

# Artifact of "Model-Bounded Monitoring of Hybrid Systems"

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This is a document on the software and the experiment data for our ICCPS 2021 paper [1].

## 1 Files

This artifact consists of the software and the benchmarks for our two approaches: the approach with a verification tool PHAVerLite and our dedicated tool HAMoni.

## 2 Experiments with PHAVerLite

The file `phaverlite.tar.xz` contains the artifact for the experiments with PHAVerLite.

### 2.1 Build graph2mc

In order to run the experiment, `graph2mc` must be compiled. `graph2mc` is an OCaml program to translate our benchmark to a model of PHAVerLite.

```
cd /path/to/phaverlite/  
cd graph2mc/  
./build.sh
```

### 2.2 Run PHAVerLite for experiment

Then, we execute PHAVerLite to conduct model-bounded monitoring. The following show an example. We note that the models and the monitored logs are in `benchmark.tar.xz`

```
cd /path/to/phaverlite/  
./translate_and_run.sh [MODEL] [LOG]
```

### 3 Experiments with HAMoni

The file `hamoni.tar.xz` contains the artifact for the experiments with HAMoni. See `README.md` in `hamoni.tar.xz` for the compilation of the tool and the `README.md` under `/example/<NAME_OF_THE_BENCHMARK>` for the usage of the tool.

### References

- [1] Masaki Waga, Étienne André, and Ichiro Hasuo. Model-bounded monitoring of hybrid systems. In Martina Maggio, James Weimer, Mohammad Al Farque, and Meeko Oishi, editors, *ICCPS '21: ACM/IEEE 12th International Conference on Cyber-Physical Systems, Nashville, Tennessee, USA, May 19-21, 2021*, pages 21–32. ACM, 2021.