



Viewpoints

In the presence of incompleteness and inconsistency

Context

- Different stakeholders have different views
- Colliding views lead to conflicts
- ViewPoints create framework to deal with such conflicts
- Traceability as important part of ViewPoints



Inconsistency

- Relationship between parts of specification
- Conflicts
- Various Reasons



Inconsistency Management

- Detect inconsistencies
- Actions:
 - Ignore
 - Delay
 - Circumvent
 - Ameliorate
 - Resolve
- Difficulty: tracking inconsistencies



ViewPoints

- Multiple perspectives as distributable objects



- ViewPoints' slots:
 - Representation style
 - Domain
 - Specification
 - Work Plan
 - Work record



View Merging Benefits

- Gain Unified Perspectives
- Understand Interaction
- End to End Analysis



Drawbacks of Ad-hoc Merge

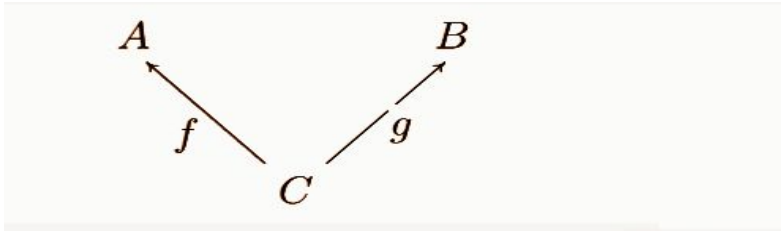
- Disagreement between Stakeholders
- Inability to trace



