

# Eclipse Modeling **Primary Storage Formats** Symposium 2008 **for Textual DSLs**

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## Eclipse TMF Xtext

- Framework for developing textual DSLs
- Derived parser, linker, editor work on text
- Textual models can reference EMF models and metamodels
- Growing model sizes require advanced techniques

## Textual DSL does not mean XML - Sample:

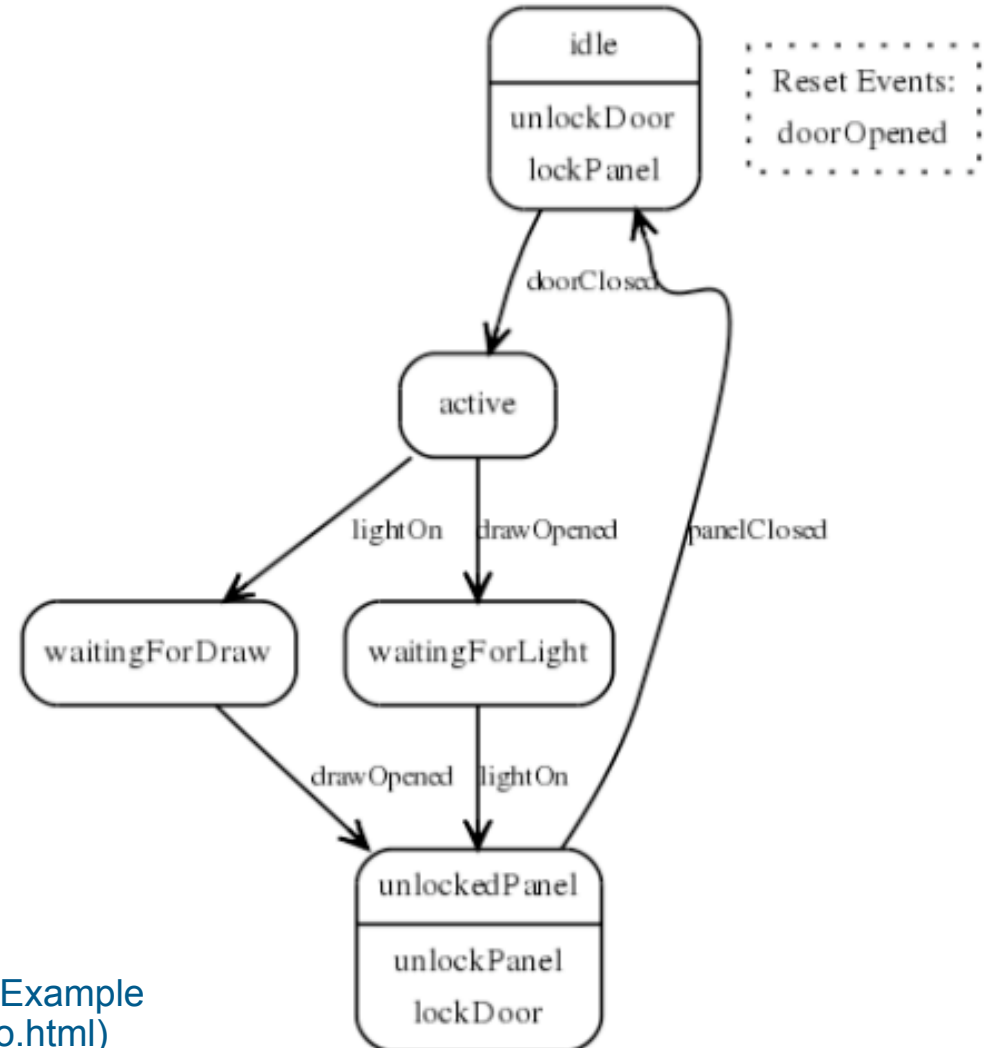
```
state idle
  actions {unlockDoor lockPanel}
  doorClosed => active
end
```

```
state active
  drawOpened => waitingForLight
  lightOn => waitingForDraw
end
```

```
state waitingForLight
  lightOn => unlockedPanel
end
```

```
state waitingForDraw
  drawOpened => unlockedPanel
end
```

```
state unlockedPanel
  actions {unlockPanel lockDoor}
  panelClosed => idle
end
```



Source: Martin Fowler's Introductory Example  
(<http://martinfowler.com/dslwip/Intro.html>)

