Device Specification

- DUV: wood burning stove
- Specification
  - logs: 3 to 6 in the stove
  - thermostat: 200° to 800° in 100° increments
  - thermometer: 100° to 1,000°
  - damper: open or closed
  - catalytic converter: ignited or not ignited
  - doors: open or closed
  - top lid: open or closed

First-Order Coverage Model Description and Attributes

- Feature name: *operating conditions*
- Semantic description: *Record all operating conditions of the wood stove defined by logs, thermostat and damper*
- Attributes and values
  - logs: 3, 4, 5, 6
  - thermostat: 200° to 800° in 100° increments
  - damper: open, closed

First-Order Coverage Model Top-Level Design

Feature	Attribute or Sampling Time	Values	Monitor
Operating Conditions	@logs_loaded		
	logs	3, 4, 5, 6	1
	thermostat	200°, 300°, 400°, 500°, 600°, 700°, 800°	1
	damper	open, closed	1
	logs, thermostat, damper	C{}	

First-Order Coverage Model Size

Attribute	Values	Number of Points
logs	3, 4, 5, 6	4
thermostat	200°, 300°, 400°, 500°, 600°, 700°, 800°	x 7
damper	open, closed	x 2
		Total: 56

First-Order SystemVerilog Coverage Model Implementation: Attributes

```
class WoodStove;
  rand int logs;
  rand int stat;
  rand enum {OPEN, CLOSED} damper;
endclass: WoodStove
```

First-Order SV Coverage Model Implementation: Base Coverage Group

```
covergroup wood_stove_cg;
  coverpoint logs {bins l[] = {[3:6]};}
  coverpoint stat {bins s[] =
    {200, 300, 400, 500, 600, 700, 800};}
  coverpoint damper;
  cross logs, stat, damper;
endgroup
```