

Improved MBD Test Data Creation

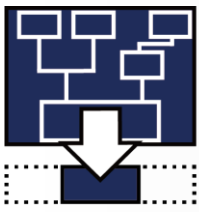
Test Data Creation Tool



PROMPT

Performable RatiOnalized Model Perfectionalization Tool





PROMPT

Performable RatiOnalized Model Perfectionalization Tool

GAIO
TECHNOLOGY

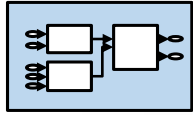


Are you facing problems like these?

Model grows in size and complexity – Structured Validation is difficult.

Expectations and Reality of Formal Methods

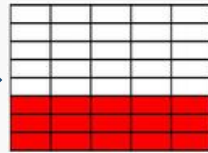
• Full Coverage would be perfect, but in reality it takes too long;
unreachable conditions exist, requiring manual workarounds.



Complex & Large



Long Time



Incomplete Coverage

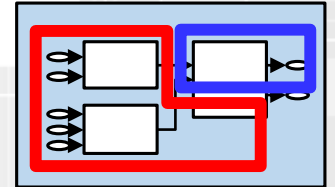
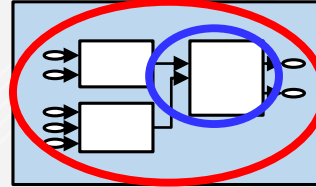


Manual
Labour



Proposed Solution

Subdivision/Reduction Use Multiple Algorithms



• Verify smaller Subunits

• Use other Methods where Formal Methods are unsuitable

PROMPT Outline

■ Features

Fast Data Creation for patterns weak in Formal Methods & Monte Carlo analysis.



Test Cases generated from waveform, not random selection of Input Range

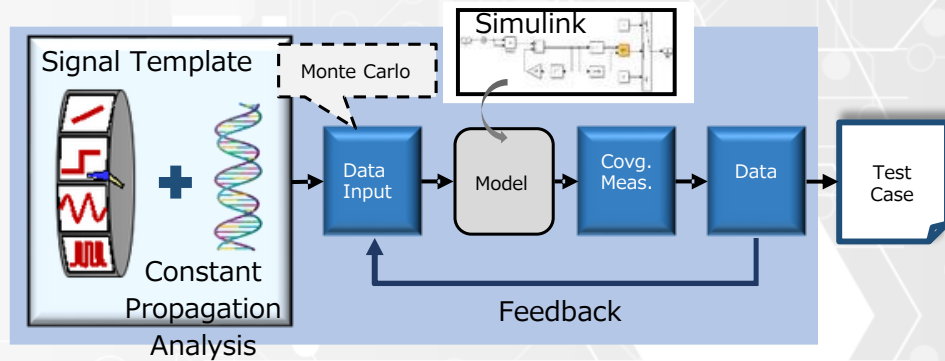
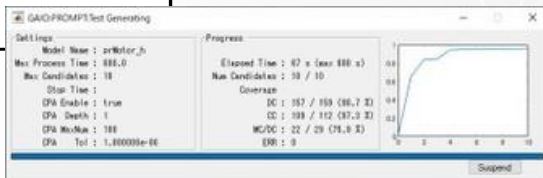


Model analysis to avoid skipping non-typical cases

■ Main Functions

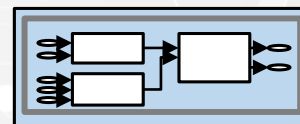
- Harness Model & Test Data Creation
- CSV Import / Test Data Output
- Model Coverage Report (DC•CC•MC/DC)

```
>> pj = Prompt.Project(model, harness);
>> pj.MakeHarness();
>> pj.Generate();
>> pj.ExportTestData();
```

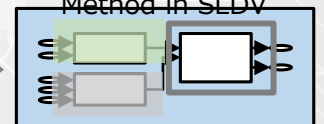


Can link to Formal Method based SLDV

Run PROMPT First (Fast)



Remainder by Formal Method in SLDV

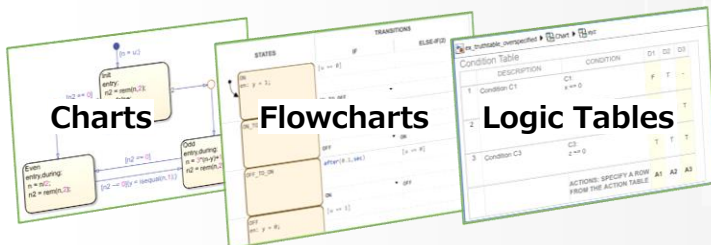


Reduced Time & Less Manual Labour

Example: Objective=213 No PROMPT 60min 89% → Total 18min 100%

V2.11

• Formal Support for Stateflow Coverage Measurement



• New Method: Objective Generation / AutoGeneration Mode

- From V2.10, Generation towards Objectives is implemented.
- From V2.11, automatic switching between Generation Modes is implemented.

System Requirements

• Supported OS

Windows11 Windows Server
Ubuntu 20.04

• MATLAB

R2015aSP1 - R2023a (Required Option: Simulink)

• License Management

FlexNET

Contact:

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