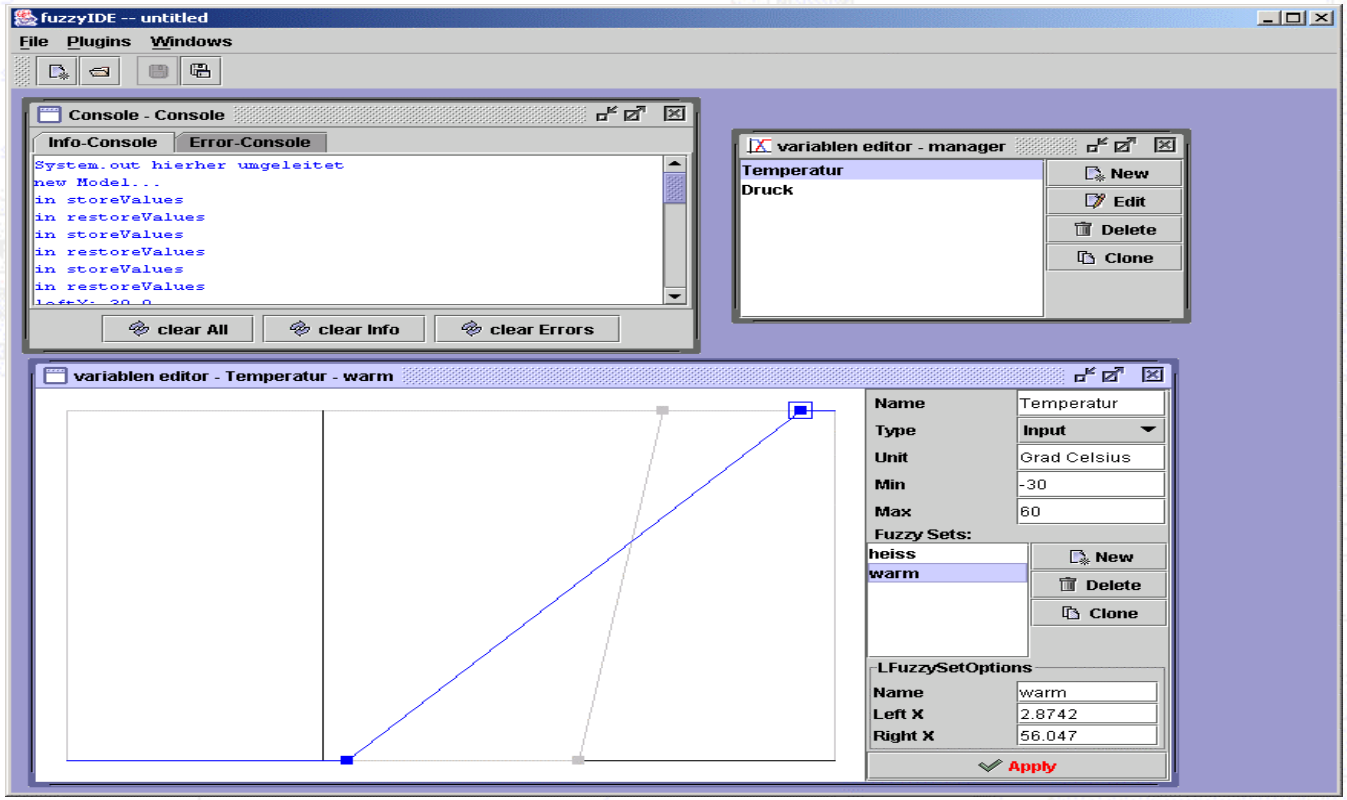
fuzzyIDE start

Willkommen zur Projektpräsentation



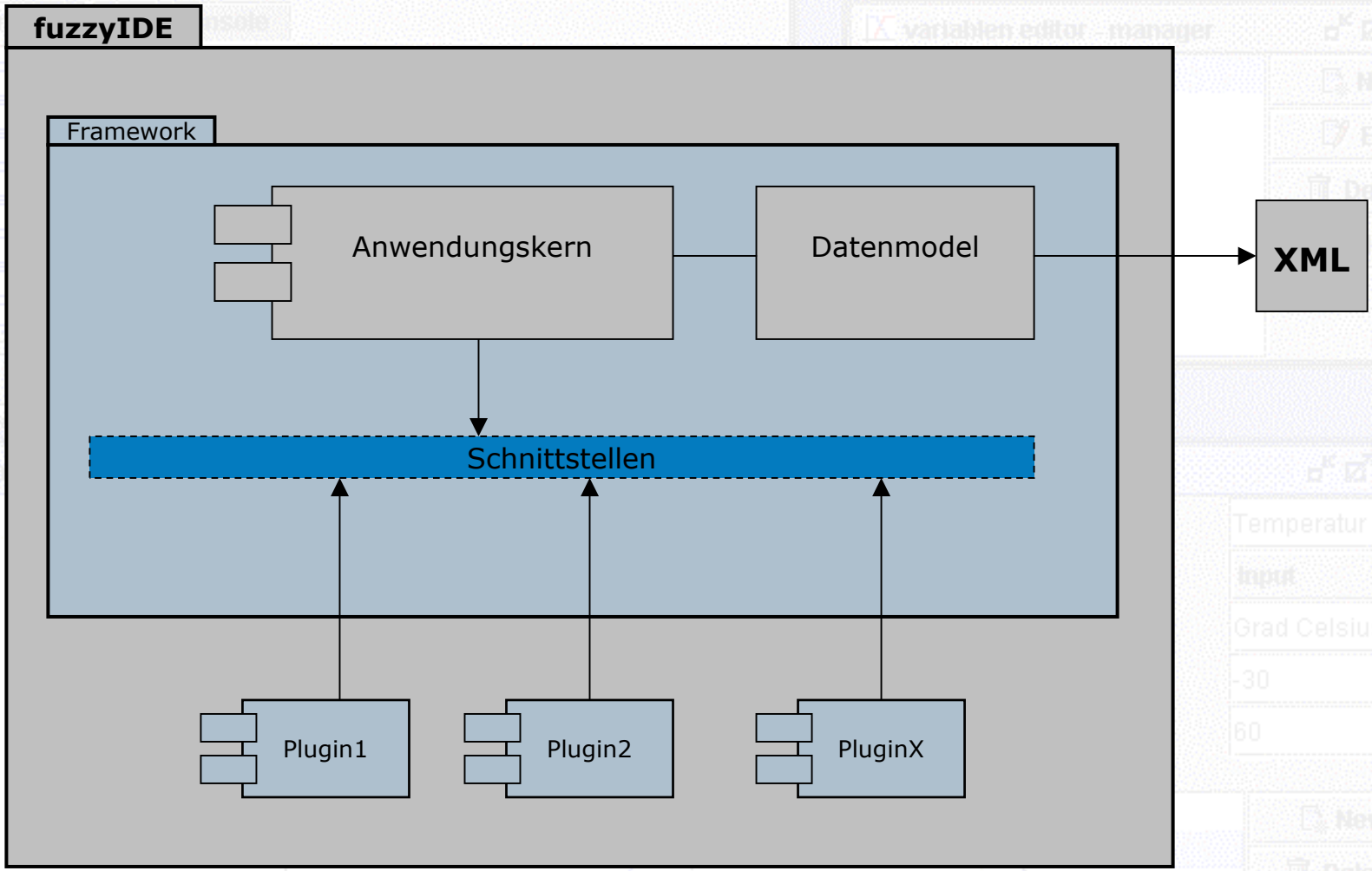
fuzzyIDE idee

- Fuzzy Steuerung für den „Kepera“
- Nutzung des „NRC FuzzyJ Toolkit“
- Problem:
  - umständliche Eingabe der Systemparameter
- Lösung:
  - grafische Eingabeschnittstelle

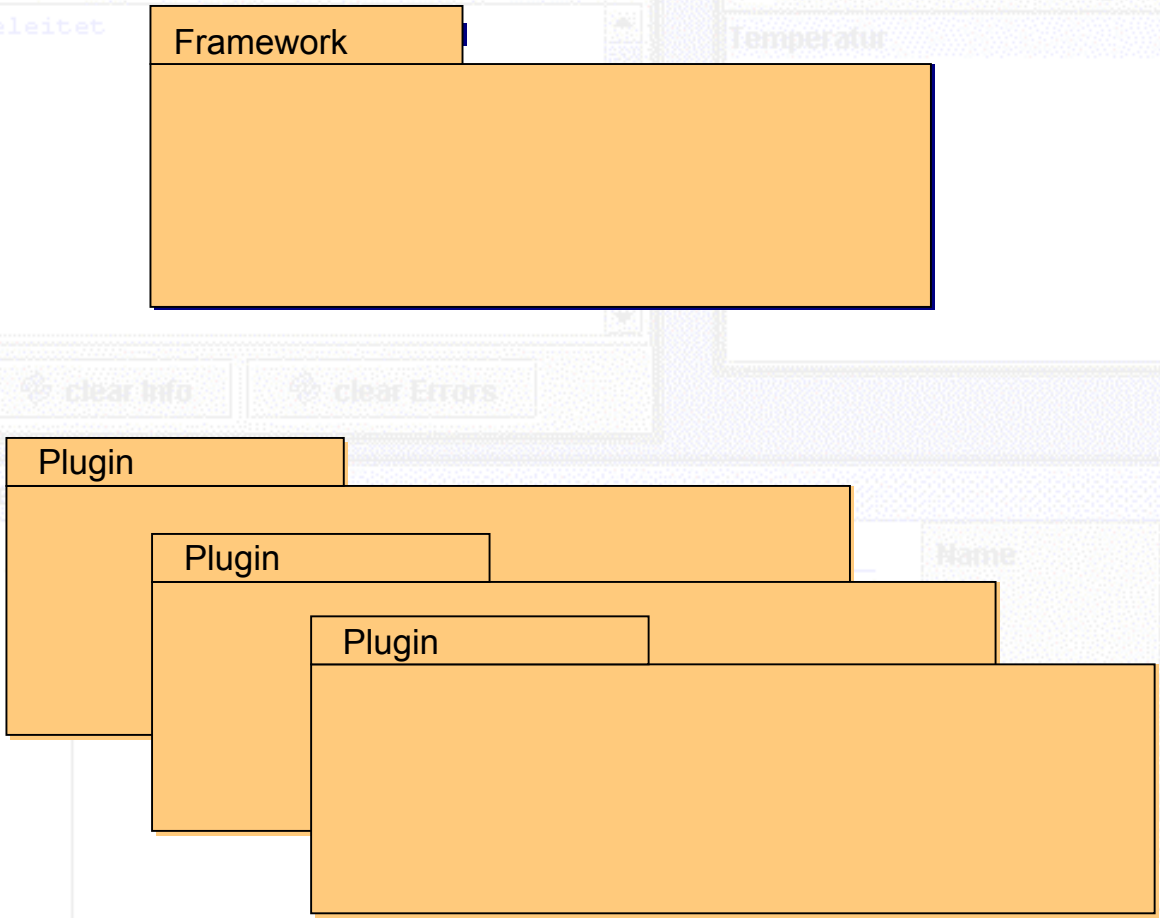
fuzzyIDE idee

- Problem:
  - hoher Funktionsumfang
- Lösung:
  - Bereitstellen eines Frameworks
  - Funktionalität durch Plugins
  - Definition einer Datenbasis

