

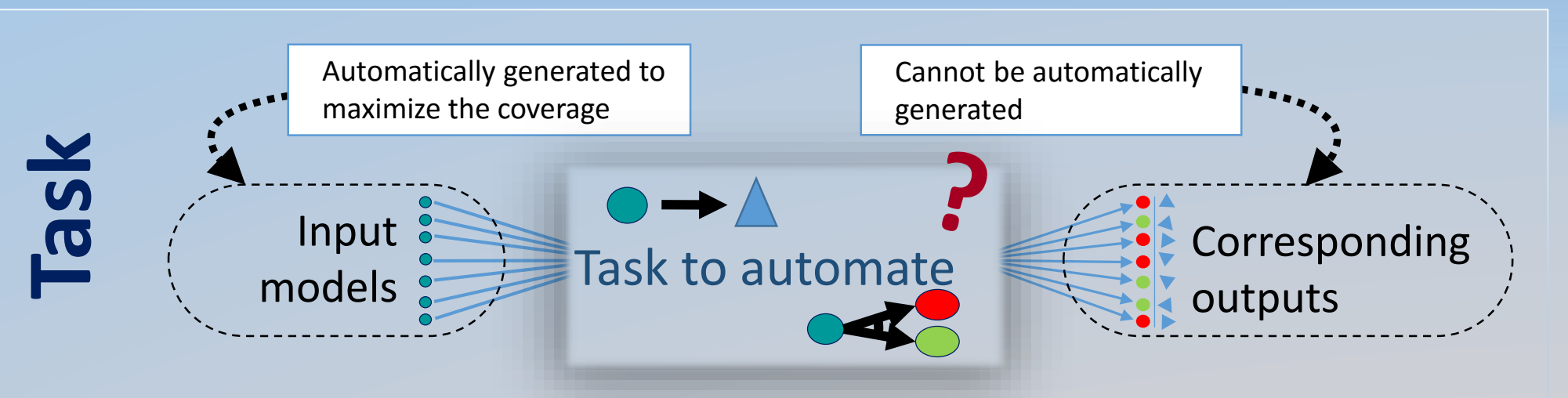
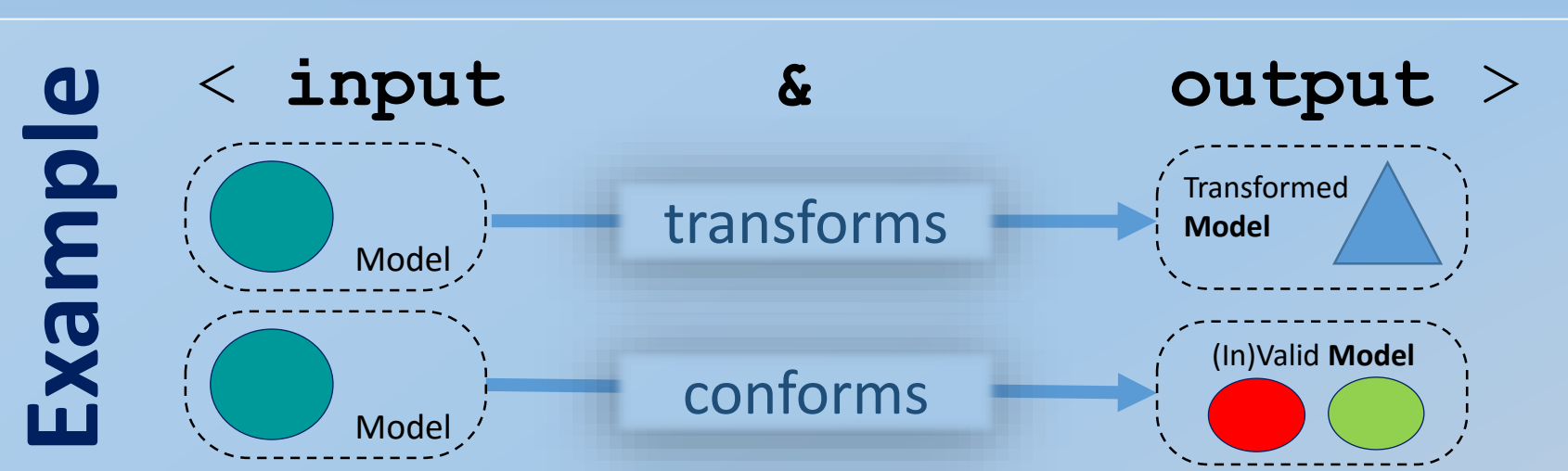
Learning Model-Driven Engineering Tasks from Examples

