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Optimizing Software Build Process of Papyrus-RT By Seamless Integration of Code Generation and EMFCompare

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Background

Software Build Process

Code based software development:

- Build tools play critical role in software development process by automating the compiling and packaging process.
- In large software project, building account for significant amount of time and optimization of build process is an active research.

Model Driven Development:

- MDD tools relies on the existing build tools, so there are inherited existing problem from existing tools.
- Due to the lack of support for proper incremental code generation, these tools even suffer from inefficient build process.

Motivation

Existing Code Generation process of Papyrus-RT

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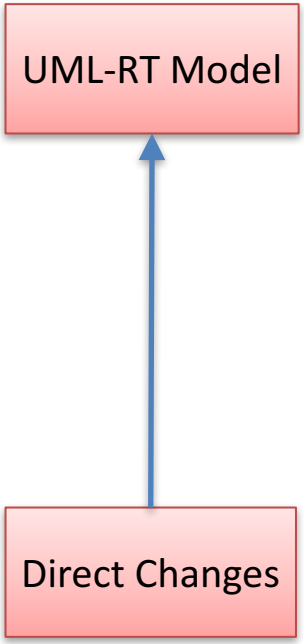

Existing Code Generation process of Papyrus-RT

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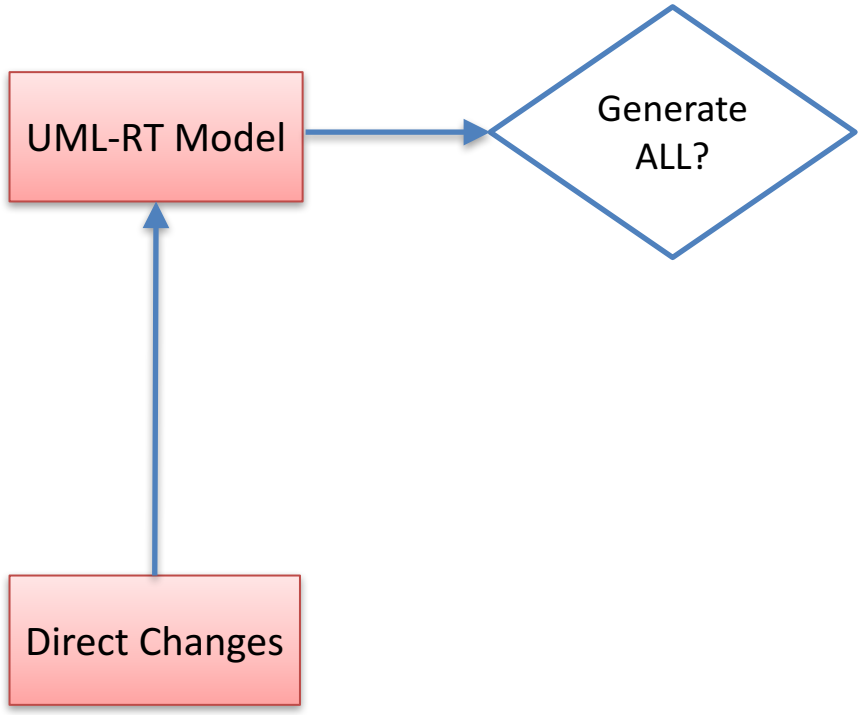

