LETTER OF ASSURANCE FOR ESSENTIAL PATENT CLAIMS

Please return via mail, e-mail (as a PDF), or fax:

PatCom Administrator, IEEE-SA Standards Board Patent Committee
Institute of Electrical and Electronics Engineers, Inc.
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No license is implied by submission of this Letter of Assurance

A. SUBMITTER:

Legal Name: Intel Corporation ("Submitter")

B. SUBMITTER'S CONTACT INFORMATION (for the purpose of licensing information):

Contact Name/Title: James A. Kovacs, Deputy Director, Licensing and Patent Acquisitions
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URL: http://www.intel.com/standards/licensing.htm

Note: The IEEE does not endorse the content, or confirm the accuracy or consistency of any contact information or web site listed above.

C. IEEE STANDARD OR PROJECT (e.g., AMENDMENT, CORRIGENDA, OR REVISION):

In accordance with Clause 6.3.5 of the *IEEE-SA Standards Board Operations Manual*, this licensing position is limited to the following:

Standard/Project Number: IEEE 1149.7
Title: Reduced-Pin and Enhanced-Functionality Test Access Port and Boundary-Scan Architecture

D. SUBMITTER'S POSITION REGARDING LICENSING OF ESSENTIAL PATENT CLAIMS:

In accordance with Clause 6 of the *IEEE-SA Standards Board Bylaws*, the Submitter hereby declares the following ***(Check box 1 or box 2 below)***:

Note: Nothing in this Letter of Assurance shall be interpreted as giving rise to a duty to conduct a patent search. The IEEE takes no position with respect to the validity or essentiality of Patent Claims or the reasonableness of rates, terms, and conditions provided in connection with submission of a Letter of Assurance, if any, or in any license agreements offered by the Submitter. To the extent there are inconsistencies between the Letter of Assurance Form and any sample licenses, material licensing terms, or not to exceed rates provided in connection with 1.a. or 1.b. below, the terms of the Letter of Assurance Form shall control.

☒ 1. The Submitter may own, control, or have the ability to license Patent Claims that might be or become Essential Patent Claims. With respect to such Essential Patent Claims, the Submitter's licensing position is as follows ***(must check a, b, c, or d and any applicable subordinate boxes):***

☐ a. The Submitter will grant a license without compensation to an unrestricted number of applicants on a worldwide basis with reasonable terms and conditions that are demonstrably free of unfair discrimination.

☐ (Optional) A sample of such a license (or material licensing terms) that is substantially similar to what the Submitter would offer is attached.

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☒ b. The Submitter will grant a license under reasonable rates to an unrestricted number of applicants on a worldwide basis with reasonable terms and conditions that are demonstrably free of unfair discrimination.

☐ (Optional) These reasonable rates will not exceed _____ (e.g., percent of product price, flat fee, per unit).

☐ (Optional) A sample of such a license (or material licensing terms) that is substantially similar to what the Submitter would offer is attached.

☐ c. The Submitter without conditions will not enforce any present or future Essential Patent Claims against any person or entity making, using, selling, offering to sell, importing, distributing, or implementing such a compliant implementation.

☐ d. The Submitter is unwilling or unable to grant licenses according to the provisions of either a or b above or to agree that it will not enforce its Essential Patent Claims as described in c above.

☐ 2. After a Reasonable and Good Faith Inquiry, the Submitter is not aware of any Patent Claims that the Submitter may own, control, or have the ability to license that might be or become Essential Patent Claims.

E. SCOPE OF ASSURANCE:

Note: The Submitter must complete this section if box 1 in part D above is checked.

The Submitter may, but is not required to, identify one or more of its Patent Claims that it believes might be or become Essential Patent Claims. ***(Submitter must check box 1 or box 2 below)***

☐ 1. When checked, this Letter of Assurance only applies to the Patent Claims identified below that are or become Essential Patent Claims. (If no Patent Claim is identified below, then this Letter of Assurance applies to all Essential Patent Claims supported by the disclosure in the patent or patent applications listed below.)

Patent/Application/Docket Number:
Description/Title (optional):

Claim (optional):

Patent/Application/Docket Number:
Description/Title (optional):

Claim (optional):

Patent/Application/Docket Number:
Description/Title (optional):

Claim (optional):

For additional patents, use additional pages as necessary.

☒ 2. When checked, this Letter of Assurance is a Blanket Letter of Assurance. As such, all Essential Patent Claims that the Submitter may currently or in the future have the ability to license shall be available under the terms as indicated above in part D.1; however, a Blanket Assurance shall not supersede any pre-existing or simultaneously submitted specific assurance identifying potential Essential Patent Claims.

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F. APPLICATION TO AFFILIATES:

With respect to any Essential Patent Claims that an Affiliate has the ability to license, the Submitter agrees that (i) the licensing positions described in parts C and D above apply to any Essential Patent Claims within the scope of the assurance described in part E; and (ii) the terms of this assurance are binding on each such Affiliate; provided, however, that such representations and commitments shall not apply to Affiliates identified below:

Organization's Name	Organization's Name
Address	Address
Contact person	Contact person

For additional Affiliates, use additional pages as necessary.

G. SIGNATURE:

By signing this Letter of Assurance, you represent that you have the authority to bind the Submitter and all Affiliates (other than those Affiliates excluded above) to the representations and commitments provided in this LOA and acknowledge that users and implementers of the [Proposed] IEEE Standard identified in part C above are relying or will rely upon and may seek enforcement of the terms of this LOA. The Submitter and all Affiliates (other than those Affiliates excluded above) agree not to sell or otherwise transfer any rights in any Essential Patent Claims that they hold, control, or have the ability to license with the intent of circumventing or negating any of the representations and commitments made in this LOA.

