

Running the EOFM Visualizer

The EOFM visualizer serves two functions: 1) it will create a visualization of an instantiated EOFM model 2) it will use the visual representation of an instantiated EOFM to visualize a counterexample generated from the SAL model checker. The visualizer requires MS Visio 2007 to run properly.

Visualizing an instantiated EOFM:

1. Open "eofm visualizer.vsd"
2. On the "security warning" toolbar, click on "options", select "enable this content," and click on "Ok."
3. Click on "run visualizer"
4. Click on "Select EOFM File" and select the desired EOFM XML file and click "Open"
5. Click on "Render EOFM"

Visualizing a counterexample generated from a formal model containing a translated instantiated EOFM:

Special note, this scenario assumes that a counterexample was generated using the following SAL commands in the cygwin or linux command line:

```
"SAL-SMC ModelName Theorem -v 3 >ModelName.out 2>ModelName.err"
```

Where "ModelName" is the name of the SAL model being evaluated, "Theorem" is the name of the temporal logic specification being checked, "-v 3" sets verbosity level to 3 (which provides additional verification statistics like number of states visited and time), ">ModelName.out" pipes the standard output to the file "ModelName.out" (where the counterexample is stored as an ASCII text file), and "2>ModelName.err" pipes the error output to the file "ModelName.err" (where verification statistics are stored as an ASCII text file).

1. Open "eofm visualizer.vsd"
2. On the "security warning" toolbar, click on "options", select "enable this content," and click on "Ok."
3. Click on "run visualizer"
4. Click on "Select EOFM File" and select the EOFM XML file that was created during the translation process (for the example above, this would be "ModelName_Out.xml") and click "Open"
5. Click on "Select Counterexample File" and select the file containing the counterexample ("ModelName.out" from the example above) and click "Open"
6. Click on "Process Counterexample"

7. Use the “→” and “←” buttons to move variables from the left column into the right boxes based on what category they fall in
8. Click “Visualize Counterexample”

Information on how to interpret the counterexample visualization can be found in the paper:

Bolton, M. L., & Bass, E. J. (2010). Using task analytic models to visualize model checker counterexamples. In *Proceedings of the IEEE International Conference on Systems Man and Cybernetics* (pp. 2069–2074). Piscataway: IEEE.