

Queen's SCHOOL OF Computing

Queen's University
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UNIVERSITY

Build Automation at Model Level

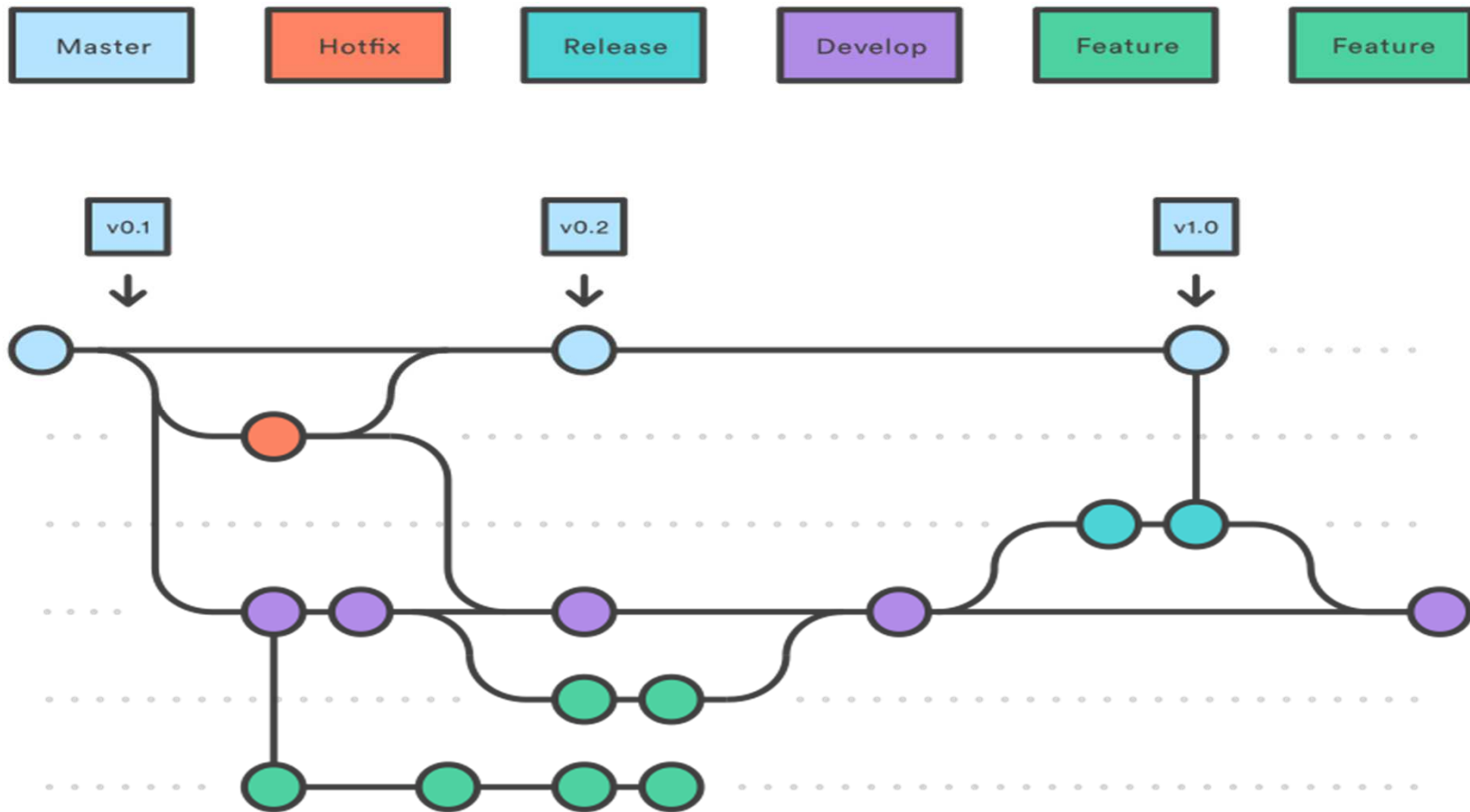
MBuild

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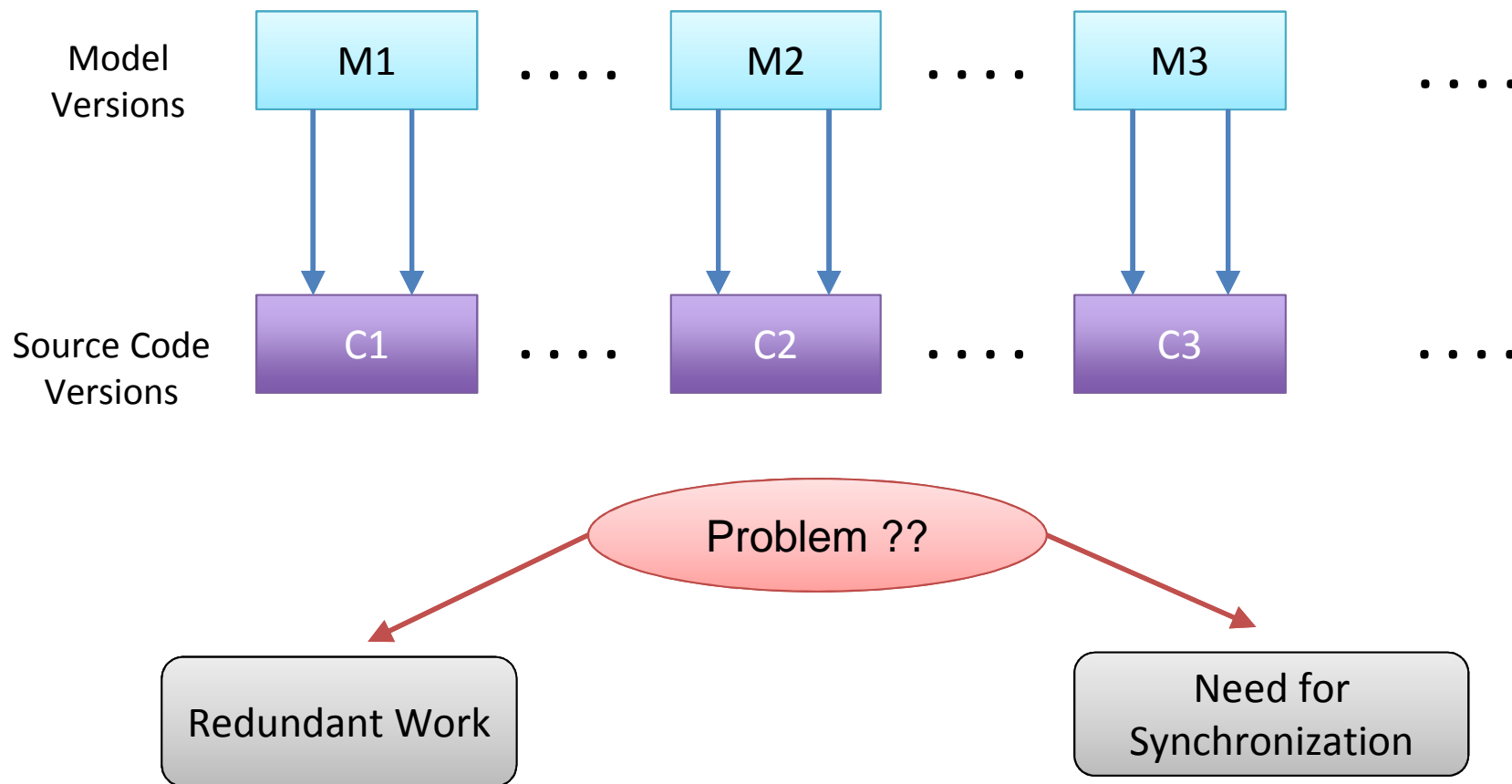
Existing Process in Code Based Development