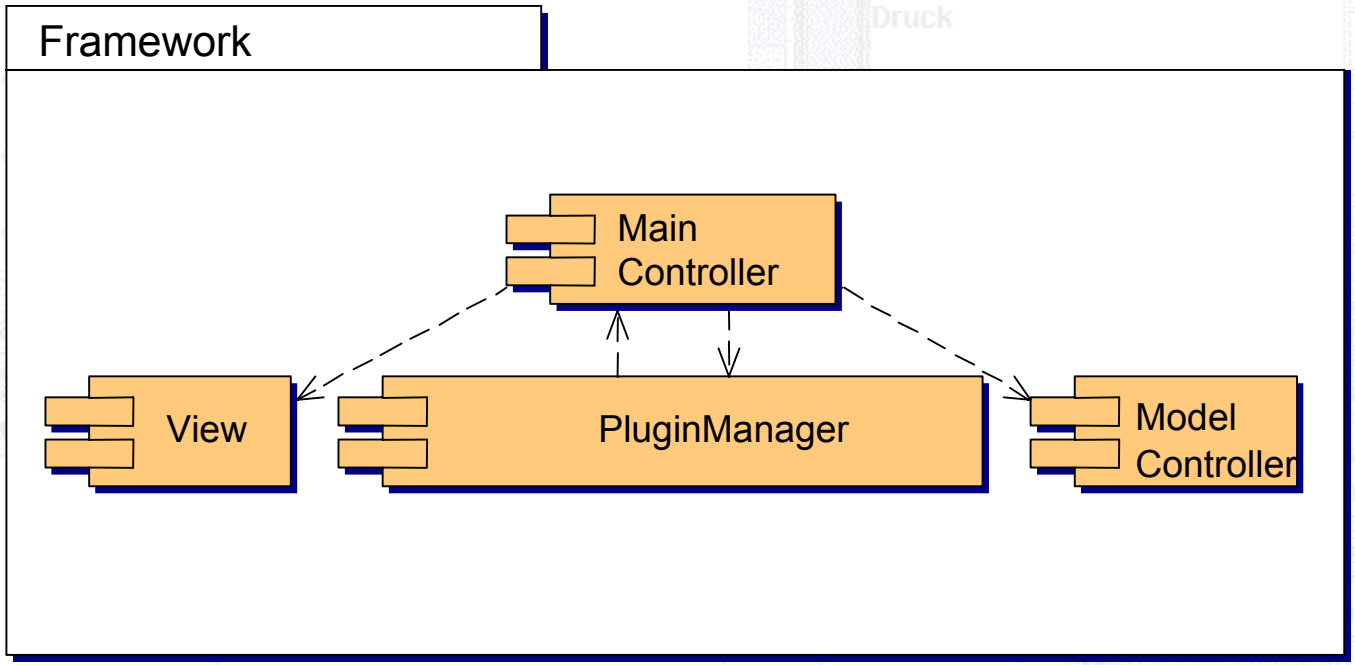
fuzzyIDE systemarchitektur



fuzzyIDE components



fuzzyIDE components



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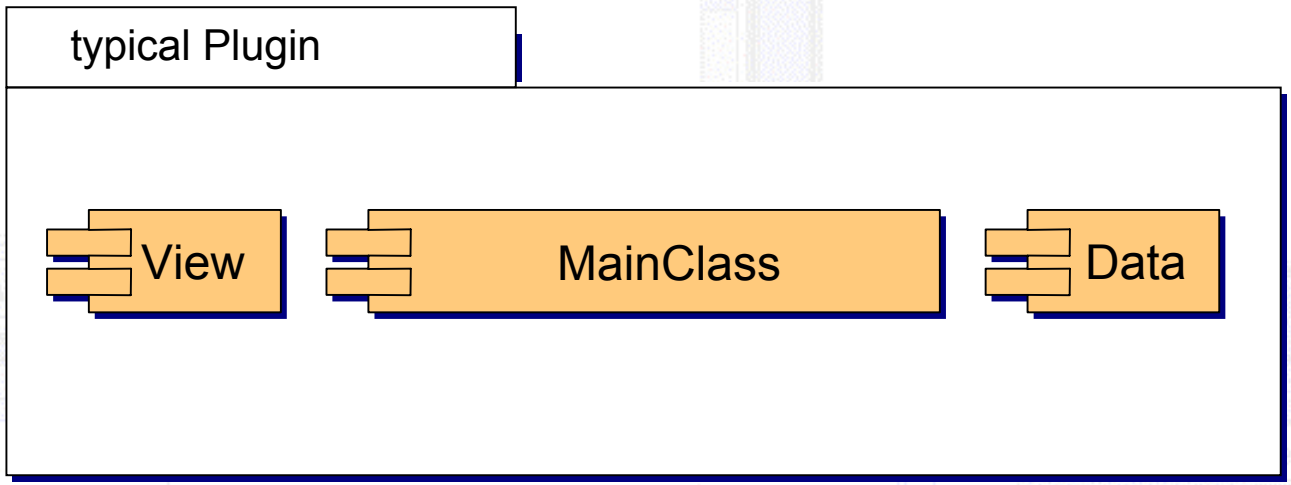
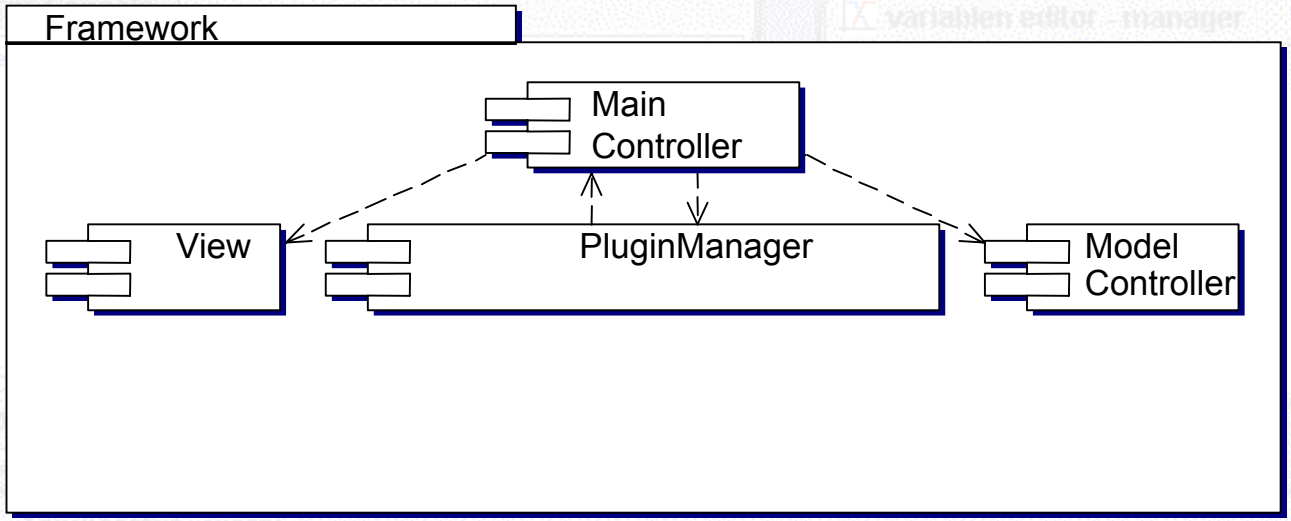
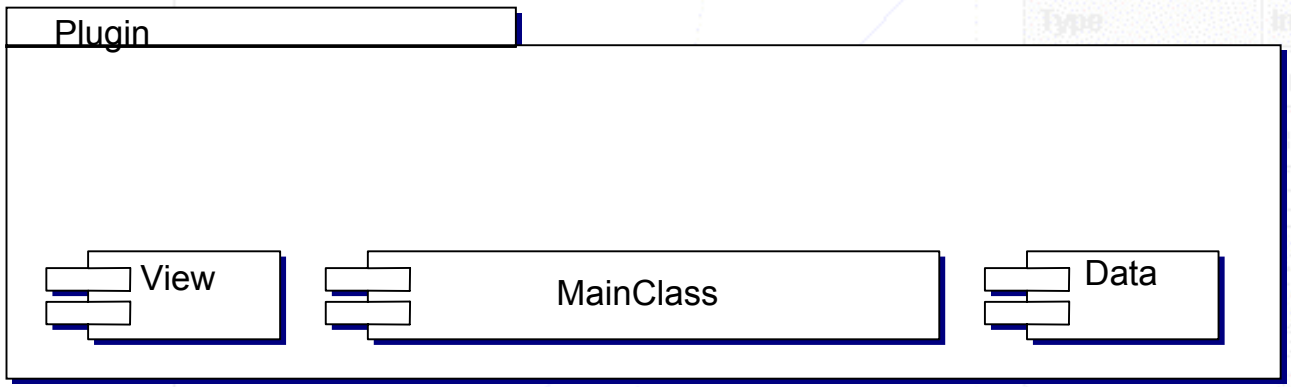
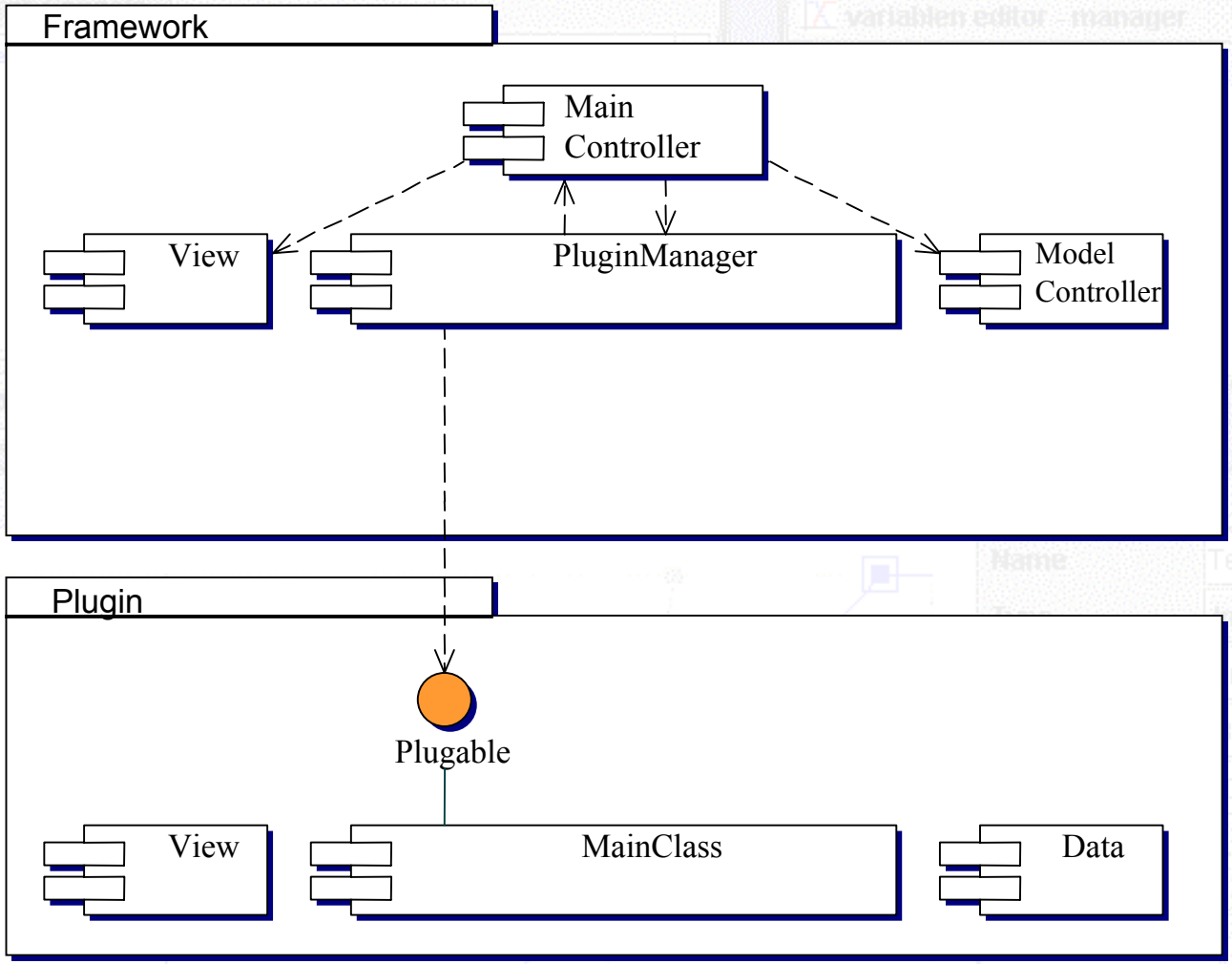


