Tool Support for Federated EA Model Management – An Industrial Case Study

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Agenda

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Tool Support for Federated EA Model Management – An Industrial Case Study

1. Demo of ModelGlue
2. Research Questions and Methodology
3. Visual Complexity and Filtering
4. Feedback
5. Conclusion

Motivation

Current problems in EA model maintenance:

EA documentation is still being done manually…

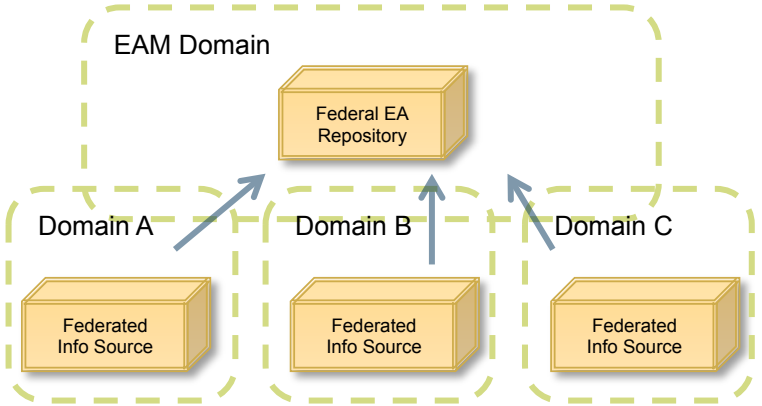
…and thus costly, resulting in models of low quality.

Type of collection	% of all
Manually from applications/databases	76.00%
Manually via interviews	68.00%
Manually modeled in workshops	52.80%
Manually via questionnaires	36.80%
Partially collected automatically	35.20%

Challenge	% of all
Huge data collection effort	55.00%
Low EA model data quality	55.00%
Insufficient tool support	34.29%
…	

Goal: High quality of data, up-to-date information, little collection effort

Retrieve reliable data basis from federated, autonomous information sources



[Ro13a]

Demo-Video

…Demonstration of ModelGlue functionality…

Research Questions and Methodology

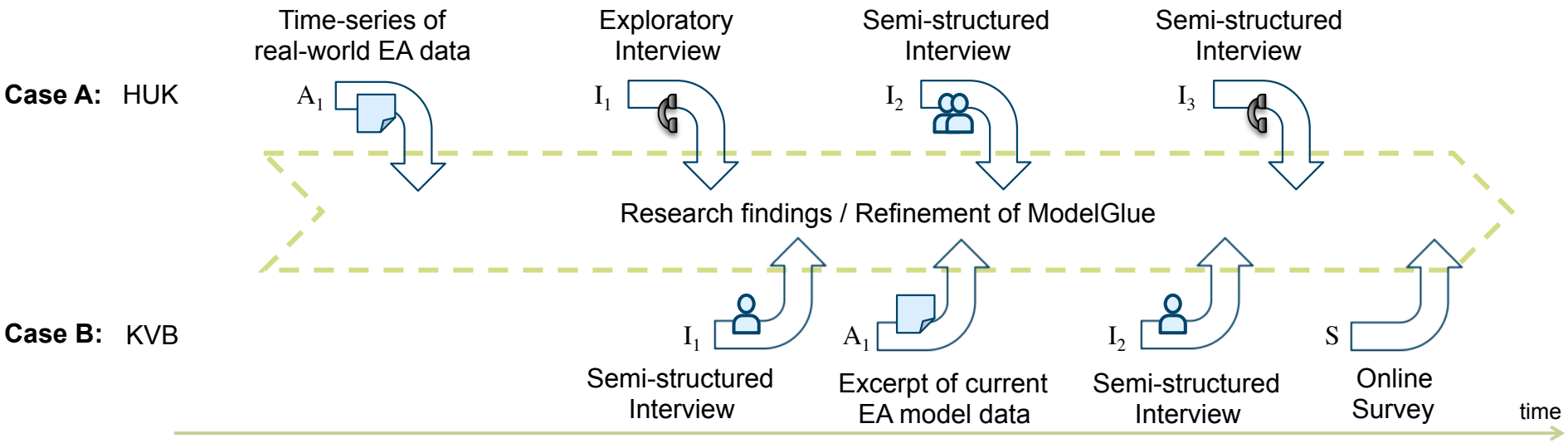
$RQ_{1/2}$: Does the concept of federated EA model management reflect industry needs – especially for automated EA model maintenance?

