Technology radar: MetaEdit+ demonstration session

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Technology radar

- Current trending topics & technologies

- Why?
  - To be in touch with current technologies
  - To see what is offered and demanded

- Where to find more...
  - ThoughtWorks
  - Gartners
  - IBM Next Five
MetaEdit+

- Product of MetaCase
  - Commercial

- Tool for designing various graphical DSLs
  - Diagram
  - Table
  - Matrix, ...

- 76 industrial cases
Example specification

- Mixing machine
  - Single fixed physical machine
  - Product variability is in software
    - Process describing mixing of solutions

- Critical system
  - If it is broken – operator can die – patient treatment fails
Goal

- Design a graphical DSL describing mixing process
- Design a code generator
  - Sequence of control commands

```java
class DNAMixingMachine extends MixingMachine {
    int dna_consultation() {
        double i, j;
        shut(0);
        move(-4);
        if(scan()!=9) return -1;
        suck(9);move(5);blow(9);
        move(-2);suck(30);move(1);blow(30);
        move(-3);
        if(scan()<6) return -1;
        i=scan();suck(i);move(5);open(0);blow(i);
        move(-3);suck(30);move(1);blow(30);
        move(1);filt(1);suck(3);move(3);filt(0);blow(3);
        move(-5);suck(30);move(1);blow(30);
        /* … */
        return 0;
    }
}
```
Implementation steps

- Detect domains concepts
- Design a meta-model
- Design a code generator
- Improve domain concepts
tool demonstration
Free alternatives

- EMF + GMF (+ Xtext)

- JetBrains MPS
  - Similar concept built on Eclipse
Summary #1

- Reusable entities (properties, relations, roles)
- Repository of models
  - Contains also graphical representations
  - Model evolution, diff
- On-the-fly meta-model re-generation
- Sub-graphs- decomposition v. explosion (views)
- Easy way of changing elements visualization
Summary #2

- Poor interoperability with EMF, OCL, ...
  - Model export only to XML

- No fancy GUI

- Lot of tricky shortcuts :-)

- Expensive tool