fuzzyIDE two worlds

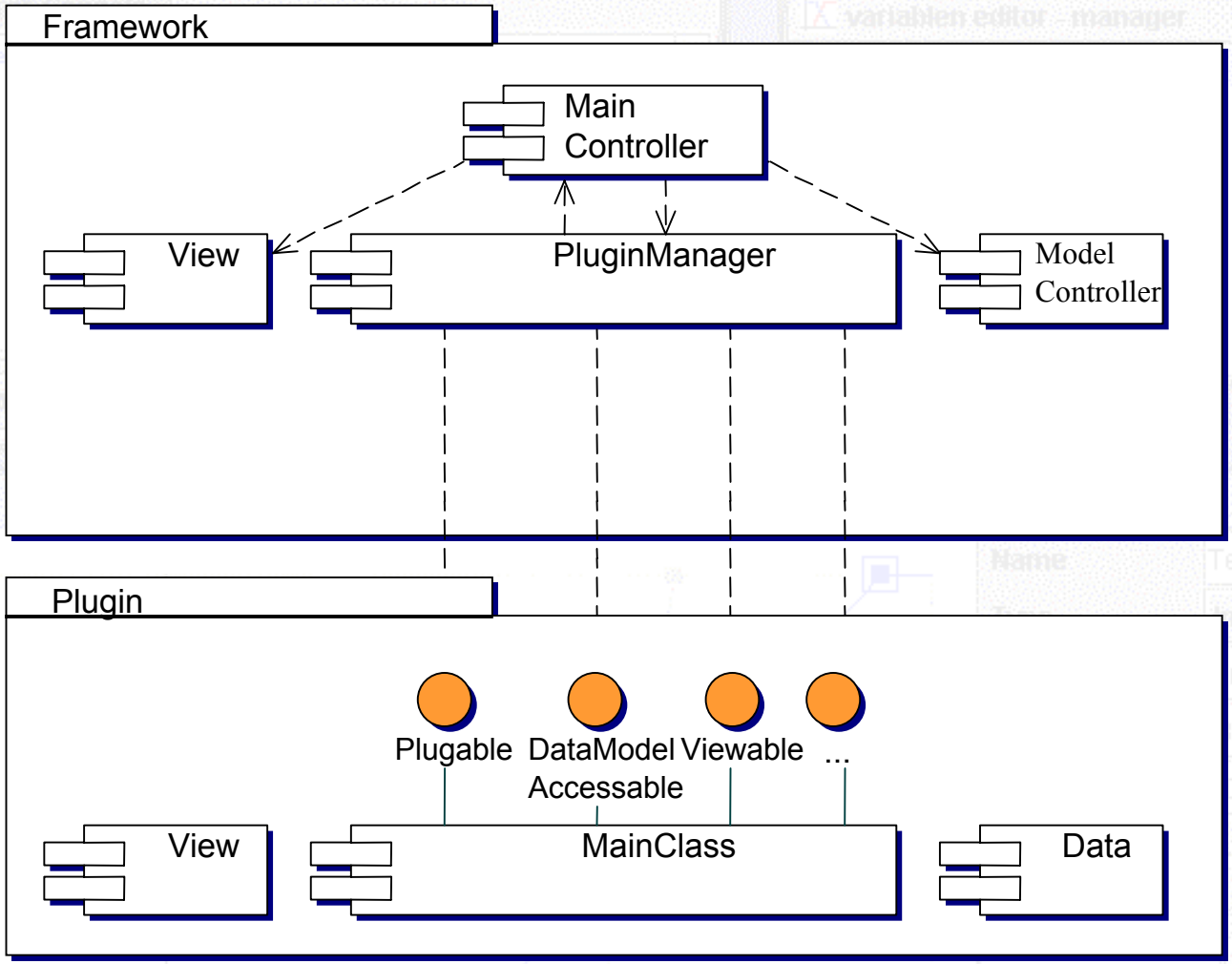




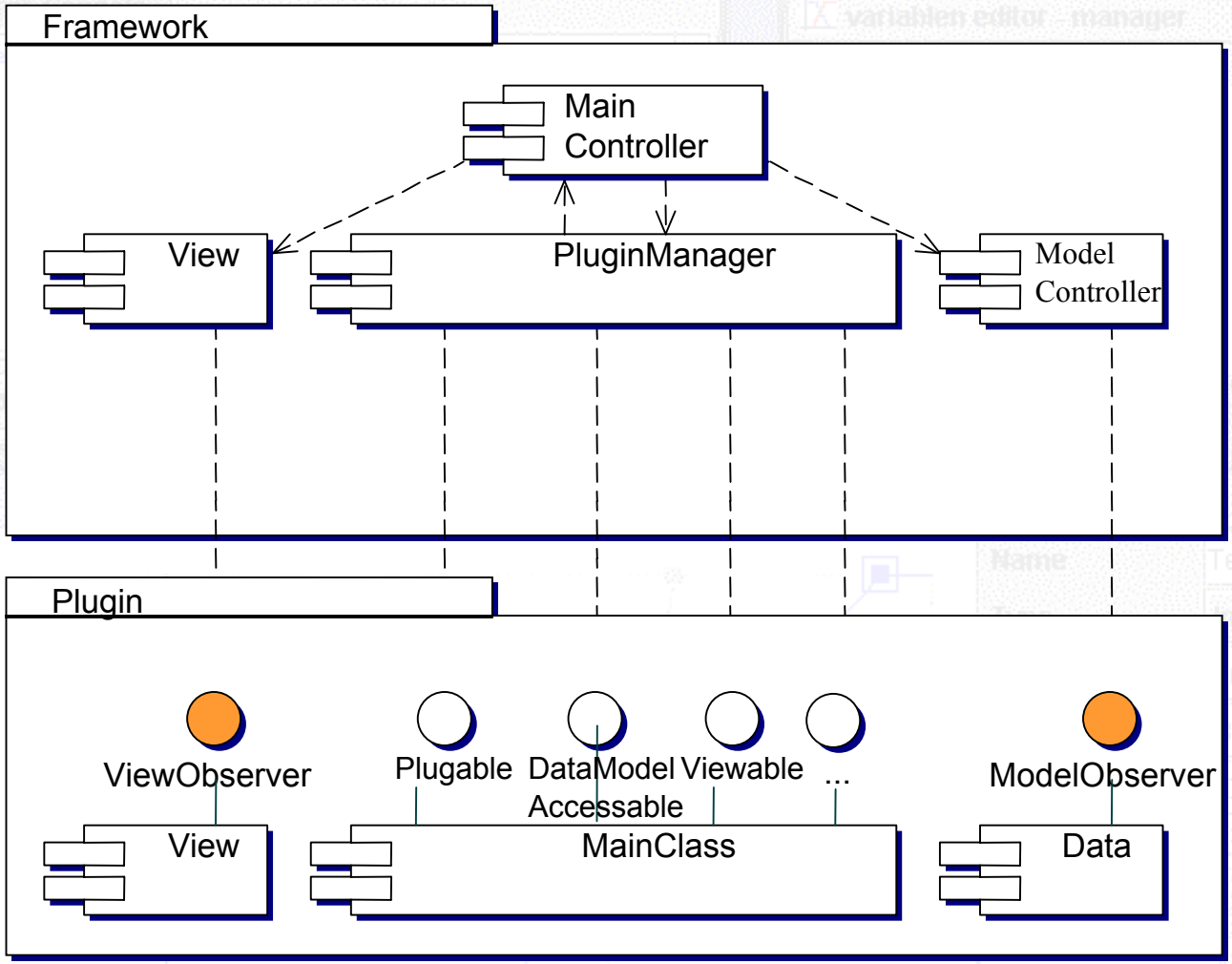
fuzzyIDE the interfaces



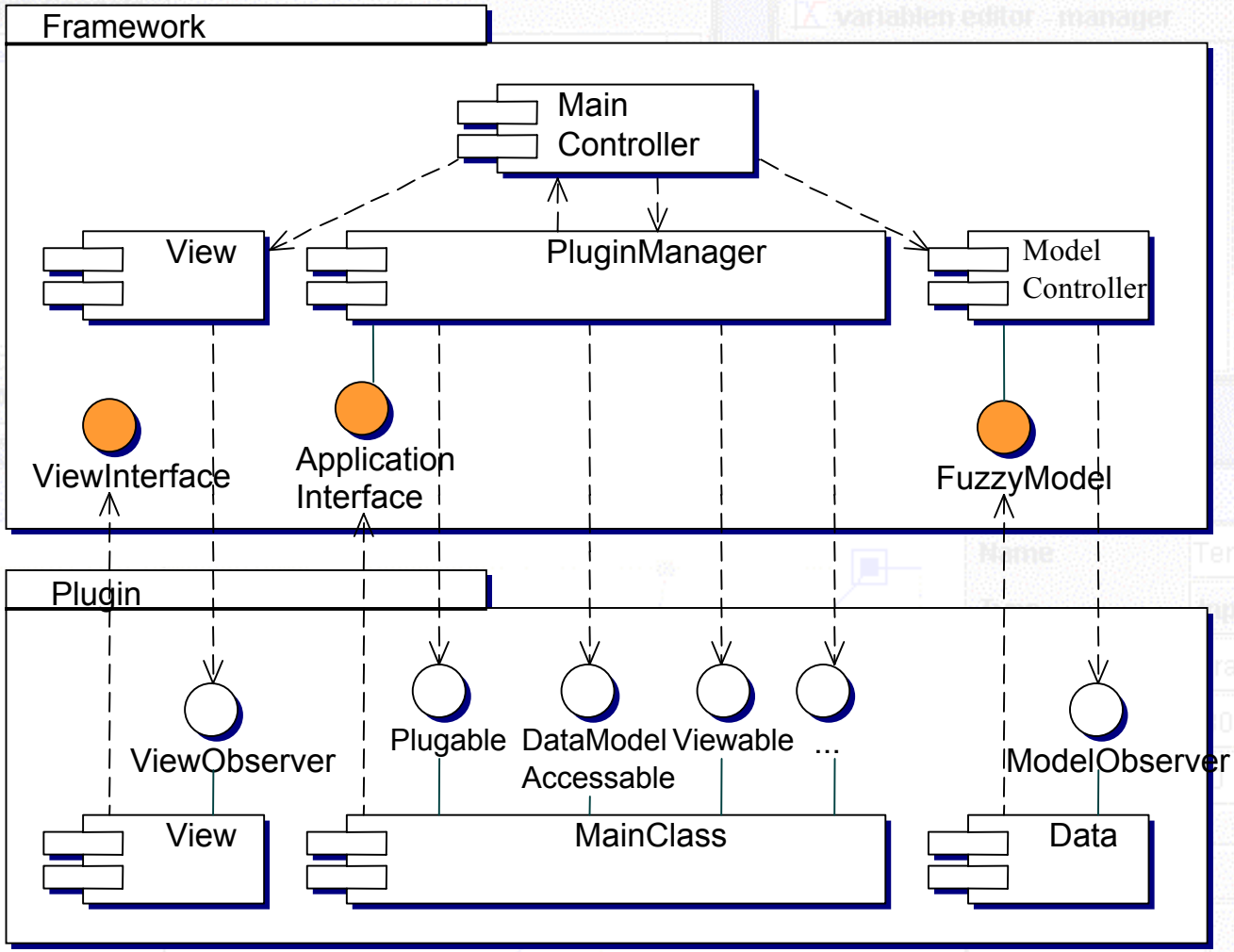
fuzzyIDE the interfaces



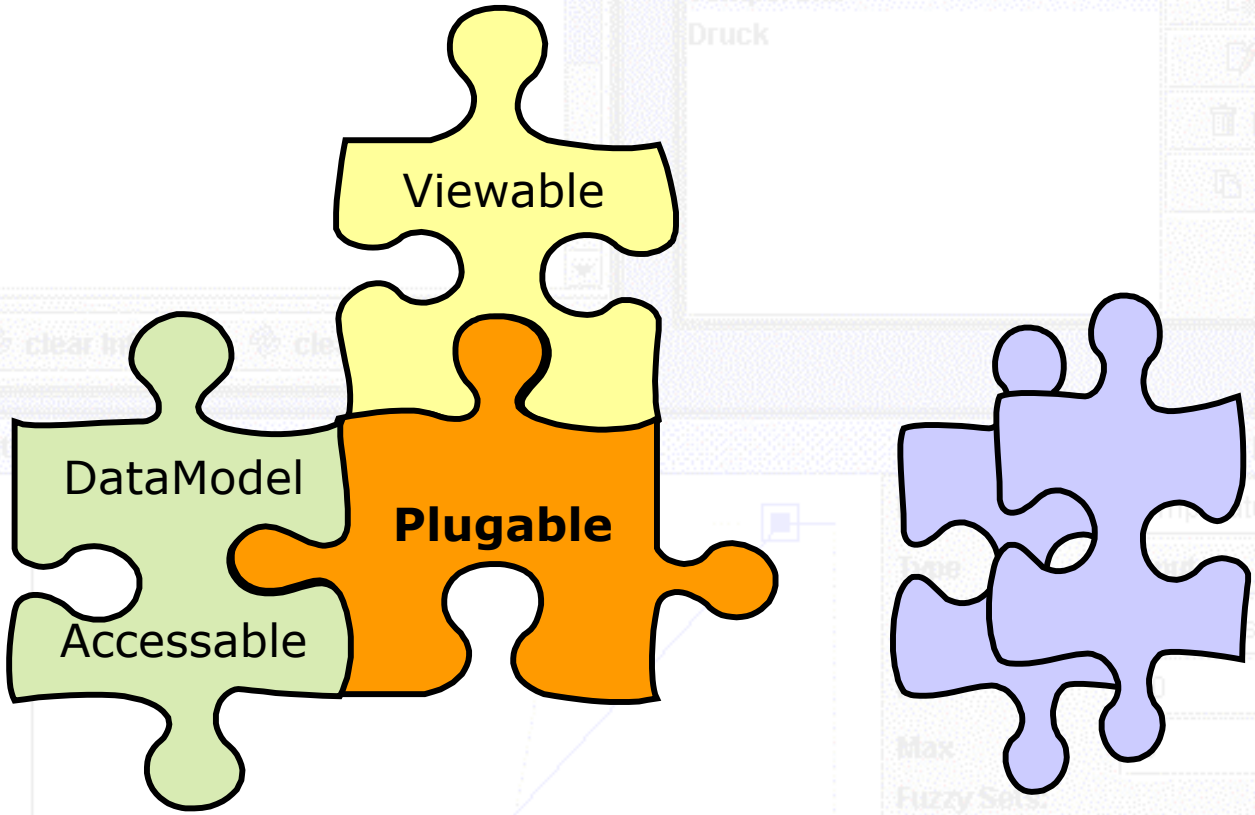
fuzzyIDE the interfaces



fuzzyIDE the interfaces



fuzzyIDE interface lego

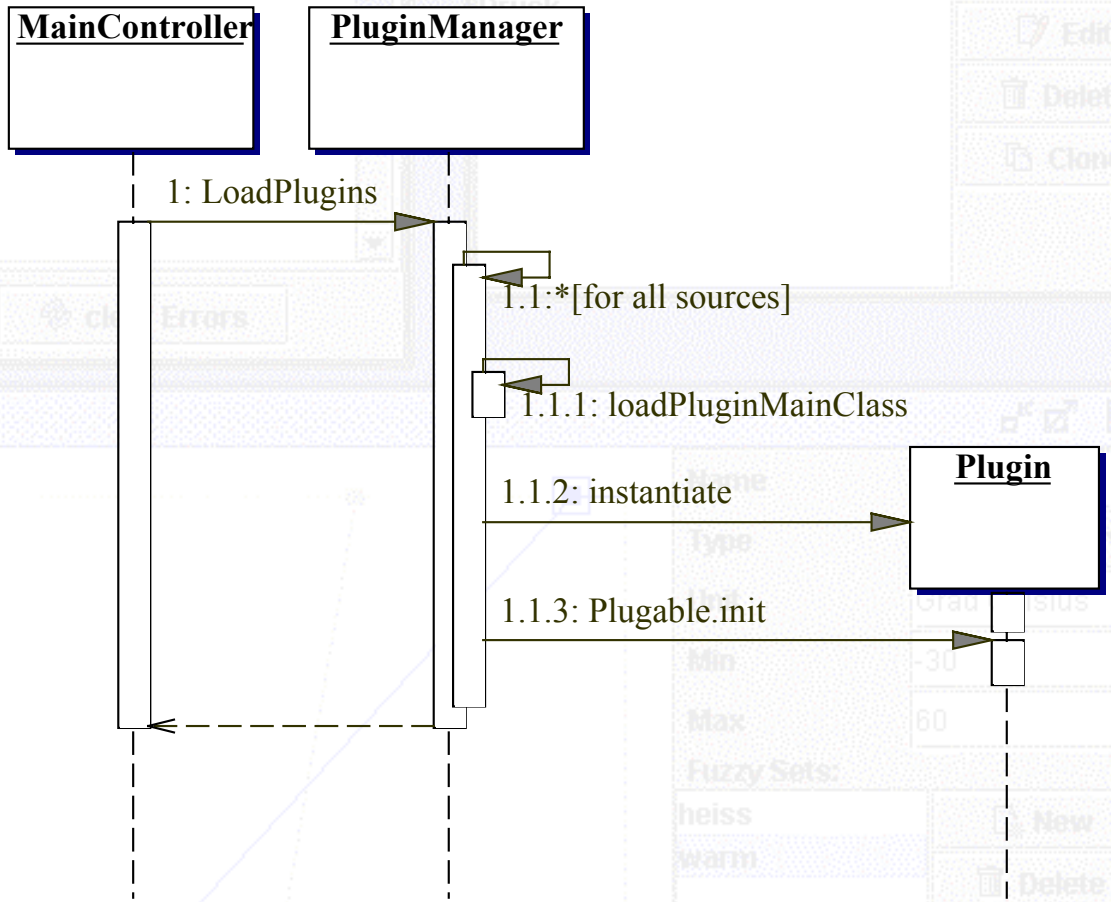


fuzzyIDE sequences

1

2

3



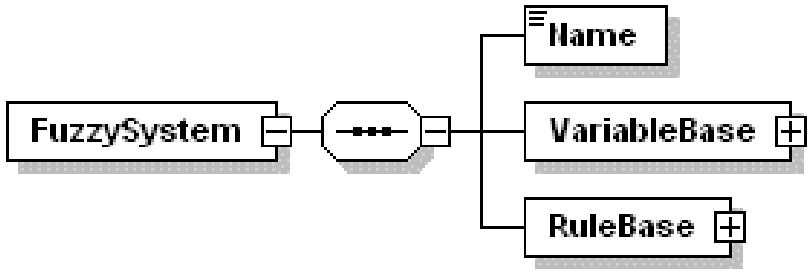