RQ_3: What are technical industry constraints and implications?

- Import frequency? Amount of relevant data? Does ModelGlue scale?

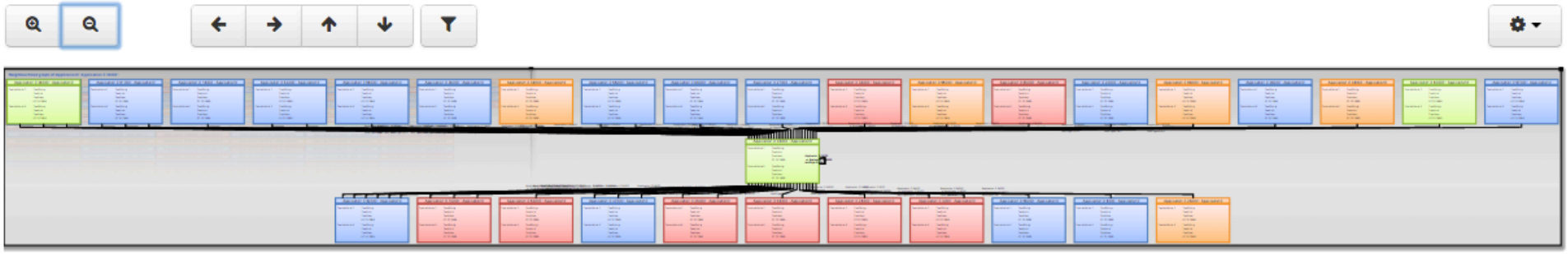
RQ_4: Does the implementation of ModelGlue (behaviour, UI, …) meet user expectations?

Research Methodology: Two Intertwined Case Studies



Visual Complexity: Many Relationships

	Company A: HUK-Coburg	Company B: KVB
	10.000 employees, 10m customers	1.500 employees, 10.000 members
No. of types:	~15	<10
Inst. per type:	1600 (Apps) – 23000 (CMDB)	200 - 1000
Relationships per inst. (av.)	5 - 40	3 - 12



