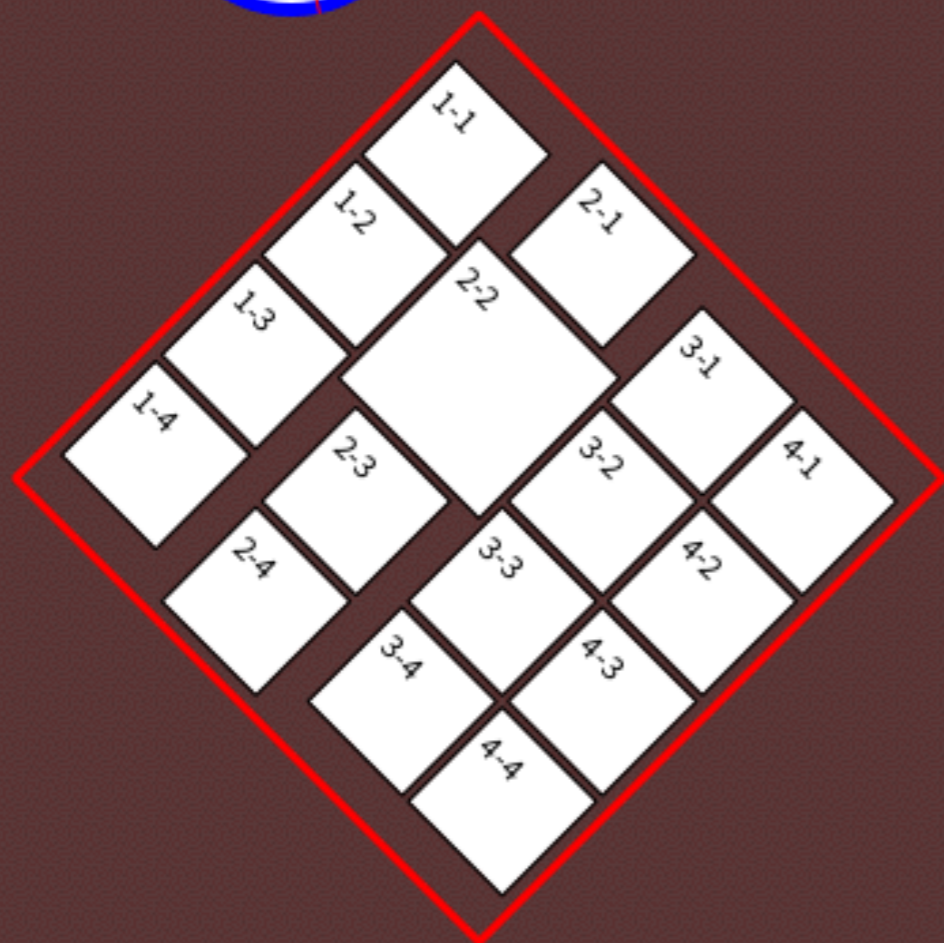# Bloc: a new Morphic framework

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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
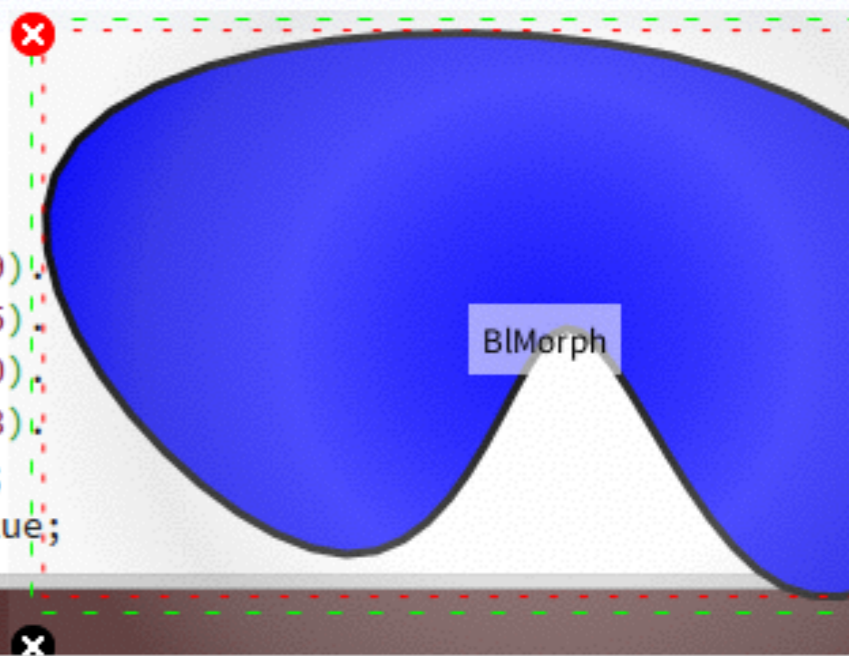
- It can schedule alarms

- Close to JavaFX

Pharo! (C:\Pharo4\Pharo-40463.image)

Phar + Bla

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

BlPolygonView class>>#example2

Bloc

Support
SystemMorphs
Tests
Text
Traits
Universe
Views
▶ Bloc-Core-MorphCc
Bloc-Halo

BlRectangleView
BlCompositeView