fuzzyIDE XML-Datenbasis

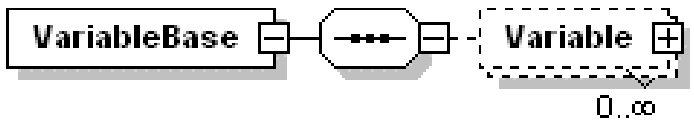
- Weiterverarbeitbarkeit
- Universalität
- Erweiterbarkeit
- einfache Modellierung mit XML-Schema

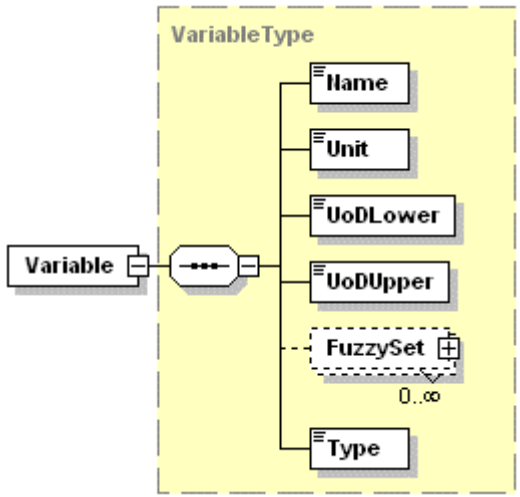
fuzzyIDE XML-unsere Motivation

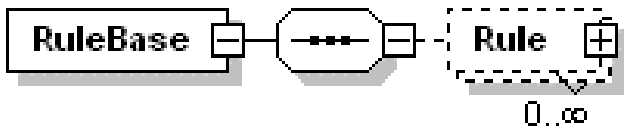
- Pluginprogrammierer von XML „verschonen“
- einfachen Zugriff zu allen Daten bieten
- auf Zusatzbibliotheken verzichten
- keine Klassengenerierung über XSD

