

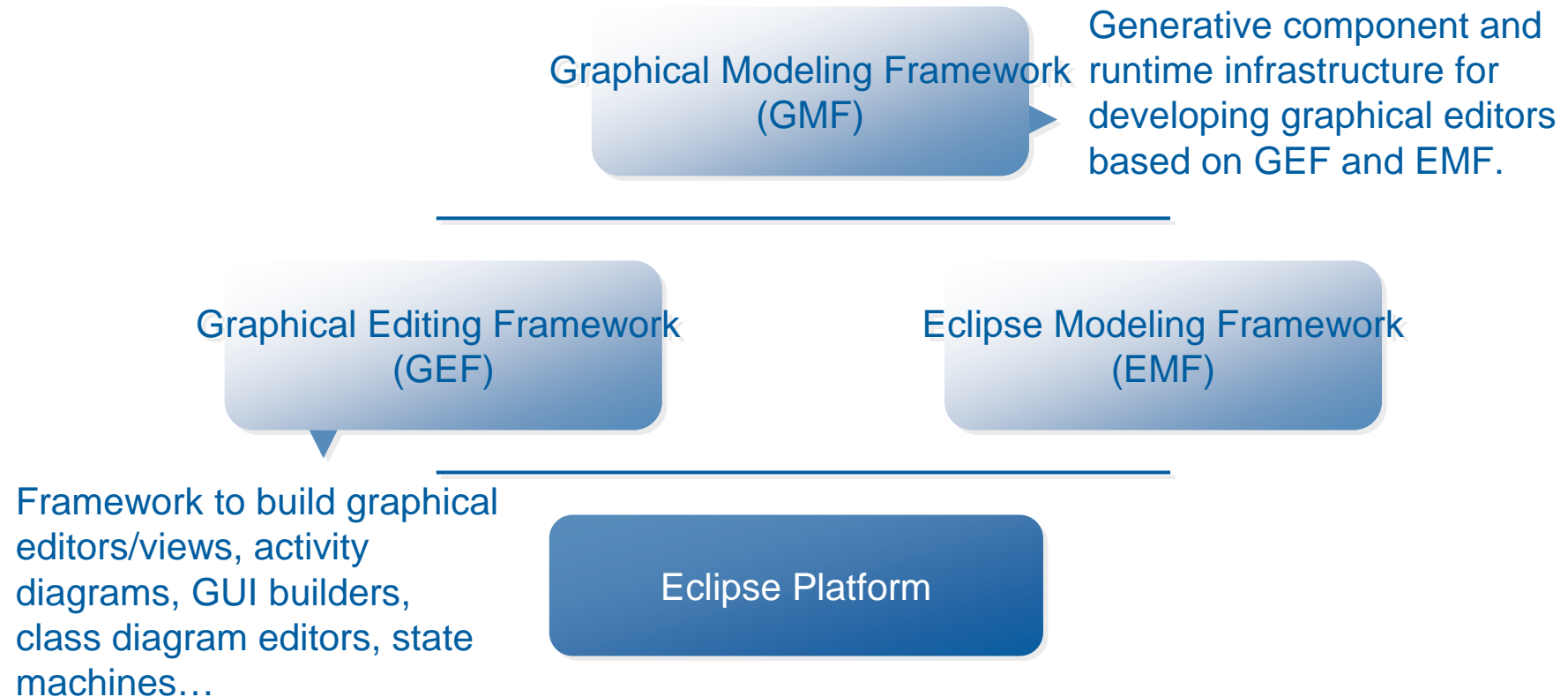
# Experiences building a GEF/GMF component

*JViews Graph Layout for Eclipse*

06/23/2009

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IBM ILOG Visualization R&D

- Resources
  - Documentation – Articles - Books
  - Diving into the Eclipse code
  - Bugzilla: a channel for interacting with committers
- Component
  - Leveraging the pure MVC architecture of GEF
  - Providing sections for the Tabbed Property Sheet
  - Extending the GMF notation model
- Demos
  - Creating a showcase GMF editor
  - Welcome Page for launching the demos



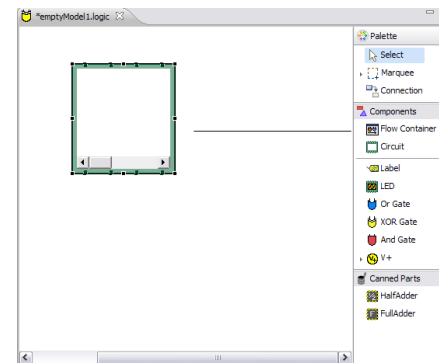
- Documentation, Articles, Books
- Diving into the Eclipse code
- Bugzilla: a channel for interacting with committers

