Design Constraints Working Group
and
System Level Design Language Initiative

Joint Working Group
Overview

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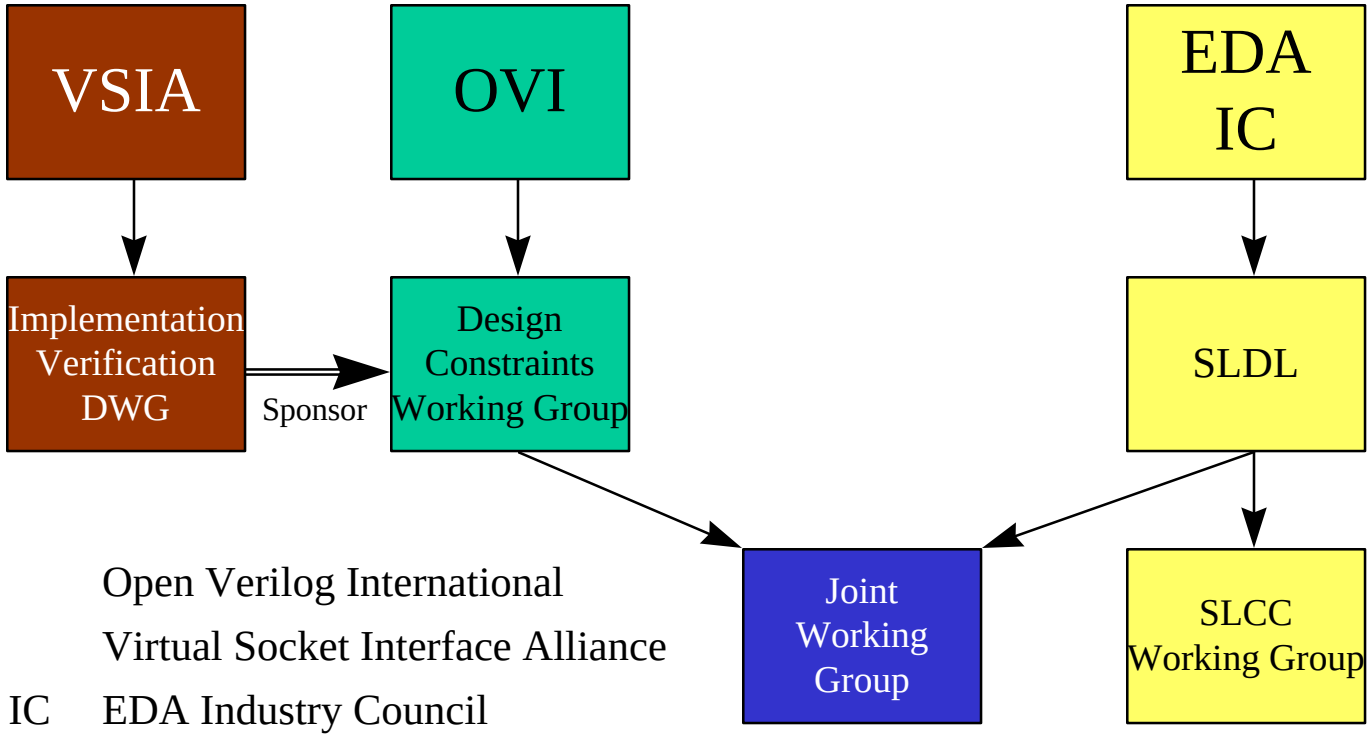
Where Does the Joint Working Group Fit?



OVI	Open Verilog International
VSI	Virtual Socket Interface Alliance
EDA IC	EDA Industry Council
SLDL	System-Level Design Language Initiative
SLCC	System-Level Constraints & Constraint Capture

Relationship Between Charters

- Joint Working Group
  - Define the general syntax and structure for the DC-WG constraint description language
  - Define a conceptual model for constraints.
  - Define a formal information model for various constraint domains
- DC-WG
  - Define precise but informal constraint semantics and specific syntax for a variety of different domains
- SLCC
  - Define terminology and semantics for constraints applicable to system level design which are not addressed by DC-WG
- SLDL
  - Create domain theories
    - Formal models of many aspects of each domain (including constraints), as well as the relationships between domains

General Language Syntax and Structure

- This is a definition of the syntactical rules which all constraint descriptions should follow
  - Ambit and IBM donations will be used as strawman proposals, as they become available
  - Additional syntax will be needed to represent a variety of information beyond simple declarative constraints, such as
    - modeling tradeoffs between constraints
    - distinguishing between absolute constraints and desirable properties
    - self-defining constraints
    - constraint transformations and dependencies

Conceptual Model

- The conceptual model should describe
  - how constraints are specified, applied, refined, transformed, and verified throughout the design flow
  - how tradeoffs between different constraints are specified and considered while exploring the feasible design space
  - the differences between environment specifications, assertions in library models, constraints, and tool-specific directives.
- The conceptual model is an English document.
  - The target audience for the document includes designers, EDA tool developers, and flow/methodology developers.

Information Model

- The information model is a formal model of constraints, their properties, and the relationships between them
  - DC-WG will use the the information model during the development of the constraint description language to check for inconsistencies.
  - SLDL will use the information model as a partial description of the formal semantics for each constraint domain, as input into the definition of a set of domain theories which more completely describe the semantics within each domain and the semantics for interactions between domains.
- Express is likely to be the language used for the information model

Schedule and Priorities

- End of January 1999
  - Complete description of syntax rules for constraint description language
- Beginning of March 1999
  - Initial draft of DC-WG standard for the timing domain
- Beginning of June 1999
  - DC-WG standard for the timing domain submitted to OVI board
- DAC, June 21-25, 1999
  - Demos based on the timing constraints standard

Priorities

- The conceptual model is not a strict pre-requisite for the other portions of the DC-WG standard
  - Early versions would help to ensure consistency with the constraint taxonomy and description language.
- The information model may be released as a deliverable from DC-WG if it proves to be sufficiently valuable.
  - This a low-priority objective. Completing or refining the information model should not be a prerequisite for releasing the DC-WG standard.