Representativeness and Generalizability

Édouard Batot

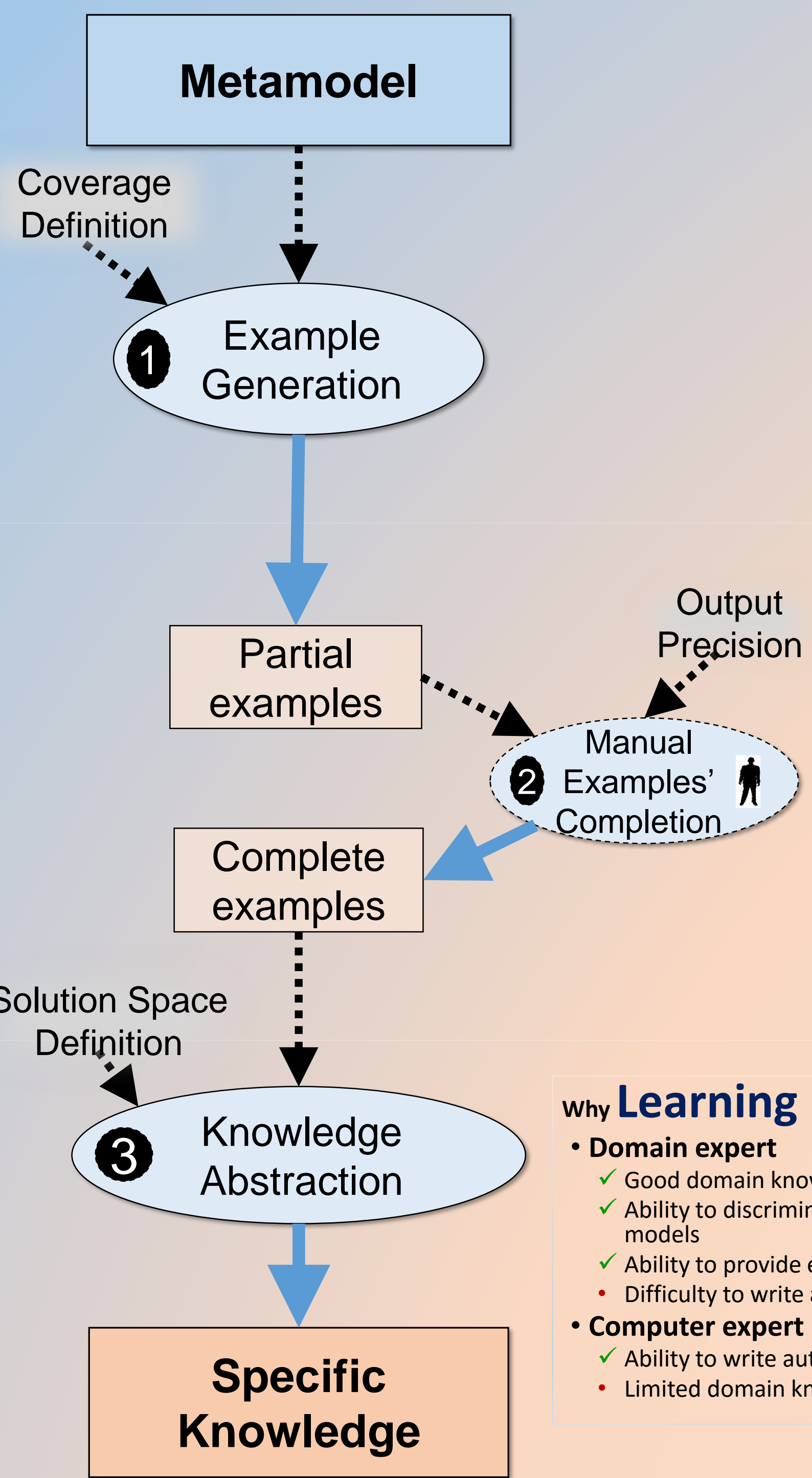
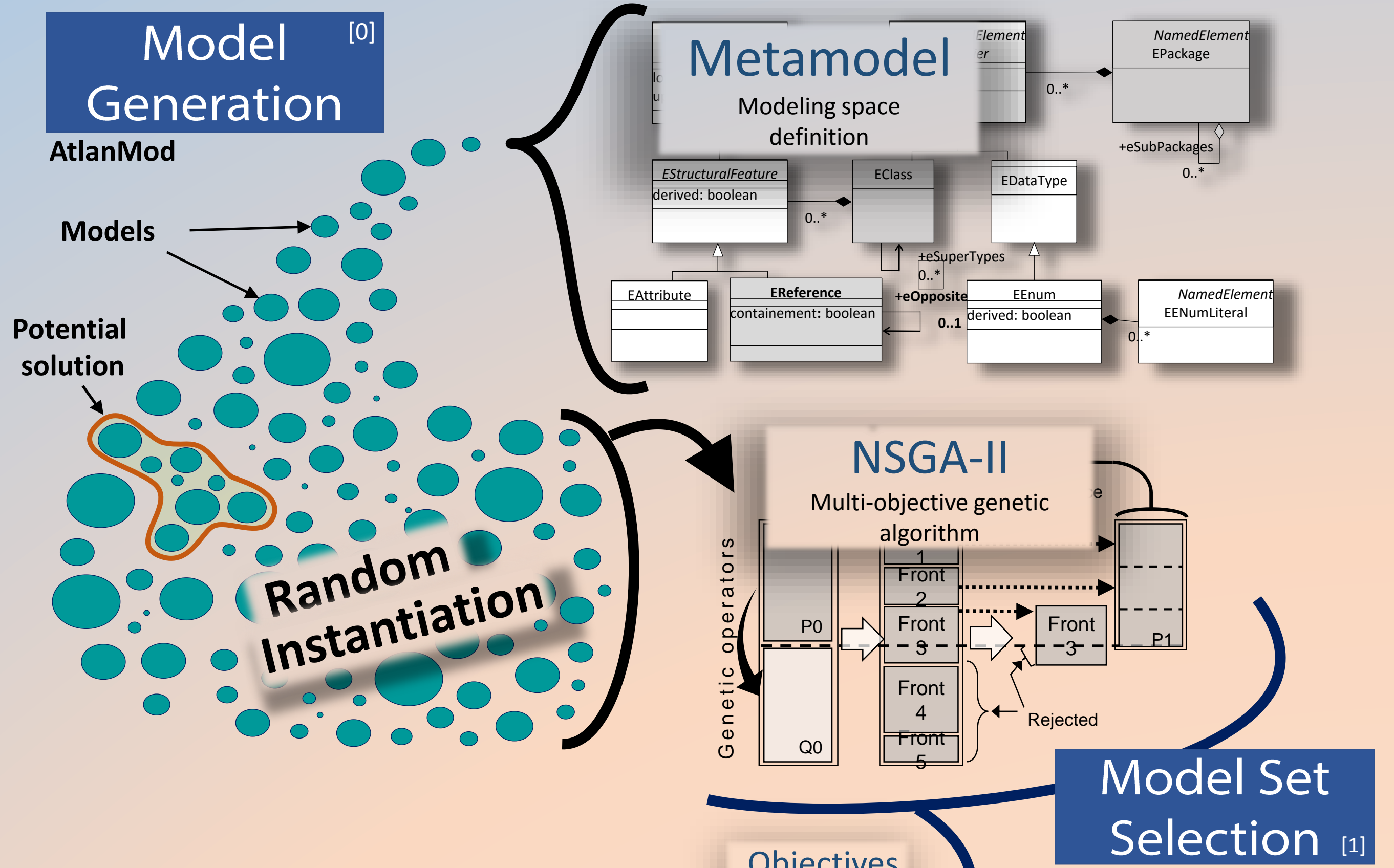
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A generic framework to study the inductive capacity of model-sets in MDE