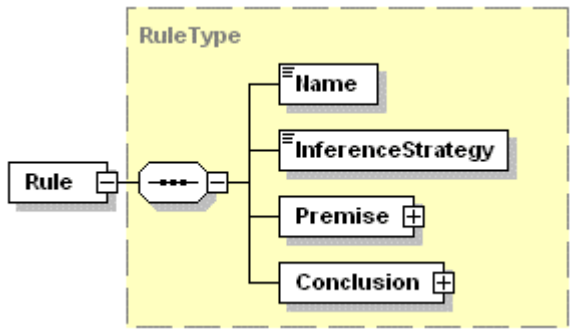
fuzzyIDE XML - Schema



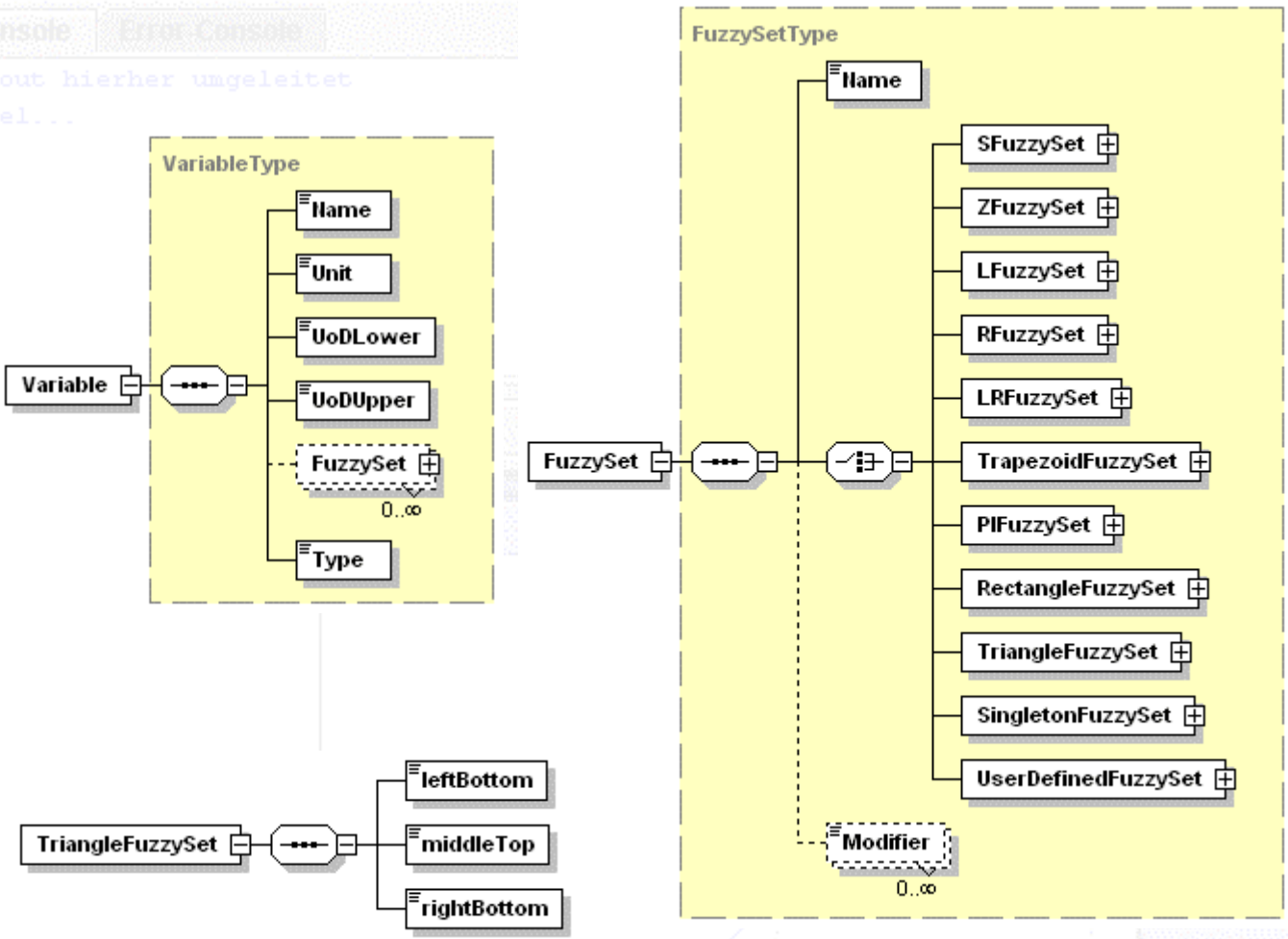




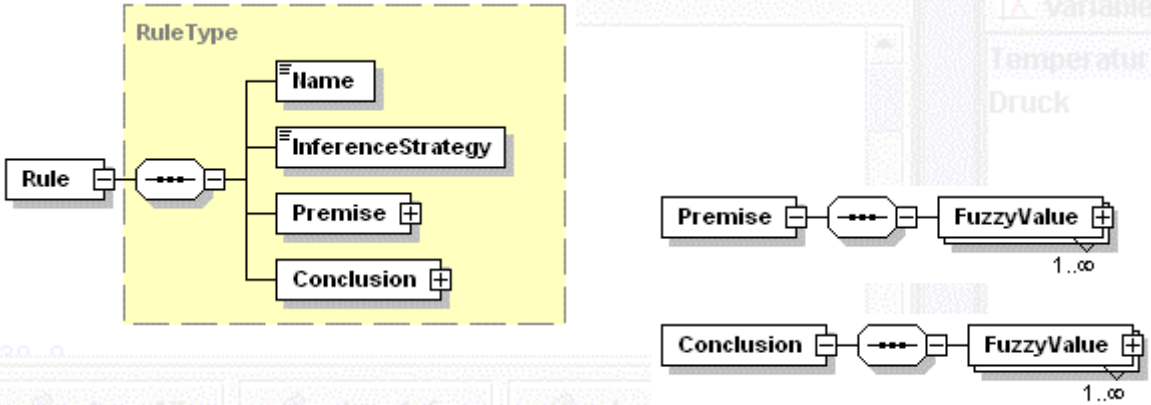


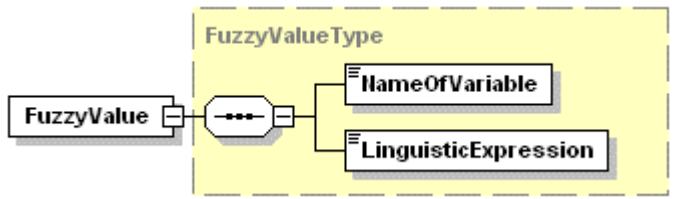


fuzzyIDE XML - Schema

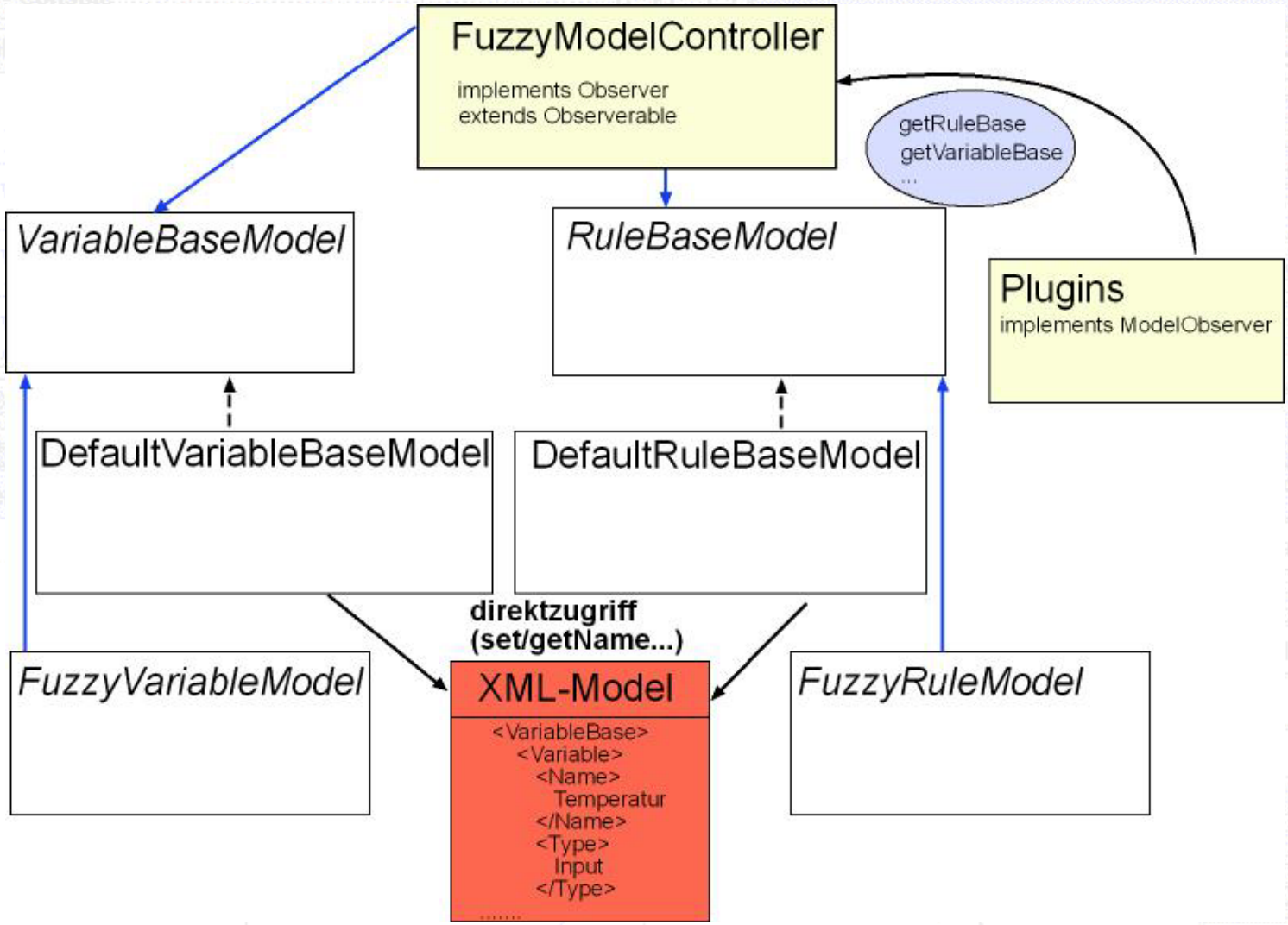


fuzzyIDE XML - Schema

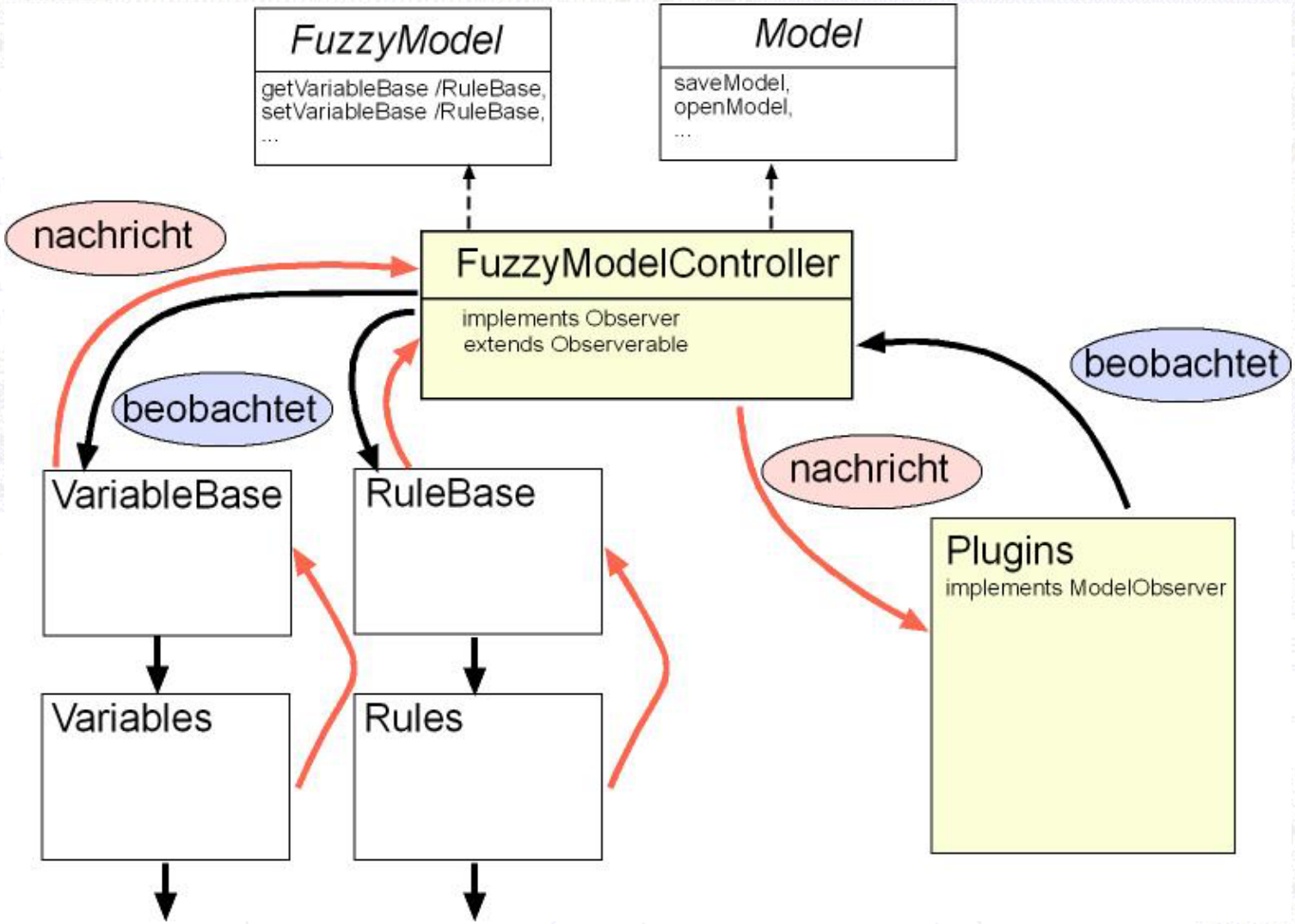