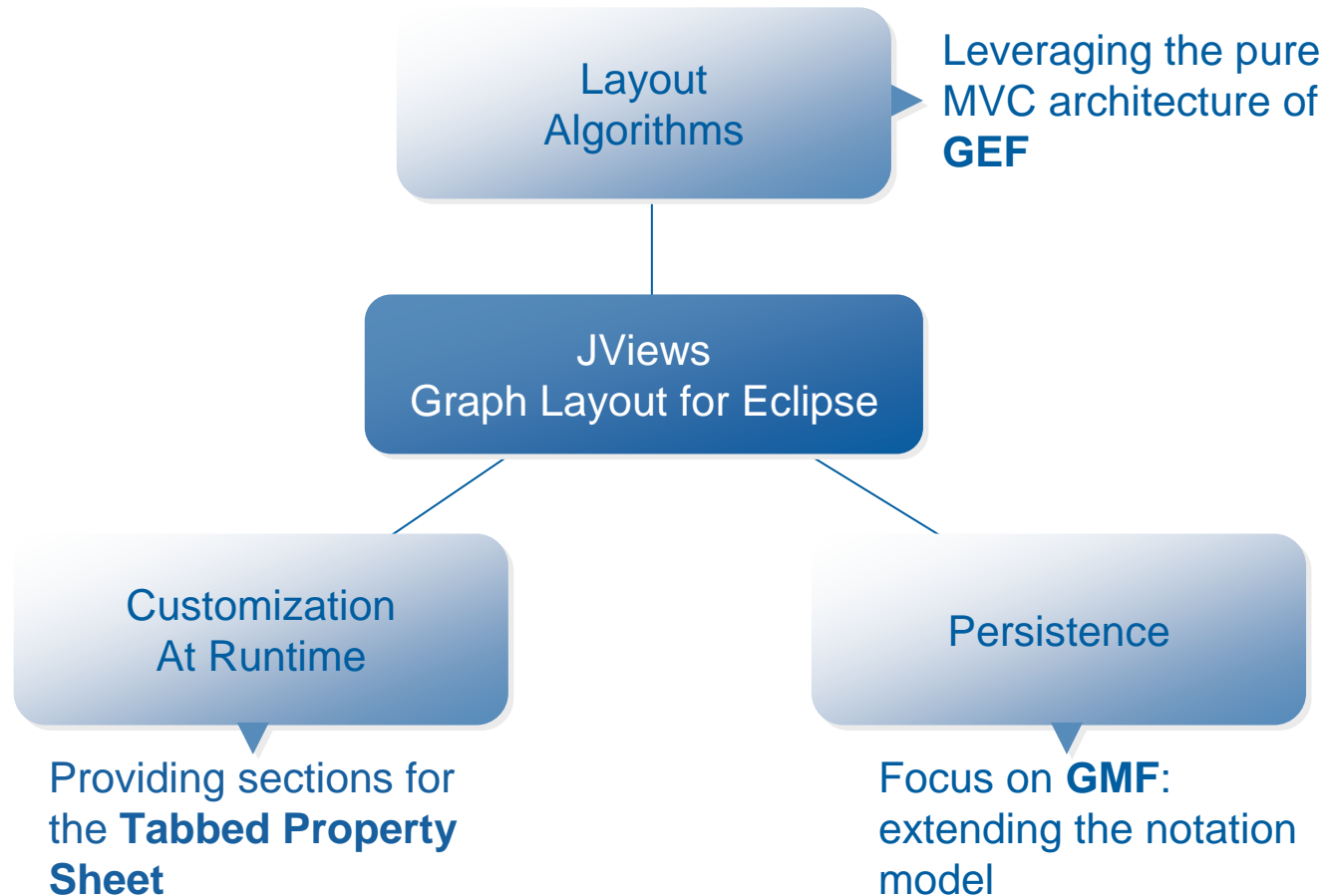
- Poor user documentation
- Few comments in the source code
- News group as documentation

- Regular activity when using a framework
- 80% of your time spent in reading code
- Steep learning curve
- Monkey See / Monkey Do Rule
  - Always start by copying the structure of a similar plug-in
- Risk: Cargo-cult programming
  - Ritual inclusion of code or program structures that serve no real purpose.