Visual Complexity: Many Instances

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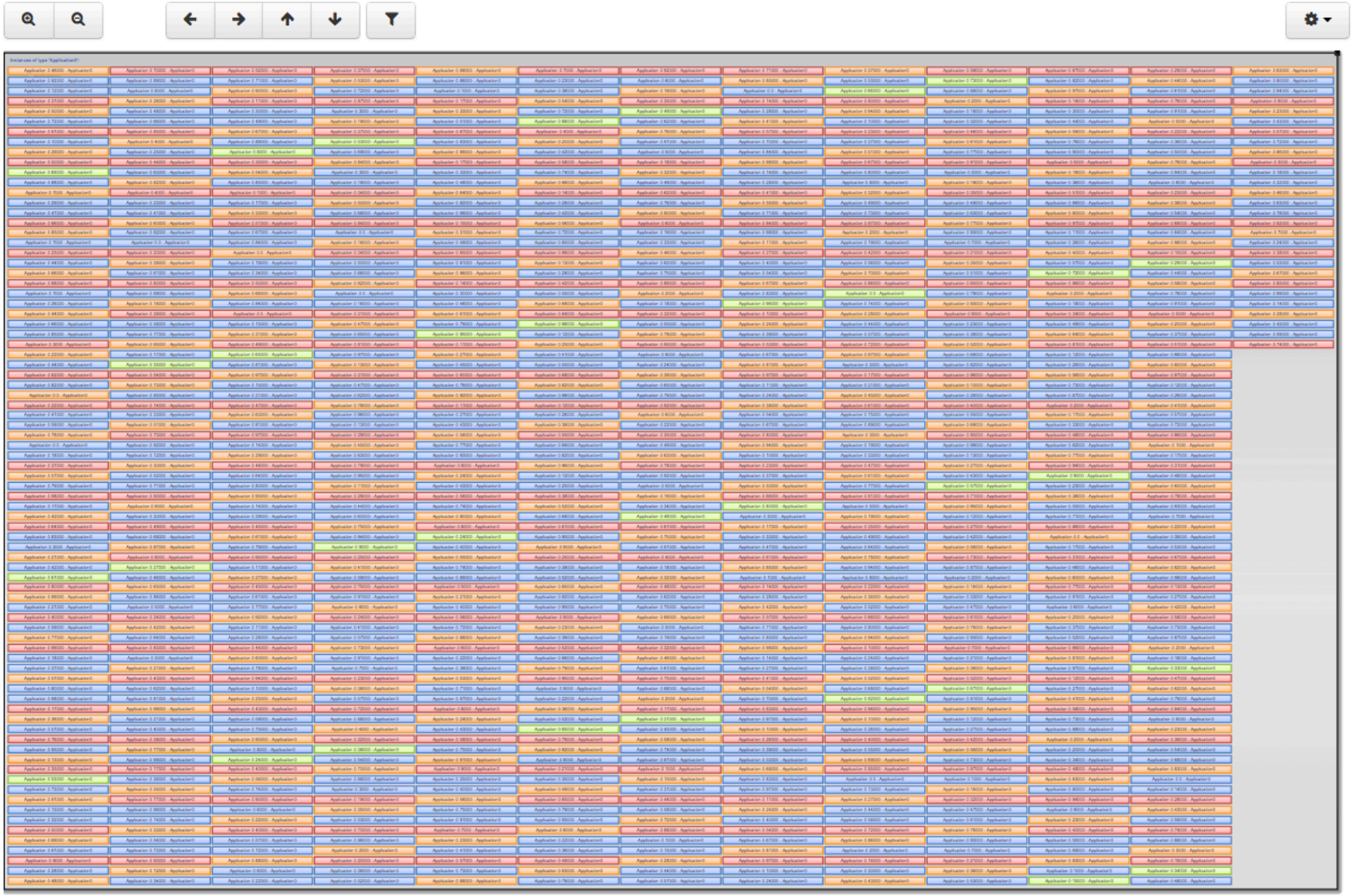
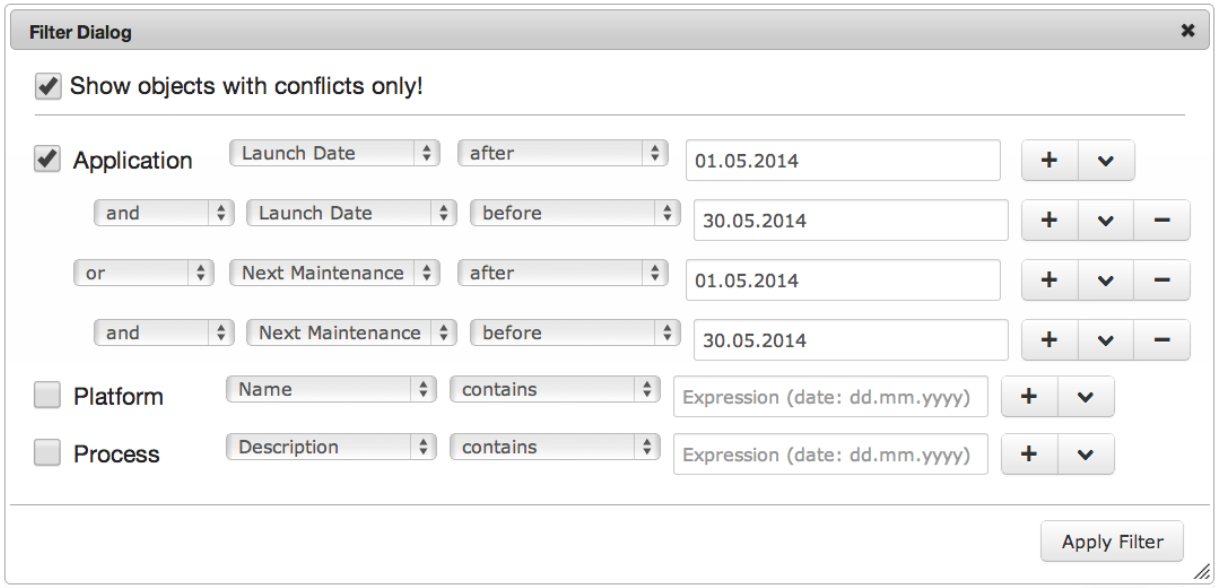