fuzzyIDE XML - Implementierung

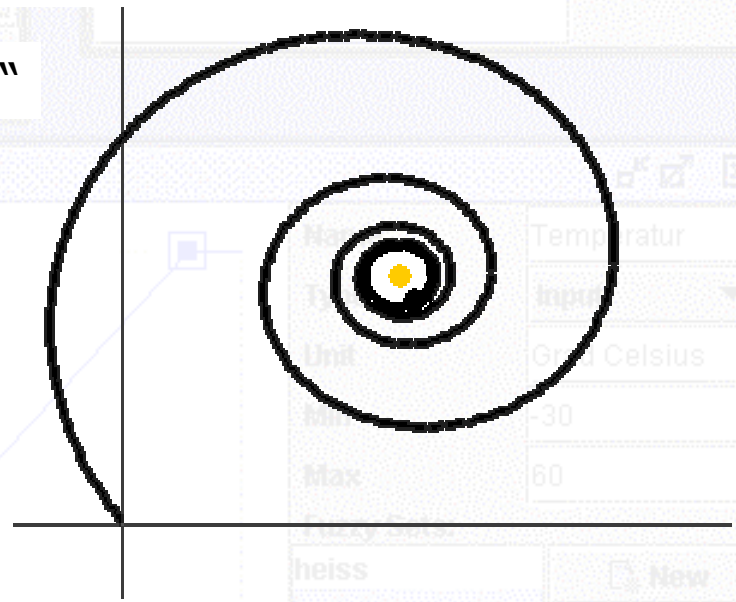


fuzzyIDE ModelController

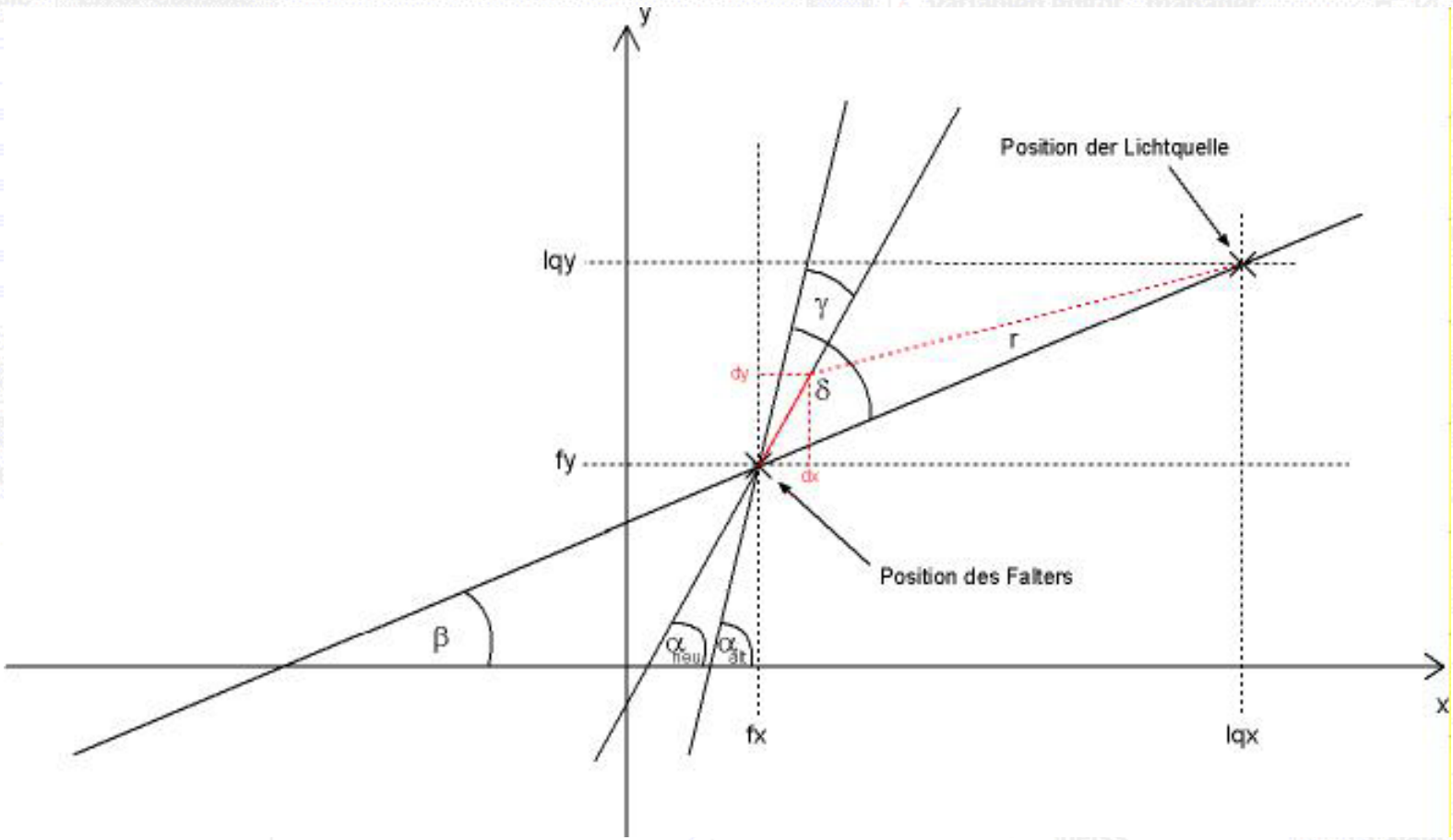


fuzzyIDE Falter Plugin

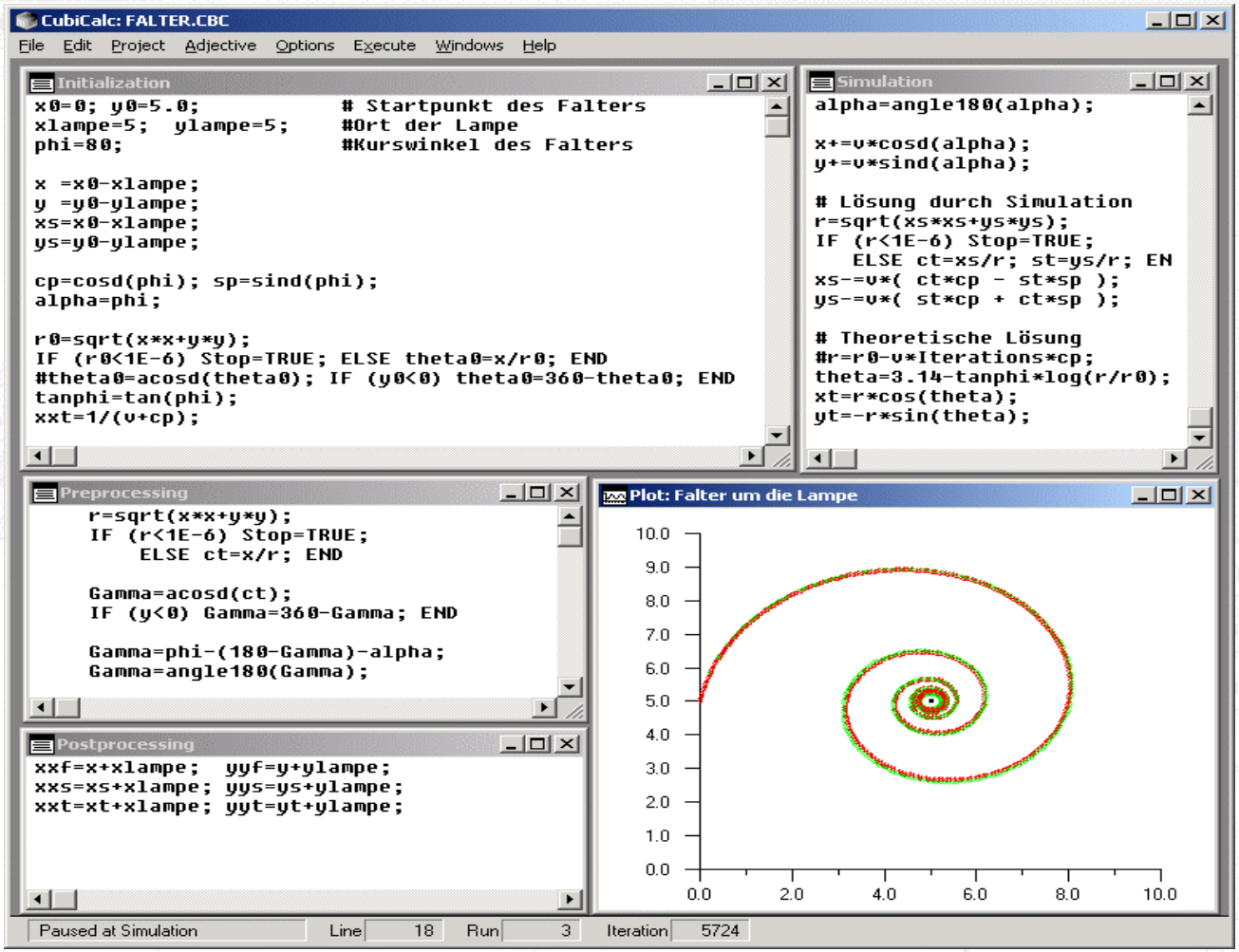
- eine Lichtquelle zu.
- Trackingproblem
- Lösung basiert auf einem FuzzySystem
- Nutzung des „NRC FuzzyJ Toolkit“