The Submitter agrees (a) to provide notice of a Letter of Assurance either through a Statement of Encumbrance or by binding any assignee or transferee to the terms of such Letter of Assurance; and (b) to require its assignee or transferee to (i) agree to similarly provide such notice and (ii) to bind its assignees or transferees to agree to provide such notice as described in (a) and (b).

If, as described in Clause 6 of the *IEEE-SA Standards Board Bylaws*, the Submitter becomes aware of additional Patent Claims not already covered by an existing Letter of Assurance that are owned, controlled, or licensable by the Submitter that may be or become Essential Patent Claims with respect to the standard identified in C above, the Submitter agrees to submit a Letter of Assurance stating its position regarding enforcement or licensing of such Patent Claims.

Print name of authorized person: Earl Nied

Title of authorized person: Program Director of ~~Standards and IPR~~

Signature of authorized person: _____ Date: 5/23/2013

Address: RS5-118, 3100 NE Shute Road, Hillsboro, OR 97124

Phone: 503-712-3397 E-mail: standards.licensing@intel.com

Note: This assurance applies from the date of the standard's approval to the date of the standard's transfer to inactive status and is irrevocable upon acceptance by the IEEE-SA.

The IEEE Patent Policy and the procedures used to execute that policy are documented in the IEEE-SA Standards Board Bylaws and the IEEE-SA Standards Board Operations Manual, available at http://standards.ieee.org/develop/policies/. The terms and definitions set forth in the IEEE Patent Policy, IEEE-SA Standards Board Bylaws, and IEEE-SA Standards Board Operations Manual in effect as of the date of this Letter of Assurance are incorporated herein.

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DEFINITIONS

The following terms, when capitalized, have the following meanings:

"Accepted Letter of Assurance" and *"Accepted LOA"* shall mean a Letter of Assurance that the IEEE-SA has determined is complete in all material respects and has been posted to the IEEE-SA web site.

"*Affiliate*" shall mean an entity that directly or indirectly, through one or more intermediaries, controls the Submitter, is controlled by the Submitter, or is under common control with the Submitter. For the purposes of this definition, the term "control" and its derivatives, with respect to for-profit entities, means the legal, beneficial or equitable ownership, directly or indirectly, of more than fifty percent (50%) of the capital stock (or other ownership interest, if not a corporation) of an entity ordinarily having voting rights. "Control" and its derivatives, with respect to nonprofit entities, means the power to elect or appoint more than fifty percent (50%) of the Board of Directors of an entity.

"*Blanket Letter of Assurance*" shall mean a Letter of Assurance that applies to all Essential Patent Claims for which a Submitter may currently or in the future (except as otherwise provided for in these Bylaws and in the *IEEE-SA Standards Board Operations Manual)* have the ability to license.

"Enabling Technology" shall mean any technology that may be necessary to make or use any product or portion thereof that complies with the [Proposed] IEEE Standard but is neither explicitly required by nor expressly set forth in the [Proposed] IEEE Standard (e.g., semiconductor manufacturing technology, compiler technology, object-oriented technology, basic operating system technology, and the like).

"*Essential Patent Claim*" shall mean any Patent Claim the use of which was necessary to create a compliant implementation of either mandatory or optional portions of the normative clauses of the [Proposed] IEEE Standard when, at the time of the [Proposed] IEEE Standard's approval, there was no commercially and technically feasible non-infringing alternative. An Essential Patent Claim does not include any Patent Claim that was essential only for Enabling Technology or any claim other than that set forth above even if contained in the same patent as the Essential Patent Claim.

"*Letter of Assurance*" and *"LOA"* shall mean a document, including any attachments, stating the Submitter's position regarding ownership, enforcement, or licensing of Essential Patent Claims for a specifically referenced IEEE Standard, submitted in a form acceptable to the IEEE-SA.

"*Patent Claim(s)"* shall mean one or more claims in issued patent(s) or pending patent application(s).

"*Reasonable and Good Faith Inquiry*" includes, but is not limited to, a Submitter using reasonable efforts to identify and contact those individuals who are from, employed by, or otherwise represent the Submitter and who are known to the Submitter to be current or past participants in the development process of the [Proposed] IEEE Standard identified in a Letter of Assurance, including, but not limited to, participation in a Sponsor Ballot or Working Group. If the Submitter did not or does not have any participants, then a Reasonable and Good Faith Inquiry may include, but is not limited to, the Submitter using reasonable efforts to contact individuals who are from, employed by, or represent the Submitter and who the Submitter believes are most likely to have knowledge about the technology covered by the [Proposed] IEEE Standard.

"Statement of Encumbrance" shall mean a specific reference to an Accepted LOA or a general statement in the transfer or assignment agreement that the Patent Claim(s) being transferred or assigned are subject to any encumbrances that may exist as of the effective date of such agreement. An Accepted LOA is an encumbrance.

"*Submitter*" when used in reference to a Letter of Assurance shall mean an individual or an organization that provides a completed Letter of Assurance. A Submitter may or may not hold Essential Patent Claims.

Should any discrepancy exist between the definitions above and the definitions in the IEEE-SA Standards Board Bylaws clause 6.1, the definitions contained in the Bylaws shall control.

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