

# MQL to Cypher - A Framework for Translating a Domain-Specific Query Language for Querying Version-Controlled Modeling Repositories into Cypher Expressions

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## Abstract

Version Control Systems (VCS) are responsible for managing changes and offer a plethora of other features over collections of information. Some of the most common VCSs such as *git* are geared towards managing textual information which characterizes them as *line-oriented*. Model Driven Engineering (MDE) is gaining more industrial interest and line-oriented VCSs are not the most appropriate for managing MDE projects as the interpretation of the changes in some serialized model over different versions of the affected artefact are not specific to the domain under which the model is conceived. A *semantically-oriented* VCS is believed to better interpret and manage a model-driven project. Such a system needs to adhere to various components such as defining the units of comparison for semantic comparison, offer the necessary features for managing the repository, the ability to query the VCS with respect to the project, ... [Syriani and Wimmer (2018)]. In this paper we present a framework based on direct translations of MQL - a query language for querying a version-controlled modeling repository which corresponds to one of the prescribed components of a semantically-oriented VCS - into Cypher - a query language supported by Neo4j graph databases. Generated Cypher expressions are computed inside the database itself.

**Keywords:** DSL, modelling, model transformation, cypher, neo4j, query language

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## 1. Introduction

Context of work, problem to solve. Expose rest of paper.

## 2. Modelling the Repository

## 3. Related Work

Sample text.

## 4. Conclusion

Sample text.

## References

Syriani, E., Wimmer, M., 2018. A roadmap towards domain-specific version control systems. White Paper .

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