BlImageView
BlFormImageView
BlSvgImageView
BlLabelView
BlMinimalMorphView
BlPolygonView
BlStringView

-- all --
examples

exa
exa
exa
exa

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;
```

BlMorph

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)
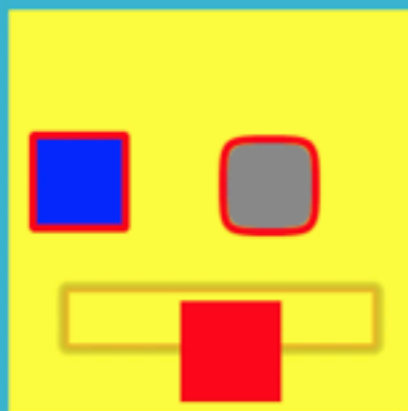
- One constraint: morphic should be able to run inside :)
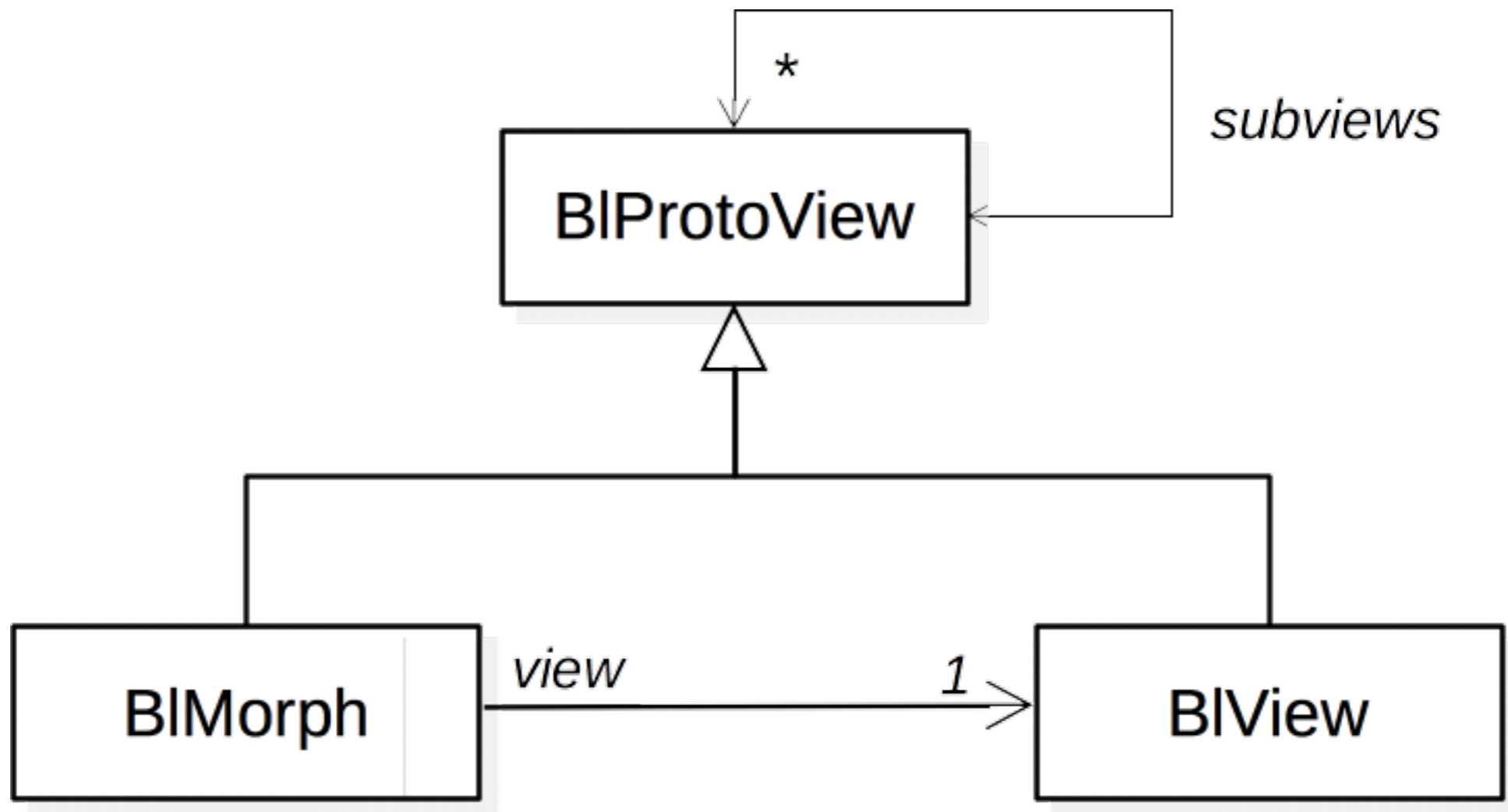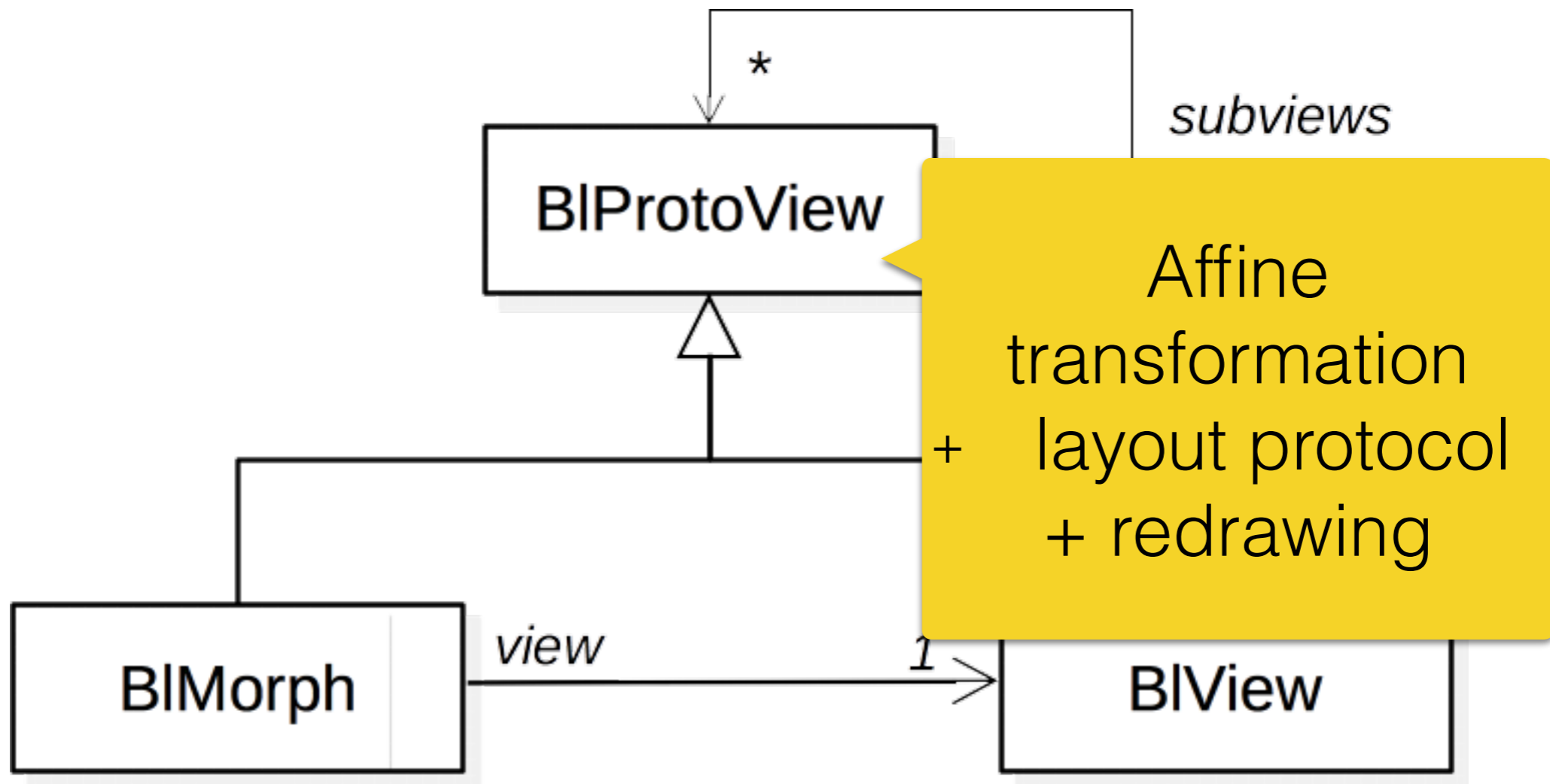
Pharo + Bloc

Playground

Page

```
BlMorph blackRectangleSample openInWorld.
