



University of Zurich
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Goal-oriented Requirements Engineering: An Overview

Requirements Engineering II - Assignment 2

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Agenda

- **Definitions**

- **Goal-oriented Requirements Engineering (GORE)**
- **Goal**

- **Why Goals?**

- **Modeling Goals**

- **Reasoning about Goals**

- **Conclusion**

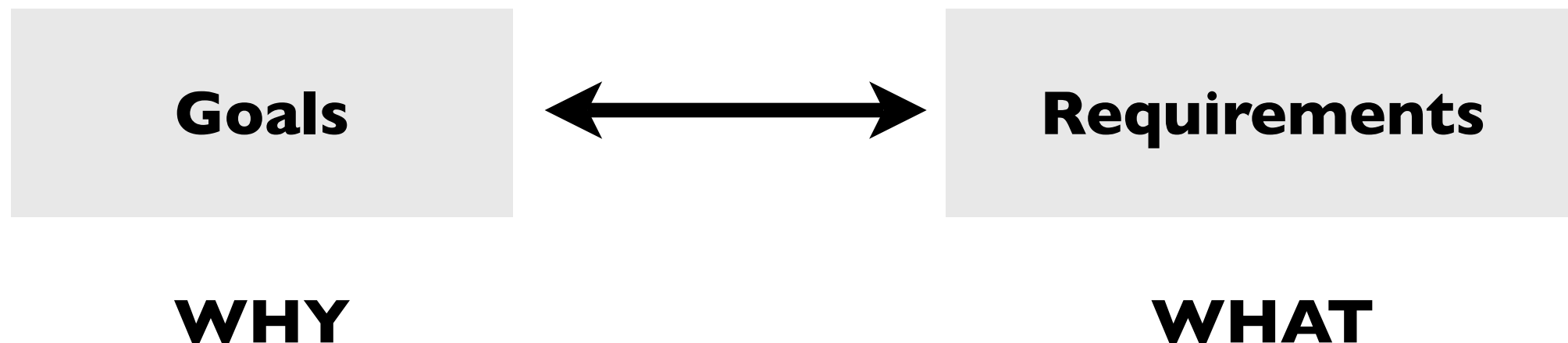
What is GORE?

- **Goal-oriented Requirements Engineering (GORE)**

Goal-oriented requirements engineering is concerned with the **use of goals** for *eliciting, elaborating, structuring, specifying, analyzing, negotiating, documenting, and modifying requirements* (van Lamsweerde, 2001).

Definition: Goal

- **An *objective* the system under consideration should achieve** (van Lamsweerde, 2001)
- **Different abstraction levels**
- **Different types**
 - functional, non-functional
- **Focus on WHY instead of WHAT**



Why Goals?

- Achieving **requirements completeness**
- Avoiding **irrelevant requirements**
- Structuring complex requirements with **goal refinement**
- **Explaining requirements:** Goals provide rationale
- **Alternative goal refinements**
- **Managing and detecting conflicts** among requirements
- Separating **stable** from **volatile information**
- **Driver for identification of requirements**

Modeling Goals (1)

■ Goal consists of:

- **Type**
- **Attributes**
- **Links: (1) To other Goals, (2) To other elements of a requirement model**

■ Goal Types

- **Function, non-functional**
- **Soft, hard**
- **Temporal behaviour** (achieve/cease, maintain/avoid)

