Moving OOo to XCanvas, Step 2 – Draw and Impress

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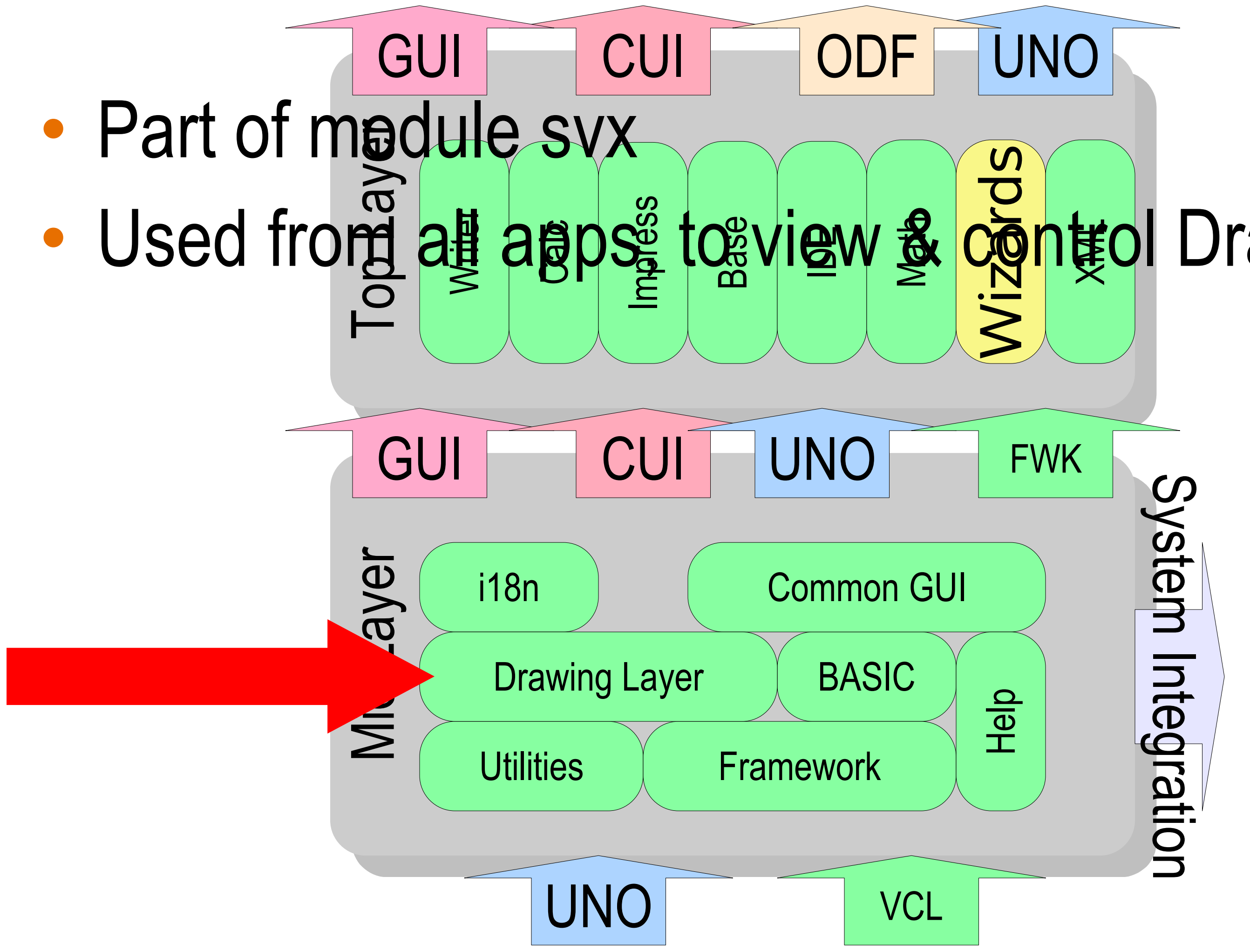
Outline

- The What and the Where of the DrawingLayer
- What are the problems?
- How does the architecture look now?
- Migration plan
- XCanvas: recap
- How was XCanvas integrated?
- Demo

DrawingLayer: Where and What For?

