
Incrementally Introducing Process Model Rationale Support in an Organization

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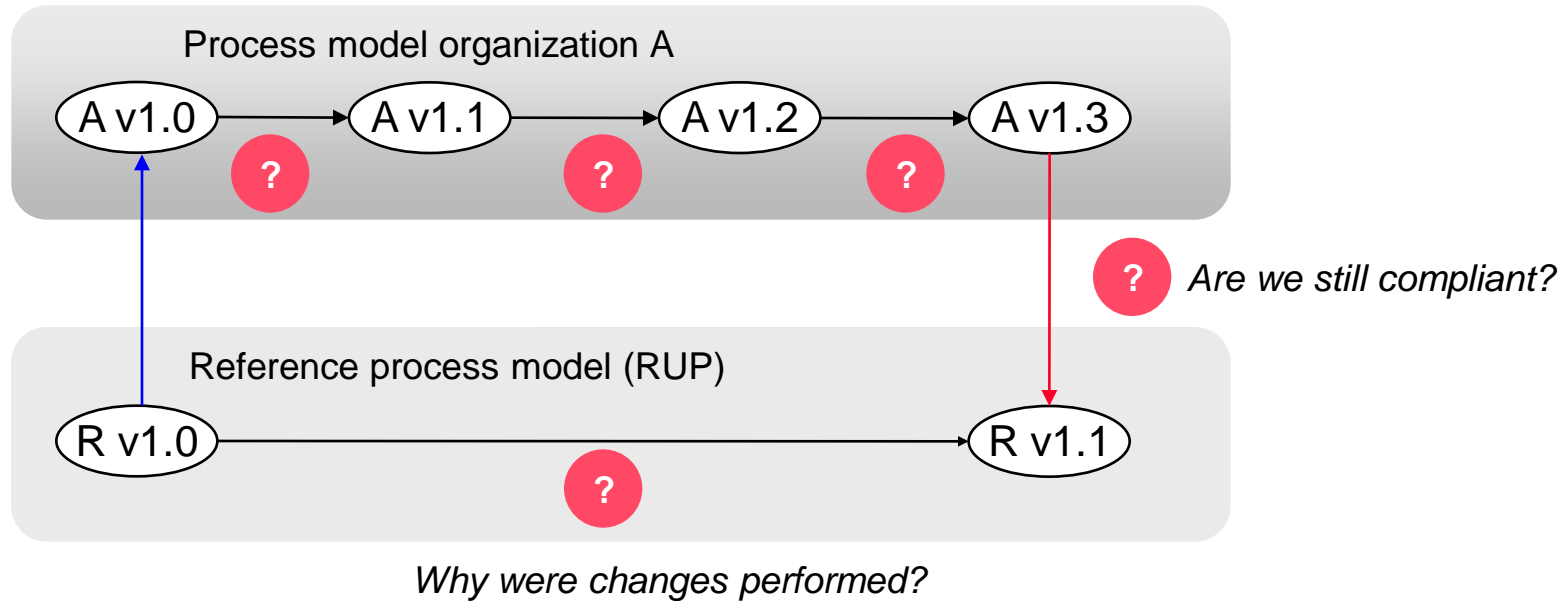
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Agenda

- Motivation
- State of the Practice
- State of the Art
- The REMIS Approach
 - Conceptual model, Method, Tool
 - Incremental Strategy
- Summary and Future Work

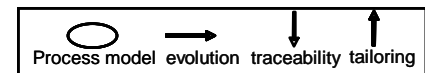


State of the Practice - Traceability Scenario → t

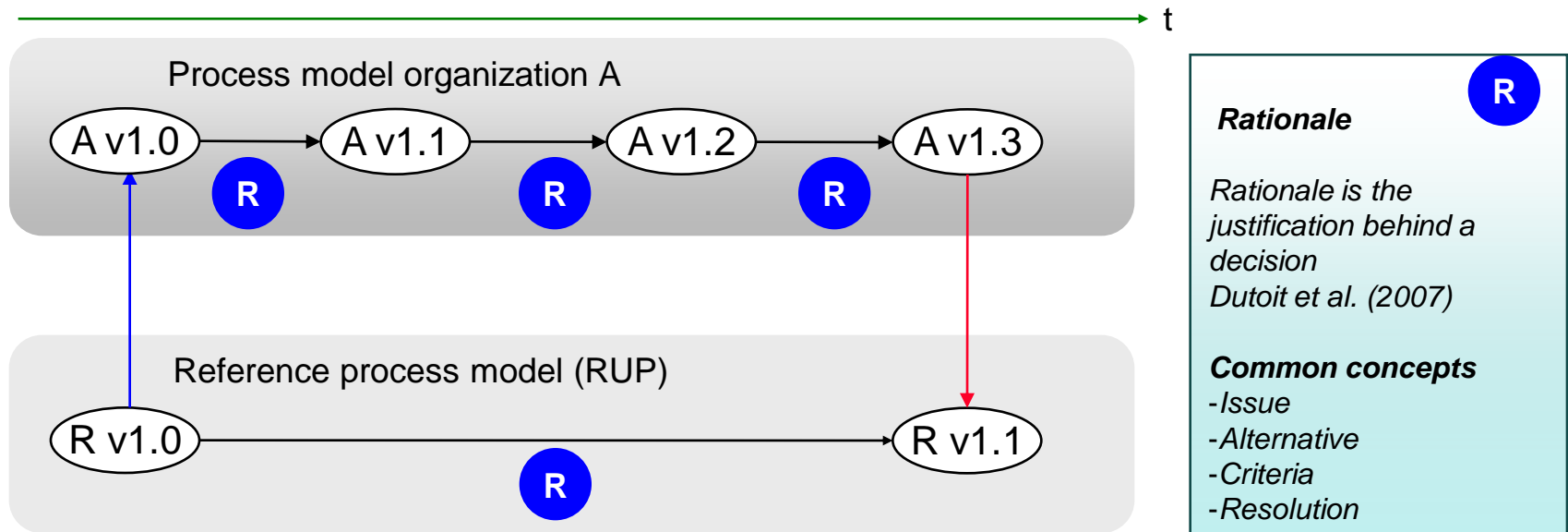


Lack of answers results in

- * Large effort for analyzing changes
- * Low quality of changes



State of the Art - Process Model Evolution and Rationale

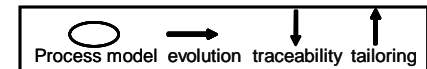


Research gaps

✳ Existing conceptual models for rationale do not consider process model changes

✳ Existing conceptual models for process model evolution do not consider rationale concepts