BlMorph blueEllipseSample openInWorld.
BlMorph redRectangleSample openInWorld.
BlMorph yellowRectangleSample openInWorld.
BlMorph whiteRectangleSample openInWorld.
BlImageViewExamples exampleSvgApplicationIcon.
```
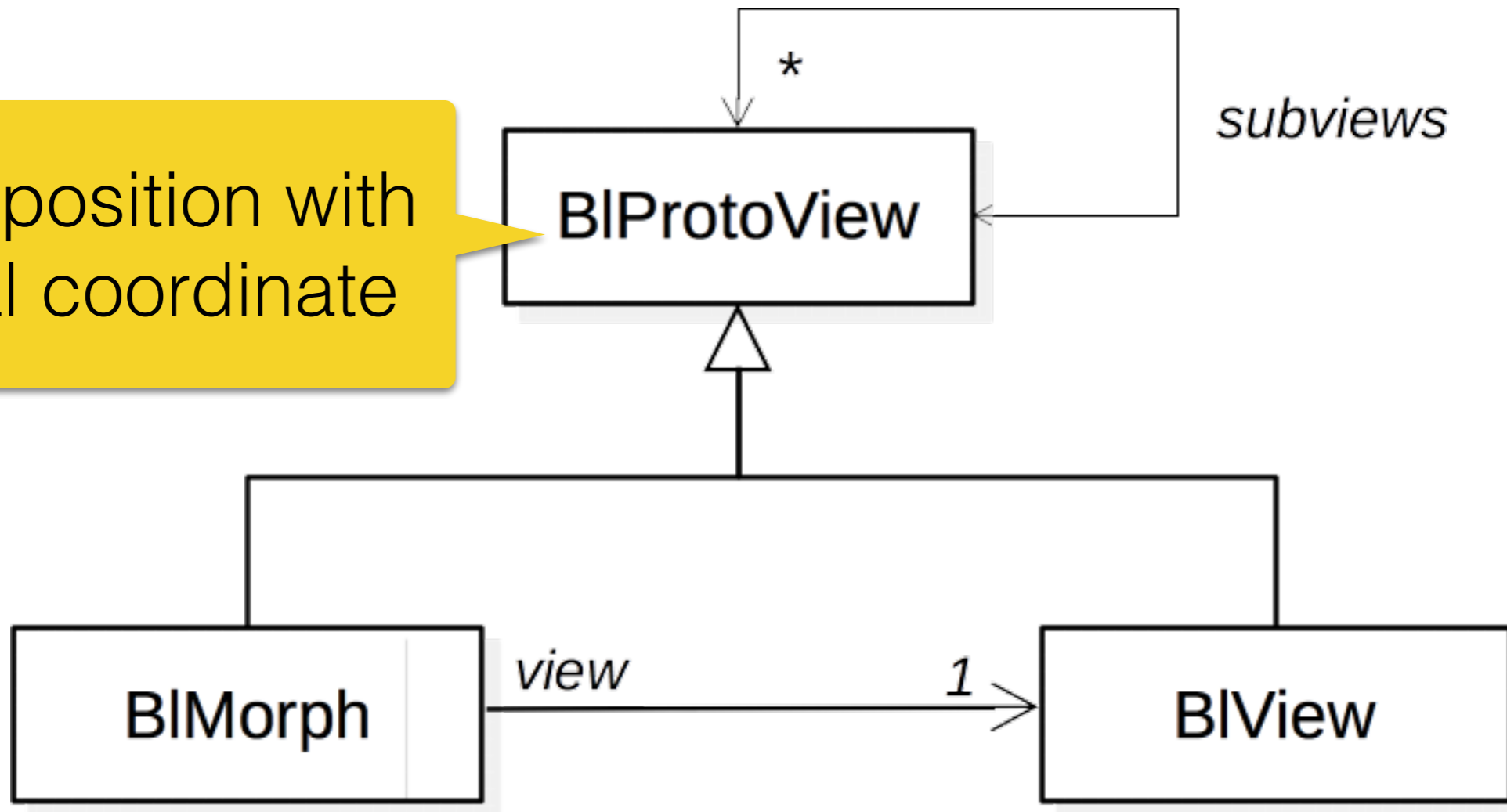
Hello Pharo fans!

