



## IEEE DASC 1076.1 Working Group

<http://www.eda-stds.org/vhdl-ams/>

### Working Group Meeting September 19, 2006 18h - 20h FDL'06, Darmstadt, Germany

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WG Chair

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## WG Activities

### ◆ New Treasurer position

- Required for funding the editorial work in P1076.1-2006 revision
- Ernst Christen ad interim WG Treasurer (formal election to be conducted)
- WG Operating Procedures to be completed and voted on again to account for the new Treasurer position

### ◆ WG bank account

- Signing Authority:
  - Ernst Christen (primary)
  - John Shields
  - David W. Smith
- Note: We got a waiver from the IEEE for having their Staff Director, Finance as co-signer. Instead we are required to have 3 volunteers



IEEE DASC 1076.1 WG meeting – September 19, 2006

<http://www.eda-stds.org/vhdl-ams/> - 3

## Meeting Agenda

- ◆ Call to order
- ◆ Agenda review
- ◆ Last meeting minutes
- ◆ WG activities
  - WG status and organization
  - IEEE 1076.1-2007 revision ballot
- ◆ Planning beyond 1076.1-2007
  - Review of proposed new features and extensions
  - Definition of a process
- ◆ Next meeting
- ◆ Adjournment



IEEE DASC 1076.1 WG meeting – September 19, 2006

<http://www.eda-stds.org/vhdl-ams/> - 2

## 1076.1 Working Group Financial Activities

### ◆ 1076.1 revision ballot funding status

- Pledges for donations by Ansoft, Cadence, ECSI, Mentor Graphics, Synopsys
- Total amount pledged \$16,500
- Total donations collected so far \$10,000

### ◆ Account balance

• Donations	\$10,000	
• Private loan	\$ 110	
• Invoices paid for LRM editing (2)		\$ 9,375
• Bank charges		\$ 135
• Miscellaneous fees		\$ 50
• Totals	\$10,110	\$ 9,560
• Account balance 9/1/2006		\$ 550



IEEE DASC 1076.1 WG meeting – September 19, 2006

<http://www.eda-stds.org/vhdl-ams/> - 4

## P1076.1-2007 Revision

### ◆ Revision content

- Based on 1076-2002
- Includes proposed changes for 1076-2006 (LCS-2006-001 and LCS-2006-002)
- Corrects editorial errors and clarifies aspects of the language definition in the original 1076.1-1999 document
- Replacement of "must" by "shall" to comply with IEEE rules

### ◆ Peter Ashenden Technical Editor

- Peter is also working on the P1076 and P1076c LRM documents

### ◆ LRM work funding

- Ansoft, Cadence, ECSI, Mentor, Synopsys
- Contributions acknowledged in the LRM
- Thank You Letters to be sent to the donors



## Planning Beyond 1076.1-2007

### ◆ Synchronization with 1076-2006 (2007?)

- Need time to analyze new language features such as:
  - IP protection
  - Procedural interface
  - PSL support
- Proposal: Endorse the IP protection scheme of 1076-2006 as being suitable for 1076.1 as well

### ◆ Proposed new 1076.1 features

- Identify other avenues for standardization
- Define suggestions
- Define project champions and study groups
- Convert suggestions to requirements (white papers)
- Define priorities (WG vote on WPs)
- Develop language changes or packages
- WG review and vote
- IEEE revision ballot



## P1076.1-2007 Revision Schedule

### ◆ April 29, 2006: Work on 1076.1 IRs completed

### ◆ May 31, 2006: WG approved IR resolutions and draft 1076.1-2006 LRM

### ◆ July 20, 2006: Invitation to sponsor ballot closed

- 42 members in ballot group

Academic	6 (14.3%)
General Interest	17 (40.5%)
Government/Military	1 (2.4%)
Producer	6 (14.3%)
User	12 (28.6%)

### ◆ Aug. 29 - Sept. 29, 2006: Sponsor ballot (30 days)

### ◆ Recirculation ballot?

### ◆ The goal is to have the final LRM version submitted to the RevCom meeting on Dec. 5, 2006



## Other Avenues for Standardization

### ◆ SAE VHDL-AMS statistical analysis packages

- Emphasis on Monte-Carlo simulation
- Approved as SAE standard J2748
- Some administrative actions are still outstanding
- Contact: David Smith (dwsmith@synopsys.com)
- Forwarded to IEEE for standardization?



## Suggestions for Future Work (1)

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- ◆ **Mixed netlists (1076.1-1999)**
  - White paper by John Shields and Ernst Christen in FDL'04 Kluwer book
  - Language definition not yet completed
- ◆ **Language semantics to sweep parameters (Nokia)**
  - Seems to be more a tool issue than a language requirement
- ◆ **Table data types and lookup functions (Ansoft, IBIS)**
  - Initial draft requirement document from Joachim Haase
  - Candidate for a new standard package
- ◆ **Passing a function name into a design unit (IBIS)**
  - Function to be called in a design unit
  - Different functions may be called in different instances of a design unit
  - Requirements to be detailed further



## Suggestions for Future Work (3)

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- ◆ **New predefined ASP signal (Gary Pratt)**
  - Need to have a model execution triggered at ASPs
  - Application example: Characterization of DDR2 memory as defined by JEDEC committee
  - Requirements to be detailed further
- ◆ **Other suggestions?**



## Suggestions for Future Work (2)

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- ◆ **Vector/matrix arithmetic (Ernst Christen)**
  - Support of composite terminals and quantities
  - Matlab-like features
  - Candidate for a new standard package
- ◆ **Temperature relaxation models (Alex Zamfirescu)**
  - Requirements to be detailed further
- ◆ **Support for requirements and specifications (Yannick Hervé)**
  - "PSL-AMS" capabilities
  - Support for verification and synthesis
  - FDL'04 paper by Yannick Hervé and Ahmed Fakhfakh
  - Initial draft requirement document from Yannick Hervé



## Recommendations for White Papers

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- ◆ **Responsible/champion**
- ◆ **Context of proposed changes**
  - Previous work
  - Typical application examples
- ◆ **Requirements**
  - Avoid language syntax as much as possible
- ◆ **Possible solutions**
  - Language changes or extensions
  - Package definition(s)
- ◆ **WPs to be published in the 1076.1 web site**



## Your Help is Requested

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- ◆ New requirements
- ◆ Definition of priorities
- ◆ Language definition work
- ◆ Development of standard packages
- ◆ Resolution of language issues

**Please contact WG Executive Committee**

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## Next WG Meetings

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- ◆ DATE'07, Nice, France, 16-20 April 2007
- ◆ DAC'07, San Diego, USA, 4-8 June 2007
- ◆ FDL'07