✳ Lack of support for establishing (rationale-based) process model evolution in practice

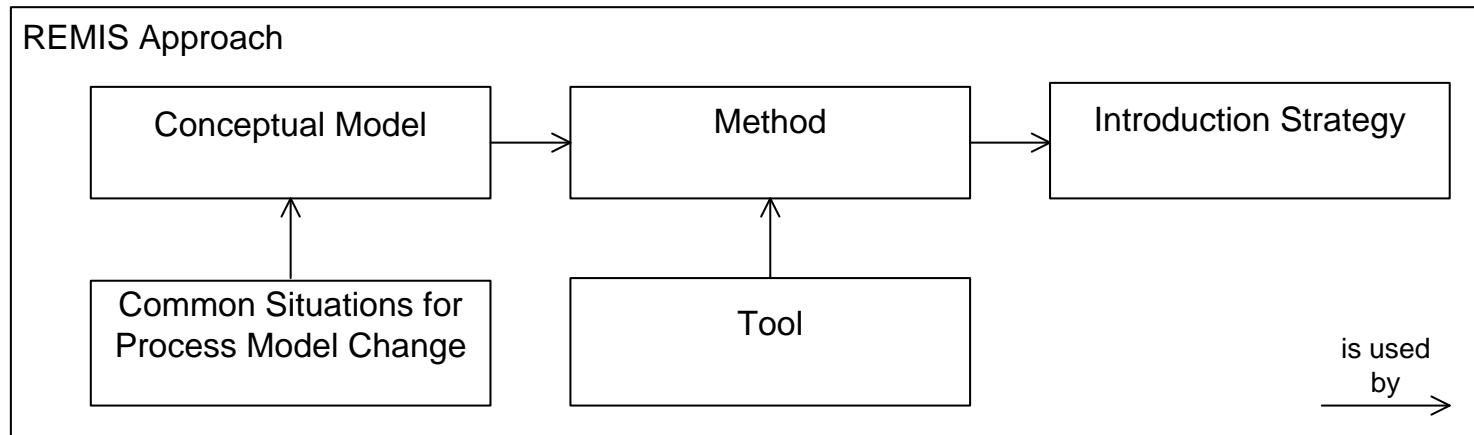


Rationale in the Industry - Is this possible?



- Rationale approaches are per se **intrusive**
- Elicitation and retrieval of rationale during design or modeling activities are seen as **overhead**
- Costs and cultural implications are a barrier
- An **strategy** is needed to overcome such barrier
- *“The main assumption for such a strategy is that a process engineering team must capture and apply information about process modeling decisions and their rationale according to the team needs, capabilities and allocated effort”*

Flexible Approach



Incremental Strategy based on Experience

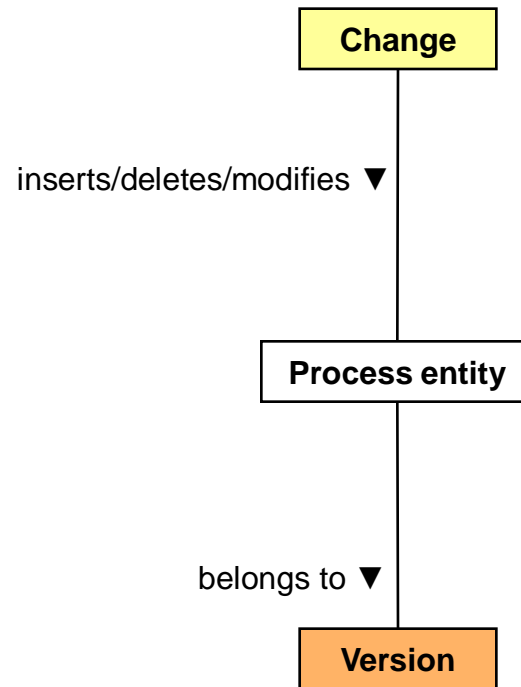
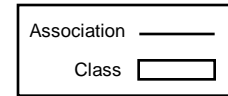
ESA Case Study

The goal of this study was to analyze the feasibility of the conceptual model and the approach for documenting and analyzing the rationale for process model changes