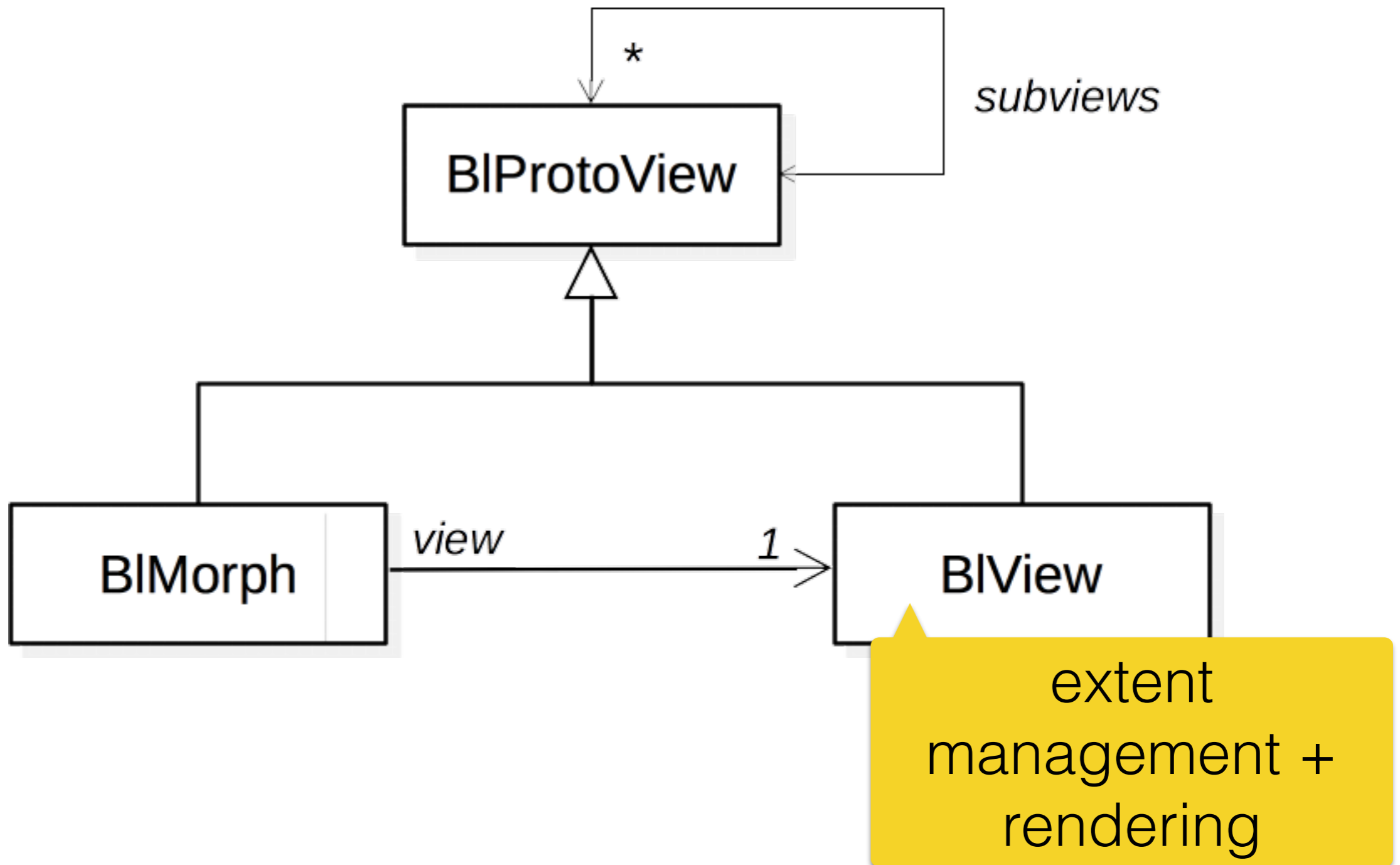| 1-1	2-1	3-1	4-1
1-2	2-2	3-2	4-2
1-3	2-3	3-3	4-3
1-4	2-4	3-4	4-4

Hello Pharo fans!

Pharo + Bloc

Playground

Page

```smalltalk
BlMorph blackRectangleSample openInWorld.
BlMorph blueEllipseSample openInWorld.
BlMorph redRectangleSample openInWorld.
BlMorph yellowRectangleSample openInWorld.