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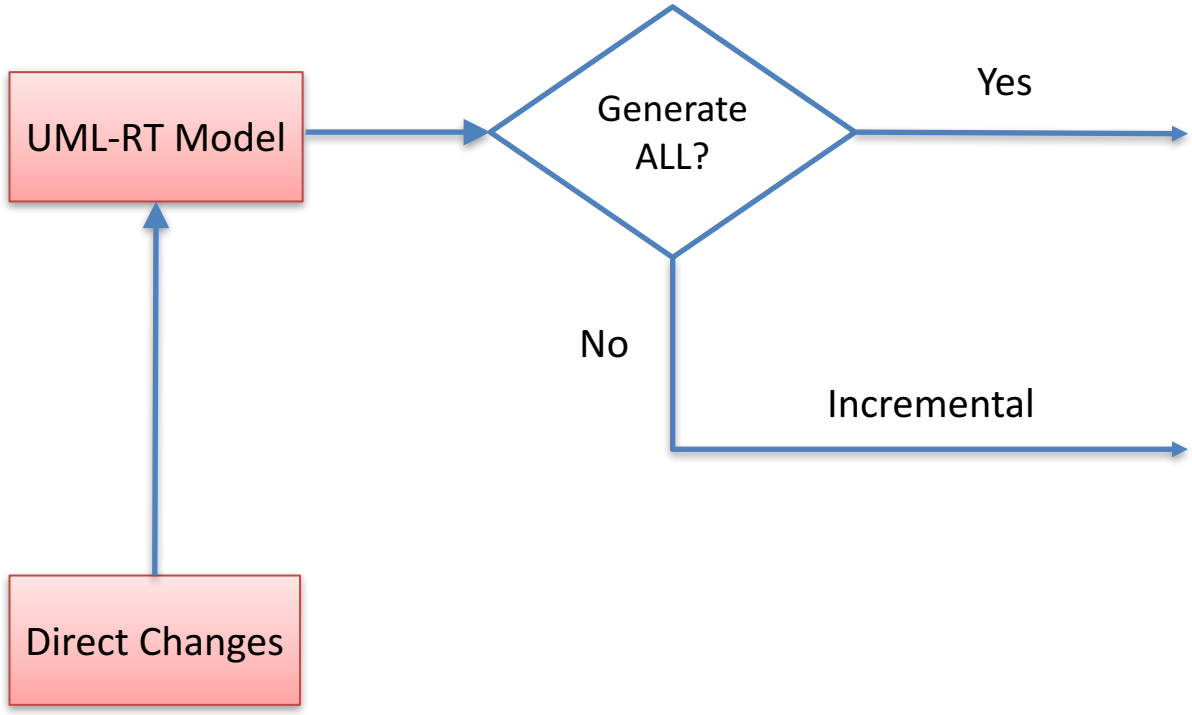

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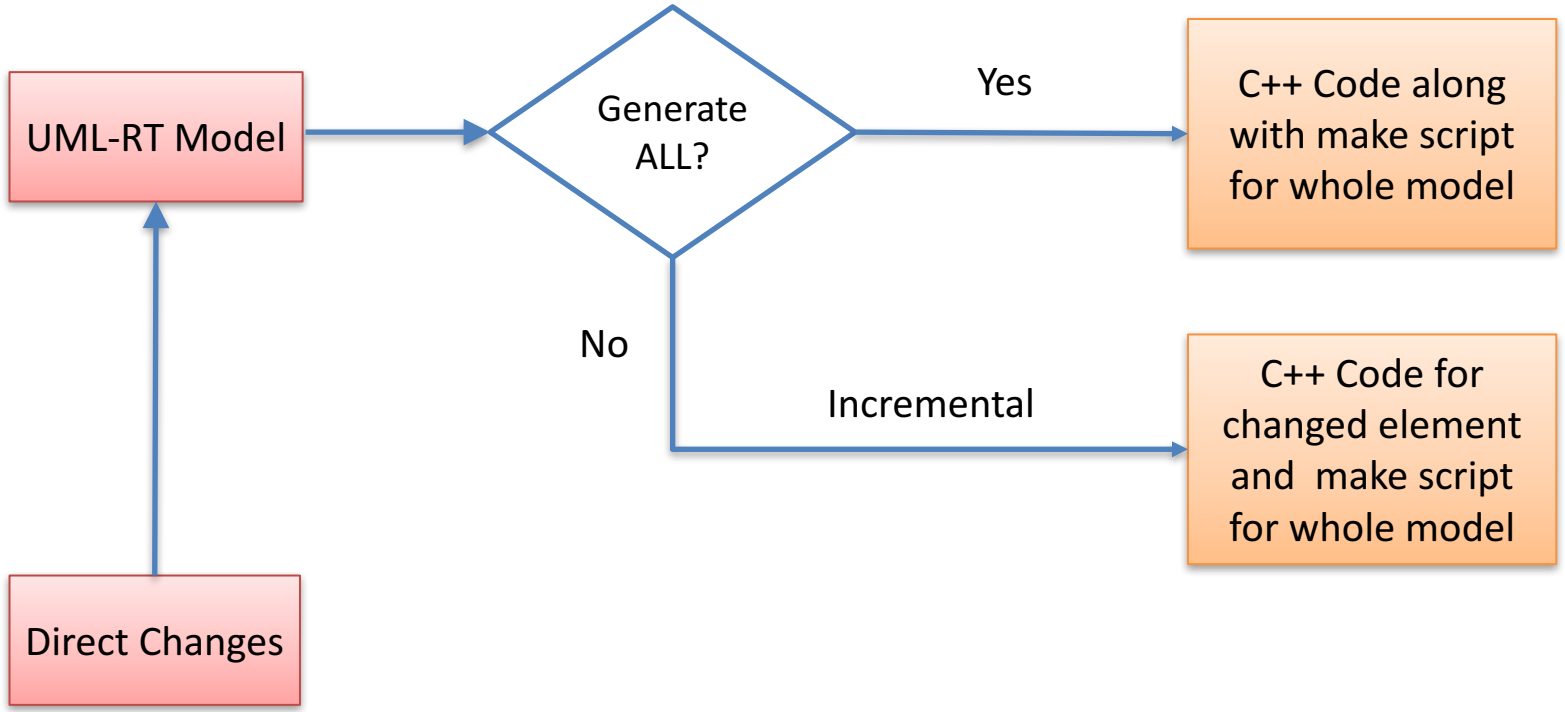

