OMEGA
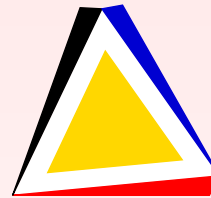# *Ressourcenadaptives Beweisplanen*

OMEGA Arbeitsgruppe
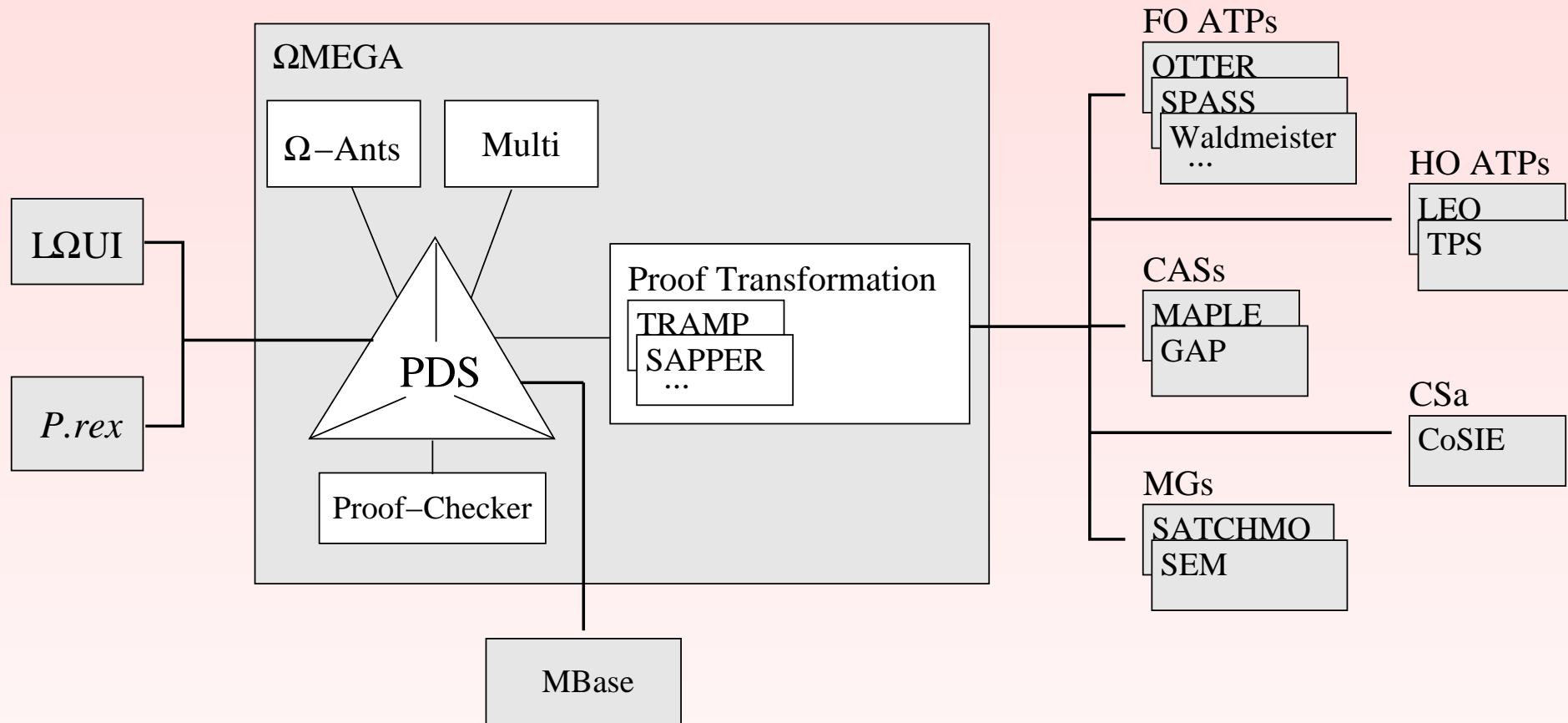