■ Goal Attributes

- **Name, Priority**

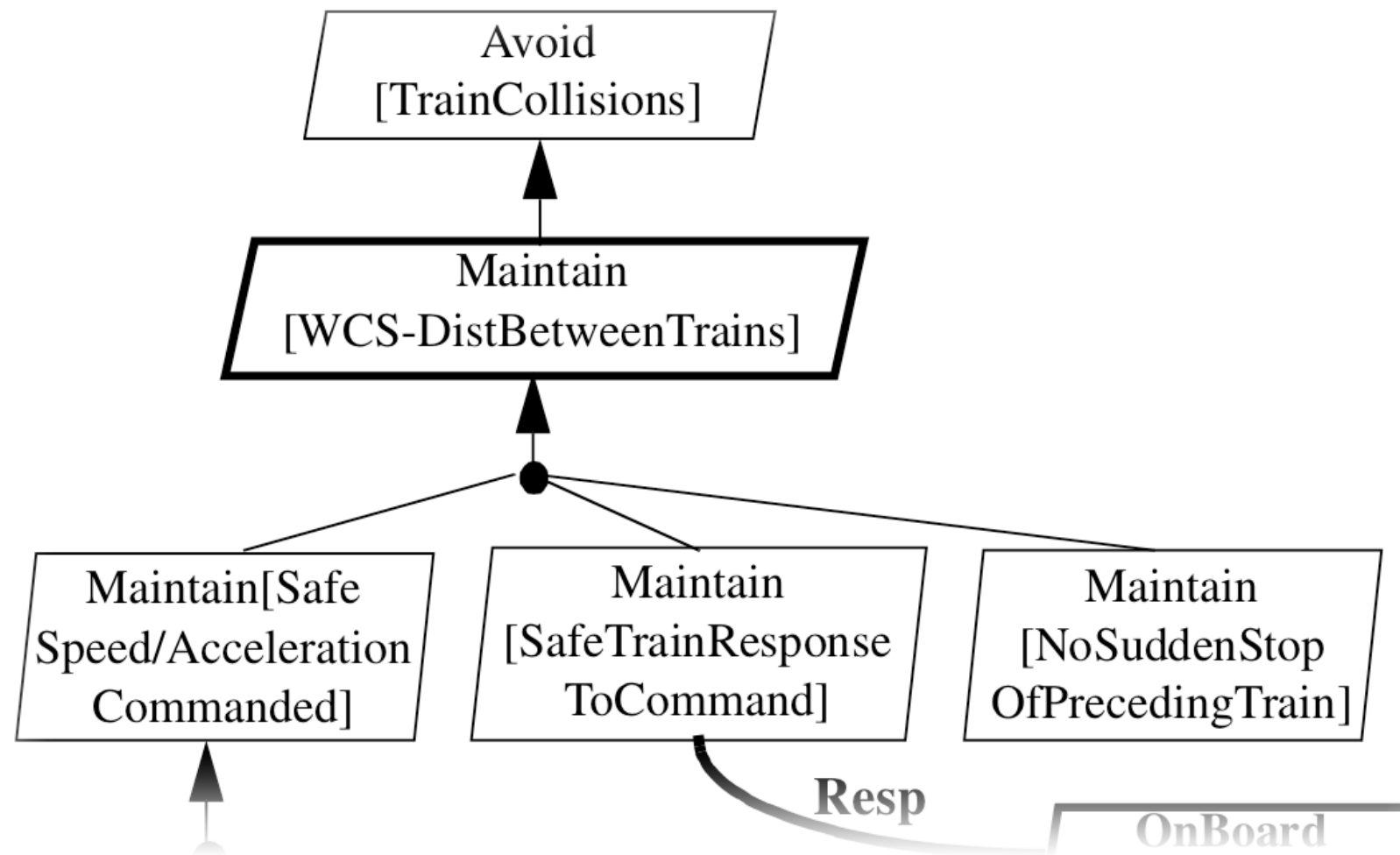
■ Goal Links

- **AND/OR refinement links**
- **Responsibility links (KAOS), Dependency links (i*)**

Modeling Goals (2)

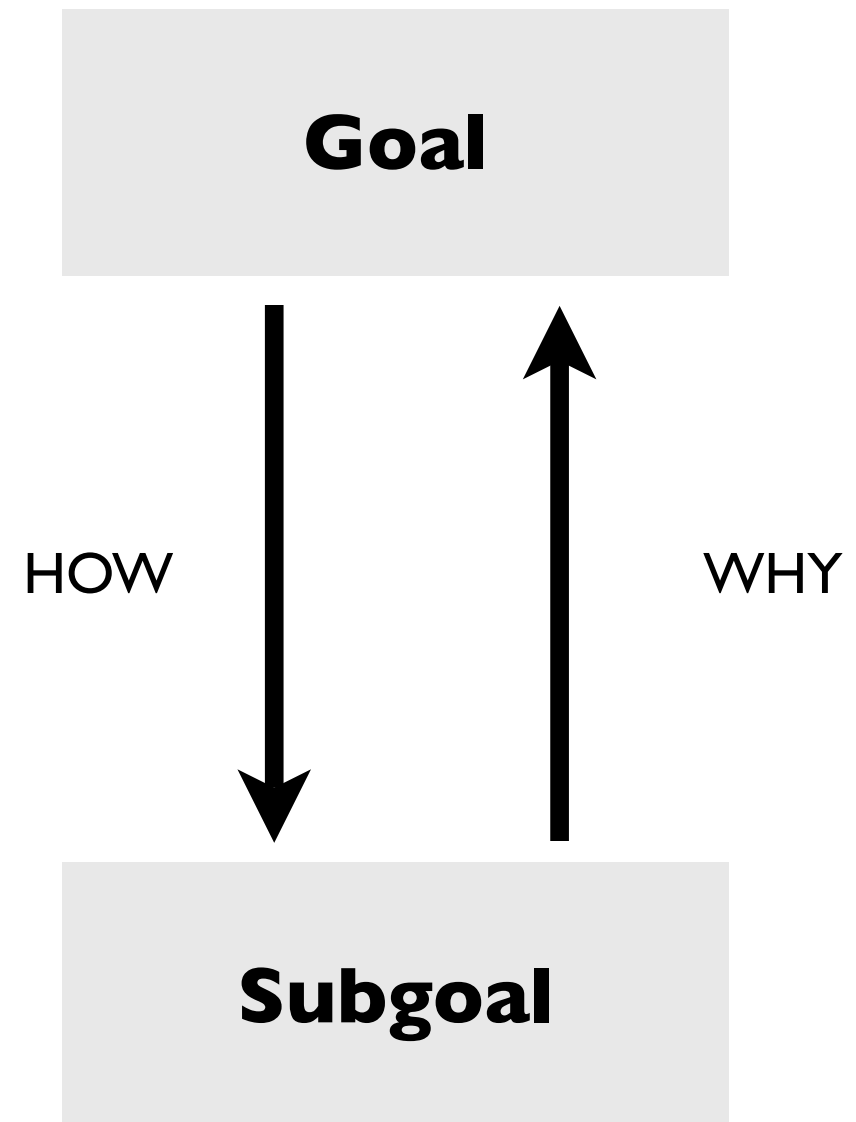
■ Result: Goal graph

- Enables **vertical traceability** from high-level strategic concerns to low-level technical details



Reasoning about Goals

- **Goal verification**
- **Goal validation**
- **Requirements elaboration**
 - Elicitation by **Refinement** => **HOW**
 - Elicitation by **Abstraction** => **WHY**
- **Conflict Management**
 - Goal-based **Negotiation**
 - **Alternative Selection**



Conclusion

- **Systematical derivation of requirements from goals**
- Goals provide **rationale** for requirements
- Results in **more robust requirements**
- **Vertical traceability**

**Thank you for your
Attention!**