Reduce Visual Complexity: Filter…

- Solution a): Classical filter UI



- Solution b): Filtering via a query language (MxL: Model Expression Language)

```
find(Application)
  .where(("Launch Date" > "01.05.2014" and "Launch Date" < "30.05.2014") or
         ("Next Maintenance" > "01.05.2014" and "Next Maintenance" < "30.05.2014"))
```

Questions:

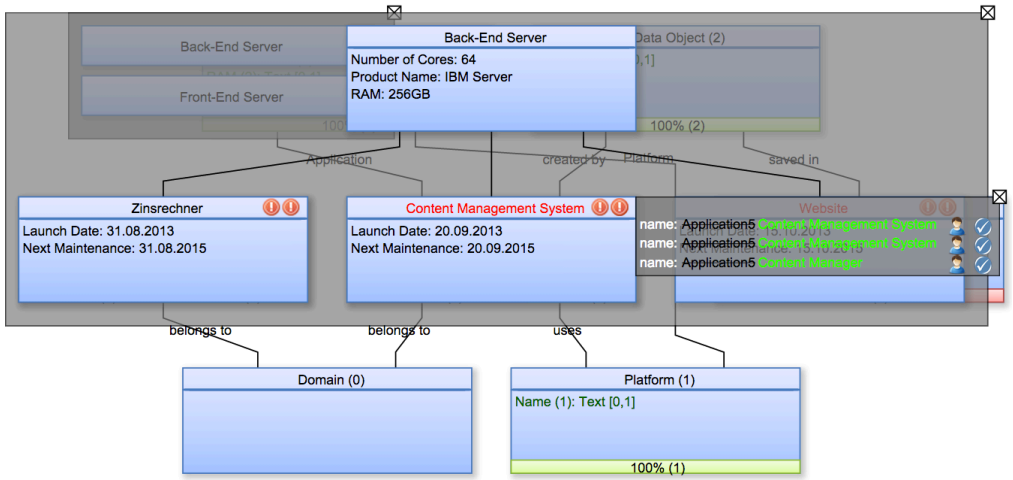
- Are both solutions intuitive (RQ_4)?
- Do they suffice EA needs (RQ_3)?

[Sc13, Re13]

Feedback: Filter UI or MxL Queries?

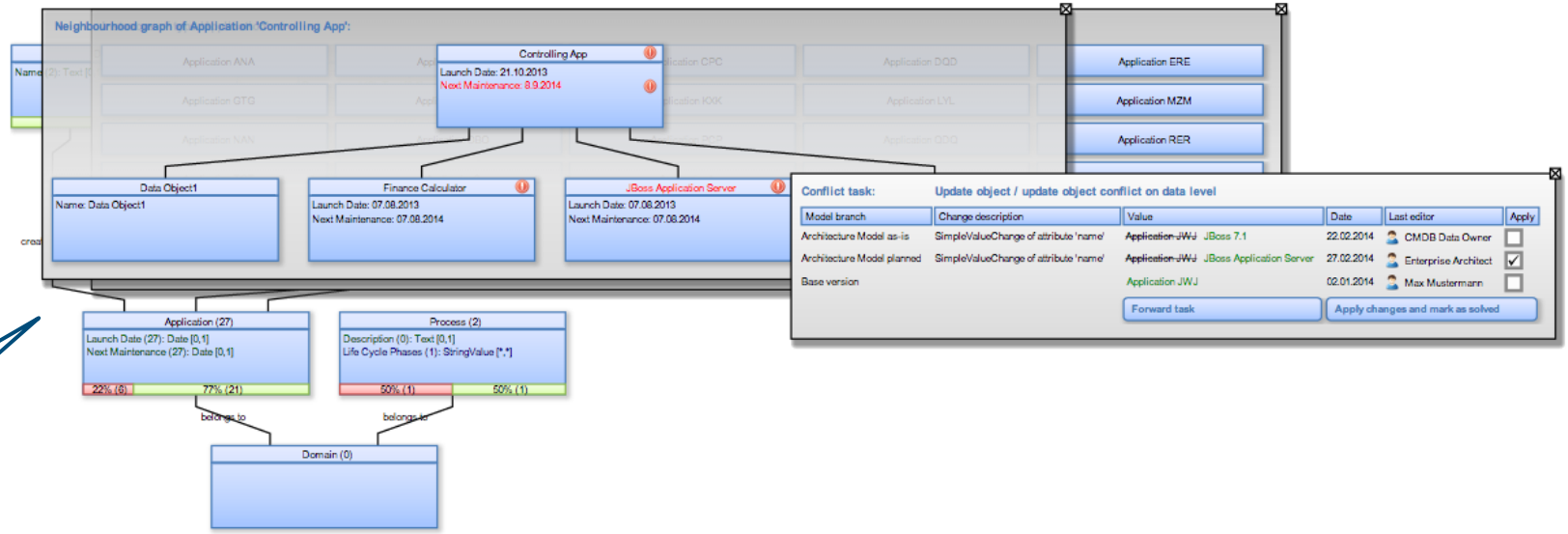
	Company A: HUK-Coburg	Company B: KVB
	10.000 employees, EAM team	1.500 empl., one enterprise architect
Expressive power	**Filter** for simple scenarios.	**Filter** is sufficient.
	Complex queries require a query language like **MxL**.	
Intuitive comprehension	**Filter** is intuitive also for casual users.	**Filter** nice and intuitive.
	Power users like enterprise architects will learn the language **MxL**.	Too few power users who would want to learn the language **MxL**.