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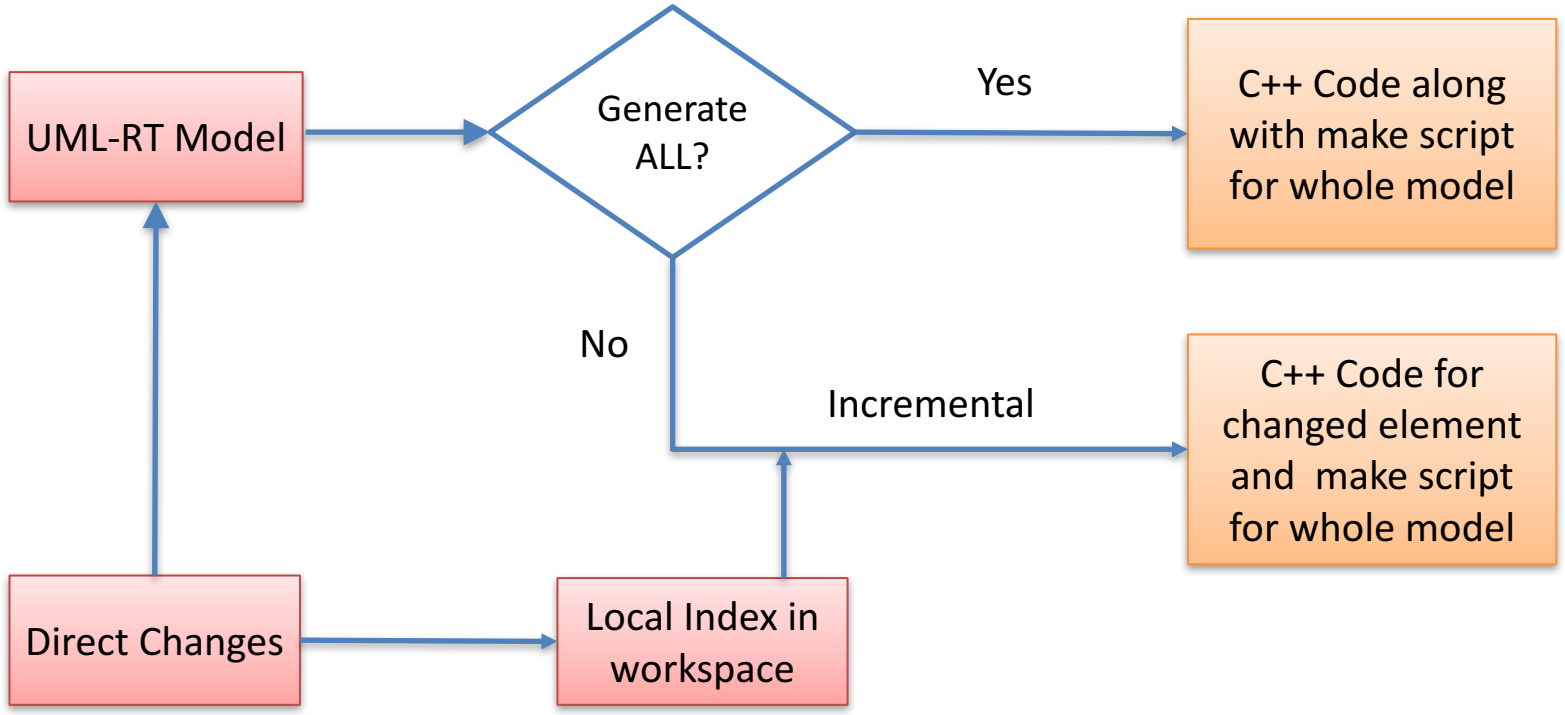


