

Conflict Management with Goal Oriented RE

Group 3 - RE II - HS14

Agenda

- How Our Topics Fit
- KAOS: goal-driven requirement engineering
- Use Goal Models to manage conflicts
- Summary
- Discussion

How Our Topics Fit

Problem:

How do we handle conflicting requirements?

- How to identify conflicts?
- How to solve them?

Goal-oriented RE:

Manage conflicts on goal level

What is KAOS?

KAOS: *Knowledge Aquisition in autOmated Specification*

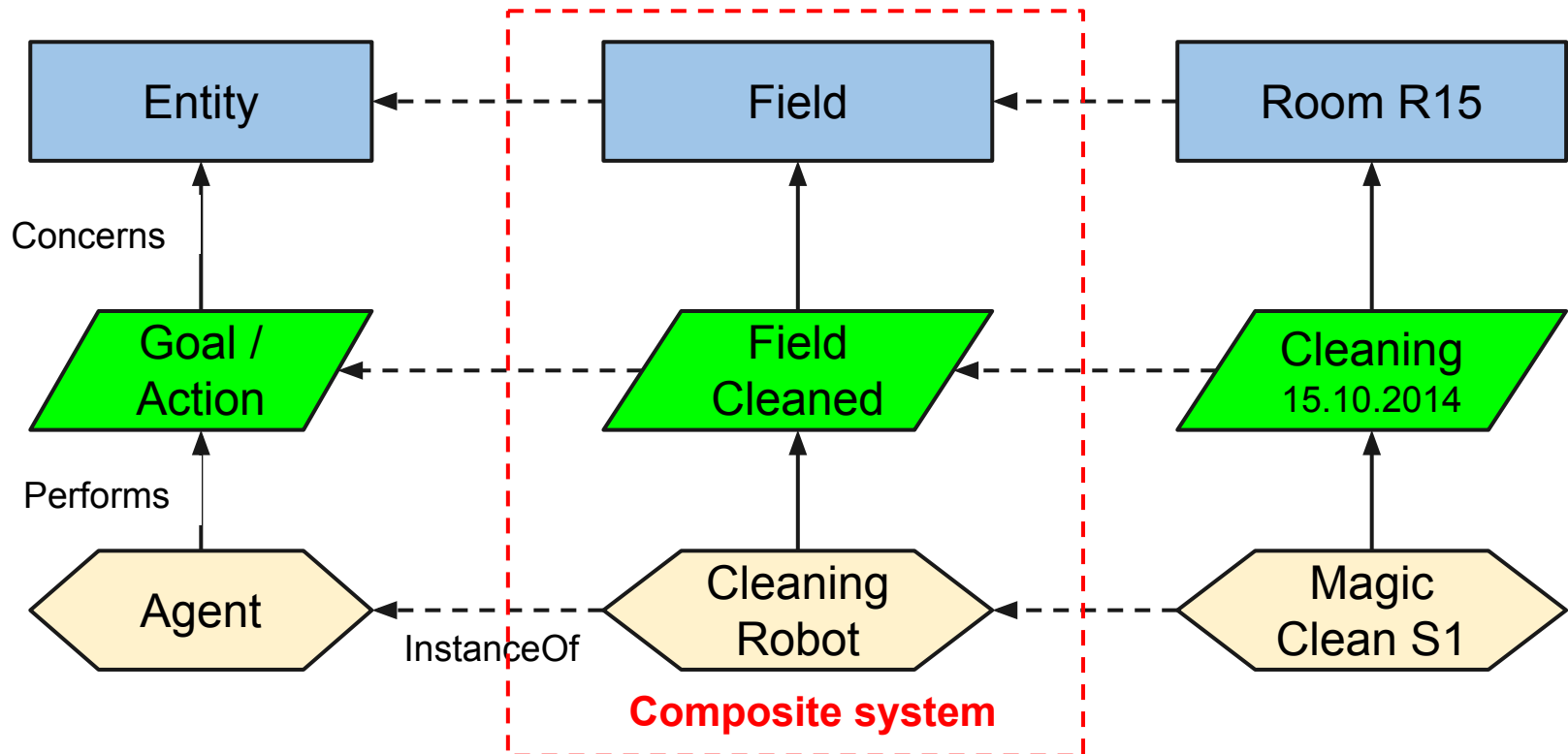
Key Idea: Support RE process with a systematic approach for discovering and structuring requirements