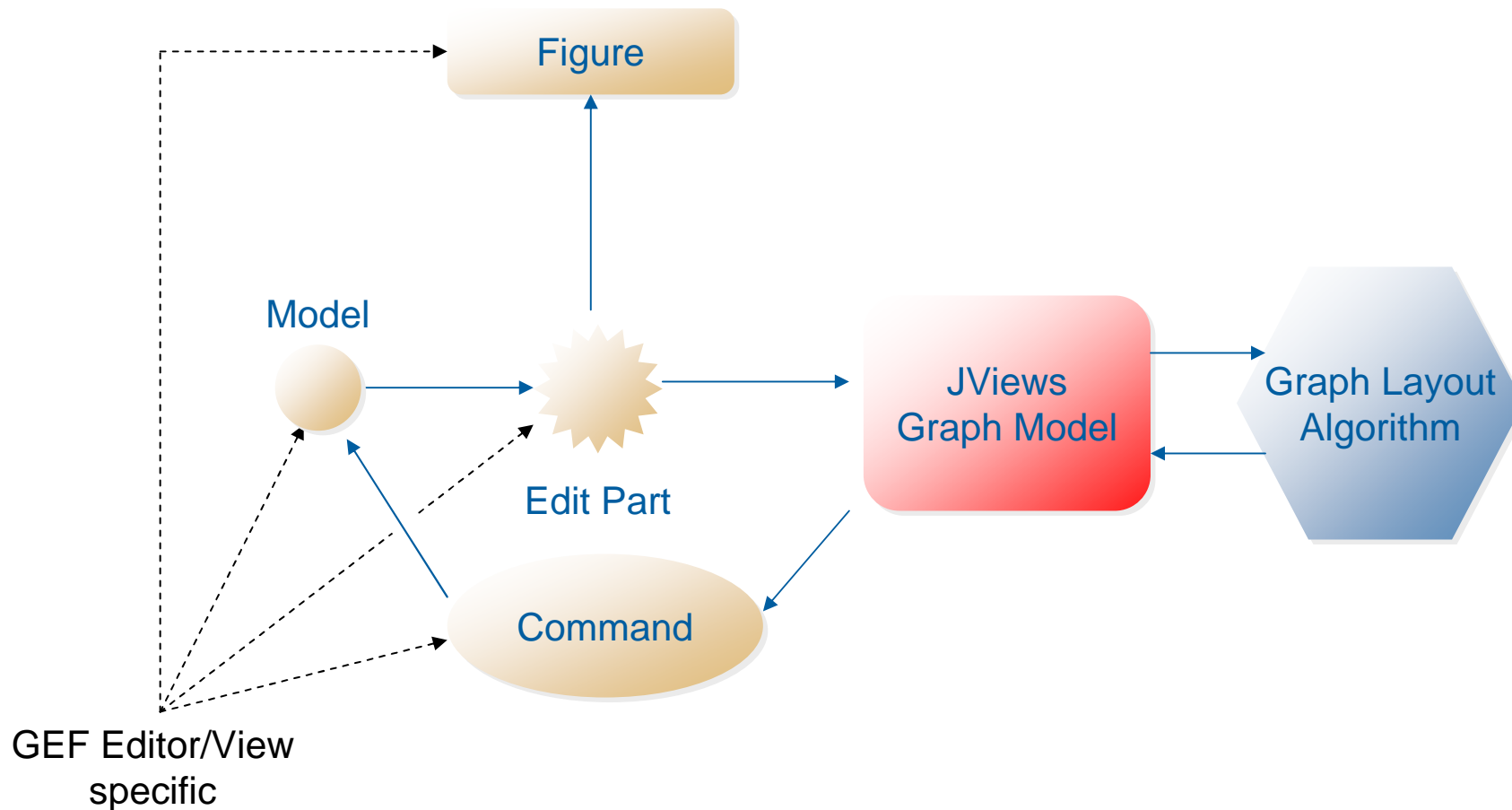
- Interacting with the developers/committers
- Participating to the evolution of the products
- Feedback is quite good and efficient most of the time
- Opened bugs
  - GEF: around 480 opened bugs
  - GMF: around 800 opened bugs
  - EMF: around 300 opened bugs

- But sometimes it looks like the committers are not really focused on their product
  - Bug 195527 : Connection outside containers
  - Opened in july 2007, closed in september 2007 because "it is the intended behavior"
  - Reopened in september 2008 after a new comment from the reporter
  - Not yet fixed