Existing Code Generation process of Papyrus-RT

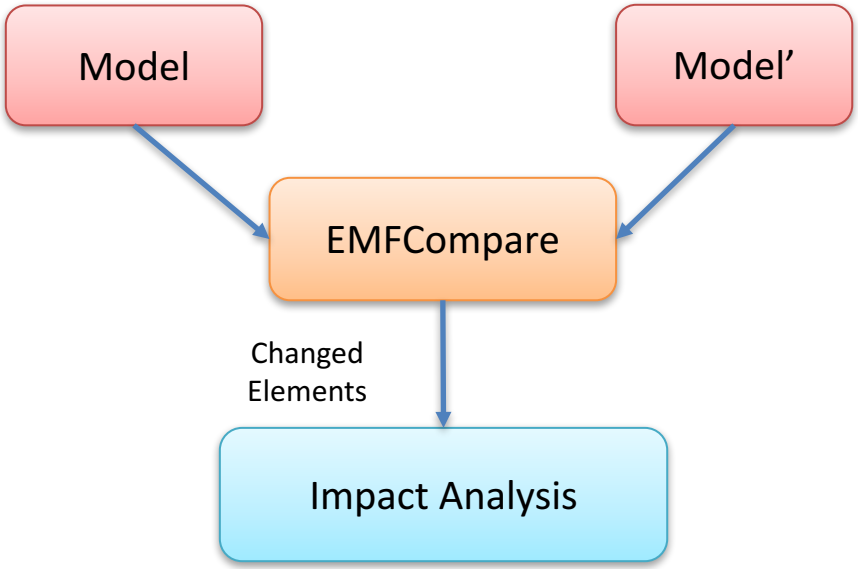
Approach

Model

Model’

