**Model Selection**

- **Model Type:** MATLAB Simulink
- **Domain:** Automotive Software
- **Sources:** MATLAB Central, General Motors

**Motivation**

- The iterative nature of model-driven engineering leads to the redundant regeneration of model-based tests.
- Understanding how changes in models impact associated tests will lead to better understanding of model evolution.
- Improving the efficiency of automotive model-based testing through possible reductions is of interest to our industrial partners.

**Proposed Methodology**

1. **Compare Versions**
   - Using model differencing tools, we will determine exactly how two versions of a model differ.

2. **Identify Updates**
   - Based on an initial Evolution Study, we will search our catalog of evolution impacts to determine what, if any, impact the evolution has on tests.

3. **Manual Interaction (when required)**
   - There may be differences in model versions that require manual interaction by the test engineer, such as the introduction of a new signal (input or output), which will require a set of values for the signal.

4. **Apply Updates (when possible)**
   - For possible changes in the test cases, updates are made directly to the source test files. Updates such as changing values will be simple, however added signals become more difficult and may require manual interaction.

**Validation**

- Correctness
- Benchmark Comparisons
- Performance
- Timed Experiments
- Usability
- User Surveys

**Limitations & Risks**

- Availability of industrial models
- Obtaining results for user surveys
- Constrained to one modeling technology

**References**