- (Formal) Specification language
- Goal Elaboration method
- Meta-level knowledge used for guidance

=> Addresses not only WHAT, but also WHY / WHO / WHEN

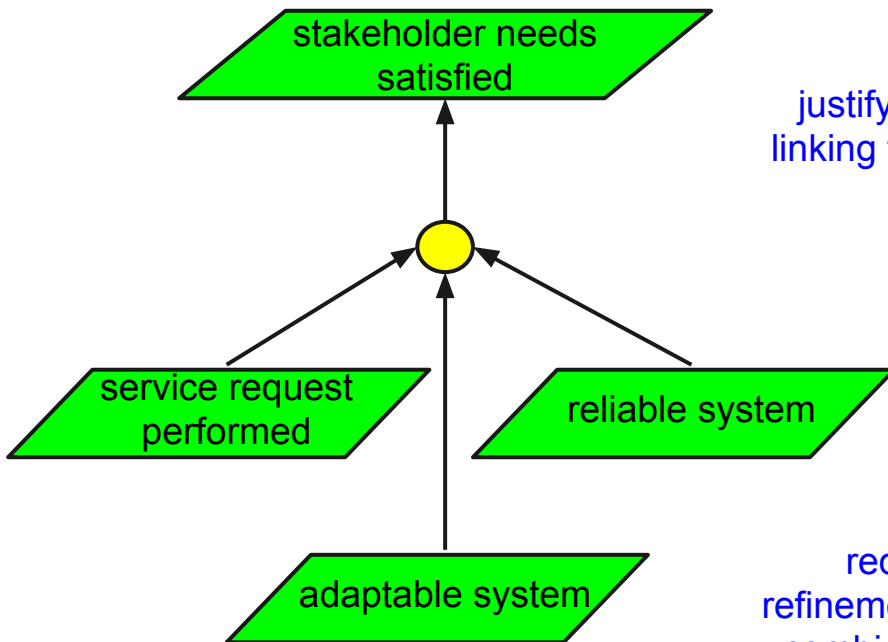
KAOS Levels

Meta Level → Domain Level → Instance Level

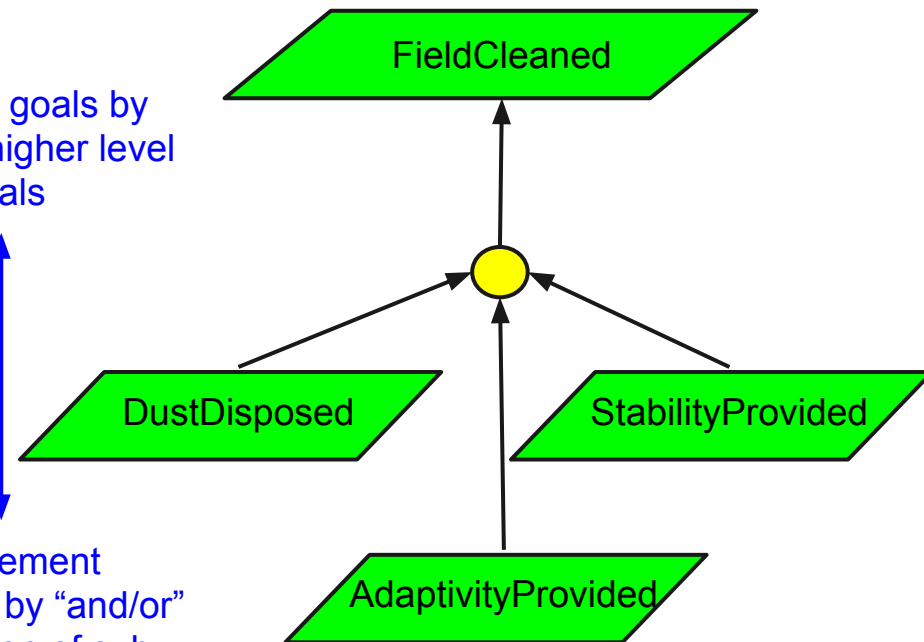


Goal Elaboration

Meta Level



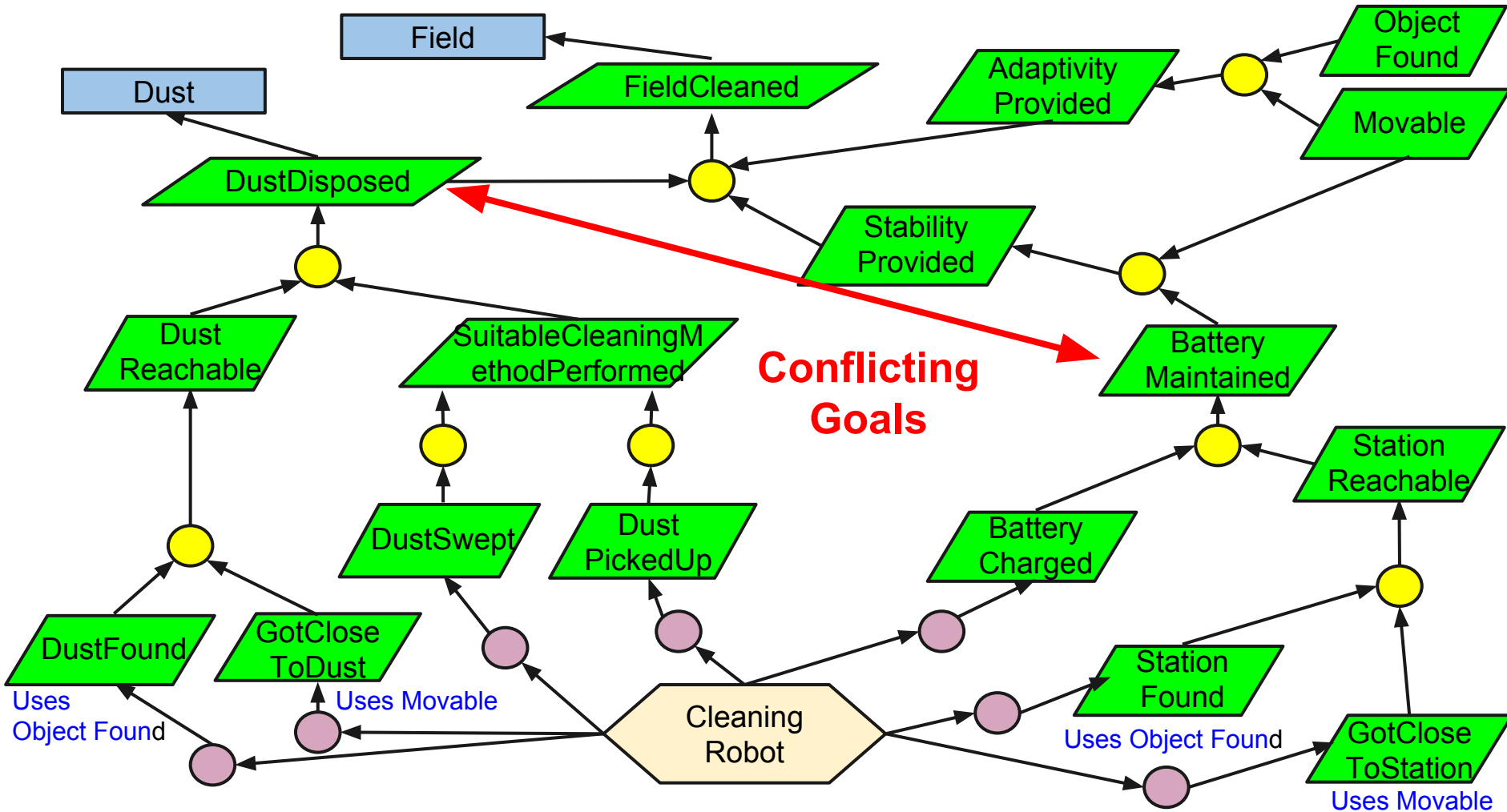
Domain Level



