

# Template for Submission of Solution to the 2026 Model Management (MoM) Challenge

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## Abstract

We contribute a solution to the Model Management (MoM) Challenge 2026 (available at doi: 10.5281/zenodo.19608752) with the XYZ tool / framework.

*Describe how your contribution addressed the challenge requirements on a high abstraction level*

## CCS Concepts

• **Do Not Use This Code** → **Generate the Correct Terms for Your Paper**; *Generate the Correct Terms for Your Paper*; Generate the Correct Terms for Your Paper; Generate the Correct Terms for Your Paper.

## Keywords

Do, Not, Use, This, Code, Put, the, Correct, Terms, for, Your, Paper

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## 1 Introduction

*General introduction of the solution:*

- *Why did you chose to take on the Challenge?*
- *What are the general capabilities of your tool?*
- *Since when is the tool being developed?*
- *Is it open-source?*
- *Is it dependent on another platform (Eclipse, etc.)*
- *Is it a commercial tool? Who are the customers?*

\*Both authors contributed equally to this research.

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2026-04-17 10:25. Page 1 of 1-3.

## 2 High-Level Dimensions and Functions of MoM

*Position your tool in the context of high-level dimensions and functions of MoM as described in the Challenge.*

### 2.1 Approach [HDF.1]

### 2.2 Technological Space [HDF.2]

### 2.3 Relationships [HDF.3]

### 2.4 Views [HDF.4]

### 2.5 Collaboration [HDF.5]

## 3 Model Management Tasks

*To enable automatic filling and computing of the score tables in this Section and Appendix A, locate the score-tables.tex  $\LaTeX$  file and change the scores in the last argument of the \MT macros. For example, giving 1 point to MT.2.3 translates to \MT{2}{3}{1}. If an MT is not addressed by your solution, you may remove its subsection and omit the corresponding \MTScoreTable call; it will be excluded from the summary table automatically.*

### 3.1 Change Impact & Reconciliation [MT.1]

*MT.1.1 – How is the change in the Parts Catalogue detected? Score 1 if your tool can detect and report changes; 0 otherwise.*

*MT.1.2 – Which mechanisms or processes ensure propagation of this change to the Bill of Materials? Score 1 if a propagation mechanism exists; 0 otherwise.*

*MT.1.3 – Is the propagation automatic, semi-automatic, or manual? Score 1 if propagation is at least semi-automatic; 0.5 if manual but documented; 0 if unsupported.*

*MT.1.4 – Can the propagation strategy be parameterised (to happen semi-/automatically)? Score 1 if the strategy is configurable; 0 otherwise.*

*MT.1.5 – At which granularity does propagation operate (e.g., element, feature, model)? Score 1 if granularity can be described; 0 if propagation is unsupported.*

*MT.1.6 – Can an explicit structure (e.g., graph, tree) be computed to represent impacted elements? Score 1 if an impact structure can be produced; 0 otherwise.*

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MT.1.7 — Can such structures be composed across multiple changes, and how deeply can they be inspected? *Score 1 if composition and inspection are supported; 0 otherwise.*

*Alternatives & Extensions. Discuss alternative mechanisms or extensions beyond the scope of the questions above, if any.*

Score.

	Question	Score	Total
MT.1	1	0	0
	2	0	
	3	0	
	4	0	
	5	0	
	6	0	
	7	0	

### 3.2 Views Management [MT.2]

MT.2.1 — Can model elements or types be selectively filtered on demand? On which criteria? *Score 1 if selective filtering is supported; 0 otherwise.*

MT.2.2 — Can filtering rules be specified declaratively (e.g., via a query language)? *Score 1 if declarative specification is supported; 0 otherwise.*

MT.2.3 — Can views be systematically derived from conformance models? How? *Score 1 if systematic derivation is supported; 0 otherwise.*

MT.2.4 — Are views themselves typed (e.g., via a metamodel)? *Score 1 if views are typed; 0 otherwise.*

MT.2.5 — How are changes in views reconciled with the source model? *Score 1 if view-to-source reconciliation is supported; 0 otherwise.*

MT.2.6 — How are views notified of changes in the source model? *Score 1 if notification or synchronisation mechanism exists; 0 otherwise.*

MT.2.7 — Do source model changes automatically propagate to views? How? *Score 1 if automatic propagation is supported; 0 otherwise.*

*Alternatives & Extensions. Discuss alternative mechanisms or extensions beyond the scope of the questions above, if any.*

Score.