Approach

Approach



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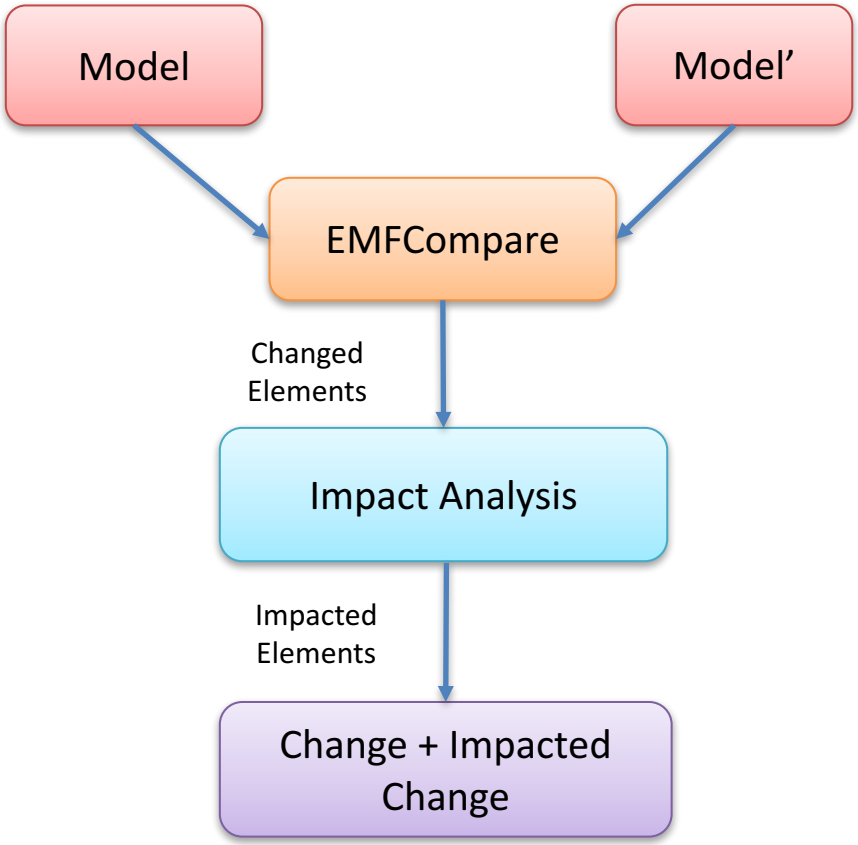
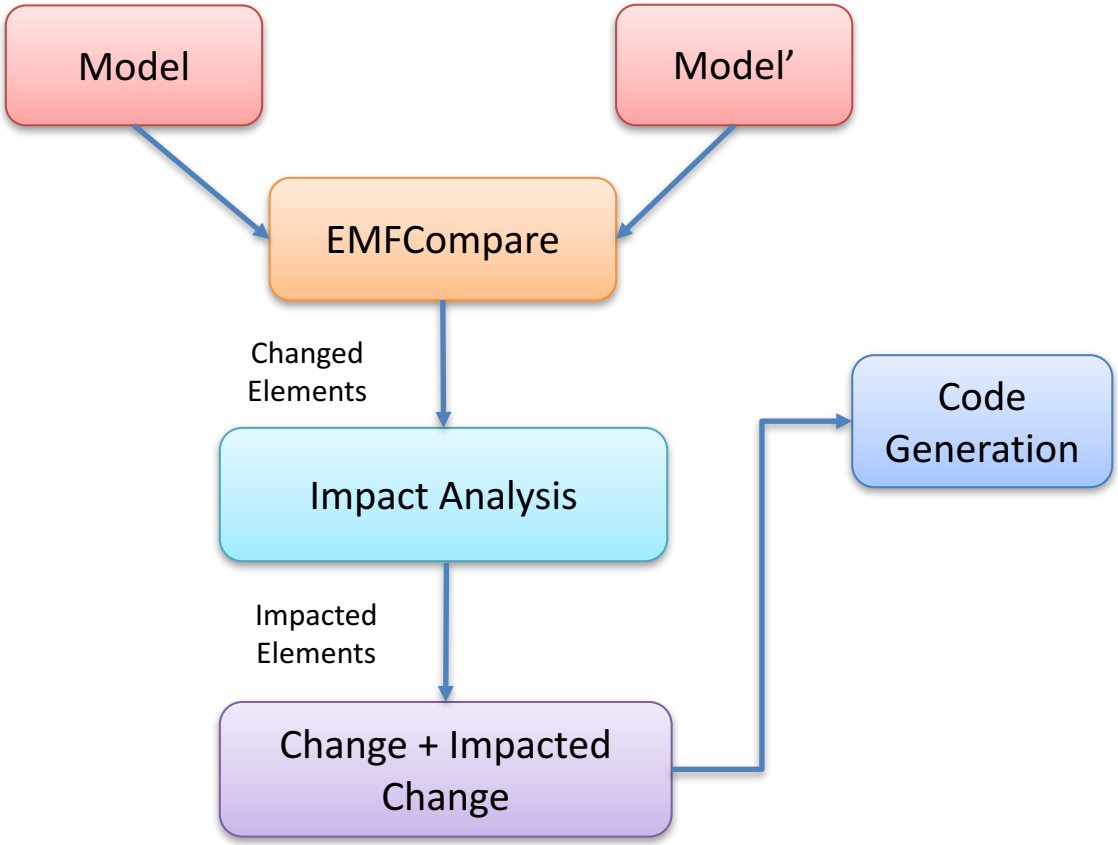