# Working with textual representations

## Primitives

- Editing
- Navigation
- Searching

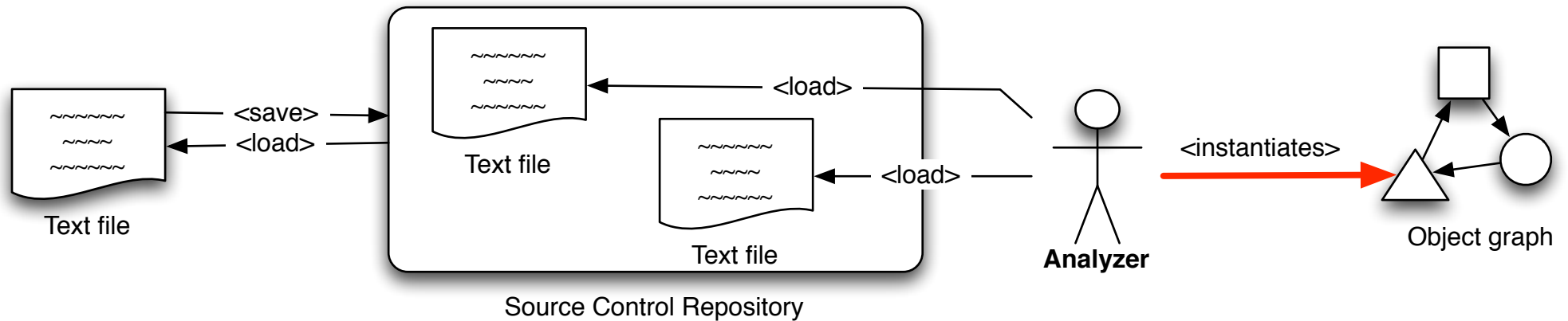
## High-level

- Validation
- Refactoring

## Processs

- Versioning
- Collaborative Work
- Integrated Models / Global View

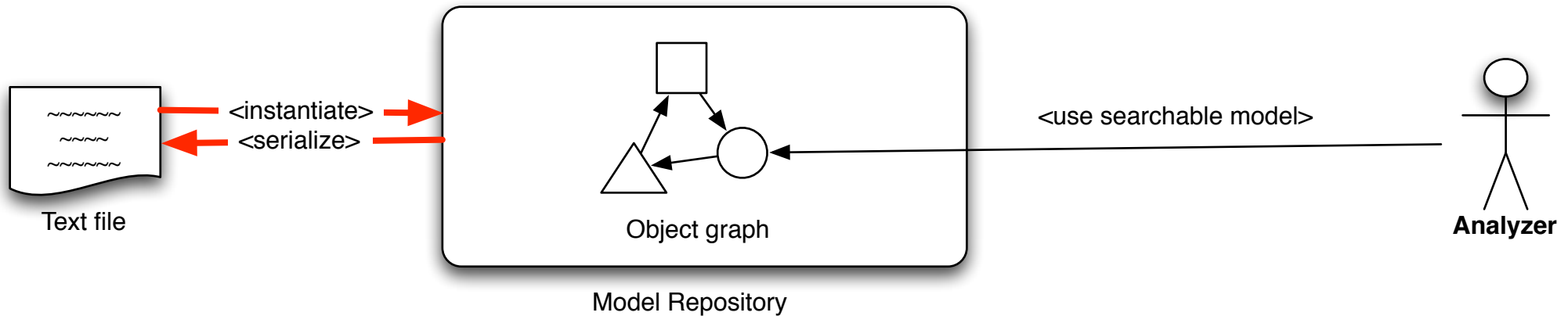
## Approach 1: Text in Source Control Repository



- Available and proven in most projects
- Leverage existing tool chain and processes
- Transactions with non-model related data
- Can store intermediate states
- Needs additional step to derive semantic model
- Needs join to produce global view at model
- Scattered knowledge make refactorings difficult
- Costly Model instantiation

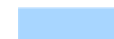


## Approach 2: Native Representation in Model Repository

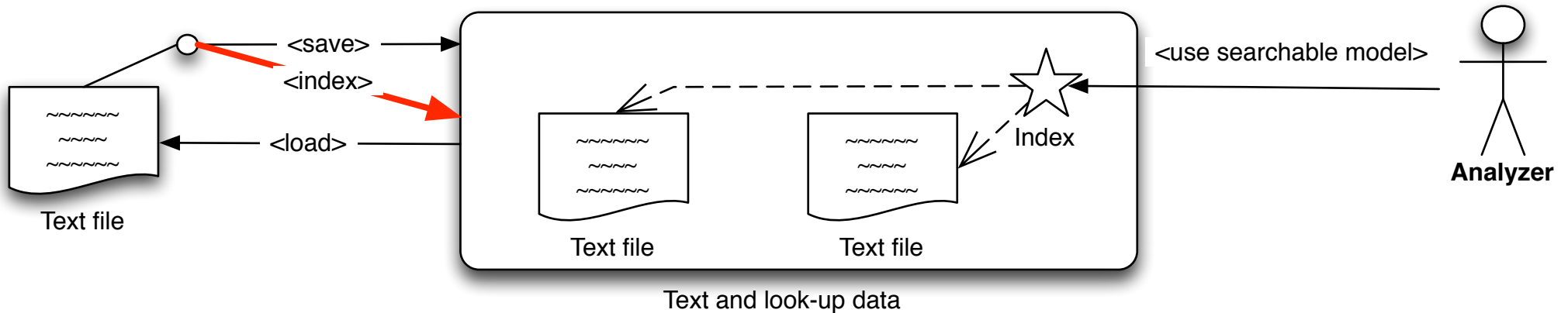


- No ad-hoc instantiation of semantic model is needed
- Constraints without complete instantiation

- Serialization step necessary
- Model-independent artefacts stored separately
- DSL evolution forces update of metamodel
- Adapter layer needed to existing tools



## Approach 3: Text complemented with look-up data



- Combines advantages of approaches 1 and 2
- No ready to use general purpose technology
- No experience, yet



## Discussion

**When to choose which approach?  
Your experiences do you have with MRs?  
How do you store textual representations?**