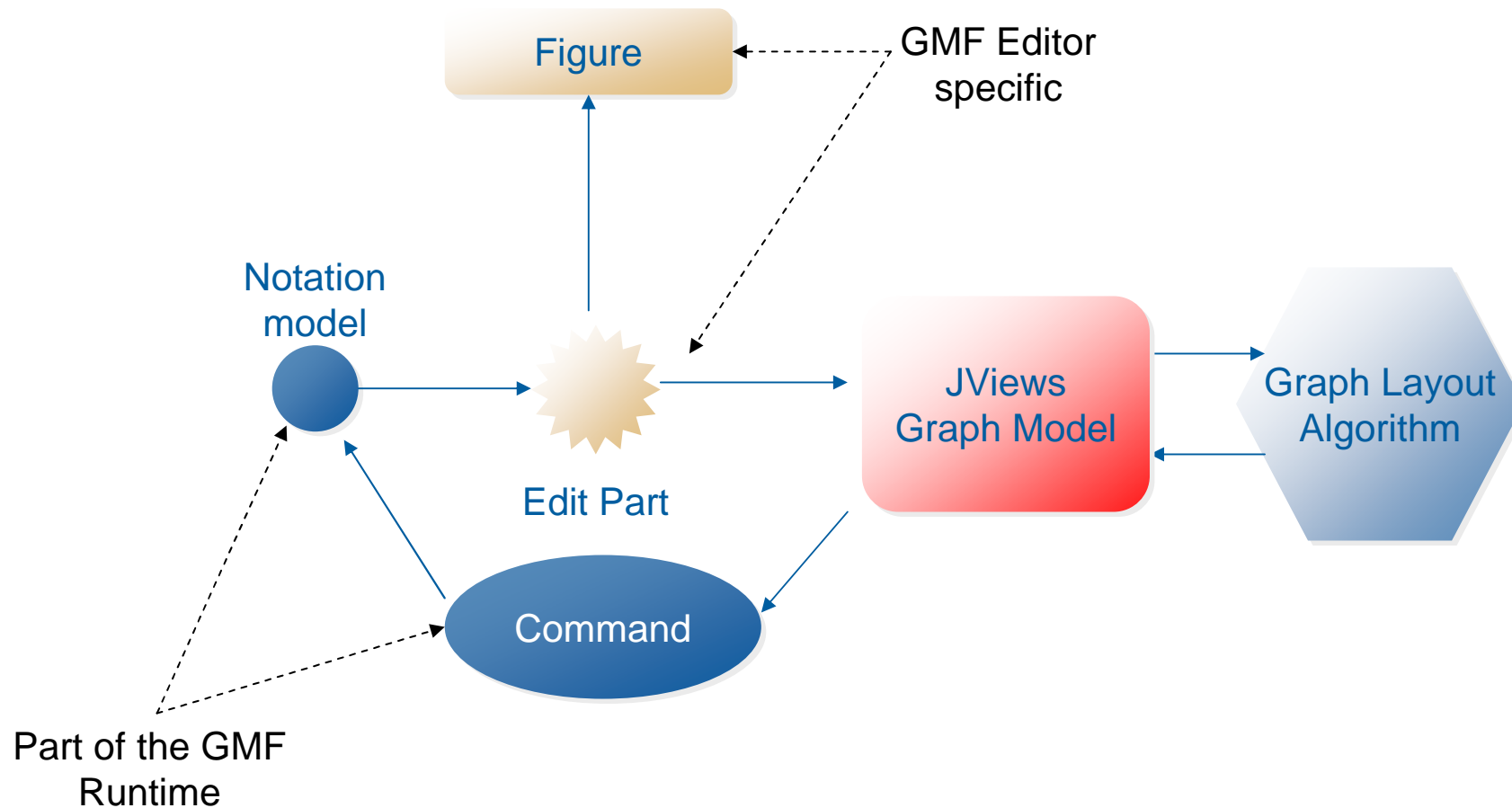




- Layout algorithms must be **Model Agnostic**



- GMF integration



- Interacting with the model
  - Integration based on GEF **requests** & **edit policies**
  - New features based on **new** ones
- Commands (modifying the model)
  - GEF
    - **Application-specific**
    - Example of source code provided in demos
  - GMF
    - **Model is known: notation model**
    - Commands in the library

