# Historization of Enterprise Architecture Models and Analysis Results for Optimization

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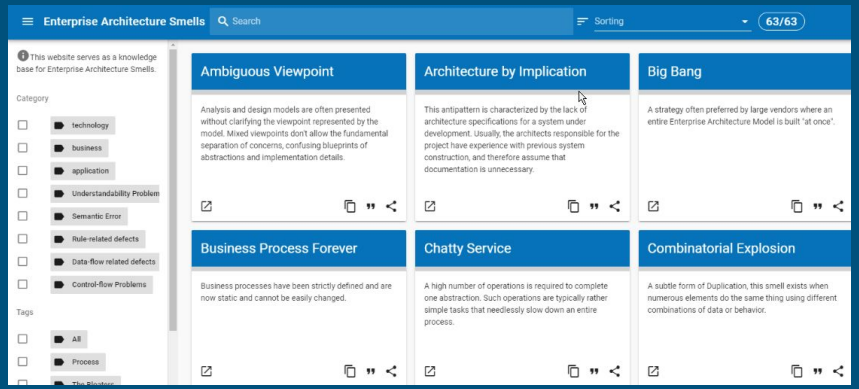
# EA Debt

> Enterprise Architecture Debt depicts the deviation of the currently present state of an enterprise from a hypothetical ideal state.

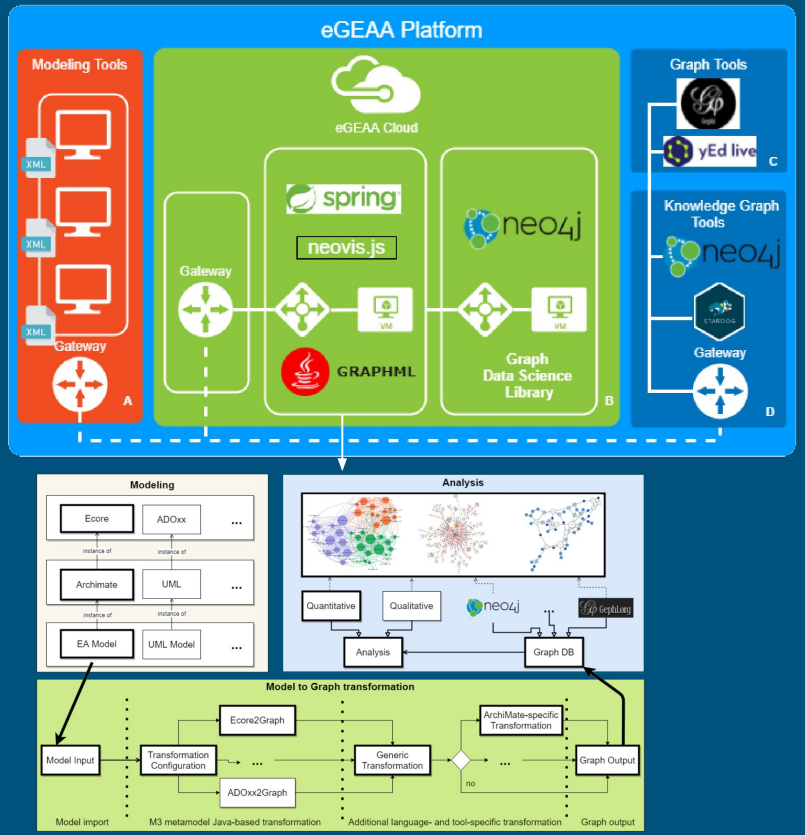
# EA Smell

- Derived from Code Smell
- The symptoms of EA Debt
- Catalog of 63 smells



# The CM2KG Platform

- Transforms EA models into key graphs
- Automatic EA Smell detection
- Graph Visualisation and Analysis
- No memory



# Why do we want historization?

- Track changes
- Navigate through time to gain context and understanding
- Track dependencies
- Temporal queries
- Backup


# Problem Statement

- How should the transformed graphs of EA models be stored and structured to preserve their history?
- How should an interface be designed to allow the models and analysis results of the CM2KG tool to be viewed, queried and extracted in an accessible way?

# Graph Historization in previous research

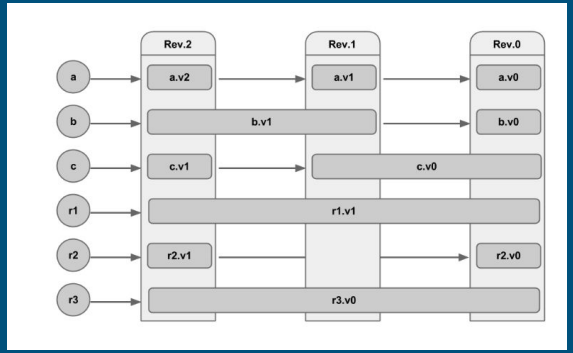
Storage

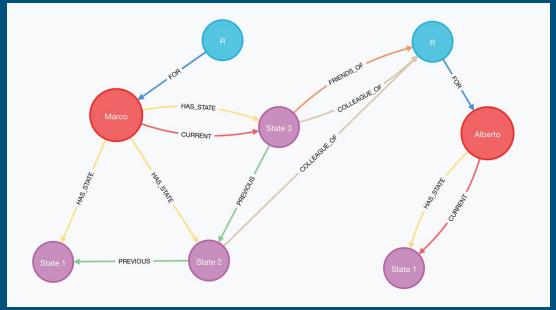
- Snapshot
  - Costly storage
  - Fast retrieval
- Delta
  - Efficient storage
  - Slow retrieval
- Granularity

# Graph Historization in previous research

Representation

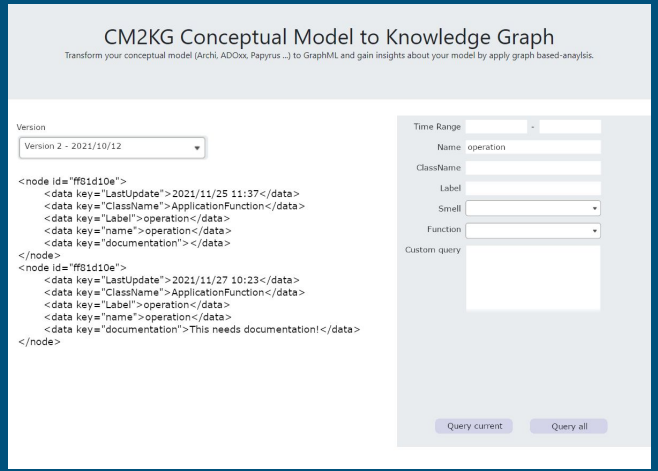
- Separation
  - Mixed
  - Isolated
- Structure
  - Linked Lists
  - Entity-State model
  - Tables
  - Whole graphs



# Implementation (current focus)

- Check ID of the model
- Compare the uploaded model with its most recent version
- Add or update the timestamp of any changed element
- Add any change to an entity-state graph
- Save the uploaded model as the most recent version
- Present the entity-state graph as well as all singular versions in a queryable way



# Demonstration & Evaluation

- The historization will be demonstrated by using modified versions of pre-existing EA models and then running queries on parts of and the whole history
- The implementation will be evaluated on the accuracy of the historization and query results, as well as how practical it is to use based on feedback from EA practitioners

# Feedback

Is there any specific historical data that you would find useful?