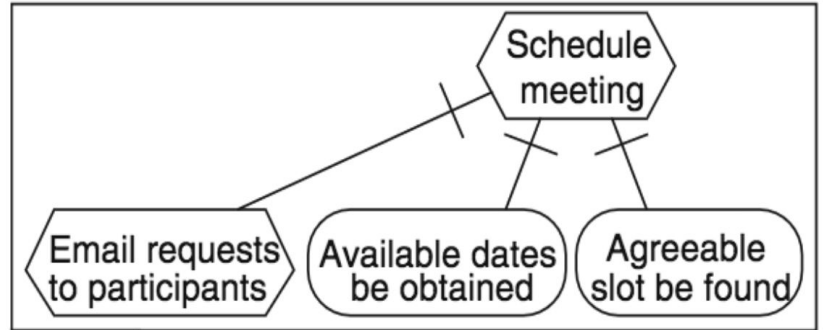
Interconnecting and Merging Graphs



Interconnection Diagram



Graph

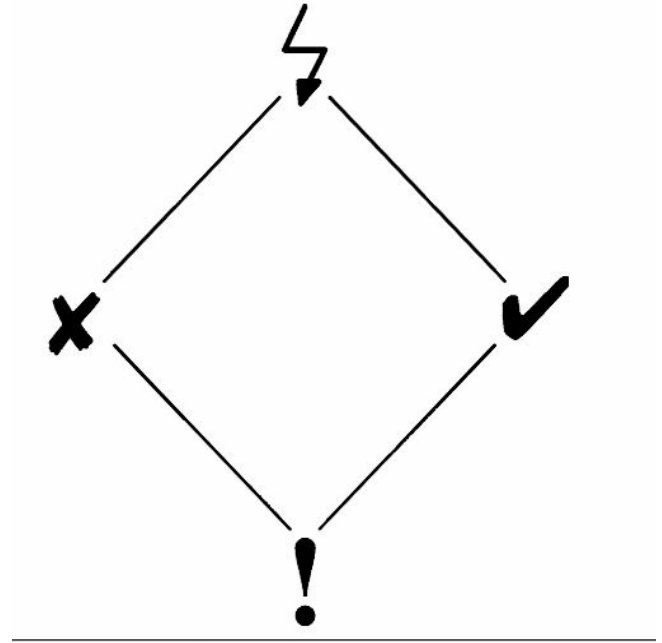


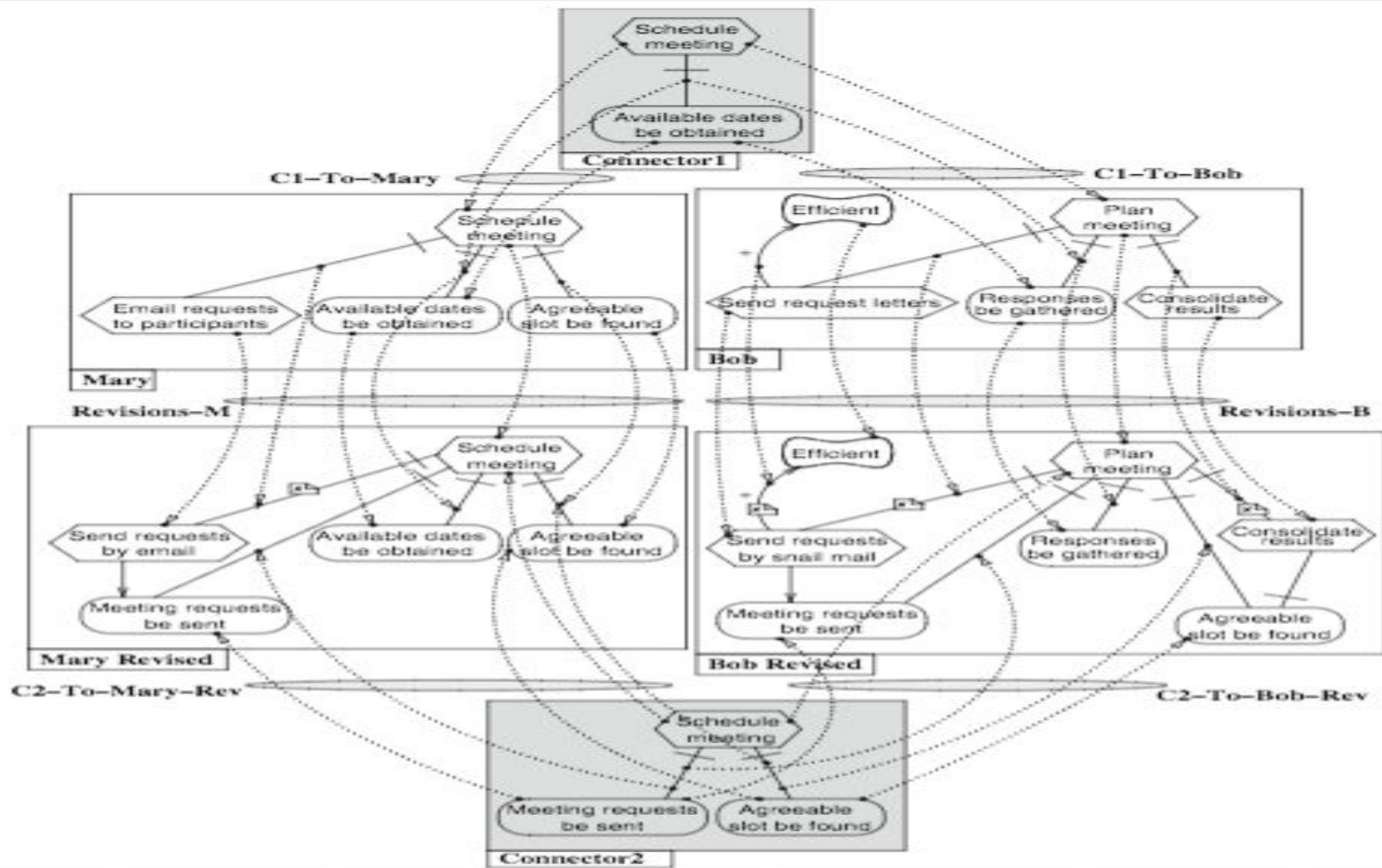
Mary

Annotation

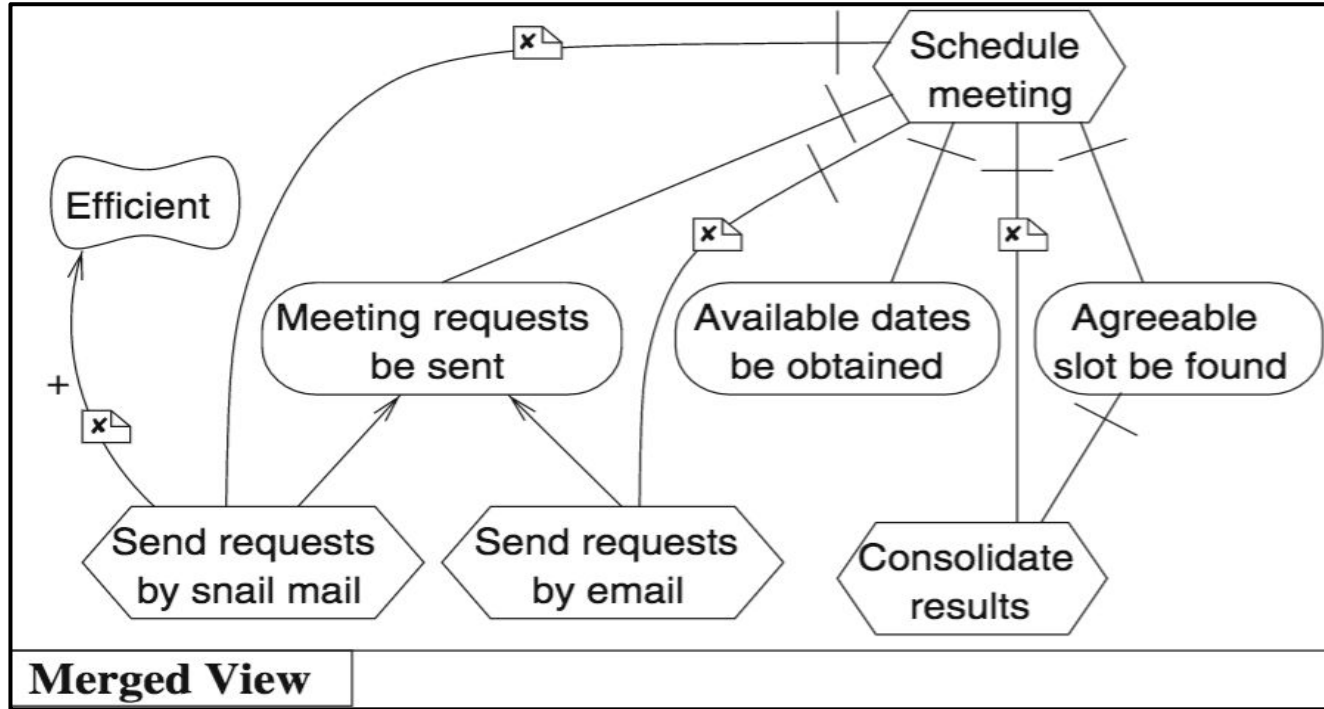
Knowledge Order

- **!** Proposed but not well conceived
- **X** ill Conceived and rejected
- **✓** Well conceived and affirmed
- **⚡** Conflicts





Final merged View



Traceability

- Assumption Traceability
- Stakeholder Traceability
 - $M;!;B:!$
 - $M;!B:x$



Conclusion(RE-1 case study)

- Current situation: all stakeholders have their own view
- Requirements clustered by stakeholders
- Merging views can help to realign the requirements - partition by requirements



Questions



Discussion

- What possible reason could still lead to conflicts, even when all inconsistencies are found and resolved?