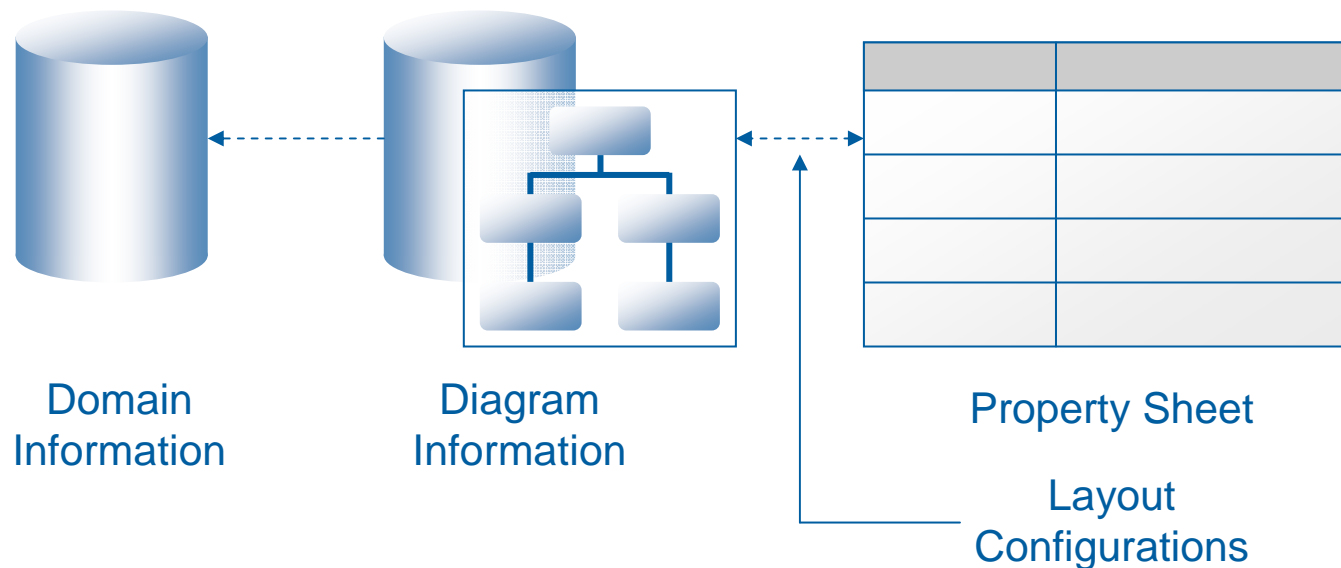
- **Context**
  - We wanted to provide **embeddable** graphical Property Sheets to allow to **customize** layouts **at runtime**.
  - GMF editors display a **Tabbed Property Sheet**.
  - The Tabbed Property Sheet can host sections.
- **We provide**
  - **Sections** to extend any Tabbed Property Sheet
  - **Filters** to bind the selection with the sections to display

- Property sheet sections are embeddable in an Eclipse application using **Extension Points**.

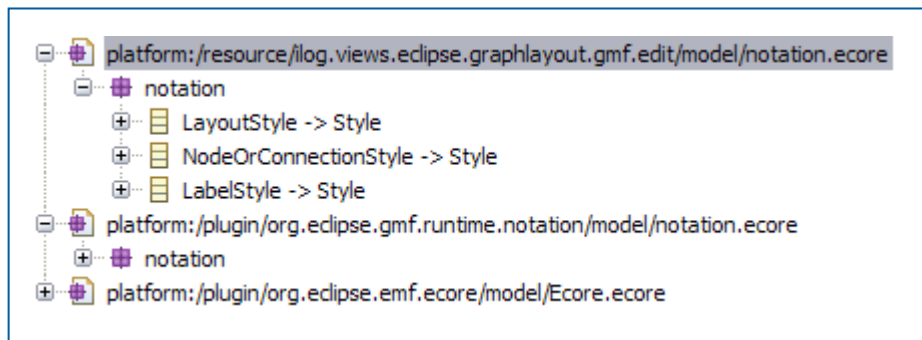
```
<propertySection id="property.section.GraphLayoutPropertySection"  
  filter="ilog.views.eclipse.graphlayout.properties.filters.LayoutPropertySectionFilter"  
  class="ilog.views.eclipse.graphlayout.properties.sections.GraphLayoutPropertySection"  
  tab="property.tab.GraphLayoutPropertySection">  
</propertySection>
```

- They can be customized by subclassing them.

- Context
  - Layouts are customizable at runtime through property sheets. We wanted to make their settings persistent **with the diagram information.**

