

Status

- **Proposed updates to Verilog-A to support compact models have been finalized and submitted to Accellera**
- **LRM (426 pages) Version 2.2 and document that defined the updates integrated into the LRM can be found at <http://www.eda.org/verilog.ams/htmlpages/compact.html>**
- **Geoffrey Coram is the key driver**

Updates

- **Many changes proposed by the working group were changed to be consistent with SystemVerilog**
- **No explicit description or units fields, these are done via attributes**
 - **must be BEFORE Verilog-A statement**
 - **(* desc="mobility" unit="cm²/Vs"*)
parameter mu0=200 from (0,10000];**
 - **for parameters, top level variables, nodes**

Updates

- **Known parameters:**
 - **\$mfactor, \$xposition, \$yposition, \$angle, \$vflip, \$hflip**
 - **automated \$mfactor scaling**
- **\$param_given() to detect if a parameter was specified**
 - **allows conditional handling of calculations based on what parameters are specified**
- **\$simparam() for access to simulator parameters (gmin, scale, shrink, tnom, ...)**

Updates

- **Limiting to aid convergence**
- **Simulator specific directives handled in #ifdef's (do not need run-time processing)**
- **__VAMS_COMPACT_MODELING__** defined if a Verilog-A compiler knows about the new directives
 - allows “old” and “new” code to exist together

Updates

- **Parameter aliases**
- **Access to derivatives (primarily for .OP type printing, can also be used in noise models)**
- **String parameters**
 - e.g. parameter type="n" from {"n", "p"};

Biggest Change

- **Concept of “paramsets”**
- **Basically is a language and mechanism for defining parameters**
 - **“instance” vs. “model” parameters defined via paramsets, so NOT part of the LRM2.2**
 - **can be done dynamically**
 - **still will need this in the short-term in SPICE, so use attributes**
 - **mechanism for defining process parameters, corners, mismatch, ...**