OMEGA **System**
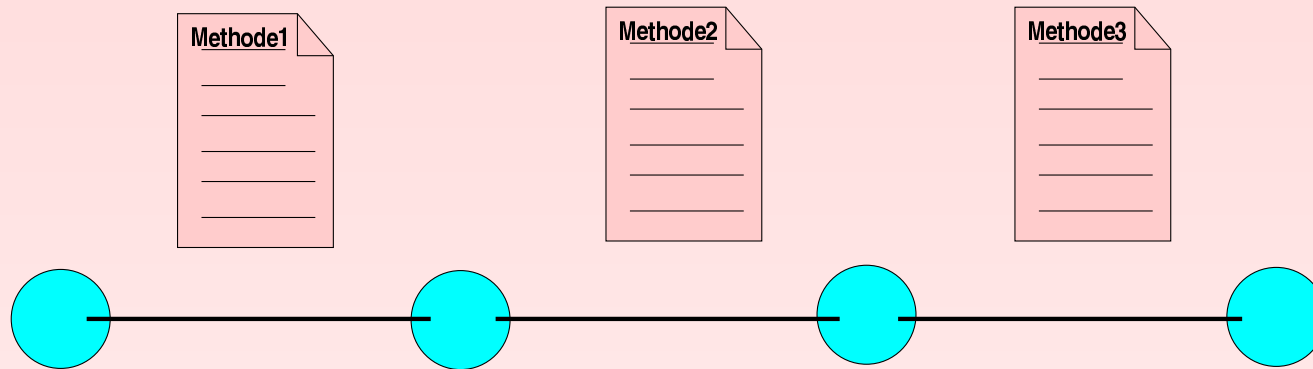
USER INTERFACE   OMEGA CORE SYSTEM   EXTERNAL REASONERS