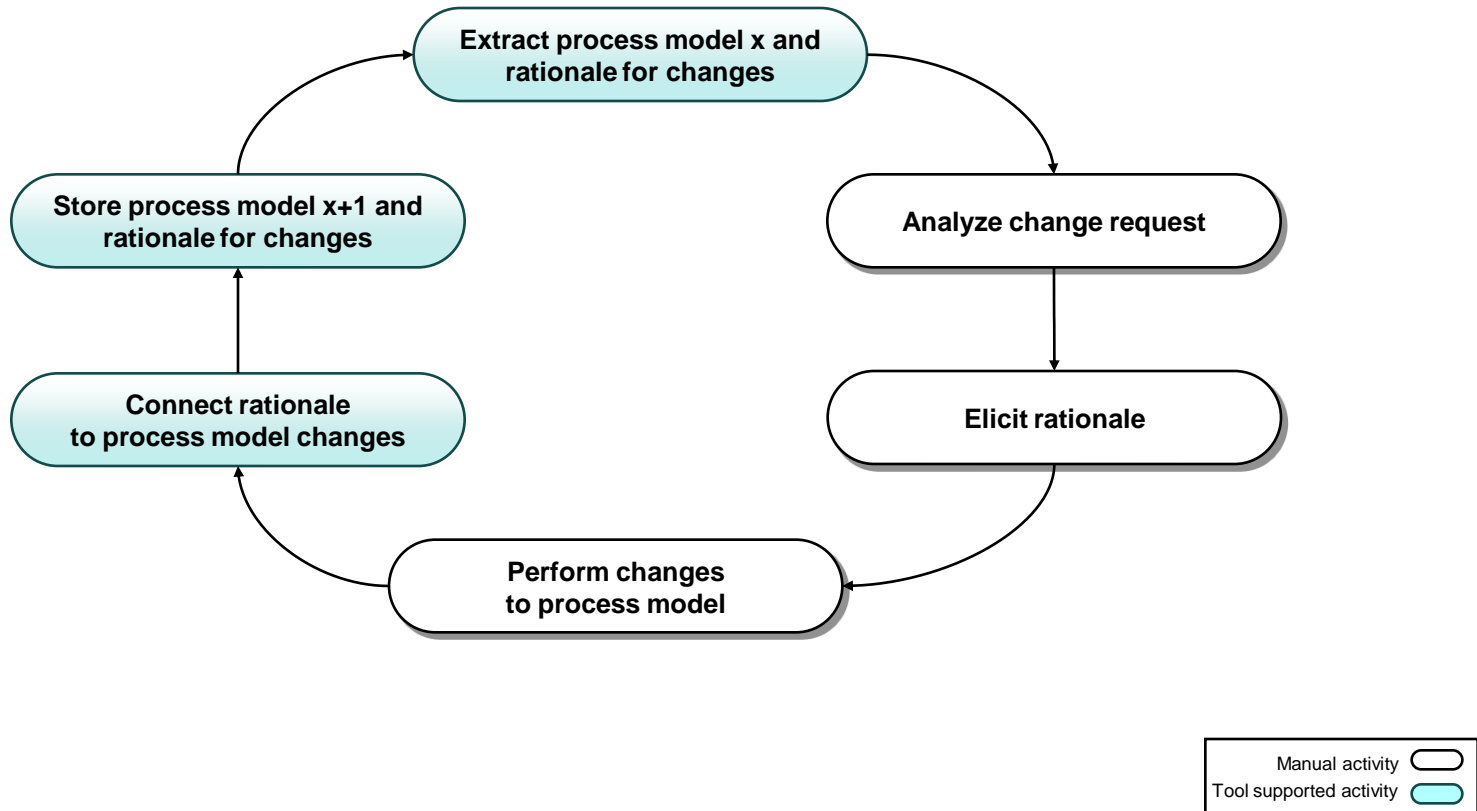
ASG Case Study

The goal of this study was to analyze the feasibility of the refined conceptual model and the refined approach for documenting and analyzing the rationale for process model changes.

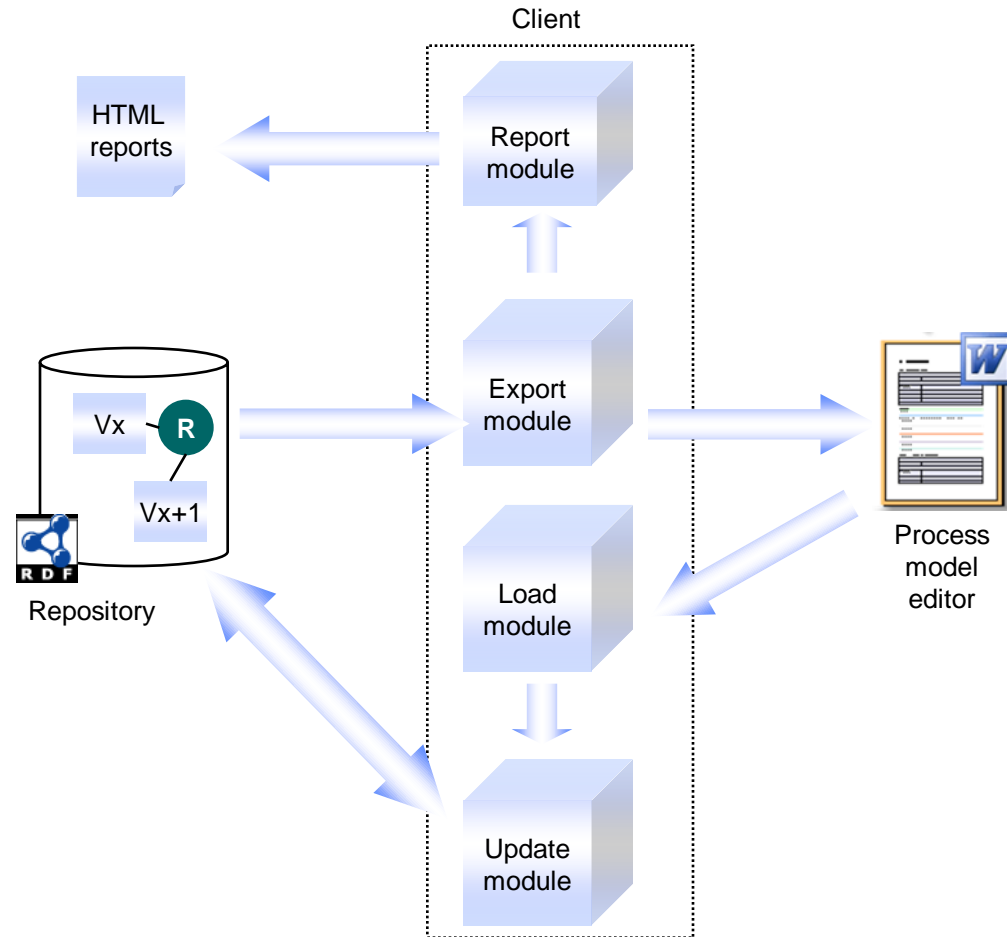
REMIS - Conceptual Model - ESA Case Study