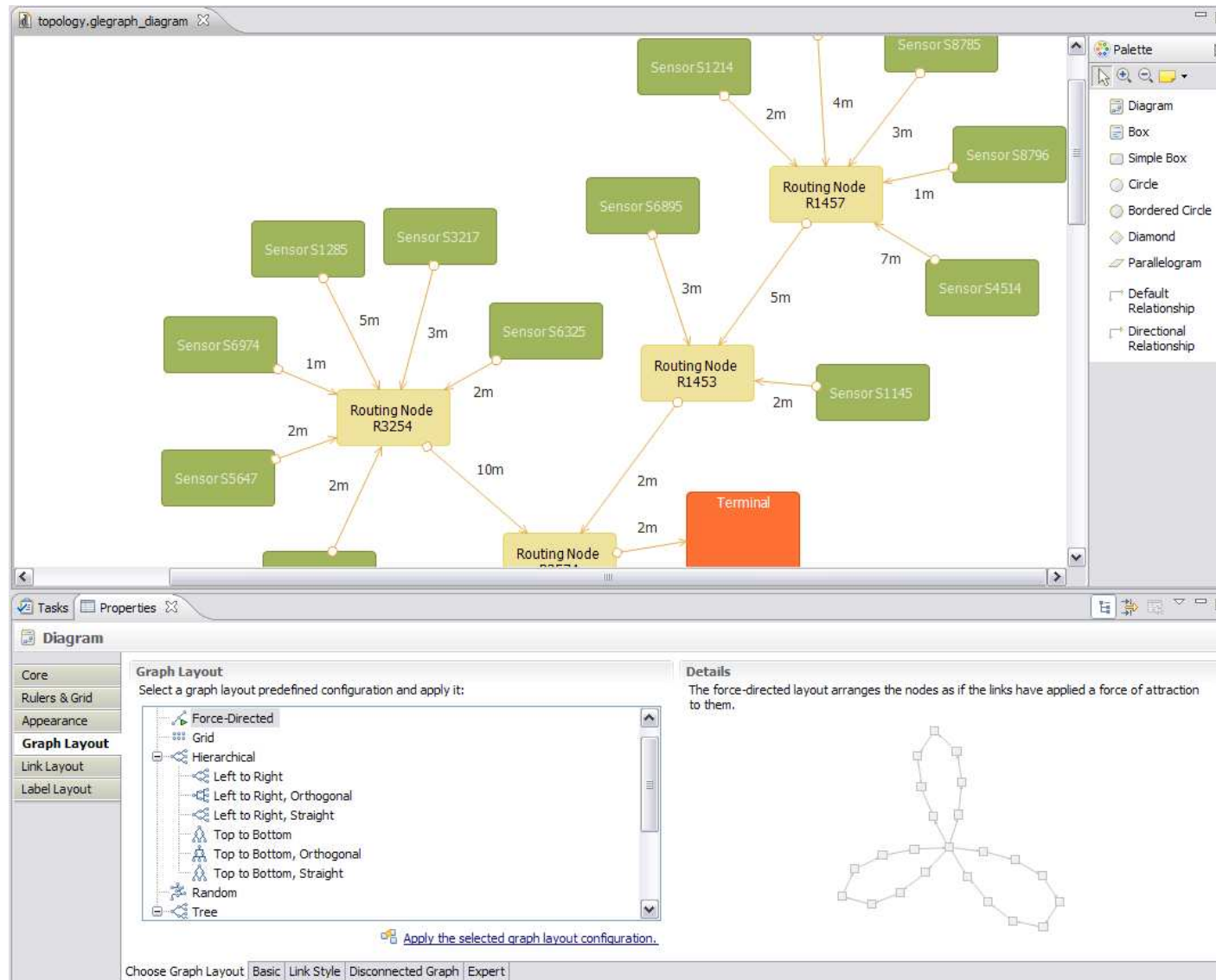


- Extension done through « **Styles** »
  - A « **Style** » is an interface defined in the GMF notation model
  - Created an Ecore model defining new classes implementing Style
  - Generated Java implementations