ΩMEGA

Ω–Ants   Multi

LΩUI

P.rex

PDS

Proof Transformation
TRAMP
SAPPER
…

Proof–Checker

MBase

FO ATPs
OTTER
SPASS
Waldmeister
…

HO ATPs
LEO
TPS

CASs
MAPLE
GAP

CSa
CoSIE

MGs
SATCHMO
SEM

MATHEMATICAL DATABASE
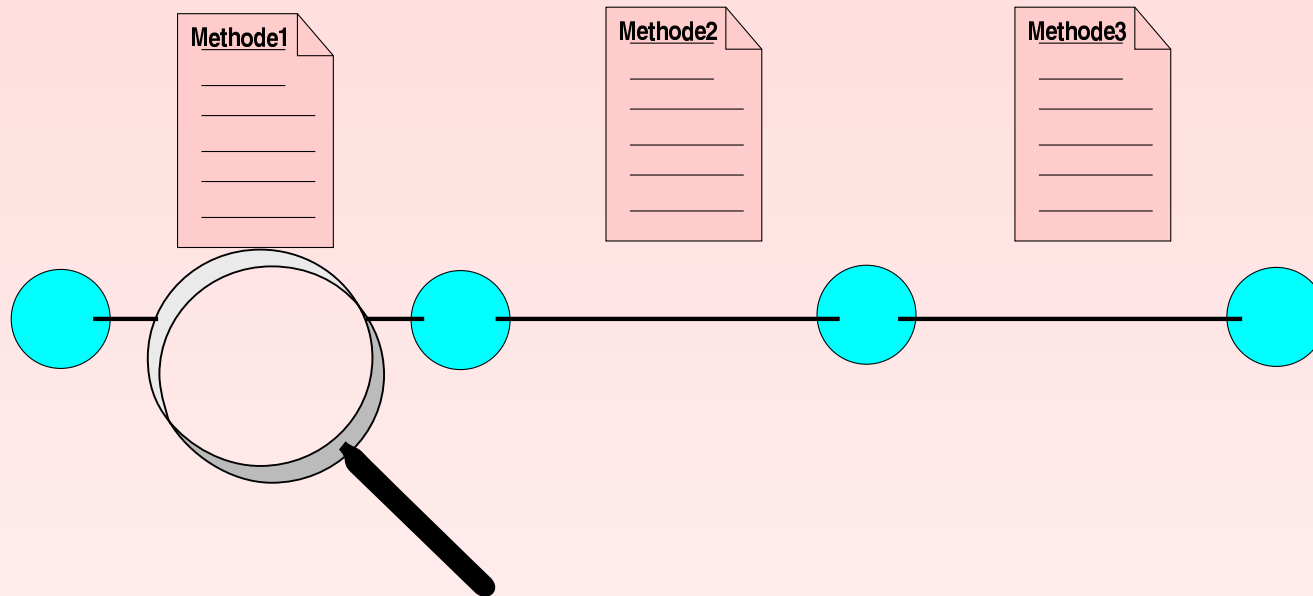
Beweisplanen

Methode1

Methode2

Methode3

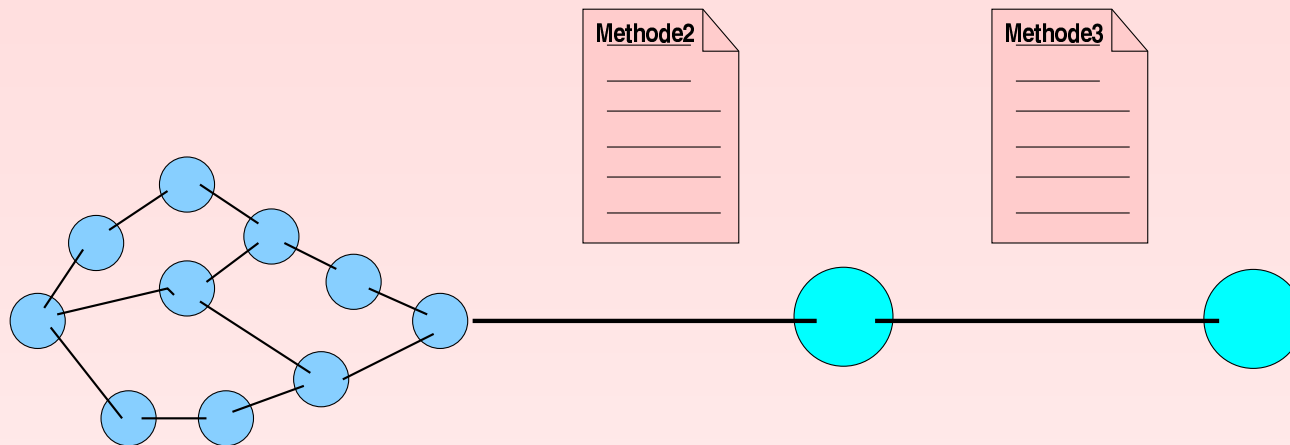$$A \subseteq B, \; A \subseteq C \qquad\qquad A \cap D \subseteq (B \cap C) \cap D$$