BlMorph whiteRectangleSample openInWorld.
BlImageViewExamples exampleSvgApplicationIcon.
```
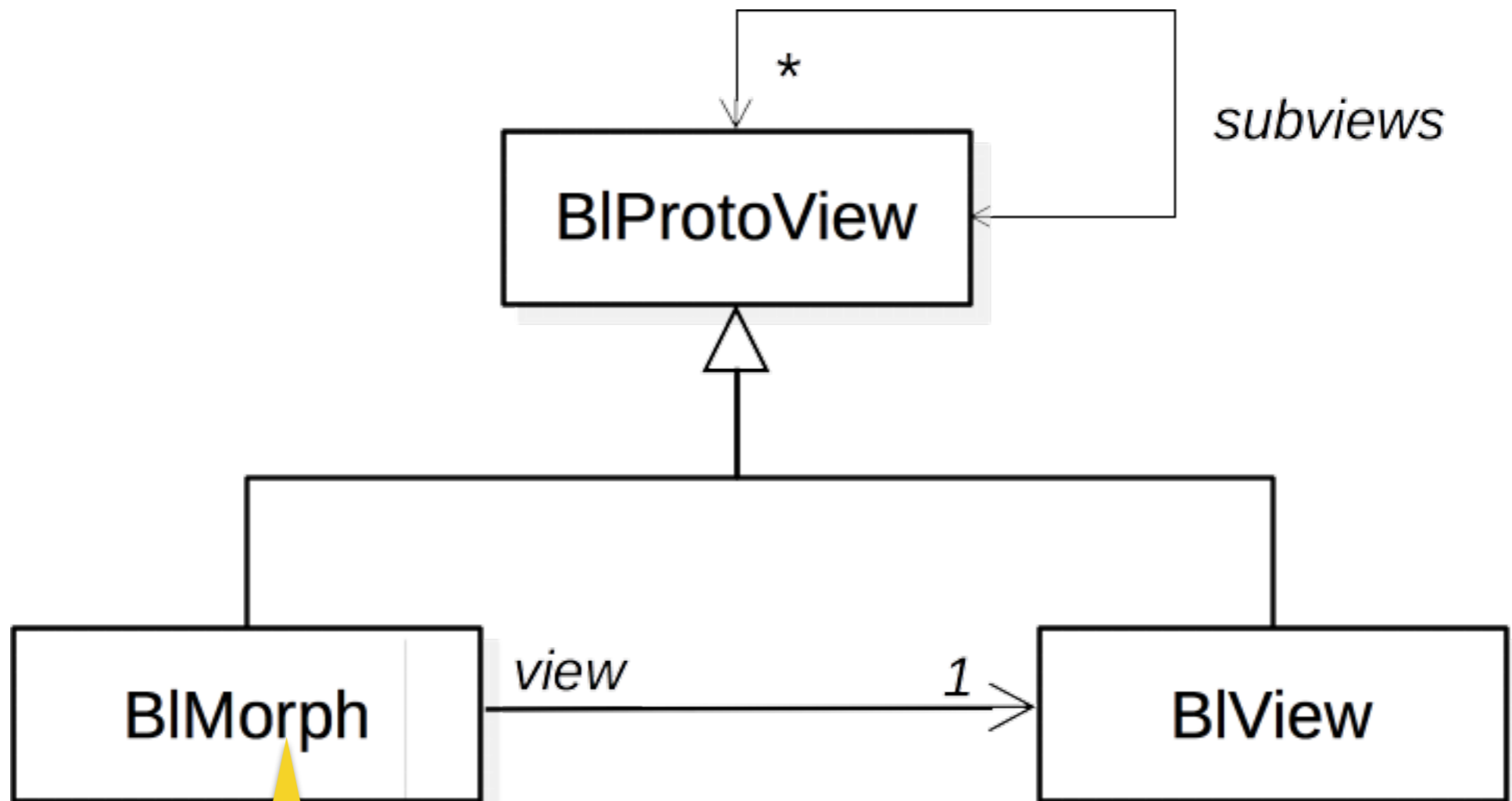
Morph + View

Morph + View

BlProtoView

subviews

*

BlMorph

view

1

BlView

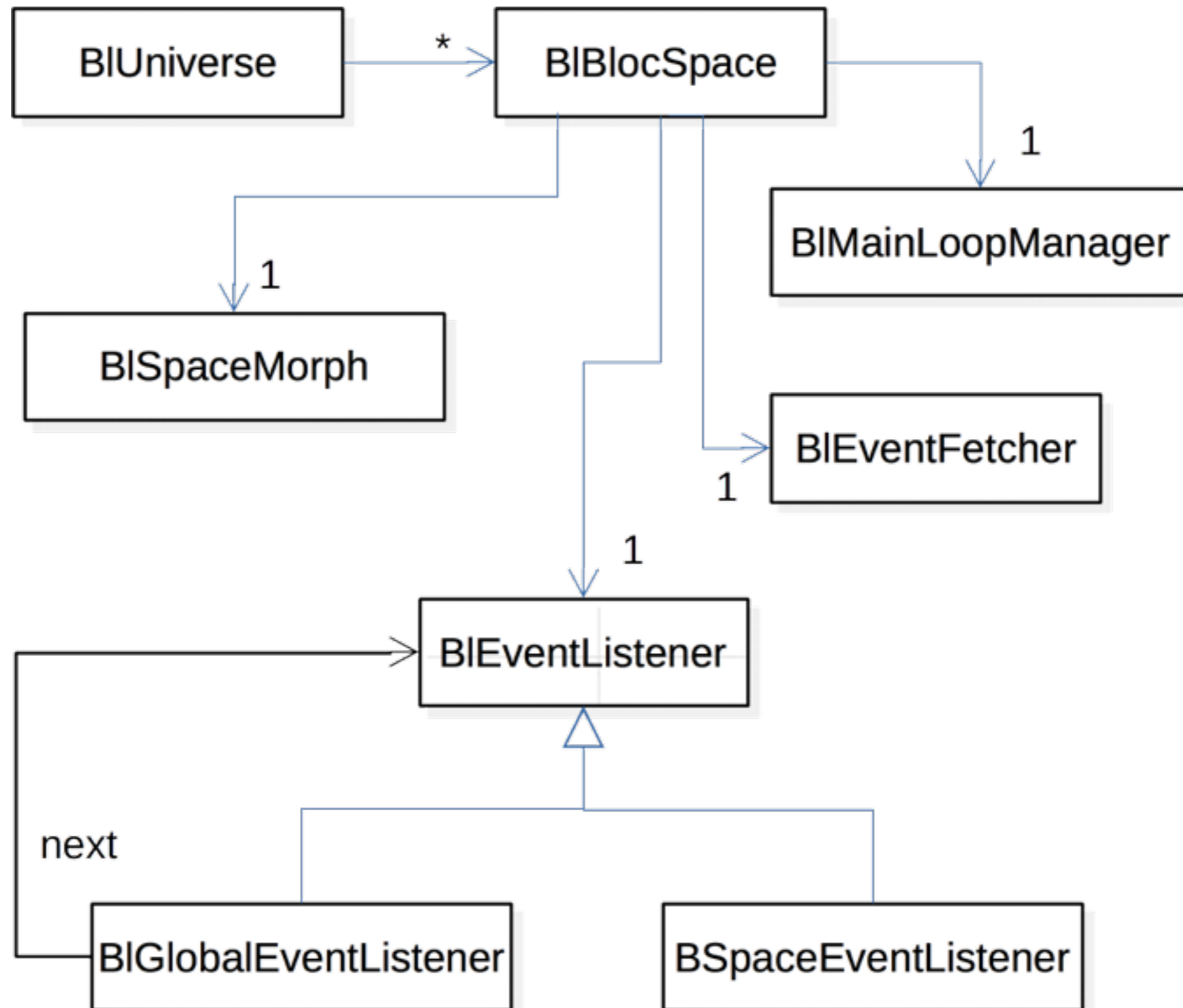Affine transformation layout protocol + redrawing