Feedback on UI Aspects: Transparency



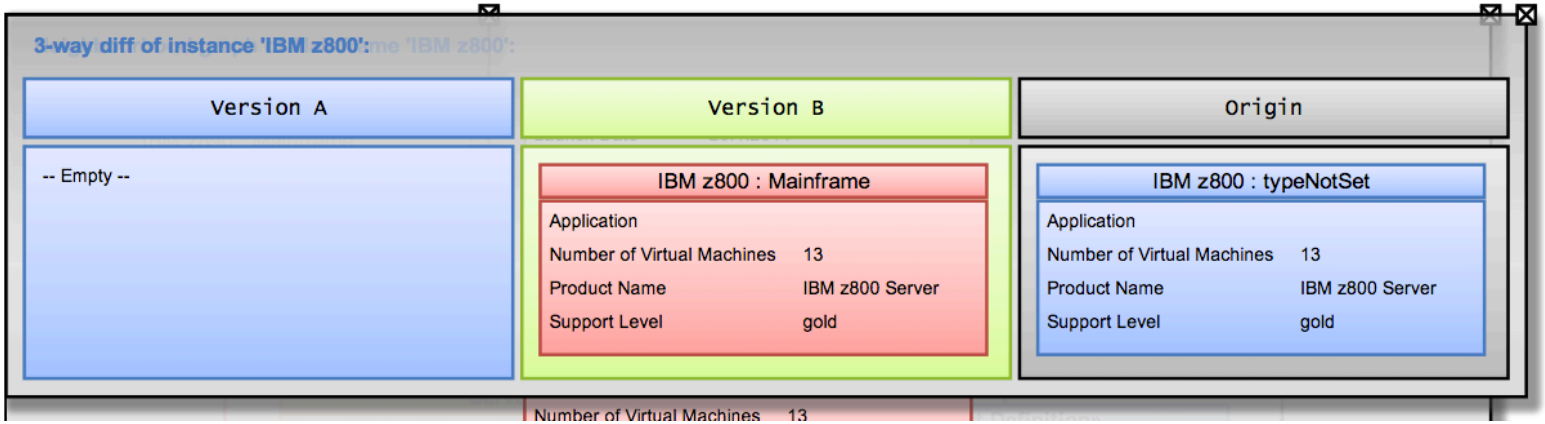
before

→ **Careful with the transparency of overlays!**



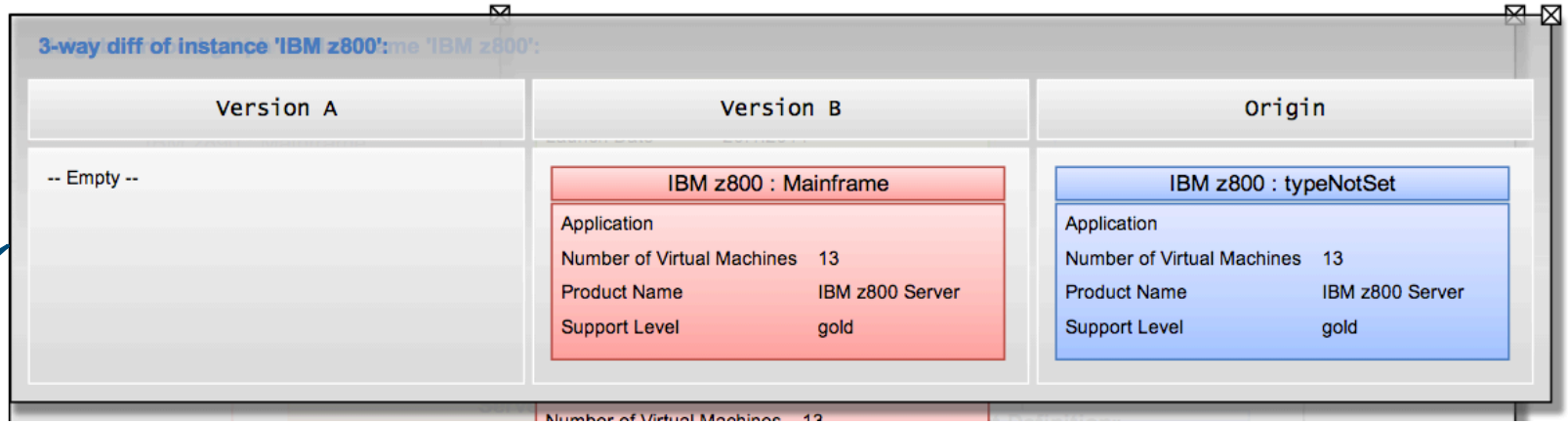
after

Feedback on UI Aspects: Colours



before

→ **Use colours sparingly and only if they have a semantic reason!**



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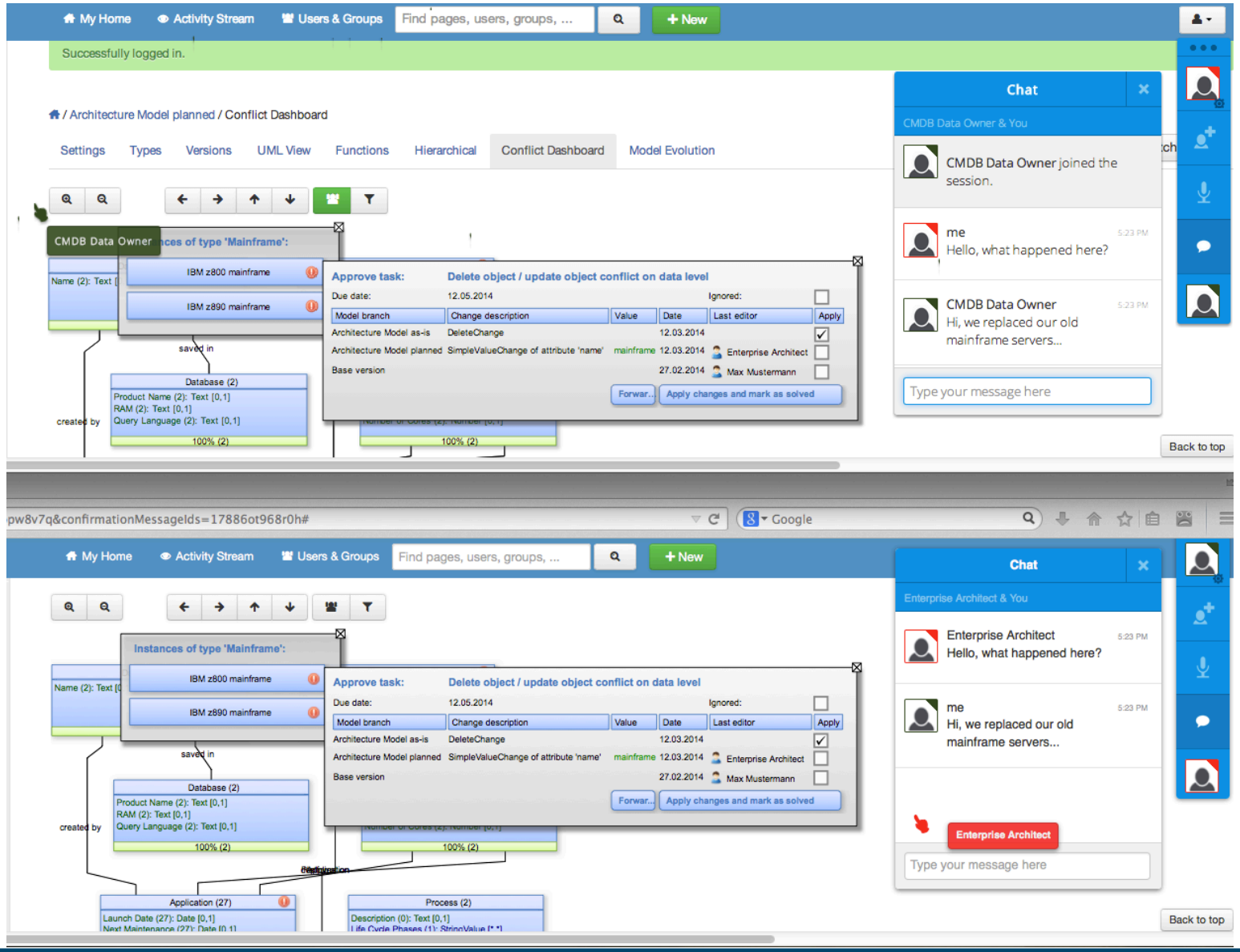
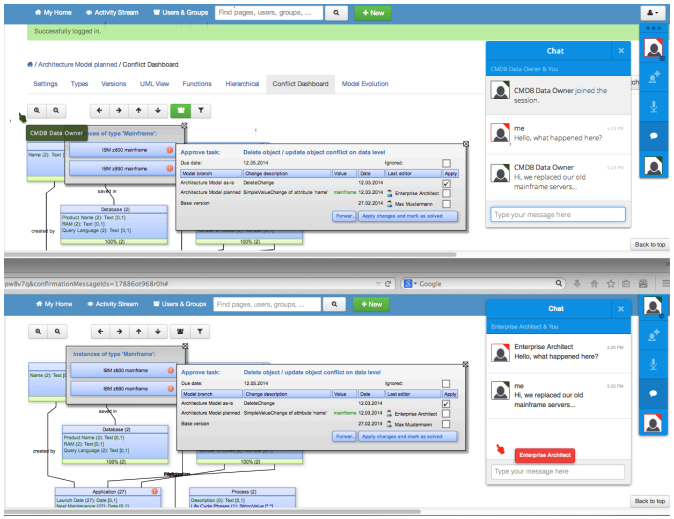
Collaborative Conflict Resolution



Further Feedback…

- Relationships afflicted with conflicts should be marked as such.

- Collaboration support (Thesis Tobias Schrade) for conflict resolution
  - ➢ Vision for the next 5-10 years.
  - ➢ Looks promising, though.
    Advantages over normal screen-sharing apps.



- Conflict resolution in a visualisation or in the table?
  - ➢ Depends…

…**Visualisation** for an overview …**Table** for conflict resolution	**What for?**
…**Visualisation** for managers …**Table** for architects and model experts	**Who uses the tool?**

Conclusion

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Evaluation results

- EA diff and conflict visualisations help to assure EA model quality
- Filtering is vital for the reduction of EA model complexity
- Tasks for conflict resolution require a solid user base
- Some features (like the collaboration support) are ahead of their time

Conclusion

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Technical Limitations

- **Layouting**: no influence on the distribution of schema elements (3rd party library)
- **Productive features**: model manipulation in visualisations
- **Conflict detection**: Only immediate neighbourhood is considered

Study Limitations

- Thorough evaluation of different conflict strategies (strict, tolerant)
- Include more users and different viewpoints (business stakeholders)

Conclusion

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Future work

- Field studies (behaviour studies, …)
- Collaboration incentives
- Implement visual model manipulation functionality
- Explore adaptation of conflict resolution strategies
- Develop new strategies to learn from user interaction

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