Beweisplanen

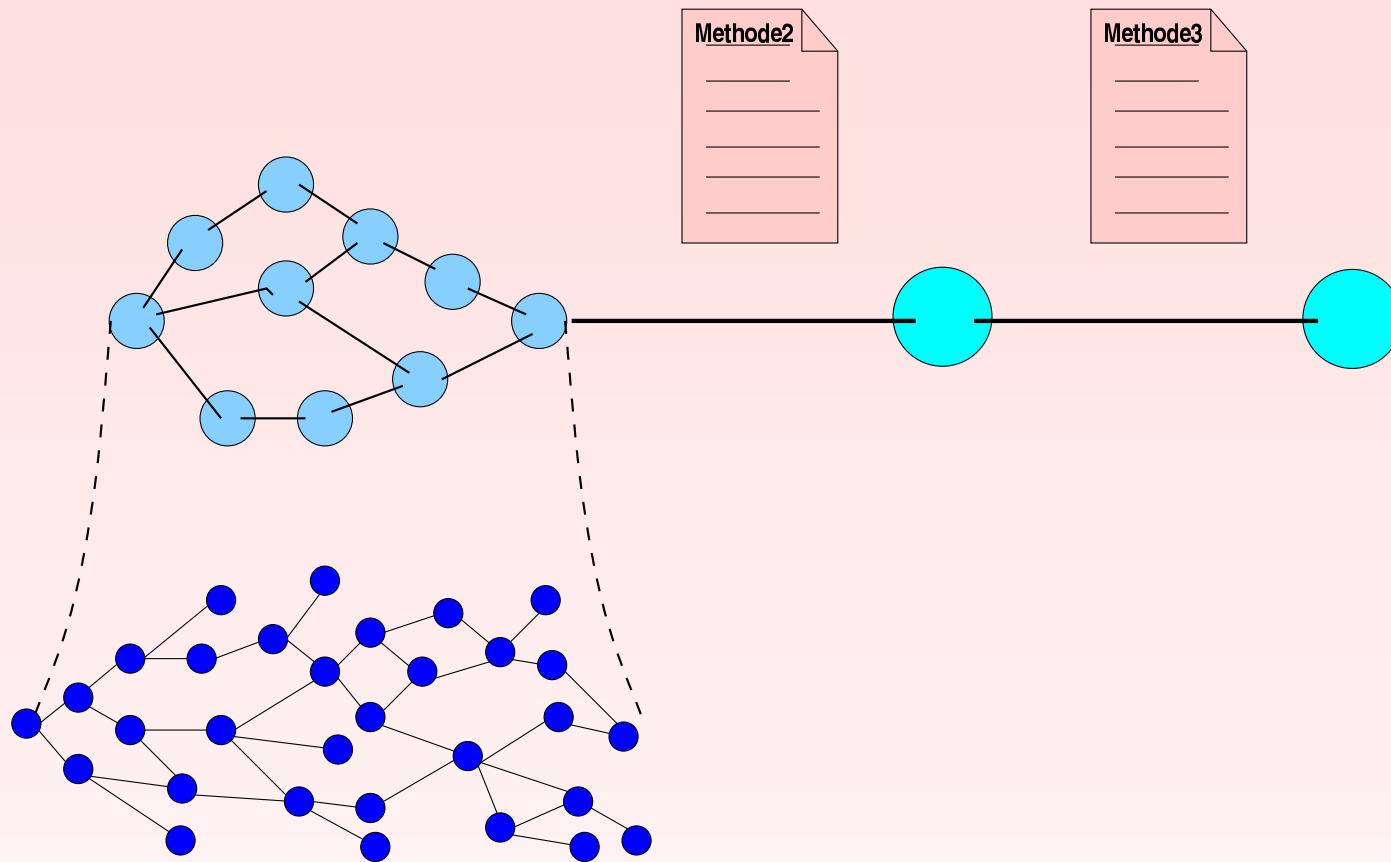$$\frac{P_1 : A \subseteq B \quad P_2 : A \subseteq C}{C : A \subseteq B \cap C} \subseteq\text{-}\cap\text{-I}$$

Beweisplanen

Methode2

Methode3

$$\frac{P_1 : A \subseteq B}{\forall e \boldsymbol{\cdot} e \in A \Rightarrow e \in B} \; DefnE \qquad \frac{P_2 : A \subseteq C}{\forall e \boldsymbol{\cdot} e \in A \Rightarrow e \in C} \; DefnE$$

$$\vdots \; natural \;\; deduction$$

$$\frac{\forall e \boldsymbol{\cdot} e \in A \Rightarrow (e \in B \wedge e \in C)}{C : A \subseteq B \cap C} \; DefnI$$