- Part of module svx
- Used from all apps to view & control Draw shapes



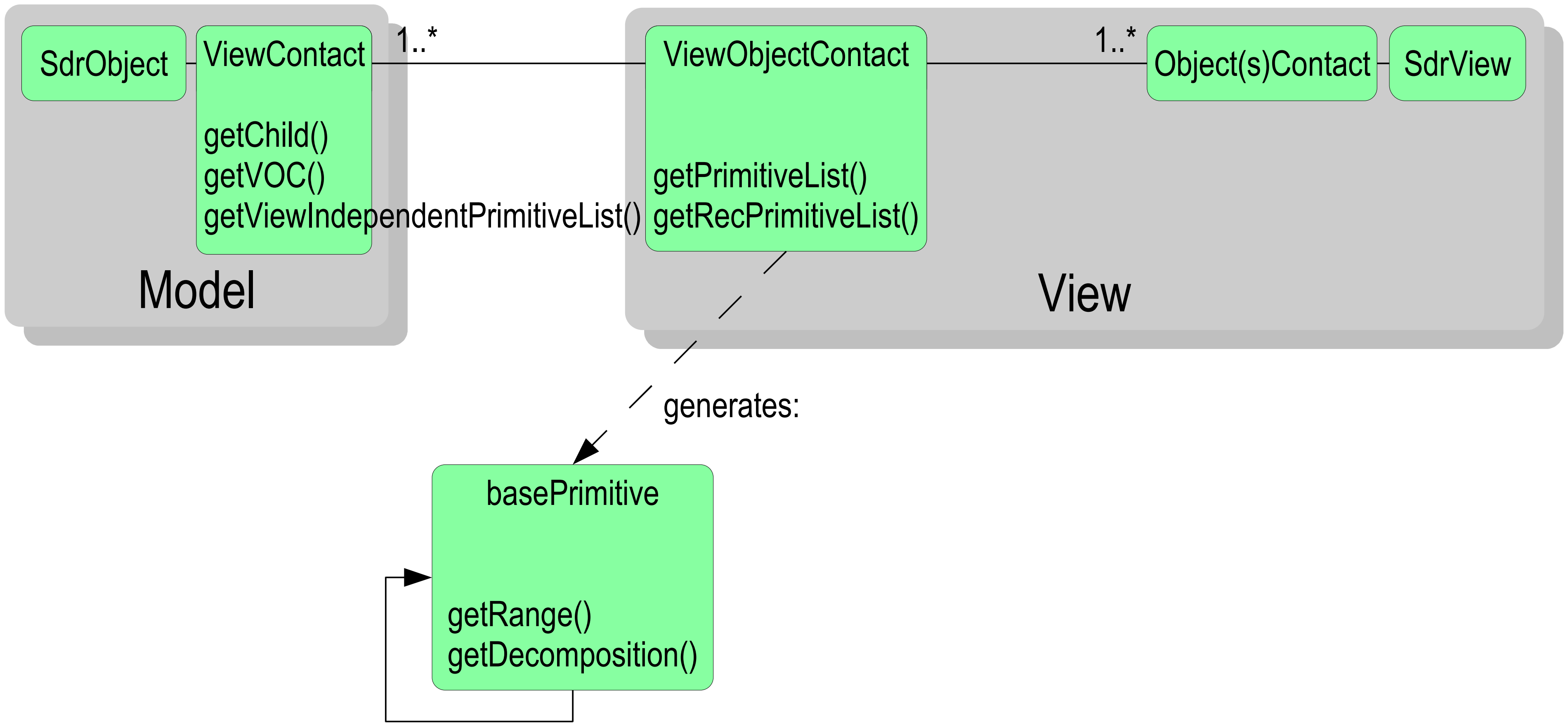
Problems With Current DrawingLayer

- Model and view basically in one object
- deep inheritance and usage of concrete instances, with app framework, control layer, and VCL
- (almost) no points of customization:
  - > impossible to exchange render backend
  - > extremely hard to add new shape types
- rendering is a crosscutting concern

DrawingLayer Rework

- Split up into two CWS:
  - Overlay/Interaction/BaseGfx stuff: aw024. Will hit HEAD soon
  - DrawingLayer primitives: aw033
    - Needs the changes from aw024 merged in, and then at least ½ year additional effort

Reworked DrawingLayer: Overview



Reworked DrawingLayer: Details

- Separates model & view (controller: later)
  - > SdrObject (model)
  - > ObjectContact & ViewObjectContact: view + “content” of the view
- Bins ad hoc output/geometry generation, instead employs factored-out graphics tooling (basegfx)
- Provides scene-graph like hierarchy of view content, makes it easy to “plug in” different renderers

Migration Plan

- ✓ Design XCanvas API, provide set of working implementations
- ✓ Base newly implemented UNO slideshow component on XCanvas
- ✓ Port Draw/Impress to XCanvas
  - Utilize overlays from aw024
- Make XCanvas accessible from remaining UNO API
- Port Calc to XCanvas
- Port Writer to XCanvas

XCanvas, What Was That Again?