REMIS – Method – ESA Case Study



REMIS - Tool



ESA Case Study – Observations

- Rationale connected to changes made more transparent the process of evolving the model
- The lack of structure of a justification influenced the understandability
- Confusing justifications that identified what was performed instead of information on why
- Information missing concerning the alternatives and why they were selected or rejected
- That information could have help reviewers understand faster the rationale and avoid unnecessary discussions
- These findings motivated the need to change the conceptual model and the instrumentation and to use it in a second case study

Experience - Incremental Strategy

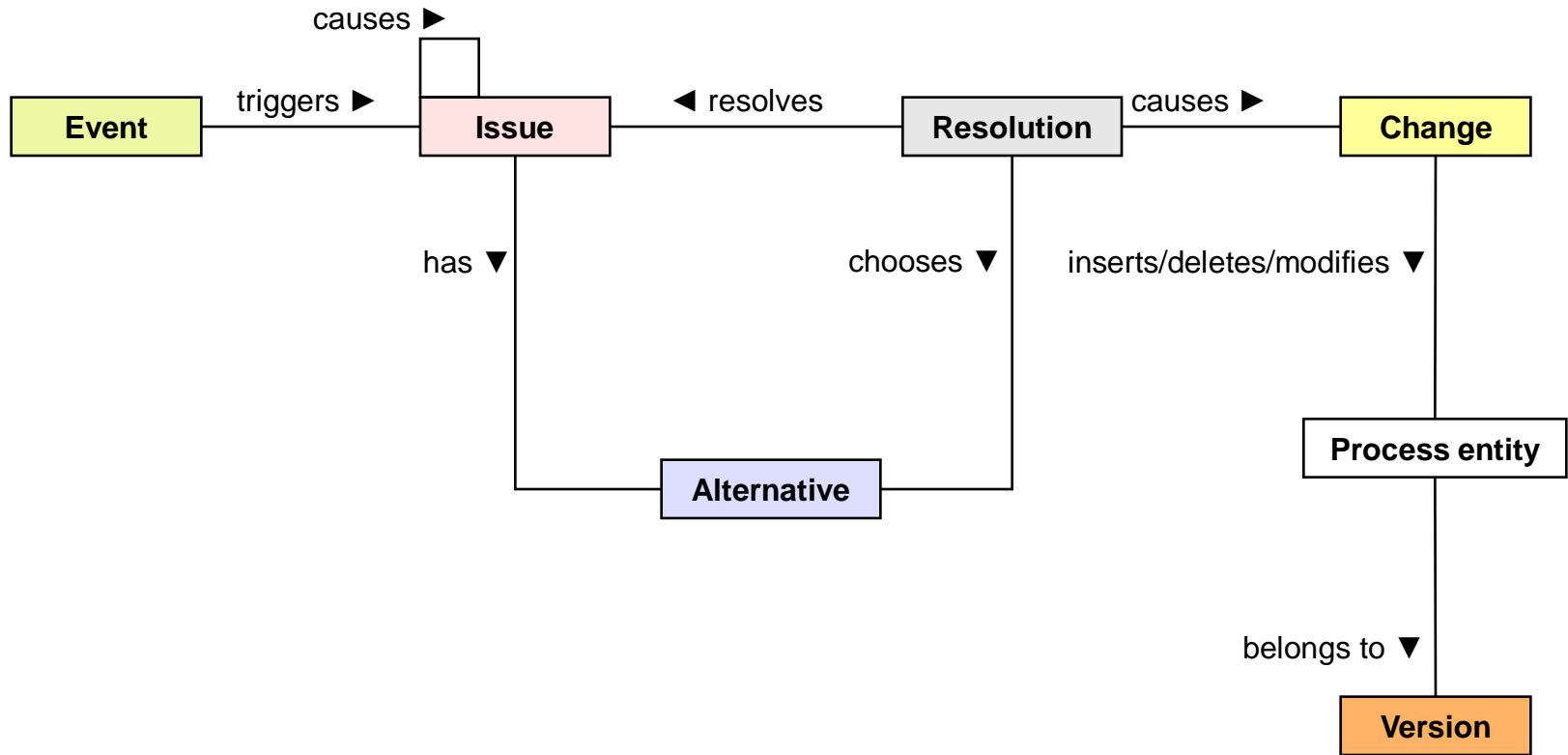
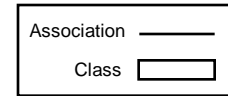
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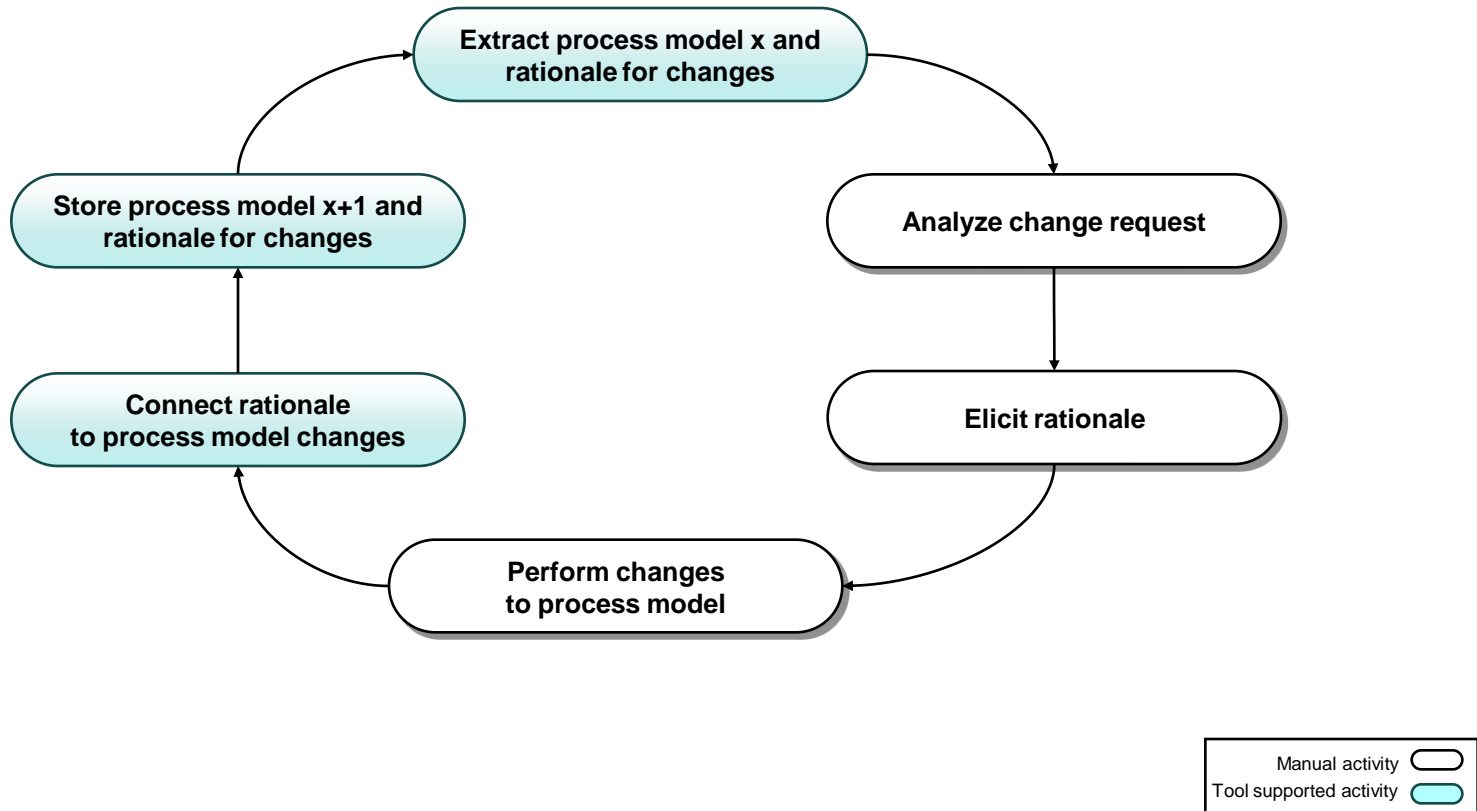
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REMIS - Conceptual Model - ASG Case Study



