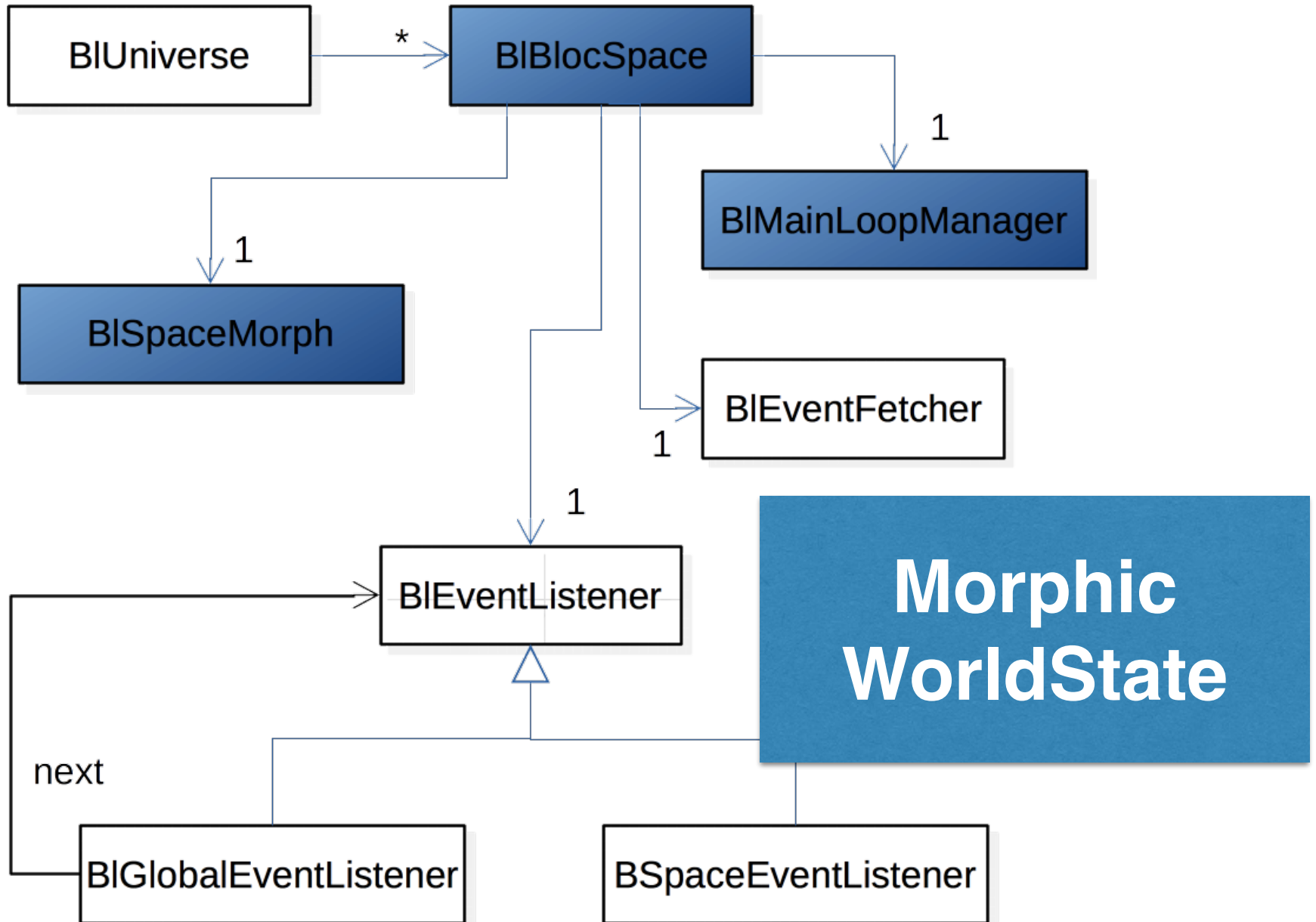


# The Bloc infrastructure

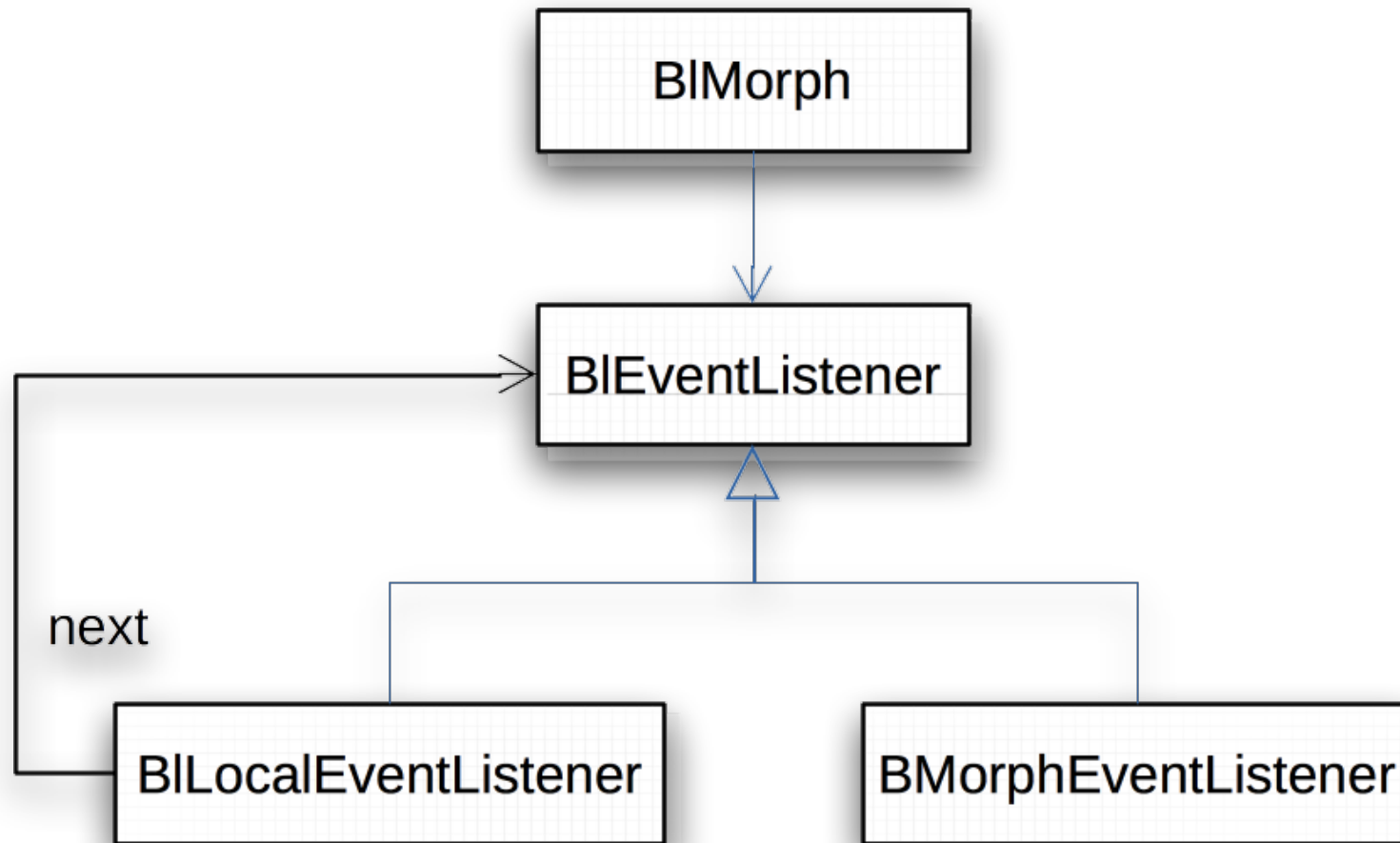




# The Bloc infrastructure



# Event listeners



# Alarms

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

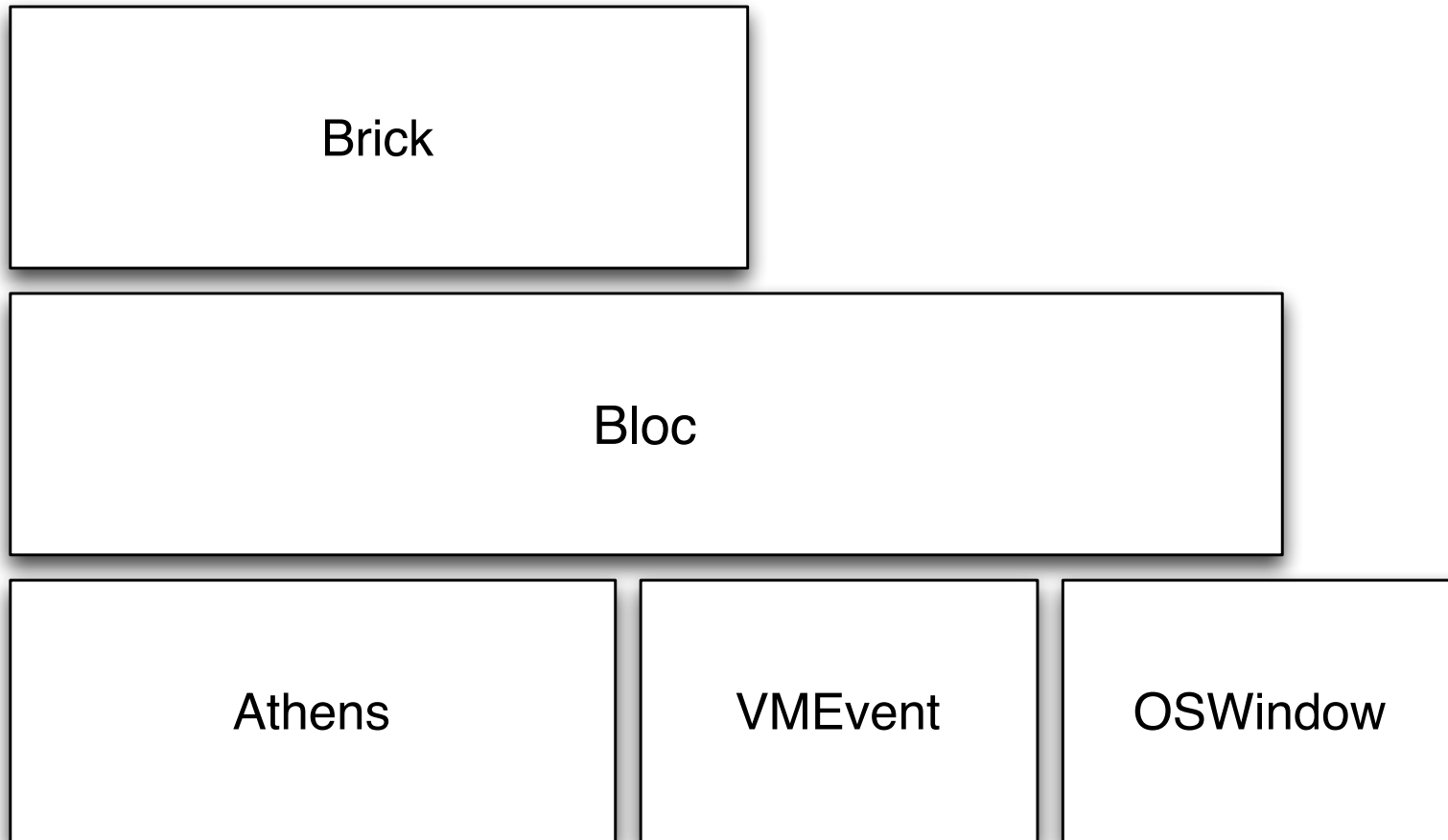
# Alarms

```
| 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 project browser shows the 'brick' project structure, with 'Brick-List' expanded to show 'Examples'. The main editor window shows the 'Class side' view for 'BrListExamples class>>#ListTxTe'. The code for 'ListTxTextPanels' is visible, featuring a REXML example tag and a morph method.

```
brick
├── Last Modified Classes
├── Most Viewed Classes
├── Work
├── Brick-Core
├── Brick-List
│   ├── Announcements
│   └── Examples
│       ├── Layouts
│       ├── Listeners
│       ├── Models
│       ├── Morphs
│       ├── Tests
│       └── Utils
├── Brick-Scrollpane
├── Glamour-Morphic-Brick
└── Glamour-Morphic-Brick-Tests
```

BrListExamples class>>#ListTxTe

- BrListExamples
- BrListLabeledModelForIconsExample
- BrListModelForTxTextExample

-- all --  
example cre  
examples  
private

Groups Hierarchy  Class side Comments History Navi

```
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
- Tools

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

Groups   Hierarchy    Class side

### ExampleSvgApplicationIcon

<example>

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