justifying goals by
linking to higher level
goals

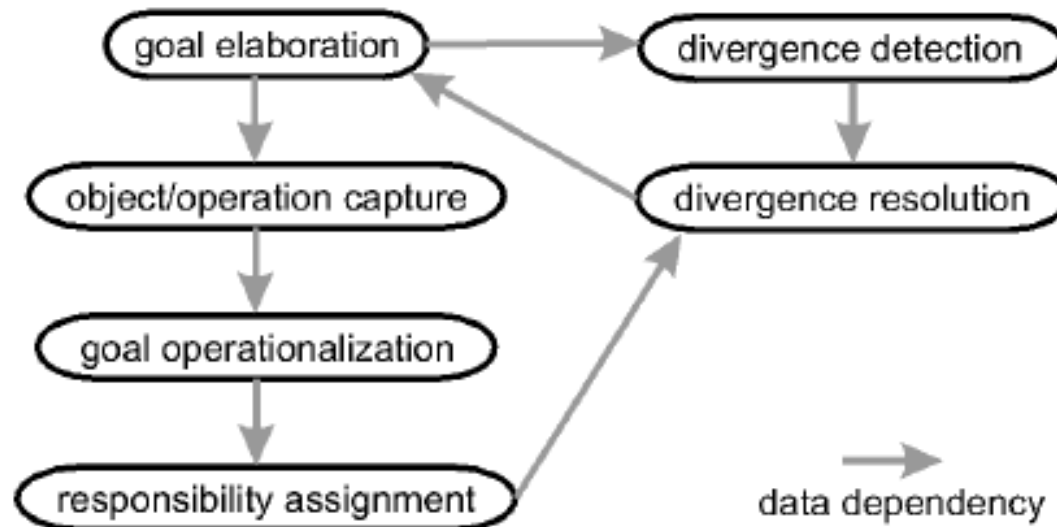
requirement
refinement by "and/or"
combination of sub-
goals

Goal Conflicts



Resolve Conflicts using KAOS

Idea:
Resolve Conflicts on Goal Level



Possible Inconsistencies I

Process Level Deviation	Unclear Responsibilities
Instance Level Deviation	Runtime Deviation
Terminology Clash	Different Syntactic Names
Designation Clash	Different Interpretation
Structure Clash	Mapping of Real World to Structure

Possible Inconsistencies II

Conflict	Minimal Set of Goals which is logically inconsistent
Divergence	Conflict that exists only under Boundary Conditions
Competition	Particular case of Divergence in a single Goal
Obstruction	Boundary Condition in a single Goal that makes this Goal unachievable