Model
Model'
EMFCompare
Changed Elements
Impact Analysis
Impacted Elements
Change + Impacted Change

Approach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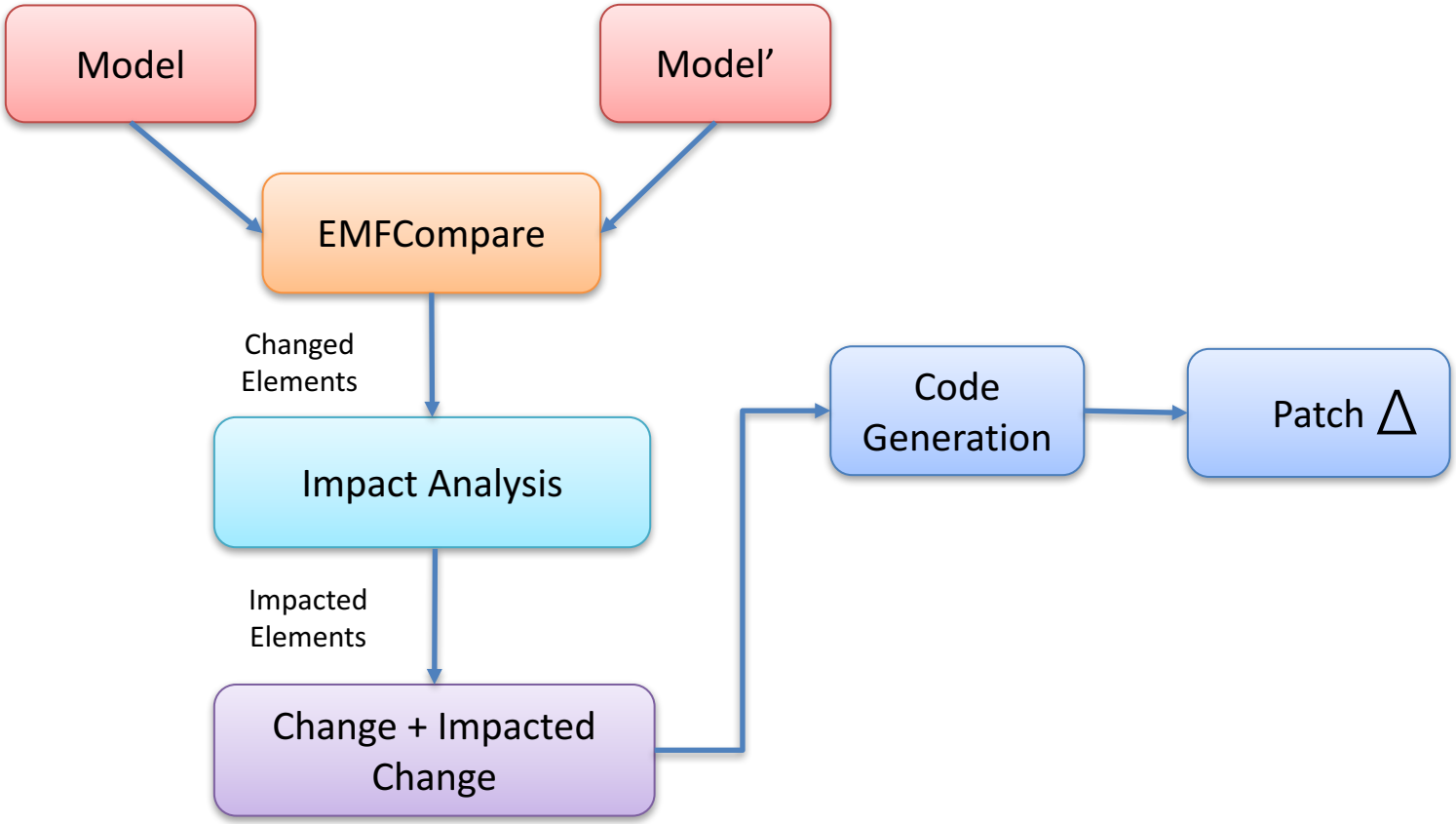
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Patch Δ