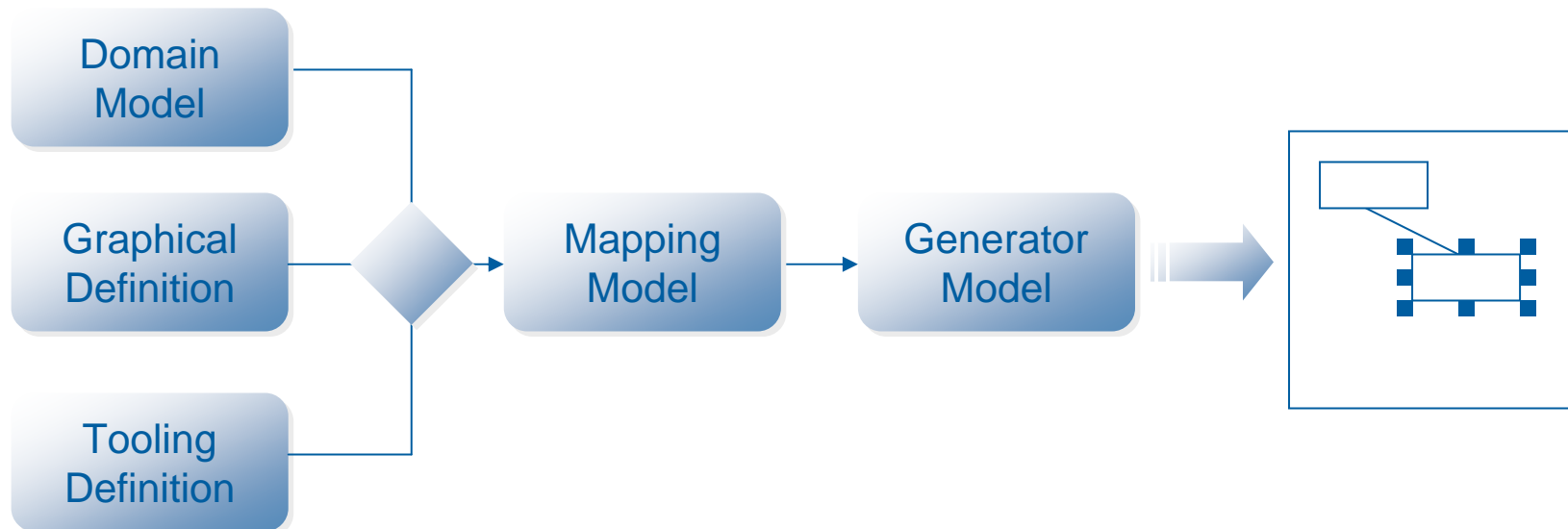


- Creating a showcase GMF editor
- Launching the demos via the Welcome Page

# Creating a showcase GMF editor



- Generated
  - Using the GMF toolchain, **most** of the editor has been generated.



- Remained

- Clipboard support

- To be able to copy/paste **semantic** elements

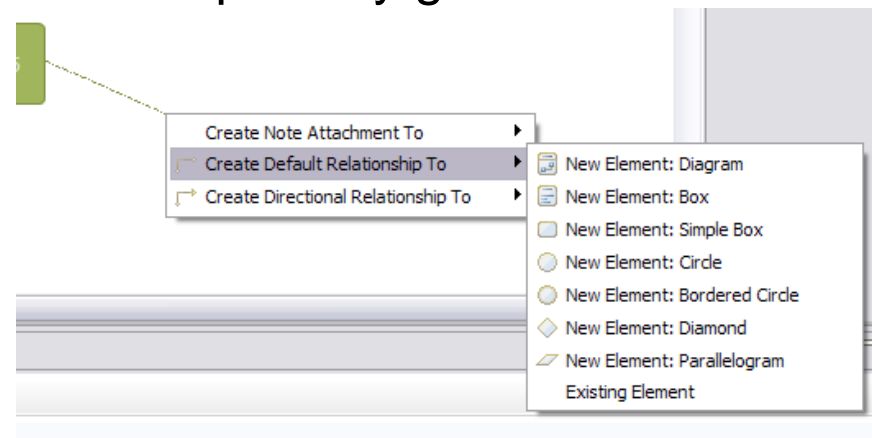
- Icons

- Tweaked the Icon Provider

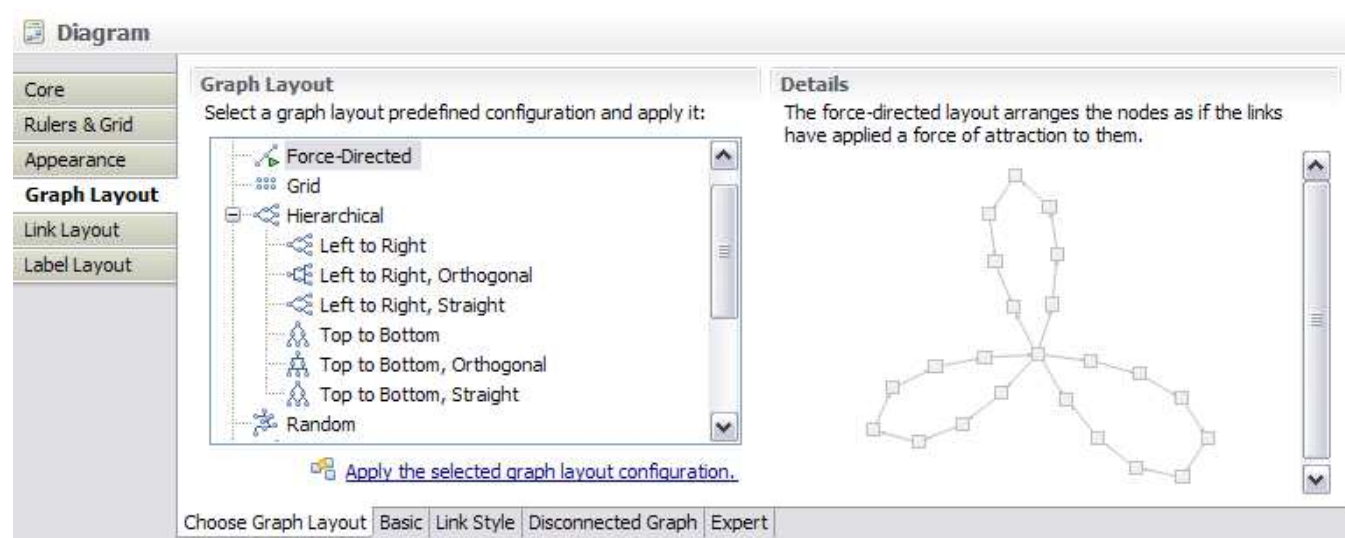
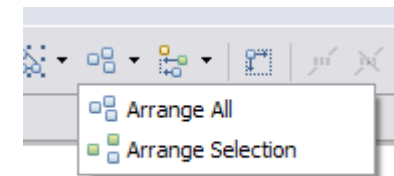
- Modeling Assistants