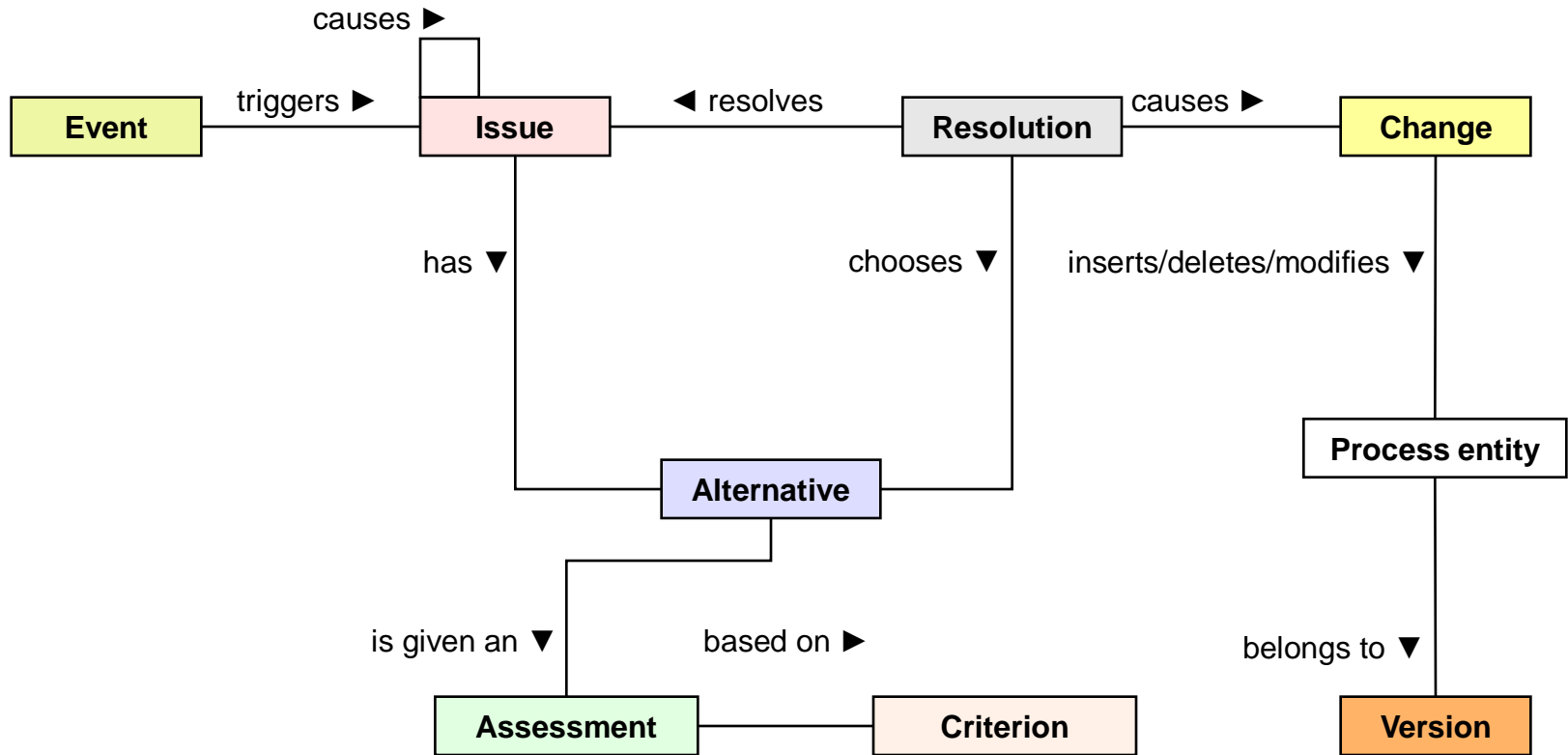
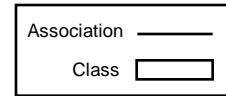
REMIS - Method - ASG Case Study