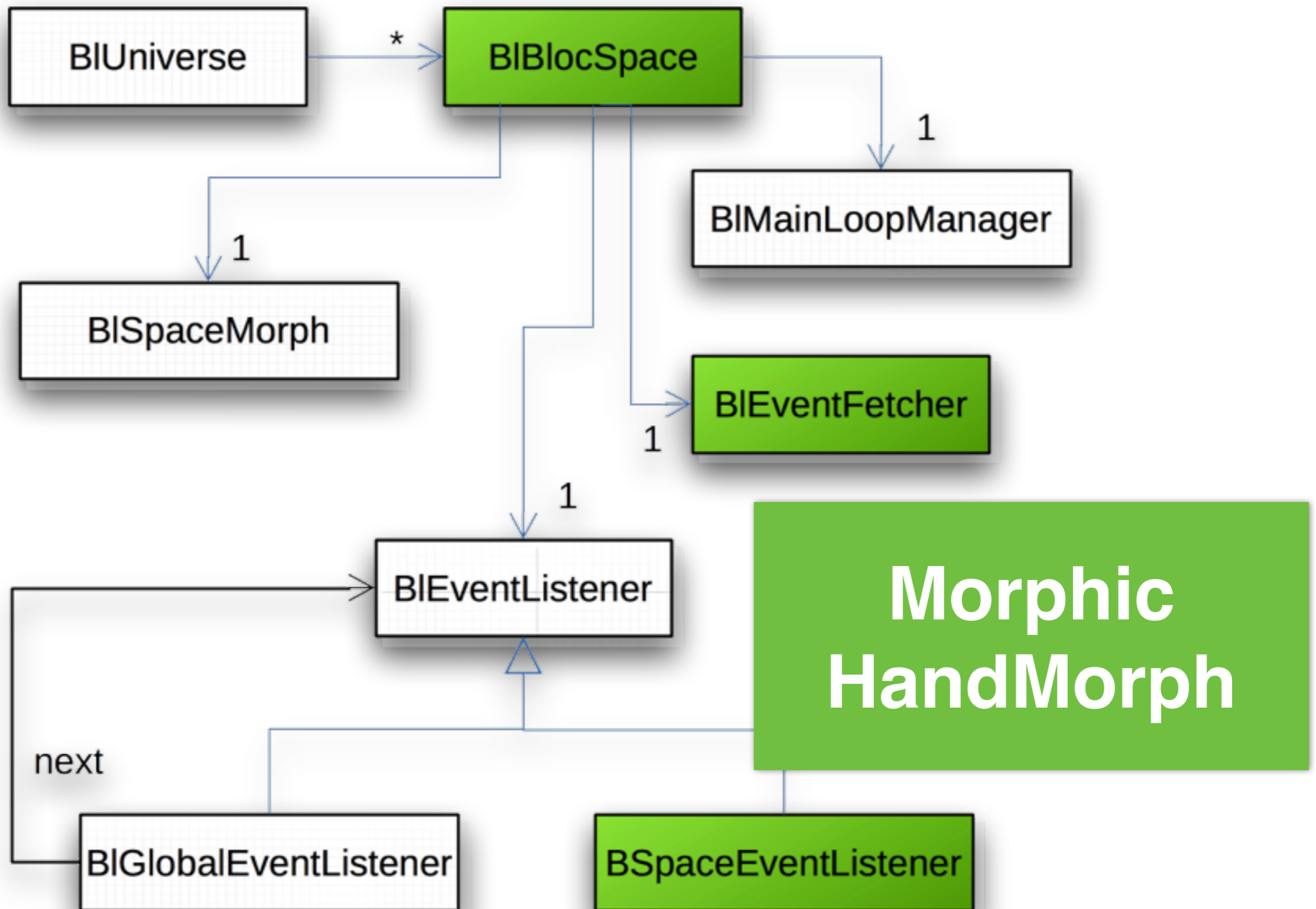
Morph + View

Morph + View
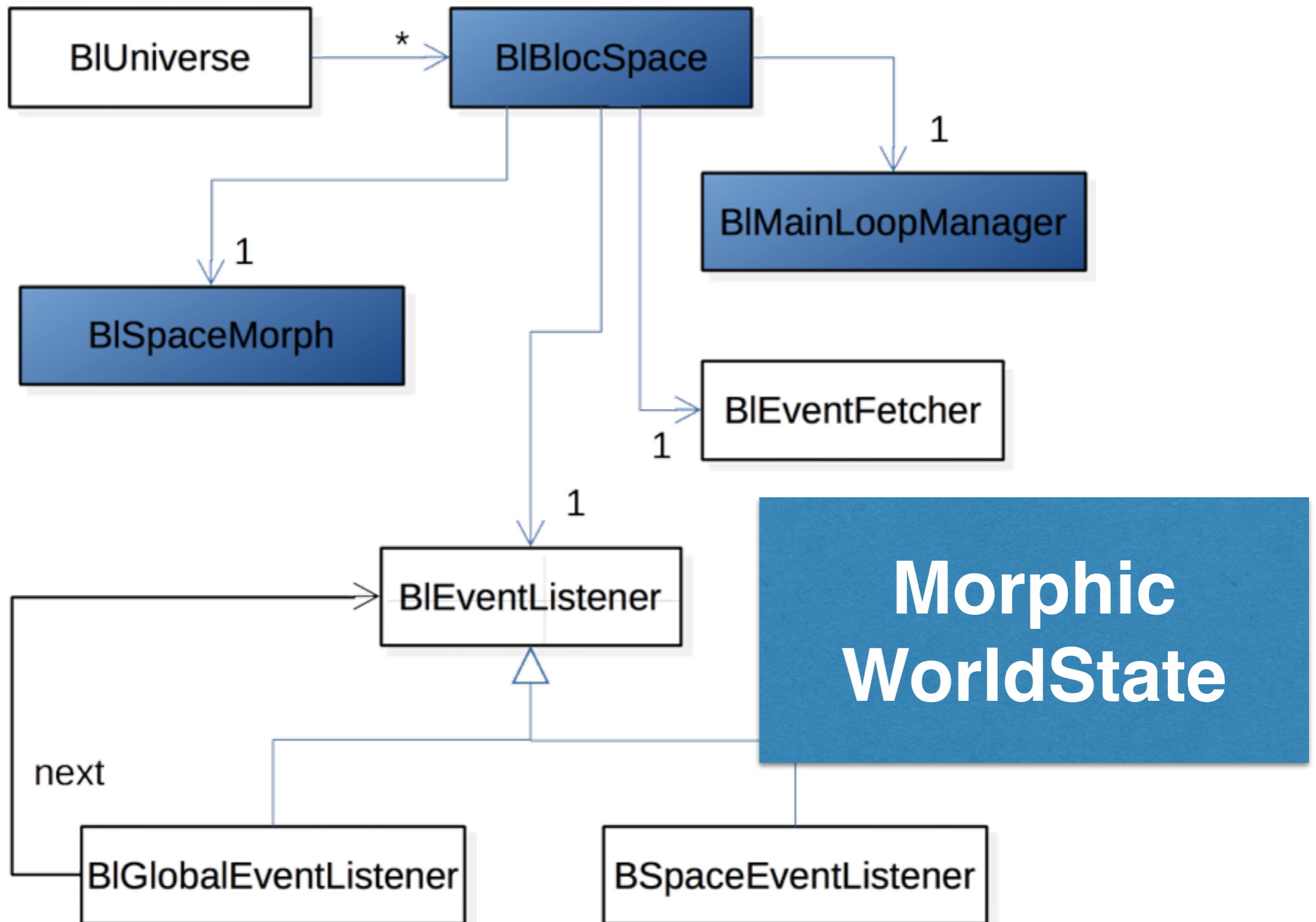
Morph + View

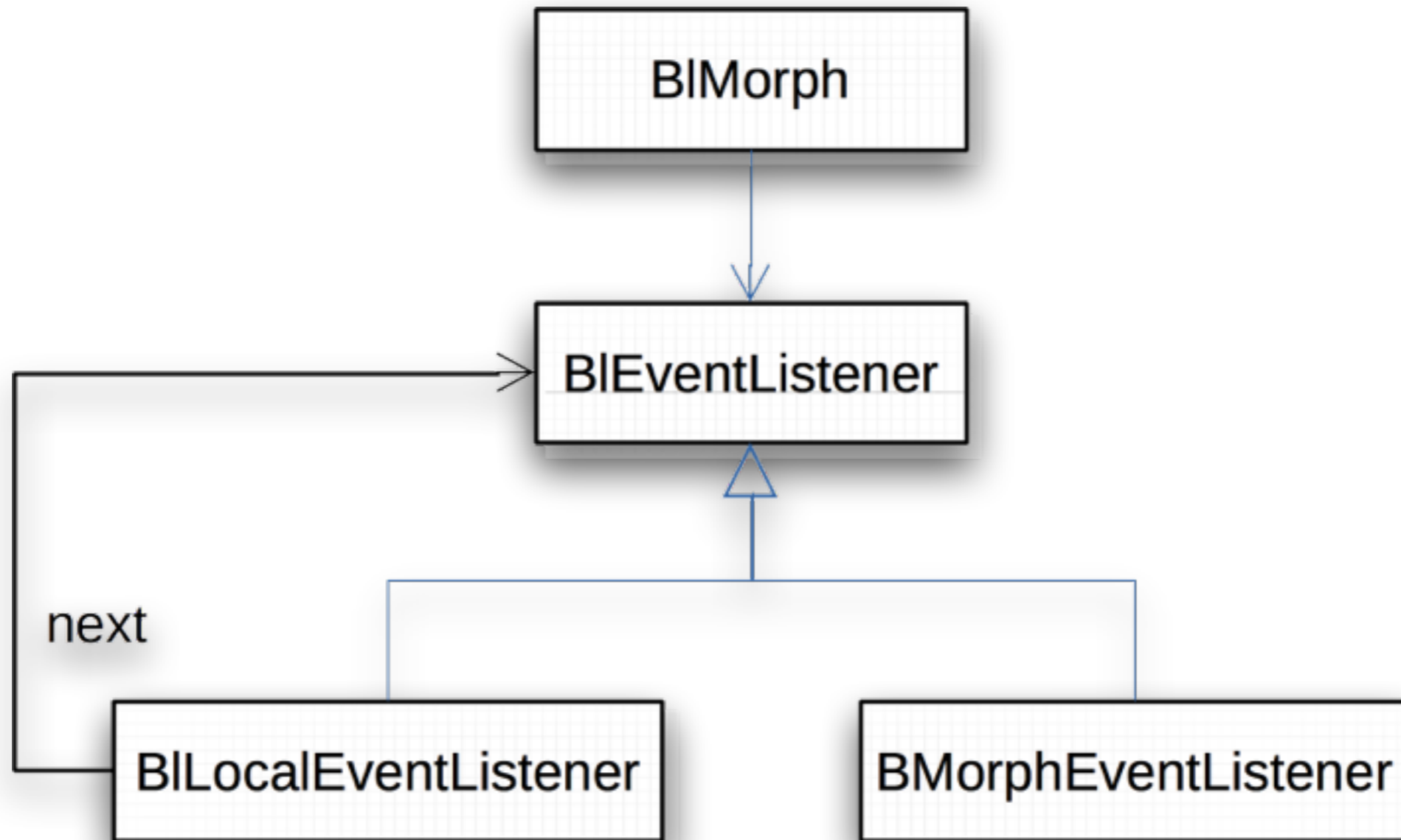# The Bloc infrastructure

The Bloc infrastructure

The Bloc infrastructure

Event listeners

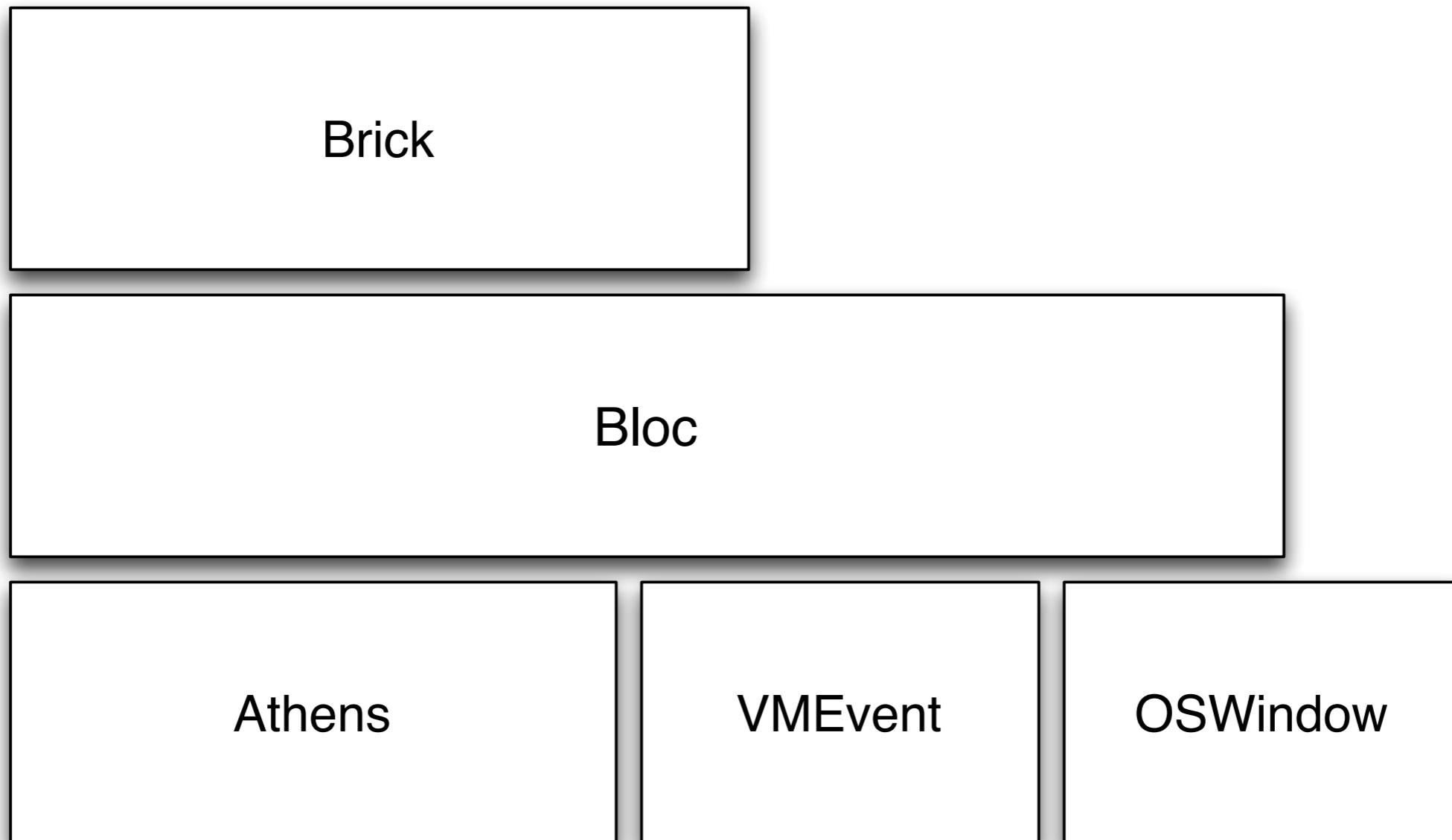# Alarms

