Submitter Email: christen.1858@comcast.net
Type of Project: Revision to IEEE Standard 1076.1-2007

1.1 Project Number: P1076.1
1.2 Type of Document: Standard
1.3 Life Cycle: Full Use

2.1 Title: Standard for VHDL Analog and Mixed-Signal Extensions

Old Title: Standard VHDL Analog and Mixed-Signal Extensions

3.1 Working Group: VHDL Analog and Mixed-Signal Extensions Working Group (C/DA/VHDL_AMS)
Contact Information for Working Group Chair
Name: Ernst Christen
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Name: John Willis
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3.2 Sponsoring Society and Committee: IEEE Computer Society/Design Automation (C/DA)
Contact Information for Sponsor Chair
Name: Stanley Krolikoski
Email Address: skrolikoski@gmail.com
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Contact Information for Standards Representative
None

4.1 Type of Ballot: Individual
4.2 Expected Date of submission of draft to the IEEE-SA for Initial Sponsor Ballot: 12/2012
4.3 Projected Completion Date for Submittal to RevCom: 10/2013

5.1 Approximate number of people expected to be actively involved in the development of this project: 10

5.2 Scope: This standard defines the IEEE 1076.1™ language, a hardware description language for the description and the simulation of analog, digital, and mixed-signal systems. The language, also informally known as VHDL-AMS, is built on the IEEE 1076™ (VHDL) language and extends it to provide capabilities of writing and simulating analog and mixed-signal

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models.

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5.3 Is the completion of this standard dependent upon the completion of another standard: No

5.4 Purpose: To support the design and verification of complex electronic systems containing a mixture of analog and digital devices, the IEEE 1076.1™ language provides, as an extension of the IEEE VHDL 1076 language, a comprehensive set of capabilities for the description and simulation of mixed-signal and mixed-technology systems.

The revision adds selected new features to the language definition of the 1076.1-2007 standard, and updates the 1076.1-2007 standard to reflect changes in the VHDL 1076-2008 specification.

Old Purpose: To provide a comprehensive mixed-signal description and simulation capabilities as an extension to the IEEE VHDL 1076 language. The revision corrects editorial errors and clarifies aspects of the language definition in the 1076.1-1999 standard, and updates the 1076.1-1999 standard to reflect changes in the VHDL 1076-2002 specification.

5.5 Need for the Project: Complex electronic systems comprise a mixture of digital and analog elements. This project defines a modeling language that allows engineers to use design automation tools to analyze and verify operation of designs prior to manufacture, thus improving productivity and avoiding the cost of erroneous designs. The language is of benefit to engineers and organizations developing mixed analog and digital systems for applications including consumer devices, telecommunications, control systems and automotive systems. Design automation tools based on the current standard are provided by a number of suppliers and are in use in industry.

5.6 Stakeholders for the Standard: The stakeholders are telecom, automotive, aerospace, EDA vendors.

Intellectual Property

6.1.a. Is the Sponsor aware of any copyright permissions needed for this project?: Yes

If yes please explain: Since the 1076.1 standard is a superset of the 1076 standard, all copyrighted material included there is also part of 1076.1. In addition, two planned projects may depend on copyrighted material. This is currently under review.

6.1.b. Is the Sponsor aware of possible registration activity related to this project?: No

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7.1 Are there other standards or projects with a similar scope?: Yes

If yes please explain: Since IEEE Std 1076.1 was first approved in 1999, two standards with overlapping scope have become available:
Verilog-AMS, an Accellera standard
SystemC-AMS, an OSCI standard

Each of these standards provides analog and mixed-signal modeling capabilities within the syntactic and semantic framework of the corresponding digital language.

7.2 Joint Development - Is it the intent to develop this document jointly with another organization?: No

7.3 International Standards Activities

a. Adoptions - Is there potential for this standard (in part or in whole) to be adopted by another national, regional or international organization?: Yes

Organization: IEC
Technical Committee Name: Design Automation
Technical Committee Number: TC-93
Contact Name: Victor Berman
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b. Harmonization - Are you aware of another organization that may be interested in portions of this document in their standardization development efforts?: No

7.4 Does the sponsor foresee a longer term need for testing and/or certification services to assure conformity to the standard?: No

Additionally, is it anticipated that testing methodologies will be specified in the standard to assure consistency in evaluating conformance to the criteria specified in the standard?: No

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8.1 Additional Explanatory Notes (Item Number and Explanation):

1. The revision incorporates changes in the base 1076 language introduced in its 2008 revision, adapts the 1076.1 definitions to be consistent with these changes, and adds selected new functionality to the language.