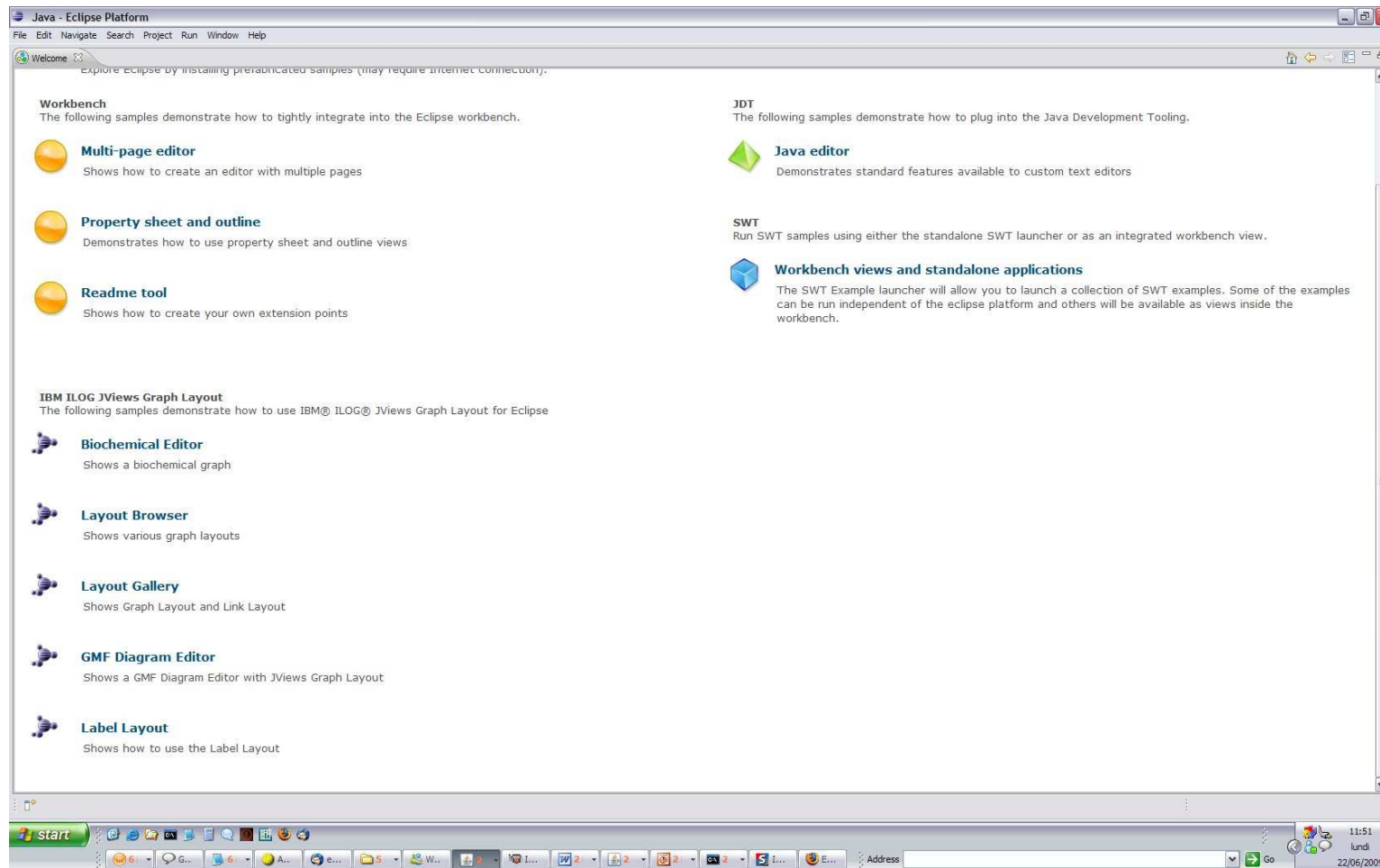
- The Modeling Assistant Provider is partially generated



- Customized
  - Layout Provider (Arrange All/Selection behaviour)
  - Tabbed property sheet
  - Generated IFigures
  - Edit Parts



## ■ Making a Good First Impression



- Resources

- **Community** (committers, developers): bugzilla, source code, newsgroup, books, articles

- Technology

- **Leveraging legacy** (JViews graph layouts)
  - Same layout API for Eclipse and JViews Diagrammer
- **Components** can be built on top of GEF and GMF.
  - Notation model (GMF)
  - Service Provider architecture (GMF)

# Questions & Answers

*Thank You*