Model-Based Statistical Testing

Usage Modeling and Test Planning

Test Case Generation and Automation Support

Results Management and Quantitative Analysis
Model-Based Statistical Testing

- Manual creation of csv file
  - epscInputPartition.csv

- python StaticCompModeler.py epscInputPartition.csv epsc
  - epsc.csv

- jumbl write -tTML epsc.csv
  - epsc.tml
Model-Based Statistical Testing

1. Build Model
2. Analyze/Revise Model
3. Generate Test Cases
4. Analyze/Revise Test Suite
5. Execute Tests
6. Reliability Analysis
7. Release Decision
8. Release

Files:
- jumbl check epsc.tml
- jumbl analyze epsc.tml
  → epsc_ma.html
Model-Based Statistical Testing

- Build Model
- Analyze/Revise Model
- Generate Test Cases
- Analyze/Revise Test Suite
- Execute Tests
- Reliability Analysis
- Retest
- Release Decision
- Release

- Test Results
- HTML Report
- Test Cases/Scripts
- HTML Report
- TML Files
- HTML Report

> python mbstauui.py
  ➔ wx panel
  ➔ Test cases python files
  ➔ epsc.sm
  ➔ epsc.str
Model-Based Statistical Testing

Build Model ➔ TML Files

Analyze/Revise Model ➔ HTML Report

Generate Test Cases ➔ Test Cases/Scripts

Analyze/Revise Test Suite ➔ HTML Report

Execute Tests ➔ Test Results

Reliability Analysis ➔ HTML Report

Release Decision ➔ Release Criteria

Release ➔ Release

> jumbl analyze epsc.str ➔ epsc_ta.html
Model-Based Statistical Testing

1. Build Model → TML Files
2. Analyze/Revise Model → HTML Report
3. Generate Test Cases → Test Cases/Scripts
4. Analyze/Revise Test Suite → HTML Report
5. Execute Tests → Test Results
   - Retest
   - Reliability Analysis → HTML Report
   - Release Decision → Release Criteria
   - Release

> From mbstau panel execute Run
Model-Based Statistical Testing

![Diagram of the model-based testing process]

- **Build Model** → **TML Files**
- **Analyze/Revise Model** → **HTML Report**
- **Generate Test Cases** → **Test Cases/Scripts**
- **Analyze/Revise Test Suite** → **HTML Report**
- **Execute Tests** → **Test Results**
- **Reliability Analysis** → **HTML Report**

> jumbl analyze epsc.str  ➔  epsc_ta.html
To do....

◆ Expansion of test parameters

◆ 2nd level testing with another oracle such as other mechanics modeling
Feature Request for Jumbl

◆ File output of Input lists with sequential testing results from console

◆ Automation of TML file generation from inputPartition.csv file