Beweisplanen

Methode2

Methode3

Beweisplanen

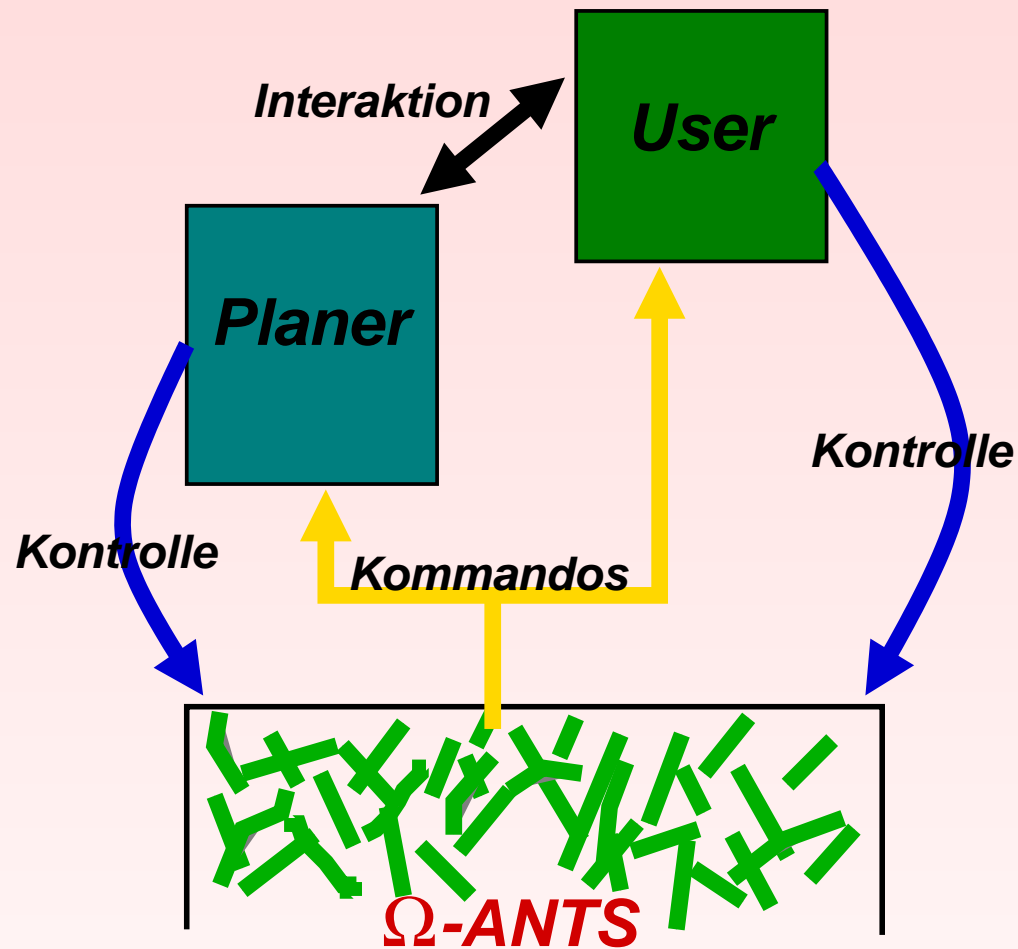Methode2

Methode3

Beweisplanen

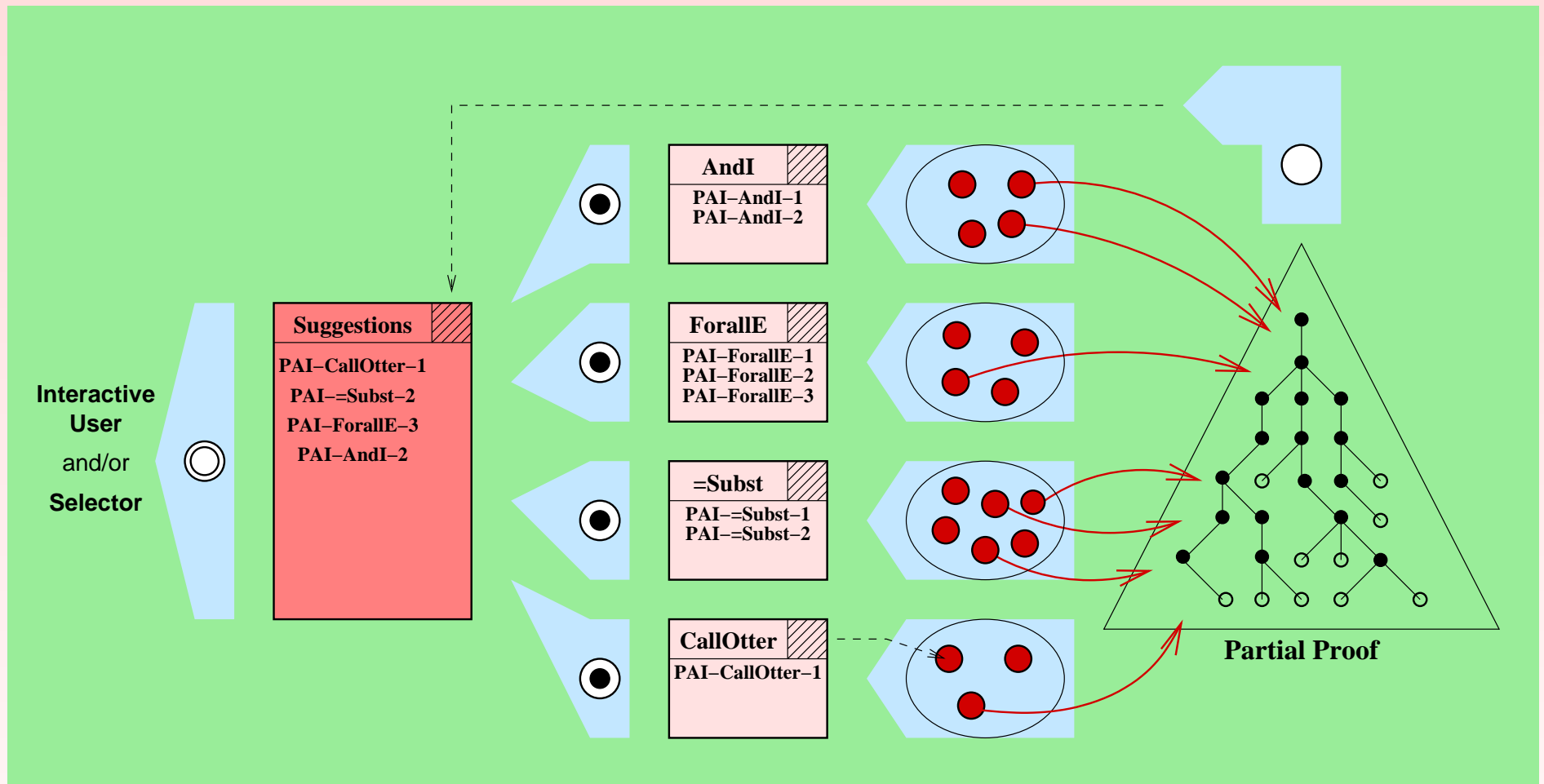Methode1

Methode2

Methode3
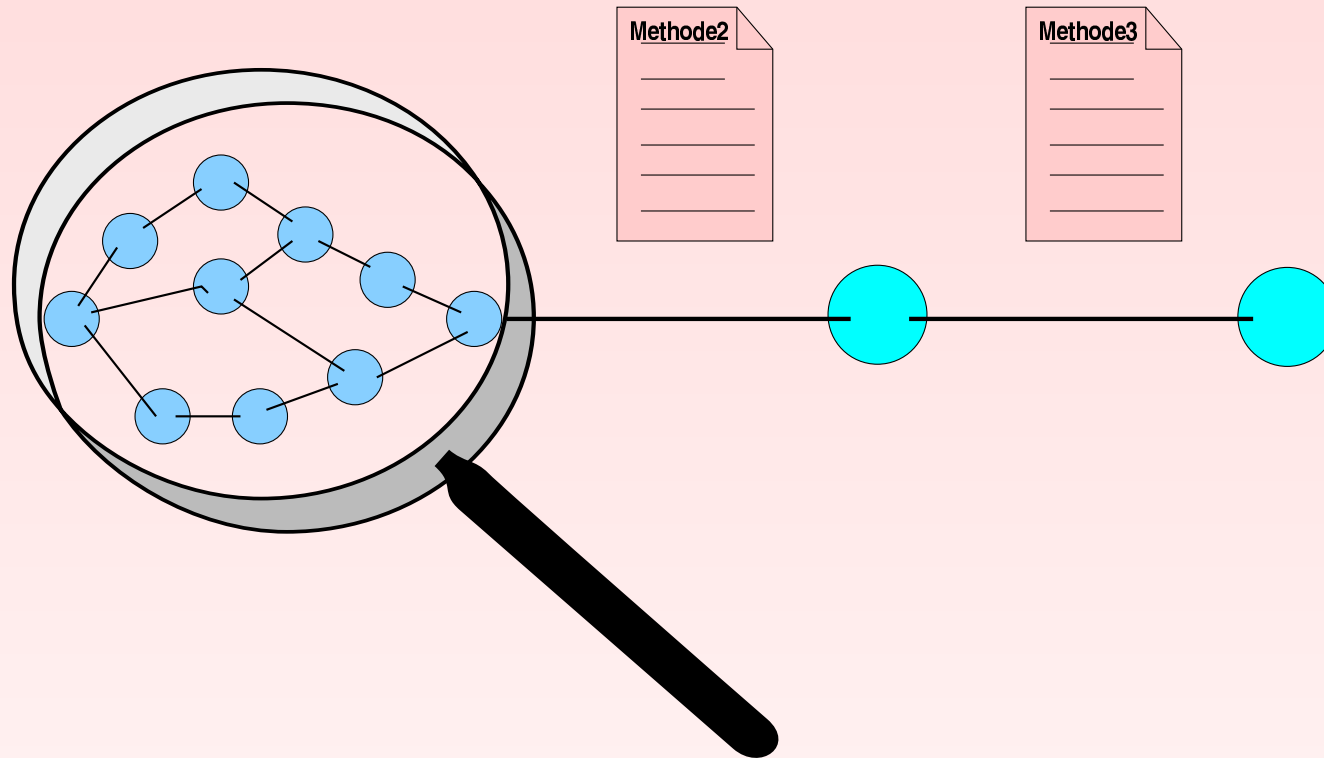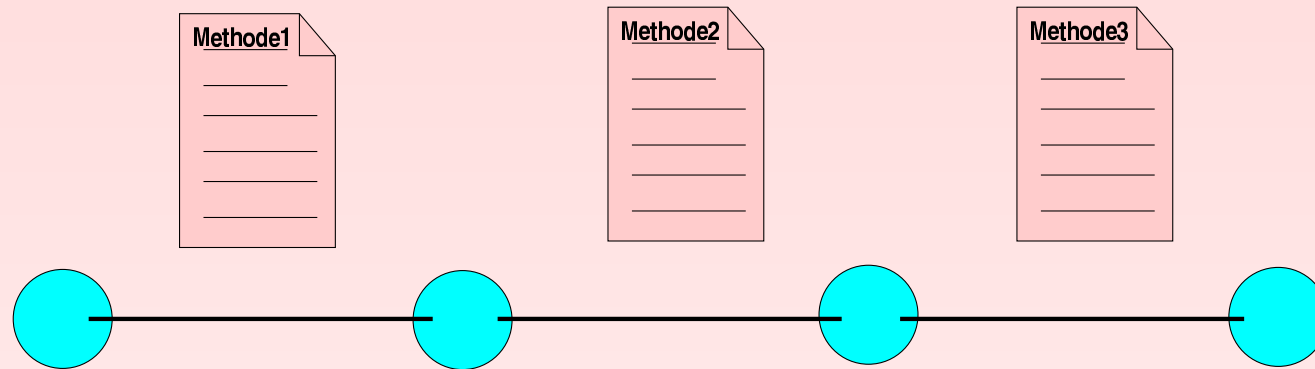
Ressourcen
- Wissen
- Zeit
- Benutzerinteraktion

Ω-Ants: Idee

$$\frac{P_1 : A \subseteq B \quad P_2 : A \subseteq C}{C : A \subseteq B \cap C} \; \subseteq\text{-}\cap\text{-I}$$

Ω-Ants: Blackboard Architektur

Interactive User and/or **Selector**

Suggestions
PAI–CallOtter–1
PAI–=Subst–2
PAI–ForallE–3
PAI–AndI–2

AndI
PAI–AndI–1
PAI–AndI–2

ForallE
PAI–ForallE–1
PAI–ForallE–2
PAI–ForallE–3

=Subst
PAI–=Subst–1
PAI–=Subst–2

CallOtter
PAI–CallOtter–1

Partial Proof

OMEGA Projekt