

# Generating Examples for Knowledge Abstraction in MDE: a Multi-Objective Framework

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## Motivation

- MDE aims at raising software abstraction
- Specific-task automation required
- Domain-specific knowledge hard to explicit
- Learning from examples is an alternative
- Examples are still produced ad-hoc

## Objectives

- Define a thorough example-to-knowledge learning process
- Characterize and generate example sets, tailored to a specific task
- Investigate coverage impact on learning

## Proposal

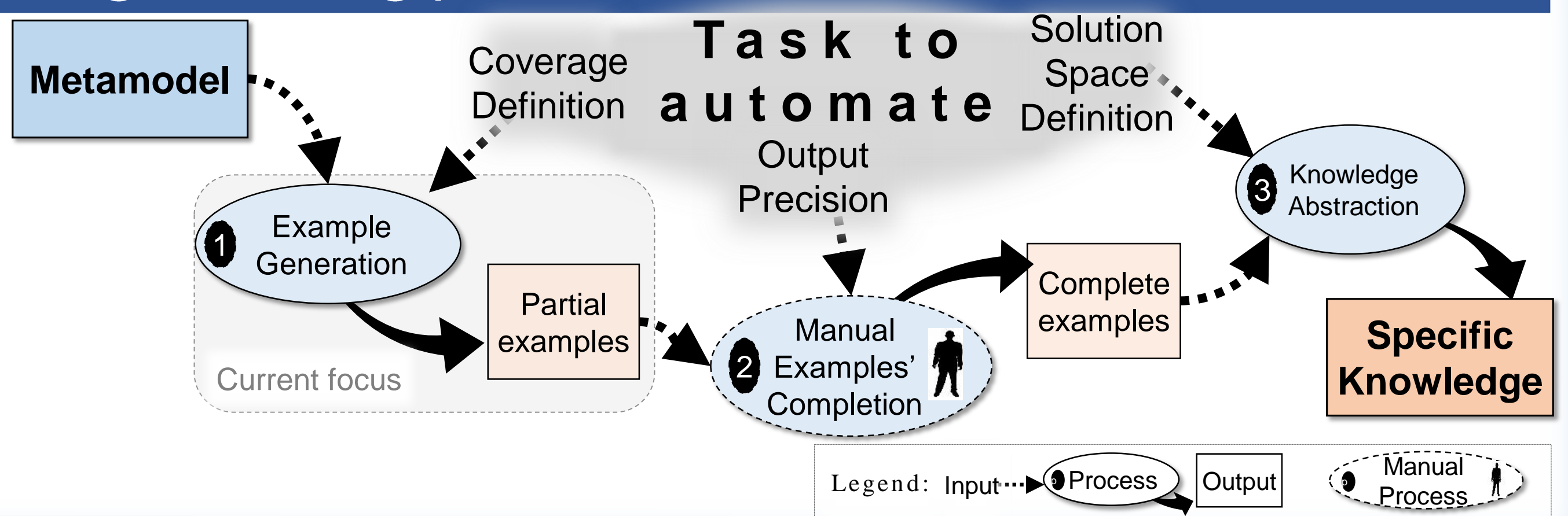
- Consider example generation as a multi-objective space exploration problem