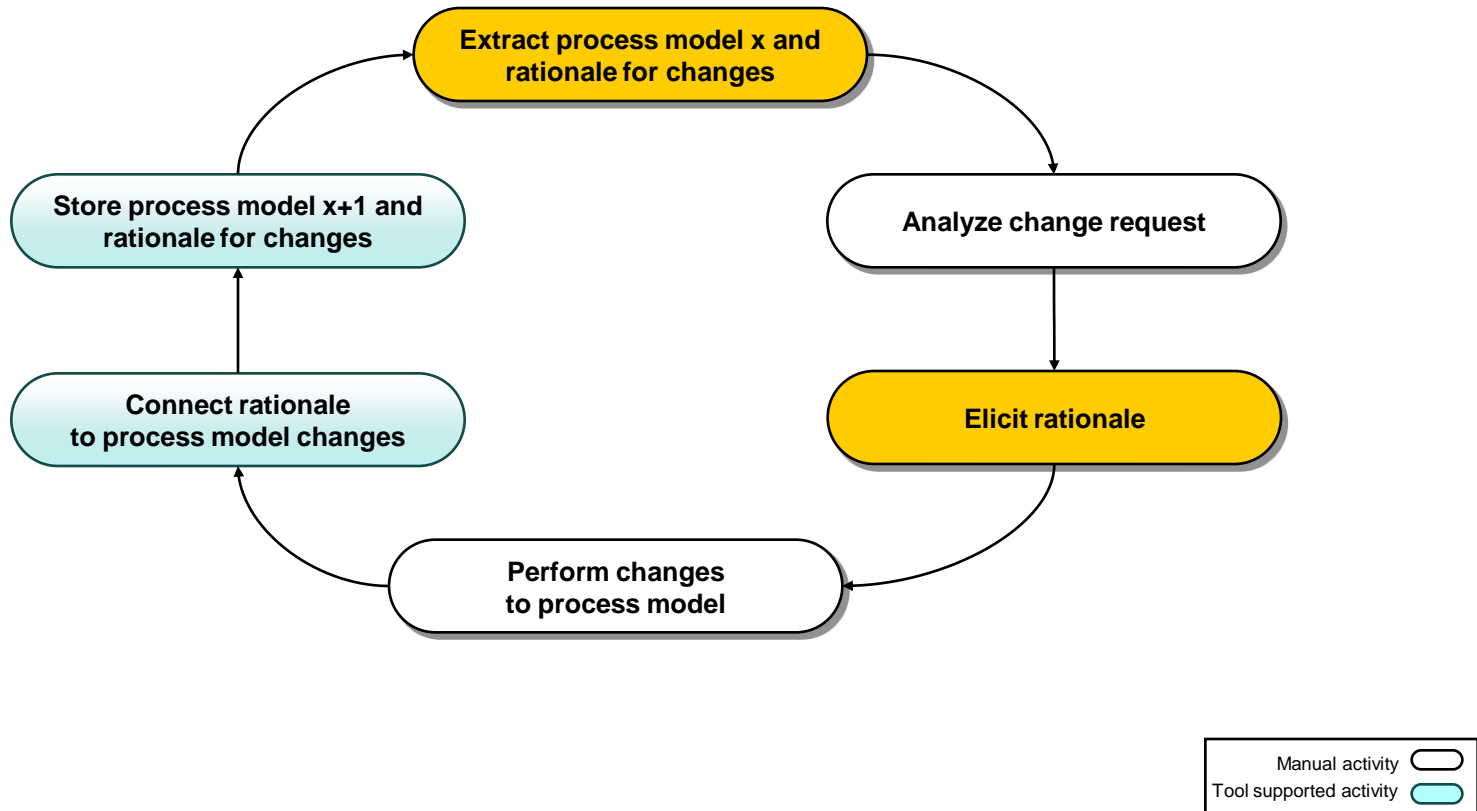
ASG Case Study – Observations

- Better structuring of the reasoning behind a decision compared to the previous study
- Rationale information is more likely to be reused before performing future changes
- The information about alternatives taken allowed better self-reflection about the real need for changing the process model
- Missing information about the criteria for assessing alternatives could improve understandability