- 'X' because it's a UNO interface
- new UNO-API based rendering subsystem for OOo
- slated to replace VCL's OutputDevice for rendering application content:
  - > Impress slideshow (OOo 2.0)
  - > Draw/Impress edit view

Reasons for XCanvas

- UNO API for rendering
- Significantly better portability
  - low impedance towards modern graphics APIs
  - easy to start with, for contributors
- Separation of concerns
  - XCanvas: rendering
  - toolkit: controls & windowing
- Speed
  - low impedance towards contemporary graphics hardware
- Quality
  - ubiquituous alpha compositing
  - anti-aliasing
  - color management

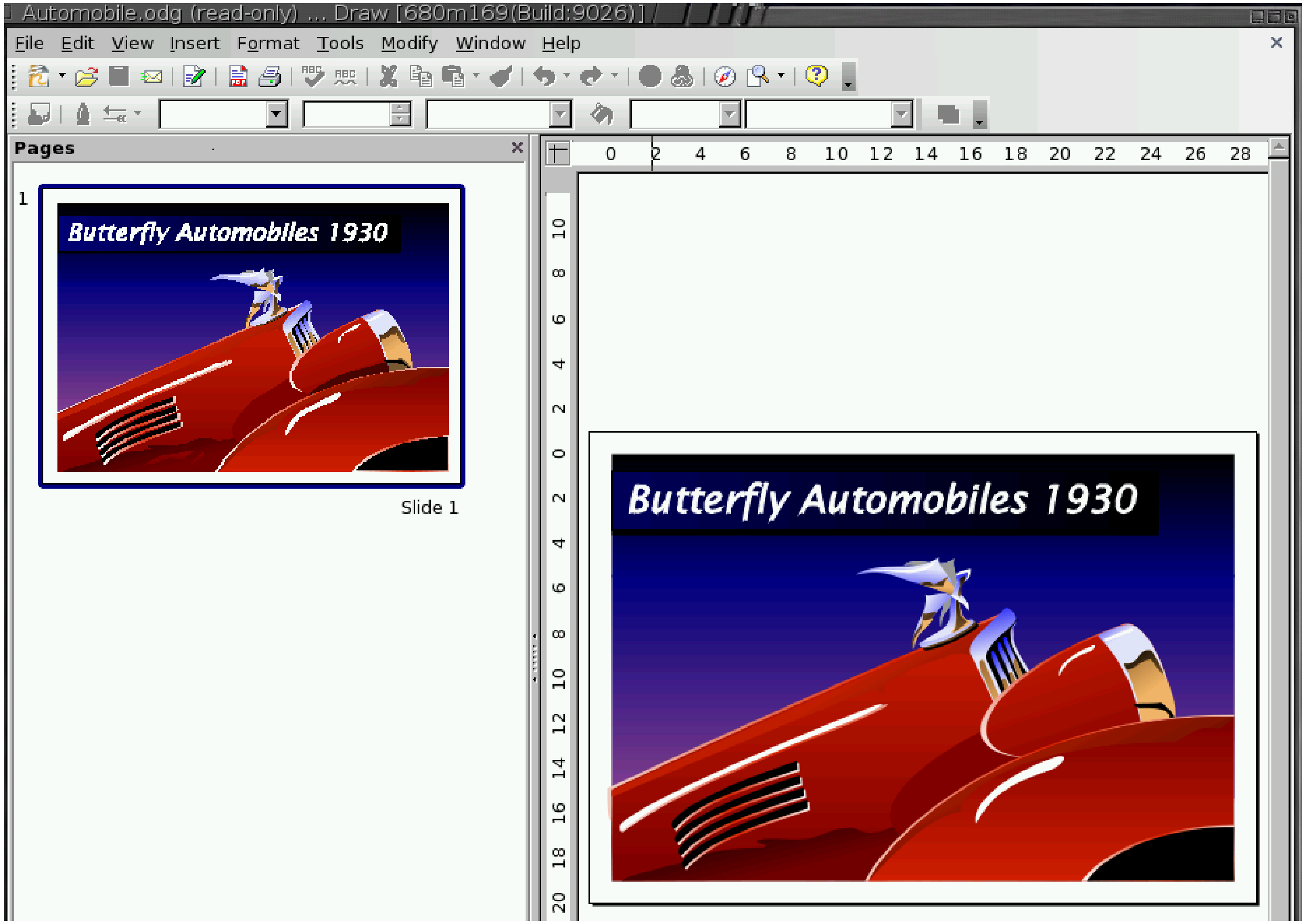
Key XCanvas Features

- Contemporary set of render primitives
- Multitude of backends feasible
- Stateless, concurrency-friendly design
- Flexible caching concept

How's XCanvas Plugged In?

- It's Model/View: you just need to reimplement the view part
- Tacid assumption: XCanvas output and VCL OutputDevice output must mix on the same area (until all of OOo has been migrated)!

Demo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Pages
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Butterfly Automobiles 1930

Further Info

- OOo Wiki's DrawingLayer rework page

Q&A

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