

Requirements for Analog Assertions

February 2, 2009

1. General context

Owner:

⟨Description of the need for this document and its place in the larger context of the Analog Assertions working group, and in the AMS language/tools effort⟩

2. The State of the Art in Digital Assertions

Owner:

⟨Description of the current technology in use in the digital world. Languages, use models, tools, standards⟩

3. The State of the Art for Analog Assertions

Owner:

⟨Description of the current approaches for analog. Languages, use models, tools, status⟩

4. Categories of Analog Designs

Owner:

⟨Description of the kinds of things we are considering as the target for this work. Big D/Little A, Big A/Little D, circuit, RF, Power, AMS, ...⟩

5. Expected Use Models

Owner:

⟨For the categories described above, describe the ways in which we believe the analog assertions will be used. The kinds of problems and tasks we believe we are attempting to satisfy. Design/Verification. Analog/Mixed mode. Simulation/Formal. Documentation/Checking⟩

6. User Needs

Owner:

⟨A survey of various users representing all categories and uses described above, to ensure that we are taking input from all the constituents of this work.⟩

7. Case Studies/Examples

Owner:

⟨Some illustrative examples that both motivate the requirements and will serve as test cases for any proposals⟩

8. Requirements on Language

Owner:

⟨What are the linguistic requirements on the assertion language. Syntax, semantics, relationship to existing digital languages, relationship to existing analog languages⟩

9. Requirements on Implementations

Owner:

⟨What are the implementation requirements? Does the language need to be executable to a specific simulation semantics. Speed?⟩

10. Interaction with Digital Languages and Engines

Owner:

⟨How should these assertions interact with existing digital tools? Simulators, formal engines, existing AMS systems⟩

11. Practical Considerations

Owner:

⟨How pragmatic should we be? Expediency vs. completeness. Short term vs. long term? Balancing ambition wrt available resources. Standards. ⟩