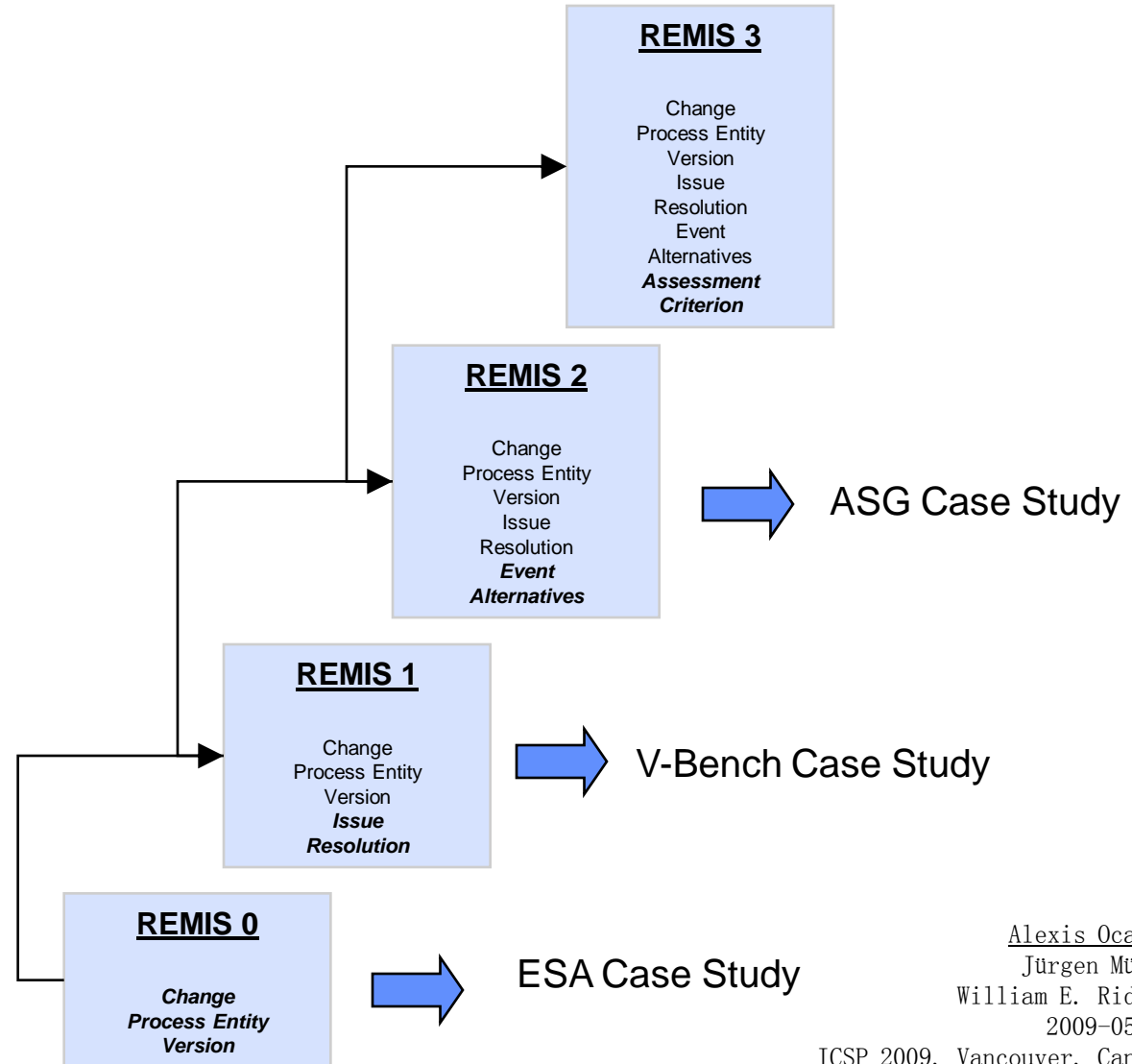
REMIS - Conceptual Model



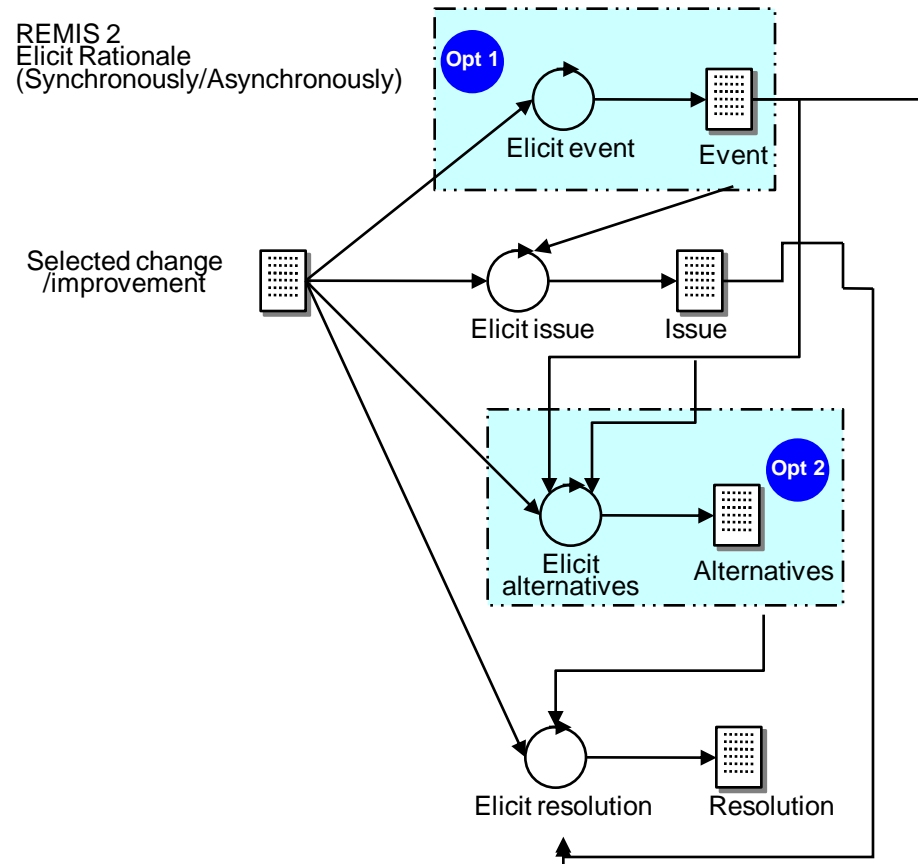
REMIS in the industry - Flexible eliciting of rationale