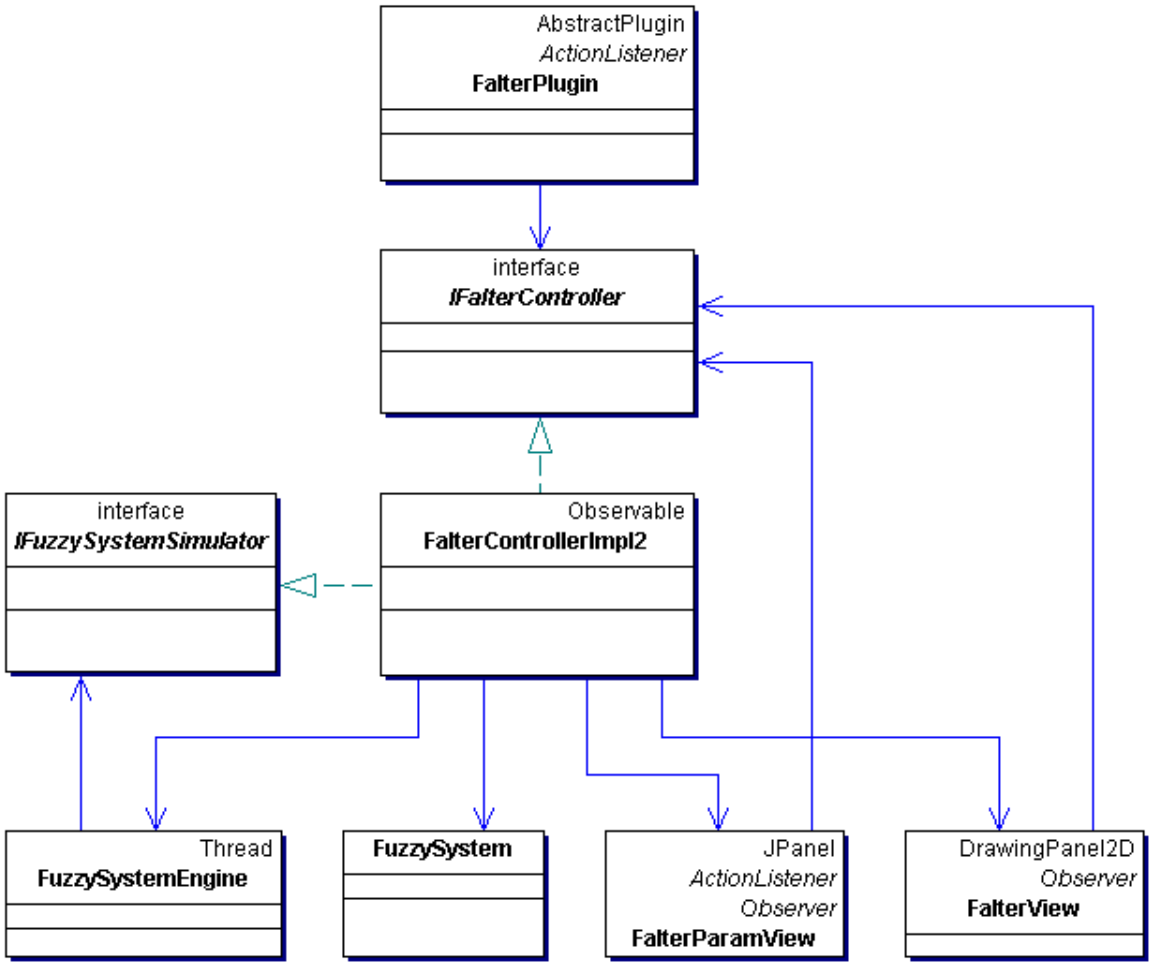
fuzzyIDE Falter Plugin



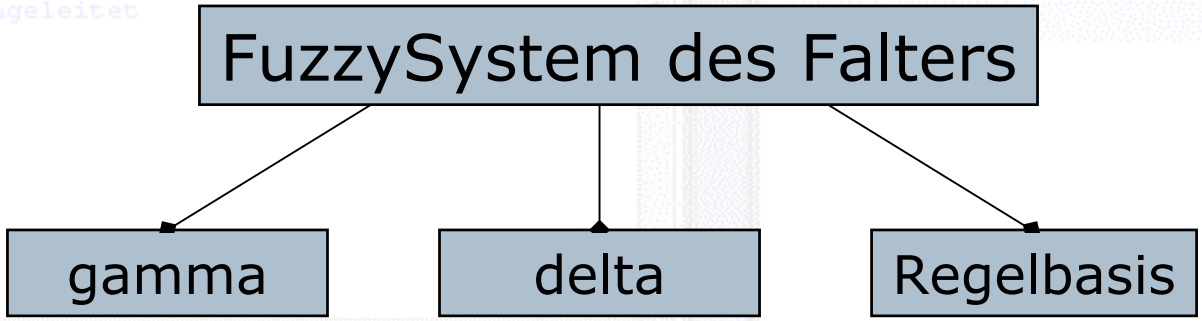
fuzzyIDE Falter Plugin



fuzzyIDE Falter Plugin



fuzzyIDE Falter Plugin

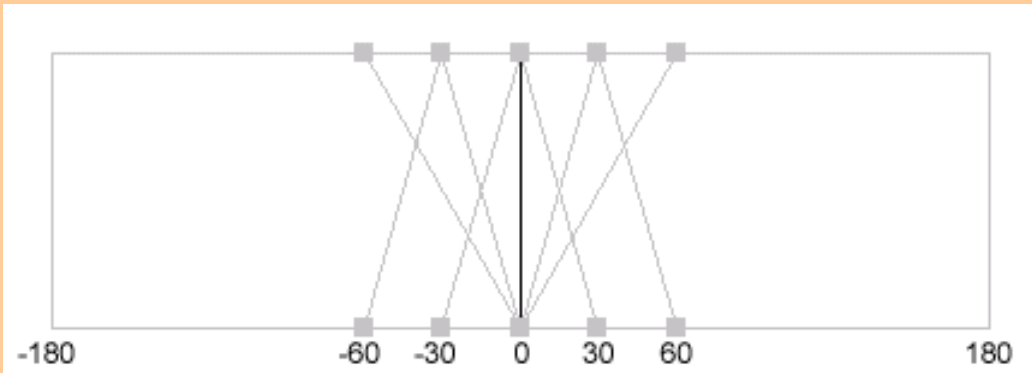


fuzzyIDE Falter Plugin

FuzzySystem des Falters

gamma | delta | Regelbasis

- Inputvariable
- 5 Ausprägungen



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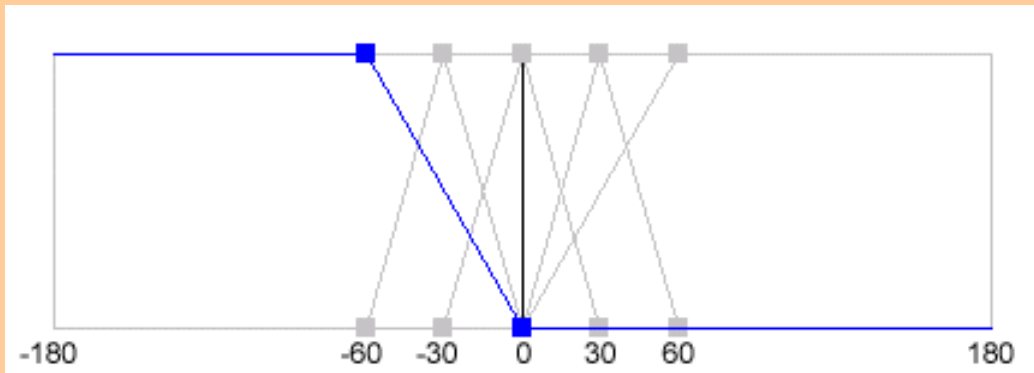

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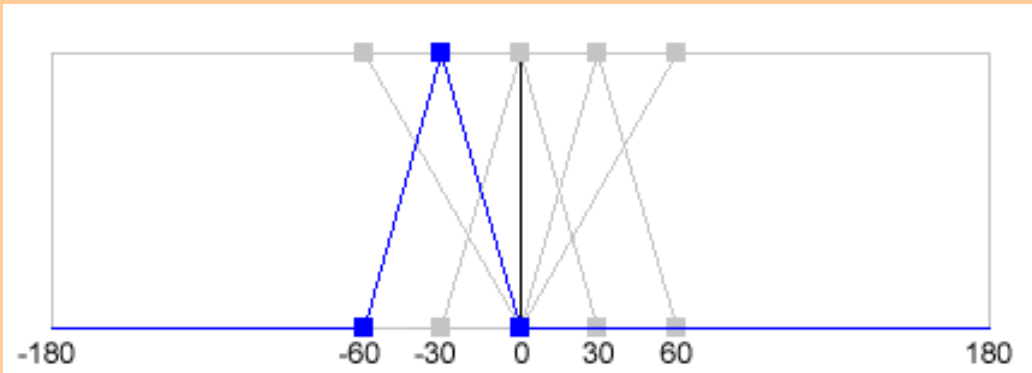

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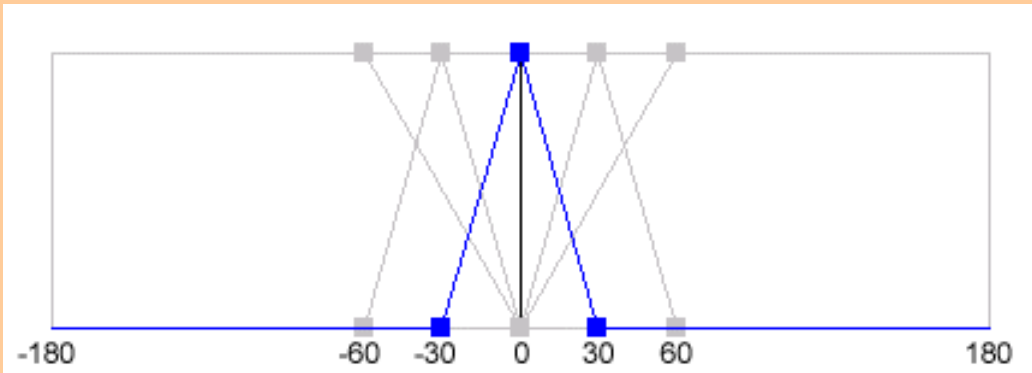

fuzzyIDE Falter Plugin

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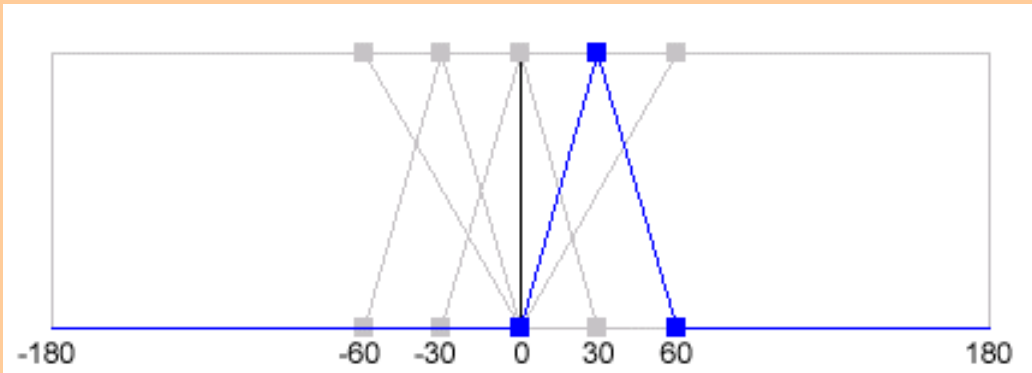