Resolution Strategies

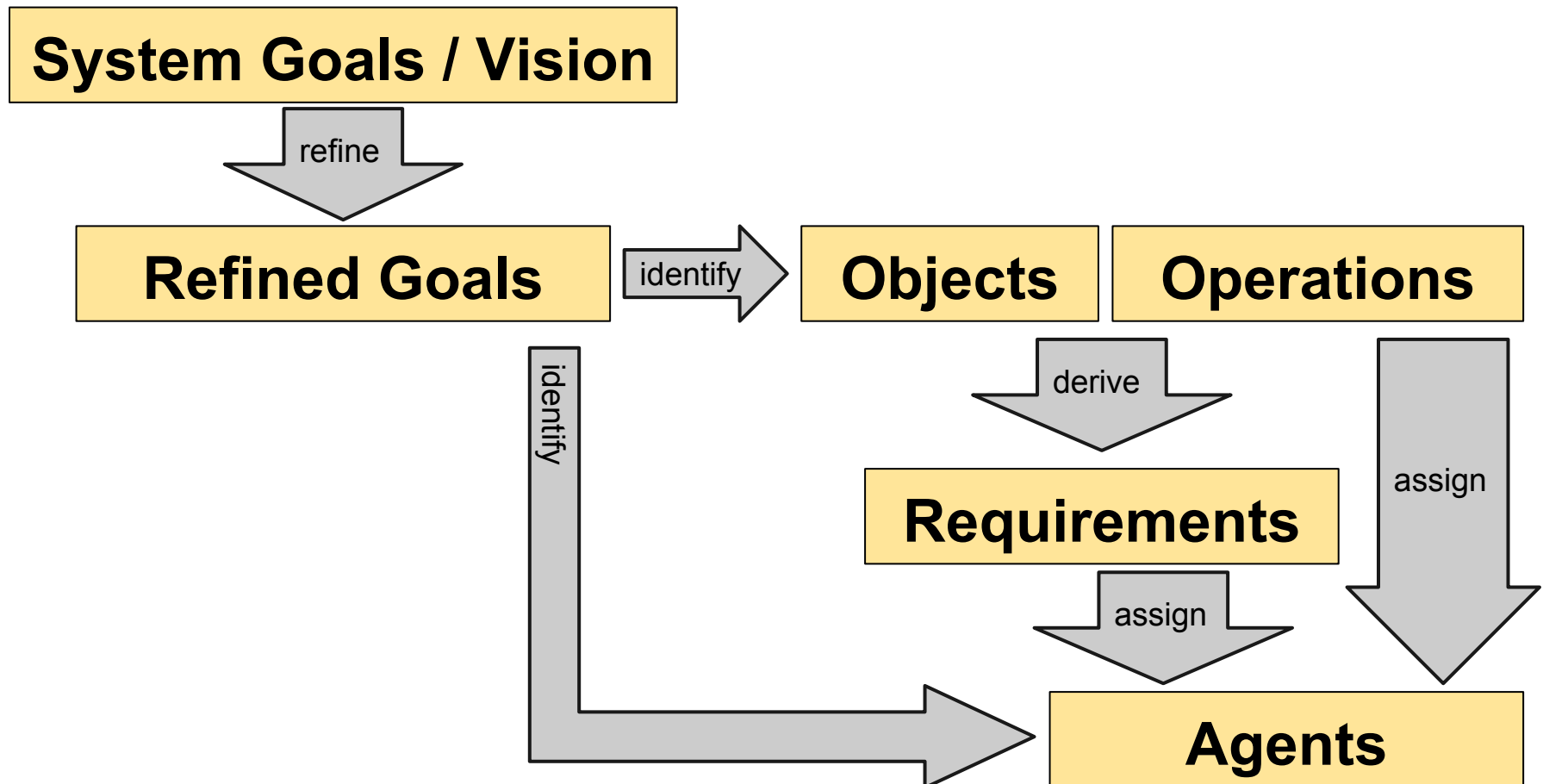
Assertion Transformation

- Avoiding Boundary Conditions
- Goal Restoration
- Conflict Anticipation
- Goal Weakening
- Alternative Goal Refinement
- Divergence Resolution Heuristics

Object Transformation

- Object Refinement
- Agent Refinement

KAOS Summary



Conflicts in case study

- Not obvious, but there is some competition:
 - Food providers fighting for stalls
 - Inventors placing their inventions
 - Exhibitors fighting for good location
 - Exhibitors fighting for visitors' choice award
- For the last point, goal-oriented RE reveals underlying goal
 - Add requirements to give some form of reward / token of appreciation to all exhibitors

Discussion

- Do you think that you would profit from applying KAOS to very complex systems?
- How can you profit from Meta-level information gained by using KAOS?