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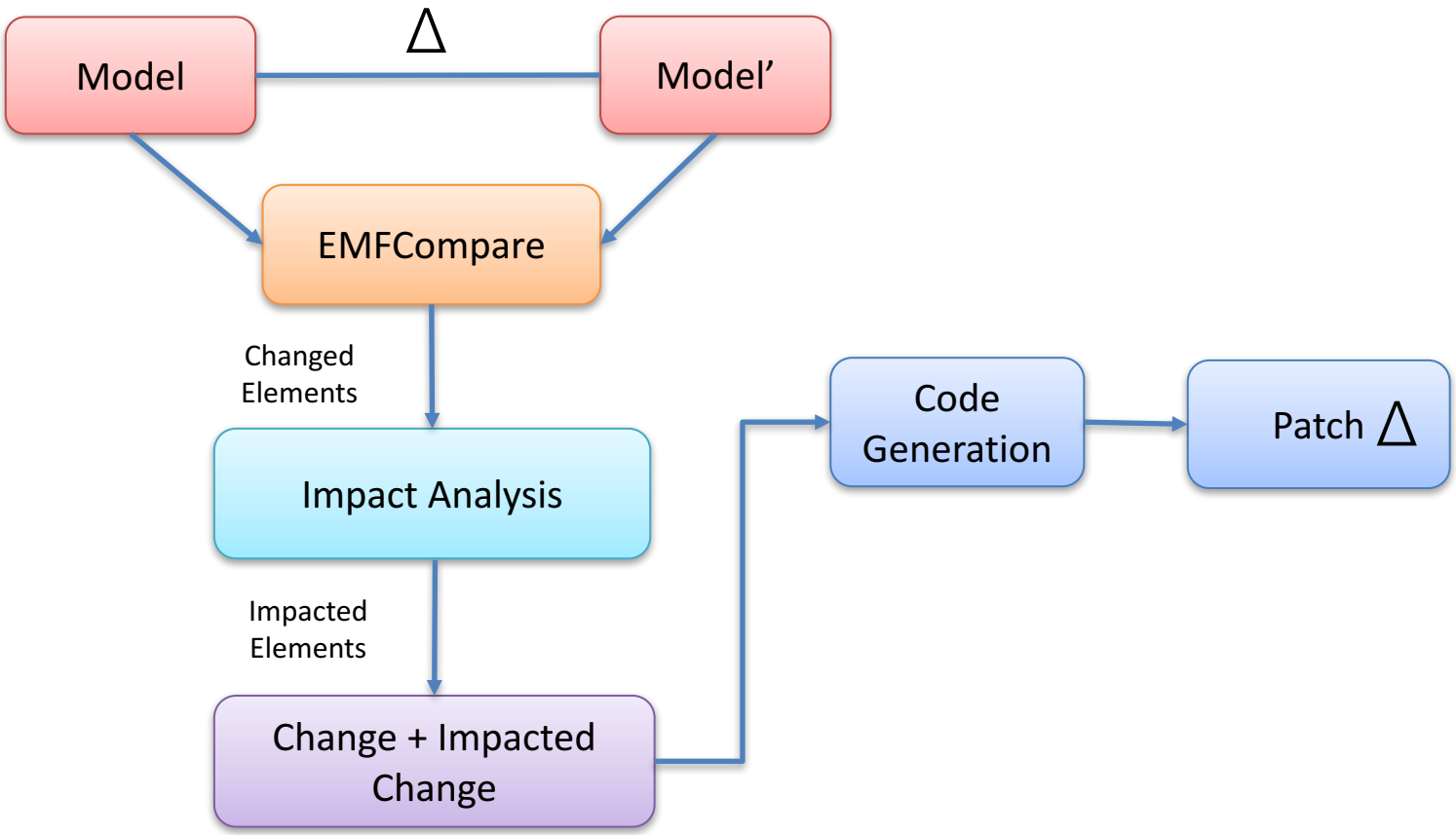
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Δ
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Conclusion

Research work focuses on

- Optimizing the Software Build Process.
- Automatic detection of the effects that any change will bring about in the model.
- Tackles the impact analysis of UML-RT based development.
- Generating a patch after Code Generation.

Thank You