fuzzyIDE Falter Plugin

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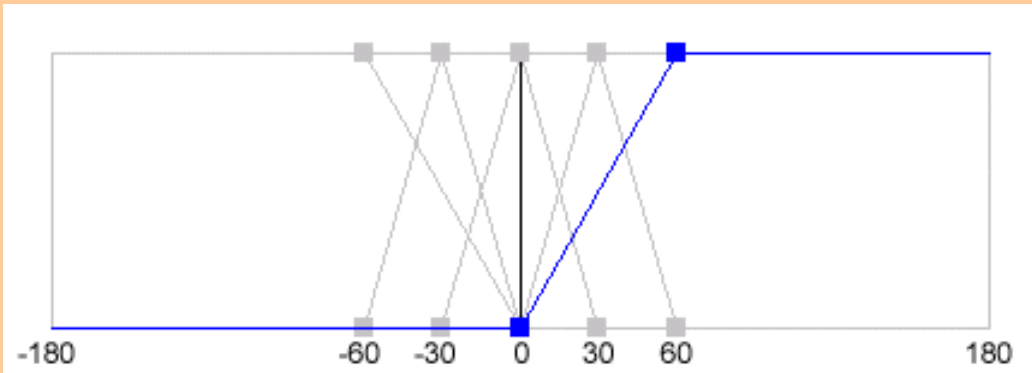

fuzzyIDE Falter Plugin

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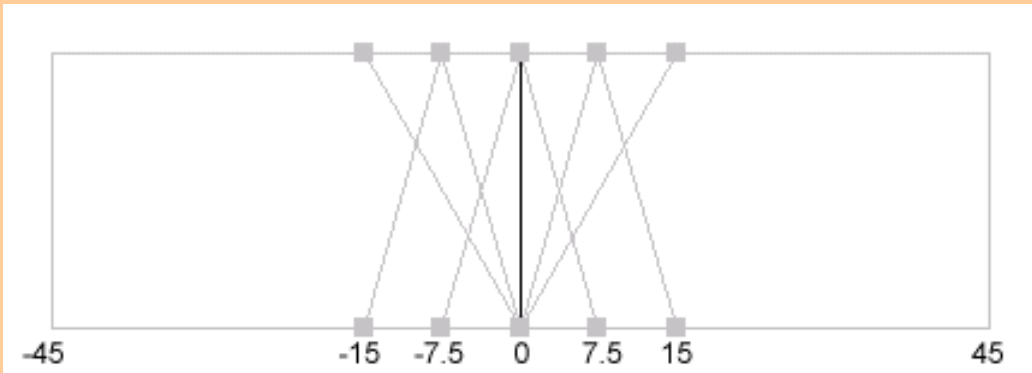

fuzzyIDE Falter Plugin

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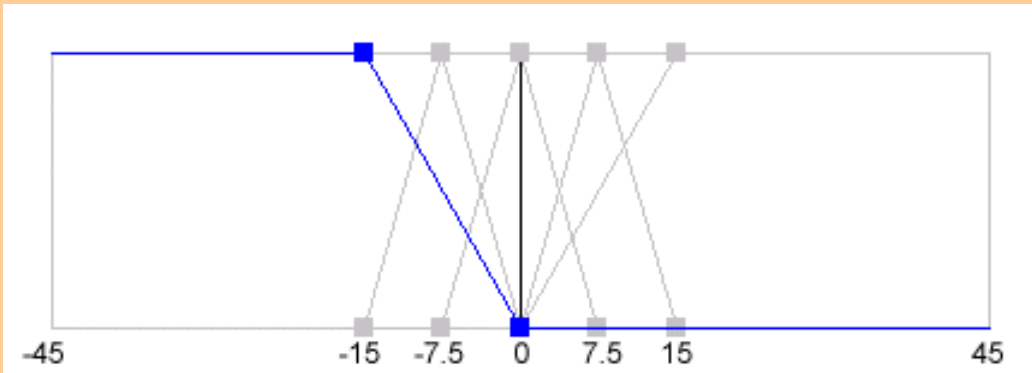

fuzzyIDE Falter Plugin

FuzzySystem des Falters

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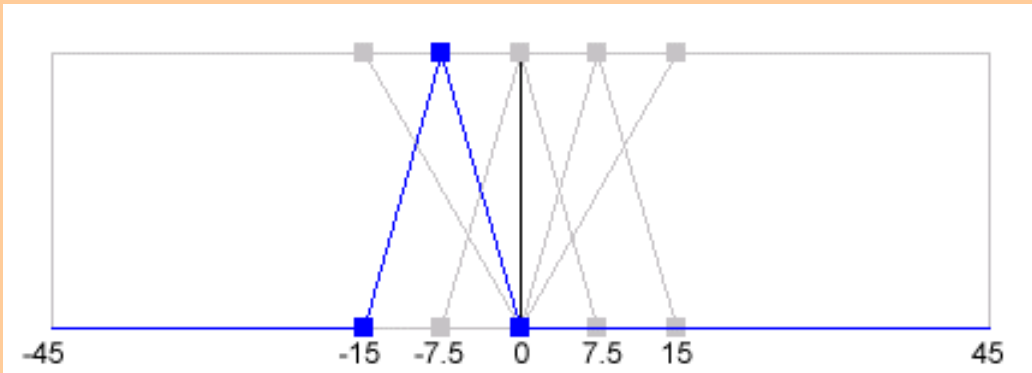
- Outputvariable
- 5 Ausprägungen



fuzzyIDE Falter Plugin

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- Outputvariable
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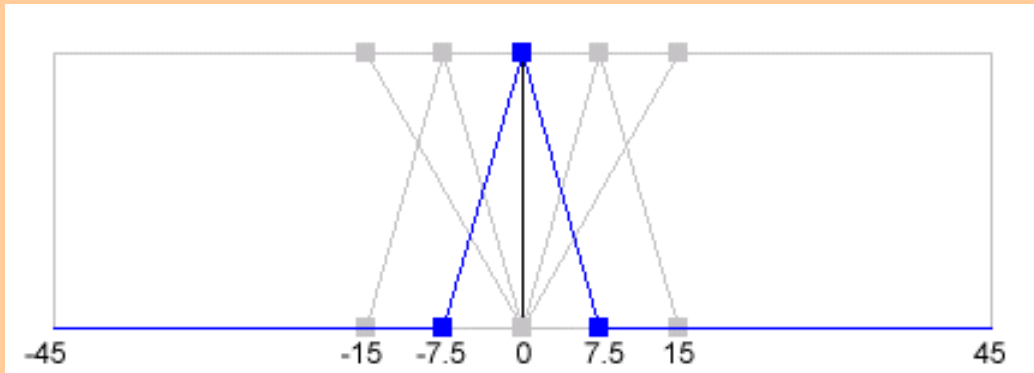

fuzzyIDE Falter Plugin

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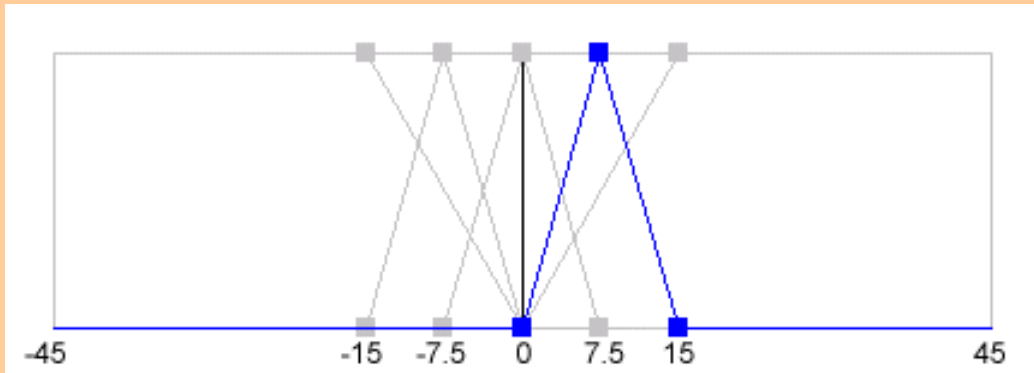

fuzzyIDE Falter Plugin

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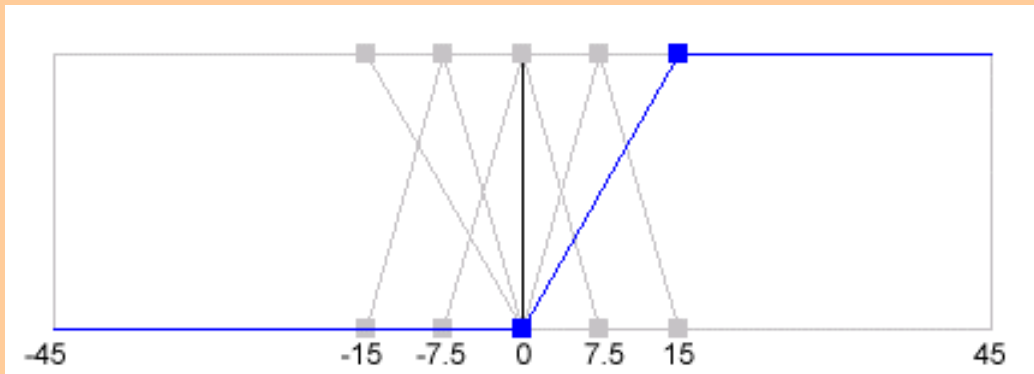
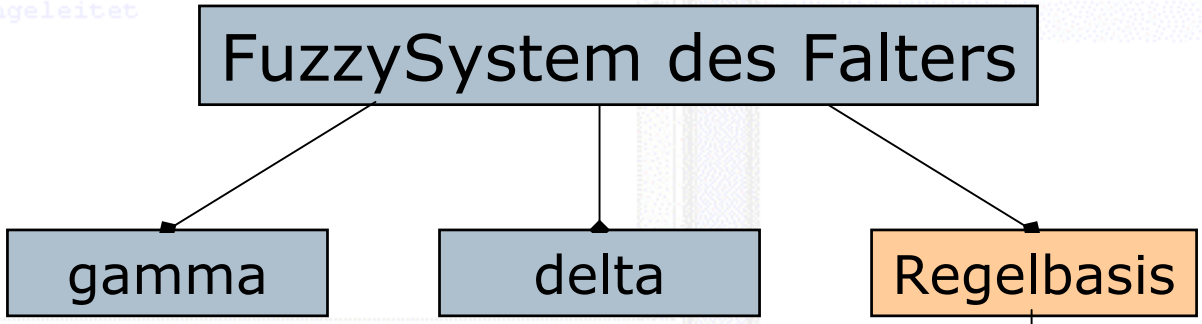


fuzzyIDE Falter Plugin



- hier werden 5 einfache Regeln definiert:

```
IF gamma IS NL then delta IS NL
IF gamma IS NS then delta IS NL
IF gamma IS Z  then delta IS Z
IF gamma IS PS then delta IS PS
IF gamma IS PL then delta IS PL
```

fuzzyIDE NRC FuzzyJ Toolkit

- „National Research Council of Canada“
- Java Klassenbibliothek
- kapselt die Mathematik der „Fuzzy Logic“
- Fuzzy Variablen, Fuzzy Rules, Fuzzy Sets,...
- einfacher Umgang

fuzzyIDE ende

http://iwaps1.informatik.htw-dresden.de:8080/Robotics/FuzzyIDE