	Question	Score	Total
MT.2	1	1	6.5
	2	1	
	3	1	
	4	1	
	5	0.5	
	6	1	
	7	1	

### 3.3 Querying & Validation [MT.3]

MT.3.1 — Is `calculated_total_mass_kg` automatically updated after the change? *Score 1 if automatic update is supported; 0 otherwise.*

MT.3.2 — Which mechanisms or processes support this update? *Score 1 if a concrete mechanism is described; 0 otherwise.*

MT.3.3 — Does it require manual intervention? *Score 1 if no manual intervention is needed; 0.5 if partially manual; 0 if fully manual or unsupported.*

MT.3.4 — Can the process be fully automated or parameterised? *Score 1 if automation is configurable; 0 otherwise.*

MT.3.5 — Is the updated status reflected in the Report? *Score 1 if the Report is updated accordingly; 0 otherwise.*

MT.3.6 — Can impact analysis be performed manually by querying all relevant models? *Score 1 if cross-model querying is supported; 0 otherwise.*

*Alternatives & Extensions. Discuss alternative mechanisms or extensions beyond the scope of the questions above, if any.*

Score.

	Question	Score	Total
MT.3	1	0	2
	2	0	
	3	0	
	4	1	
	5	1	
	6	0	

### 3.4 Concurrent Modifications [MT.4]

MT.4.1 — How are conflicts resolved: manual vs. (semi-)automatic, online vs. offline, configurable vs. fixed strategies? *Score 1 if a conflict resolution strategy is supported; 0 otherwise.*

MT.4.2 — Are changes propagated in real time or through explicit synchronization? *Score 1 if propagation mode is described; 0 if concurrent editing is unsupported.*

MT.4.3 — If concurrent conflicting modifications are prevented, which mechanisms or policies detect and avoid such conflicts? *Score 1 if prevention mechanisms are described; 0 if neither prevention nor resolution is supported.*

MT.4.4 — Does the tool support live collaborative modelling? If so, how are conflicts visualized, prevented, or resolved? *Score 1 if live collaboration is supported; 0 otherwise.*

*Alternatives & Extensions. Discuss alternative mechanisms or extensions beyond the scope of the questions above, if any.*

Score.

	Question	Score	Total
MT.4	1	0	0
	2	0	
	3	0	
	4	0	

### 3.5 Version Management [MT.5]

MT.5.1 — What is the definition of a “version” (single artefact, dependency closure, or system-wide state)? *Score 1 if the notion of version is clearly defined; 0 otherwise.*

MT.5.2 — Are versions created automatically or explicitly (e.g., commit-based)? *Score 1 if version creation is supported; 0 otherwise.*

MT.5.3 — How are artefacts linked across versions (e.g., traceability links between instances)? *Score 1 if cross-version linking is supported; 0 otherwise.*

MT.5.4 — Can versions be enriched with metadata? *Score 1 if metadata attachment is supported; 0 otherwise.*

MT.5.5 — Are such metadata queryable and exploitable? *Score 1 if metadata can be queried; 0 otherwise.*

MT.5.6 — Can the rationale for version creation be captured and maintained? *Score 1 if rationale capture is supported; 0 otherwise.*

*Alternatives & Extensions. Discuss alternative mechanisms or extensions beyond the scope of the questions above, if any.*

Score.

	Question	Score	Total
MT.5	1	0	0
	2	0	
	3	0	
	4	0	
	5	0	

#### 4 Replication Package (Optional)

We recommend authors provide a replication package to accompany their solution. Simple impermanent links to the source code are not acceptable. Consider using technologies like containerization, notebooks, etc. in order to enhance the replicability of your solution, and deposit them on platforms with some kind of guarantee of permanence like Zenodo. Ensure you provide complete instructions for not just initializing your tool, but also to reproduce the Engineering Scenarios (ES) described in the Challenge.

#### 5 Conclusion

- Summarize the **main strengths and limitations** of the approach;
- Describe any **adaptations or assumptions** made to fit the Case Study;
- Identify **unaddressed requirements or limitations** of the challenge;
- Provide **lessons learnt** and implications for future work, both for the authors and the broader MoM community.

#### Acknowledgments

To XX for YY.

2026-04-17 10:25. Page 3 of 1–3.

#### References

##### A Scores Summary Table

	Question	Score	Total
MT.1	1	0	0
	2	0	
	3	0	
	4	0	
	5	0	
	6	0	
	7	0	
MT.2	1	1	6.5
	2	1	
	3	1	
	4	1	
	5	0.5	
	6	1	
	7	1	
MT.3	1	0	2
	2	0	
	3	0	
	4	1	
	5	1	
	6	0	
MT.4	1	0	0
	2	0	
	3	0	
	4	0	
MT.5	1	0	0
	2	0	
	3	0	
	4	0	
	5	0	
<b>Grand Total</b>			<b>8.5</b>

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