A unified view wrapped in a common framework

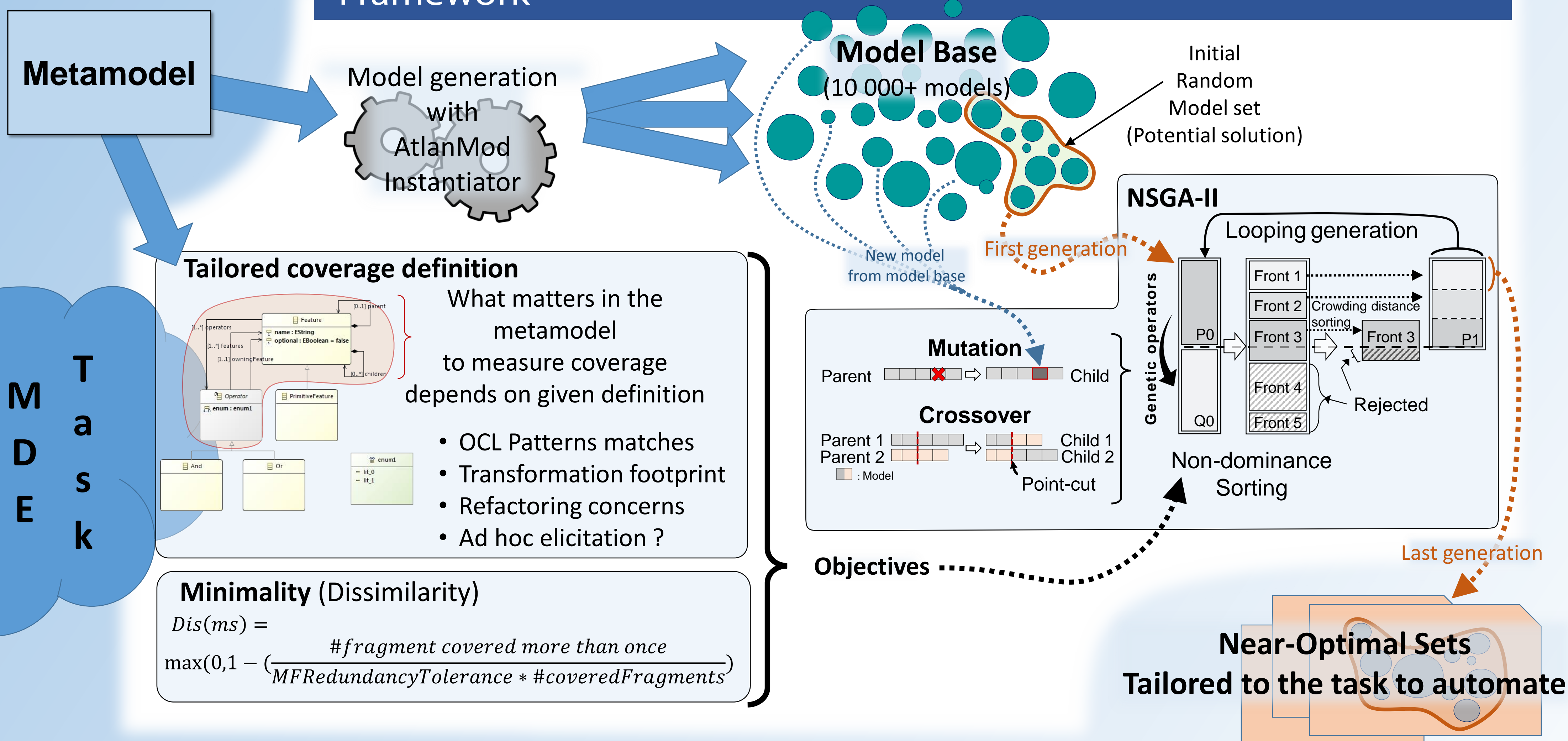
## A thorough example-to-knowledge learning process

From examples elicitation/generation to knowledge: a 3-steps process:

1. Example set generation
2. Examples completion
3. Knowledge abstraction



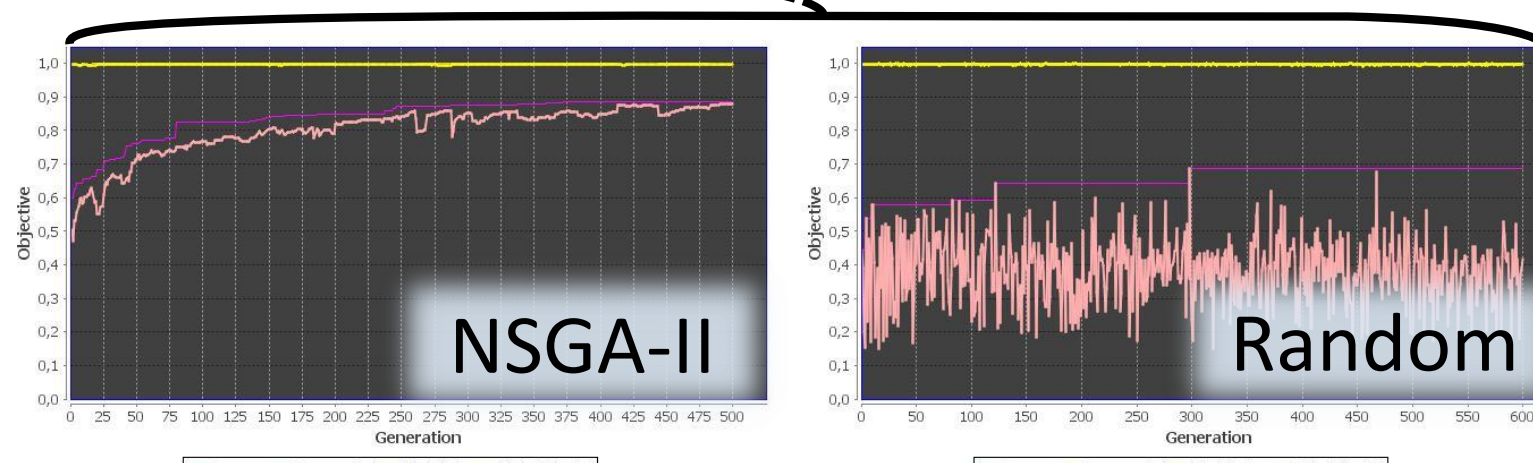
## Framework



## Preliminary results

Comparison between our approach and a random generation

	ATL2.0		Feature Diagram	
	Random	NSGA-II	Random	NSGA-II
Dissimilarity	99%	99%	83%	95%
Coverage	78%	93%	100%	100%



## Applications

- Metamodel testing
- Constraint learning
- Model transformation learning
- Refactoring learning