Incremental Strategy



REMIS in the industry - Flexible eliciting of rationale



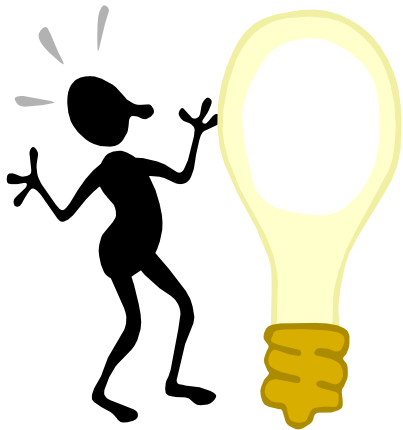
```

select ?change ?processEntity ?description ?issue ?issueStatus ?issueDescription
where {
  ?change rationale:changeProducedInVersion relrdf:version3 .
  ?change rationale:changeModifiesEntity ?processEntity .
  ?change rationale:changeDescription ?description .
  ?change rationale:changeAddressedByIssue ?issue .
  ?issue rationale:issueDescription ?issueDescription .
  ?issue rationale:status ?issueStatus
}

```

change	processEntity	description	issue	issueSt
rationalei:change_1_v3	asgi:process_1	"The process has been classified under the discipline platform engineering. The name has been modified. The inputs and outputs ha...	rationalei:issue_1_v3	"closed"
rationalei:change_2_v3	asgi:process_1	"The process description has been shortened."	rationalei:issue_2_v3	"closed"
rationalei:change_3_v3	asgi:process_13	"This is a new process classified under platform engineering."	rationalei:issue_1_v3	"closed"
rationalei:change_4_v3	asgi:process_13	"A set of tasks has been grouped as a process contained by the process Platform Engineering - Analyse ASG-Requirements."	rationalei:issue_3_v3	"closed"
rationalei:change_5_v3	asgi:process_2	"The process has been classified under the discipline platform engineering. The name has been modified. The purpose has been mo...	rationalei:issue_1_v3	"closed"
rationalei:change_6_v3	asgi:process_2	"The process description has been reviewed and rewritten."	rationalei:issue_2_v3	"closed"
rationalei:change_7_v3	asgi:process_3	"The process has been classified under the discipline platform engineering. The name has been modified. The purpose has been mo...	rationalei:issue_1_v3	"closed"
rationalei:change_8_v3	asgi:process_3	"The process description has been reviewed and rewritten."	rationalei:issue_2_v3	"closed"
rationalei:change_9_v3	asgi:process_14	"This is a new process classified under application engineering.."	rationalei:issue_1_v3	"closed"
rationalei:change_10_v3	asgi:process_15	"This is a new process classified under application engineering."	rationalei:issue_1_v3	"closed"
rationalei:change_11_v3	asgi:process_16	"A set of tasks has been grouped as a process contained by the process Analyse Requirements."	rationalei:issue_3_v3	"closed"
rationalei:change_12_v3	asgi:process_16	"This is a new process classified under application engineering."	rationalei:issue_1_v3	"closed"
rationalei:change_13_v3	asgi:process_17	"A set of tasks has been grouped as a process contained by the process Analyse Requirements."	rationalei:issue_3_v3	"closed"
rationalei:change_14_v3	asgi:process_17	"This is a new process classified under application engineering."	rationalei:issue_1_v3	"closed"
rationalei:change_15_v3	asgi:process_18	"This is a new process classified under application engineering."	rationalei:issue_1_v3	"closed"
rationalei:change_16_v3	asgi:process_18	"A set of tasks has been grouped as a process contained by the process Analyse Requirements."	rationalei:issue_3_v3	"closed"
rationalei:change_17_v3	asgi:process_19	"This is a new process classified under application engineering."	rationalei:issue_1_v3	"closed"
rationalei:change_18_v3	asgi:process_19	"A set of tasks has been grouped as a process contained by the process Analyse Requirements."	rationalei:issue_3_v3	"closed"
rationalei:change_19_v3	asgi:process_20	"This is a new process classified under application engineering."	rationalei:issue_1_v3	"closed"
rationalei:change_20_v3	asgi:process_20	"A set of tasks has been grouped as a process contained by the process Analyse Requirements."	rationalei:issue_3_v3	"closed"
rationalei:change_21_v3	asgi:process_21	"The process is newly introduced under the discipline platform engineering."	rationalei:issue_1_v3	"closed"
rationalei:change_22_v3	asgi:process_22	"The process is newly introduced under the discipline platform engineering."	rationalei:issue_1_v3	"closed"
rationalei:change_23_v3	asgi:process_23	"The process is newly introduced under the discipline service engineering."	rationalei:issue_1_v3	"closed"
rationalei:change_24_v3	asgi:process_24	"The process is newly introduced under the discipline service engineering."	rationalei:issue_1_v3	"closed"
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rationalei:change_29_v3	asgi:process_27	"A set of tasks has been grouped as a process contained by the Service Engineering Design."	rationalei:issue_3_v3	"closed"
rationalei:change_30_v3	asgi:process_4	"The process has been classified under the discipline platform engineering. The name has been modified. The purpose has been mo..."	rationalei:issue_1_v3	"closed"
rationalei:change_31_v3	asgi:process_4	"The process description has been reviewed and rewritten."	rationalei:issue_2_v3	"closed"

Summary and Future Work



- Flexible conceptual model, method, incremental strategy → REMIS approach based on industry experience
- Incremental deployment process allows monitoring success of REMIS
- Open research questions:
 - Suitable techniques for aggregating/integrating rationales?
 - Visualization techniques that easily explains rationale?
 - Connect rationale to high-level goals of an organization

Thank You For Your Attention!



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