Code Based Development

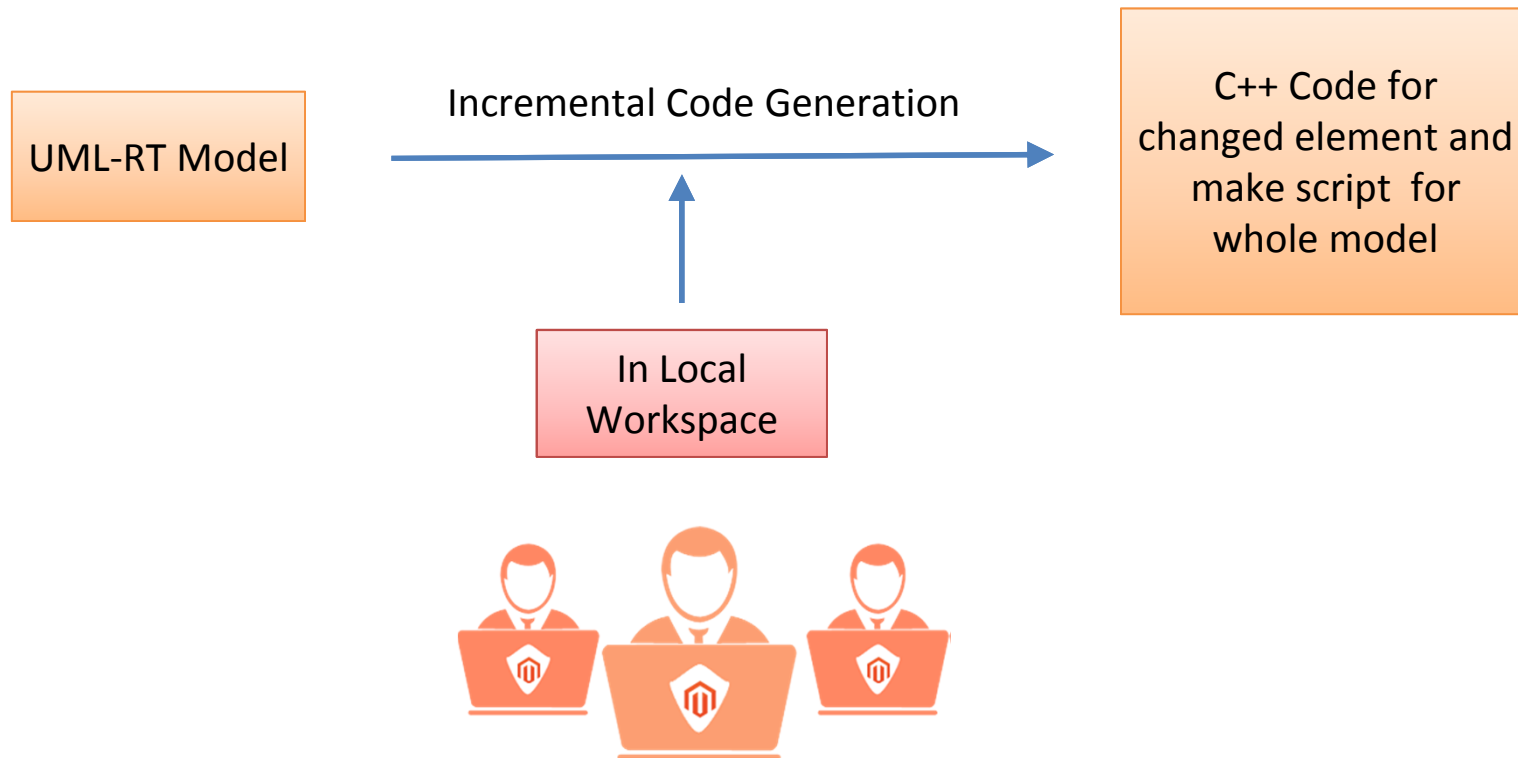


Existing Process in Model Based Development

Model Based Development

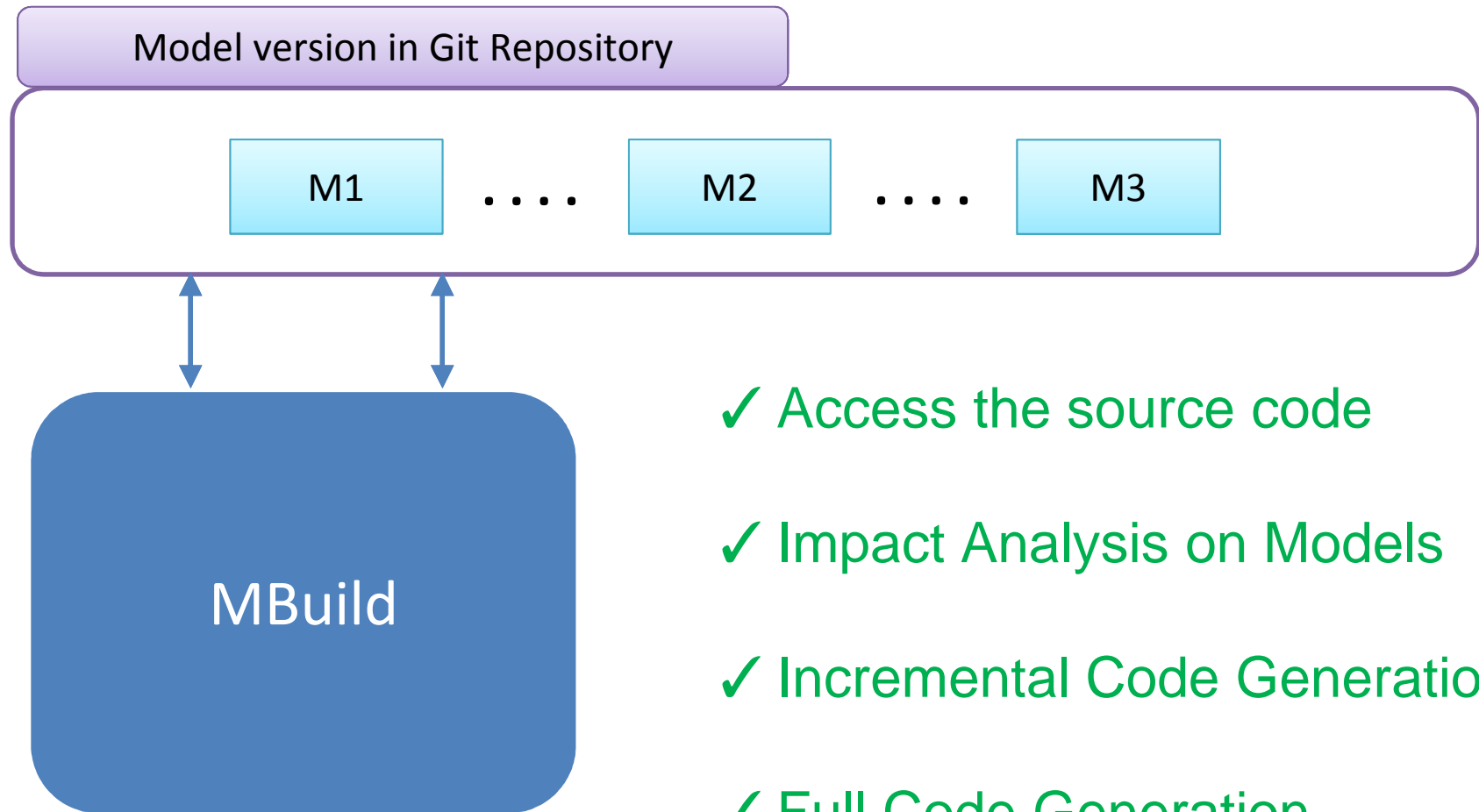


Existing Process in Model Based Development



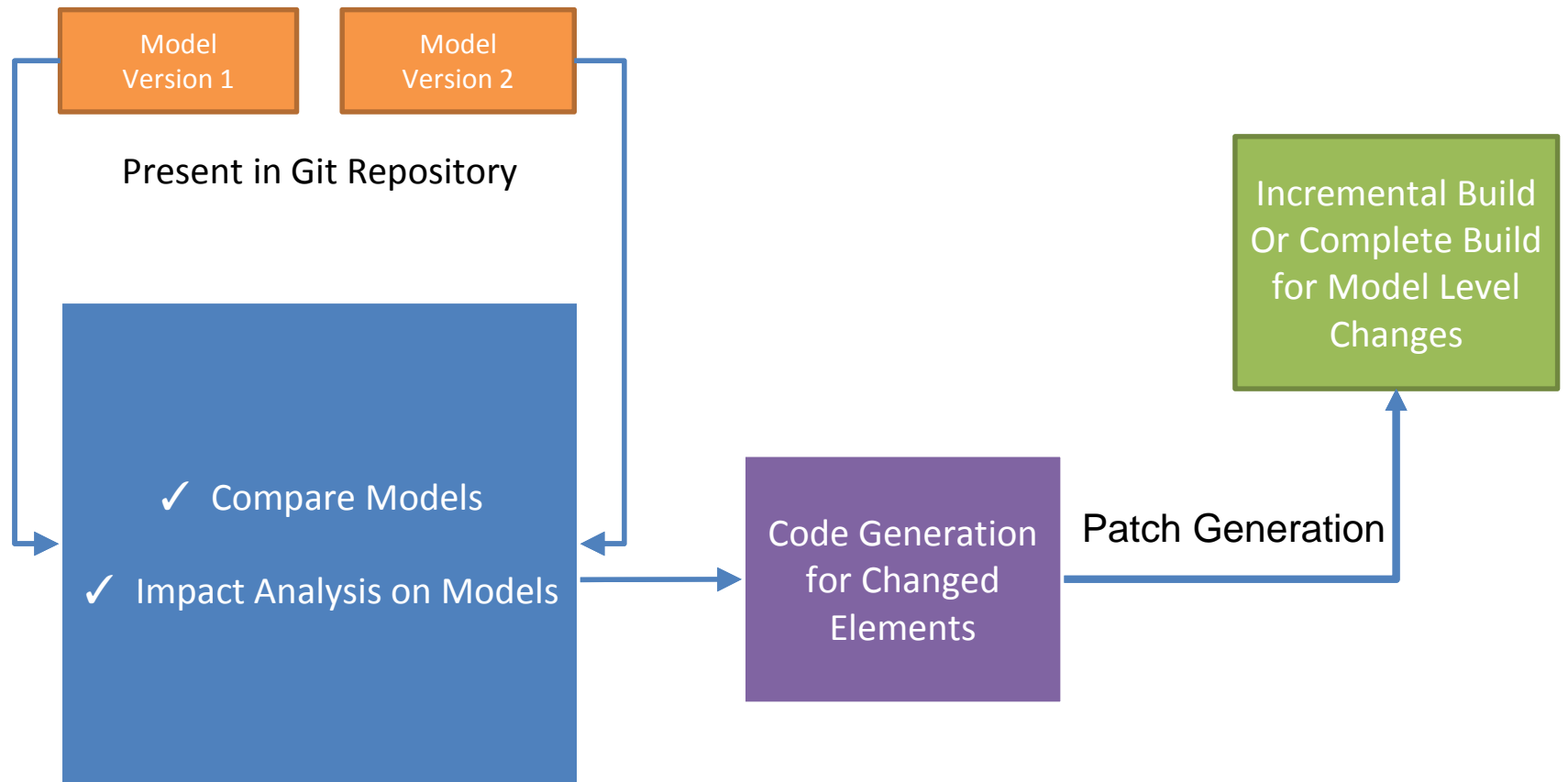
Existing Code Generation process of Model Based Development

Solution in Model Based Development



- ✓ Access the source code
- ✓ Impact Analysis on Models
- ✓ Incremental Code Generation
- ✓ Full Code Generation

Approach



Build Automation Tool - MBuild

Example































Change



Impacted Elements – Top

Typical Code Generation vs MBuild

Existing Code Generation	MBuild
 CMakeLists.txt	 CMakeLists.txt
 Makefile	 Makefile
 MakefileTop.mk	 MakefileTop.mk
 Pinger.cc	 Pinger.cc
 Pinger.hh	 Pinger.hh
 PingPong.cc	 PingPong.hh
 PingPong.hh	 Ponger.hh
 Ponger.cc	 Top-connections.log
 Ponger.hh	 Top.cc
 Top-connections.log	 Top.hh
 Top.cc	 TopControllers.cc
 Top.hh	 TopControllers.hh
 TopControllers.cc	 TopMain.cc
 TopControllers.hh	
 TopMain.cc	

Why Do We Need This ??

- Access to any version of models and its Source code from Repository
- Revise historical changes on models.
- Helps to predict the cost and complexity of changes.
- No need to be in the local workspace for code generation.
- Helps to decide whether to implement changes in a new release or not.



Thank You