Model-set generation

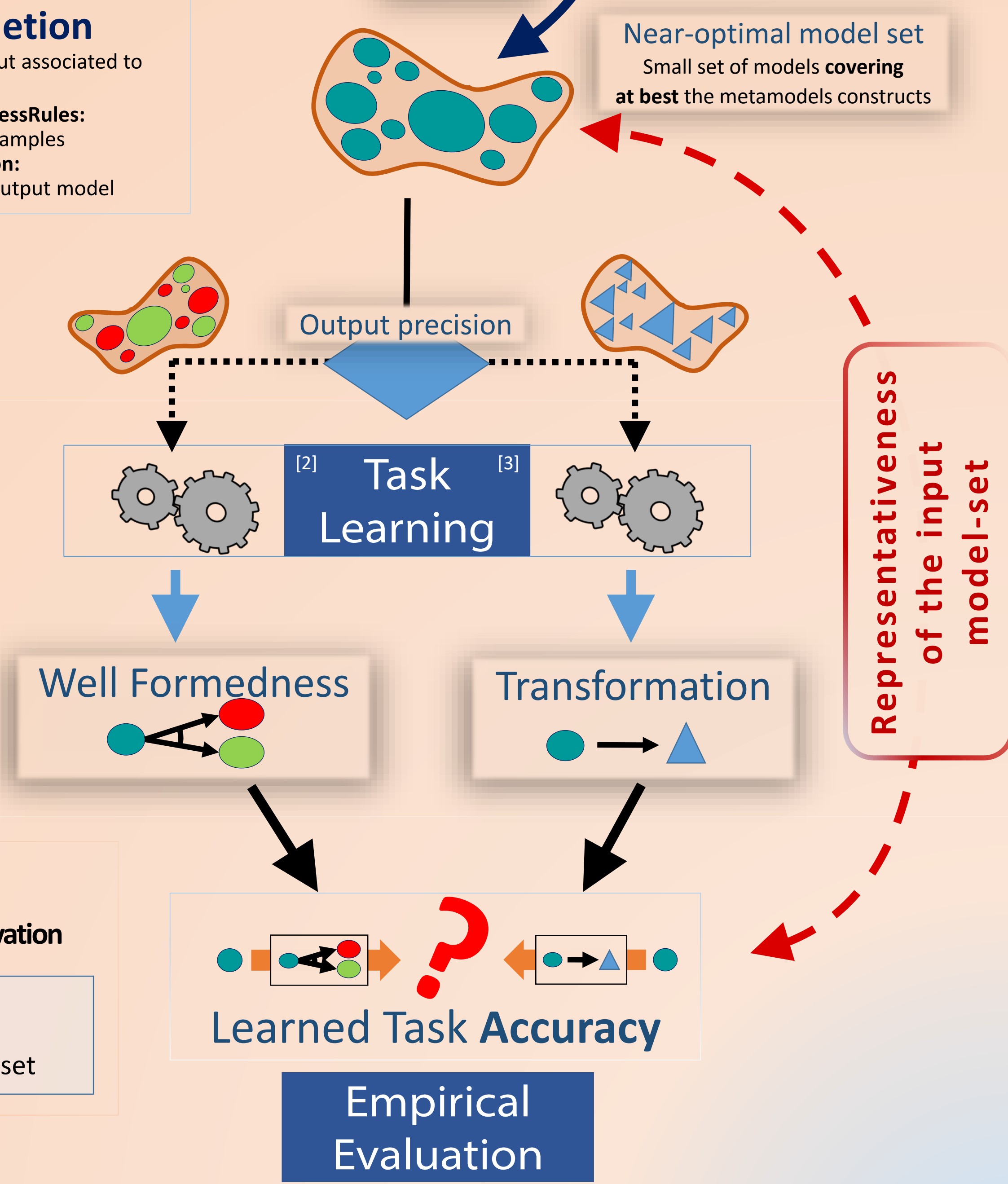
- Existing approaches
- Gather existing models (examples)
 - Use prototypical examples provided by experts
- Limitation
- Lack of **representativeness**
 - Impact the **quality** of the learned automation knowledge
- Automated model-set selection
- **Characterization** and control of models-sets production
 - Exploration of horizons wider than experts/modellers



Manual completion

What is the expected output associated to a known input ?

- **Learning Well formednessRules:**
 - Valid and invalid examples
- **Learning Transformation:**
 - Provide expected output model



Representativeness and Generalizability

Quantification of an example set's capacity to support qualified knowledge derivation

Coverage level of input models vs Quality of the task learned

Representativeness of example set vs Inductive capacity of example set

References and published works

[3] Bakj, I. and Sahraoui, H., Multi-step learning and adaptive search for learning complex model transformations from examples. In TOSEM 2016, 25(3):20-1-20-37.

[2] Faunes, M., Sahraoui, H., and Boukadoum, M., Genetic-programming approach to learn model transformation rules from examples. In ICMIT 2013, pp. 17-32.

[1] Batot, E. and Sahraoui, H., A Generic Framework for Model-Set Selection for the Unification of Testing and Learning MDE Tasks, in MoDELS 2016: 374-384.

[0] Batot, E., Generating examples for knowledge abstraction in MDE: a multi-objective framework, in SRC@MoDELS 2015, pp. 1-6.