[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 := BlRectangleView 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

Brick

Bloc

Athens

VMEvent

OSWindow

Glimpse @ Brick

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

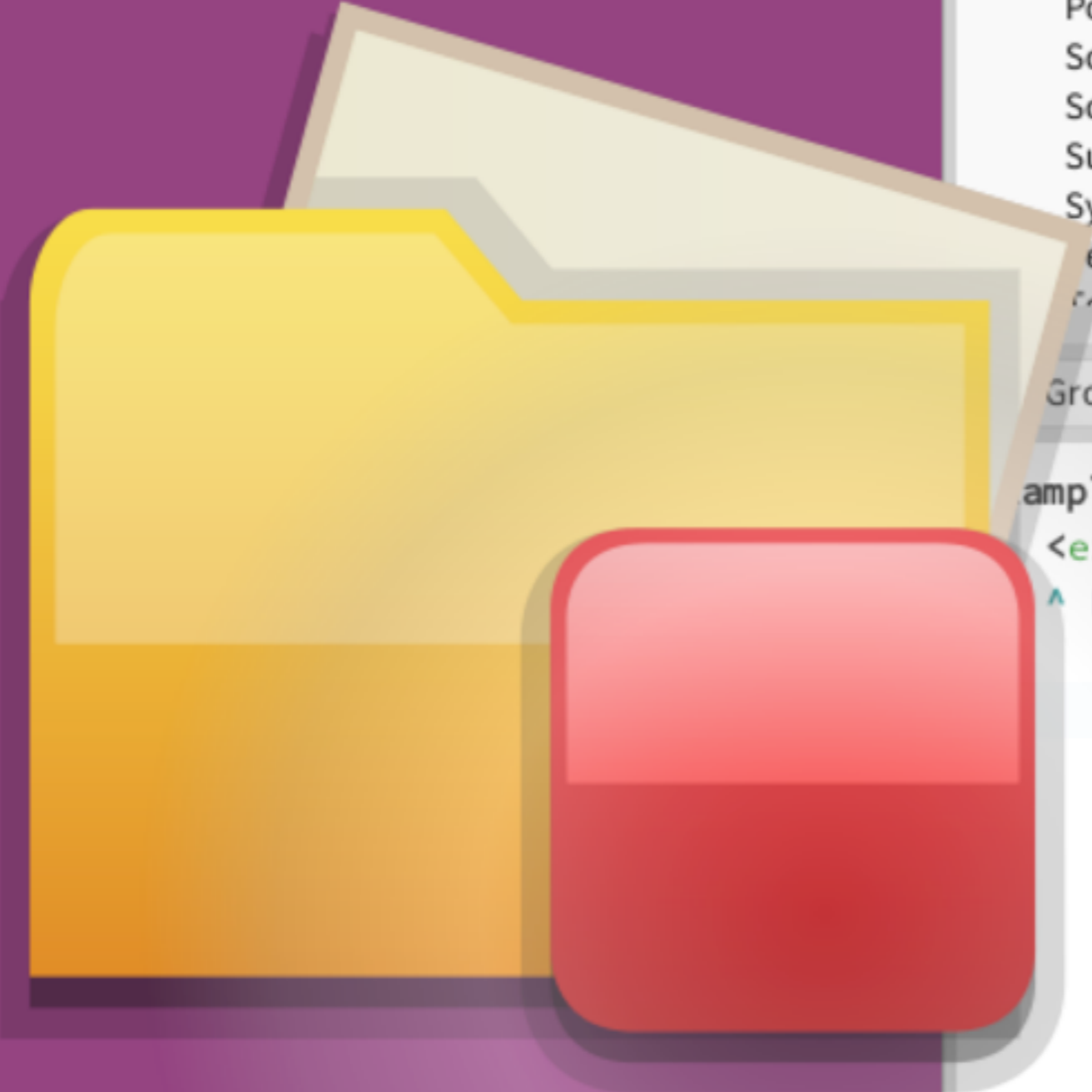- Rethought event loop

- Multispaces

Bloc

Examples
Fills
LayoutStrategy
LayoutStrategy-Anchor-Supp
LayoutStrategy-Box-Support
Obsolete
Popup
Scrolling
Scrolling-Announcements
Support
System Morphs
ests

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

Groups   Hierarchy   ☐ **Class side**

ampleSvgApplicationIcon
<example>
^ BlMorph new
    view: self svgApplicationIconView;
    openInWorld

5/5 [14]