

Comments of the Semiconductor Industry Association (SIA) on Amendment to Prohibitions Pertaining to the Release of Technology to Standards Organizations Members that are on the Entity List

Ref: 85 Fed. Reg. 36719 (June 18, 2020); BIS 2020-0017; RIN 0694-AI06

Submitted on August 17, 2020

The Semiconductor Industry Association (SIA)¹ appreciates the opportunity to comment on the interim final rule. Many of our members are active participants in many types of standards development organizations. As a result, they have been particularly affected by the impact the Entity List prohibitions have had on such work.

SIA fully agrees with BIS's justification for the rule, which is that "it is important to U.S. technological leadership that U.S. companies be able to work in [standards] bodies in order to ensure that U.S. standards proposals are fully considered."² As BIS well stated, "international standards serve as the building blocks for product development and help ensure functionality, interoperability, and safety of the products." Thus, the spirit of the new rule is consistent with our view, which is that the EAR should not interfere with U.S. leadership in standards organizations, except with respect to truly sensitive military and dual-use technologies that are controlled for release to foreign persons generally.

For BIS to fully achieve its stated objectives, however, we respectfully request that it make three additional amendments to the scope of the standards carve-out from the Entity List-related prohibitions. Our first request is that the carve-out apply to listed entities equally. Our second request is that the carve-out clearly apply to ordinary standards promulgation activities. Our third request is that "software" be added to the scope of the carve-out.

These requests can be easily accomplished by the addition of a sentence such as the following to the end of EAR section 744.16(a):

The requirements imposed by this paragraph do not apply to the release of "technology" or "software" controlled for anti-terrorism reasons only or that is EAR99 when such a release is for a "standards-related activity" or a

¹ SIA is the trade association representing leading U.S. companies engaged in the research, design, and manufacture of semiconductors. Semiconductors are the fundamental enabling technology of modern electronics that has transformed virtually all aspects of our economy, ranging from information technology, telecommunications, health care, transportation, energy, and national defense. Innovations in semiconductor design and manufacturing have resulted in increasingly smaller, more powerful, less expensive, and more energy efficient semiconductors, which has a "multiplier effect" that drives advancements throughout other sectors of the economy, resulting in increased growth, jobs, and productivity. More information about SIA and the semiconductor industry is available at www.semiconductors.org.

² 85 Fed. Reg. 36719 (June 18, 2020).

“standards development activity,” as these terms are defined, respectively, in the Trade Agreements Act of 1979 (19 U.S.C. § 2571(14)) and the Standards Development Organization Advancement Act of 2004 (15 U.S.C. § 4301(a)(7)).

I. The Standards-Related Carve-Out from the Entity List Prohibitions Should Apply to Listed Entities Equally

A. Reasons for the Request

BIS excluded from the scope of the Huawei-related Entity List prohibitions the release of unpublished Anti-Terrorism (AT)-only and EAR99 technology to members of a “standards organization” for the purpose of contributing to the revision or development of a “standard.” This amendment indeed advances U.S. technological leadership because, for example, it removed a restriction on U.S. members’ contributing to standards organizations that had a Huawei entity as a member. It also removed such a restriction on non-U.S. members that develop and would want to contribute unpublished U.S.-origin technology to the organization.

Many standards organizations, however, have other members that are on the Entity List. Without making the standards-related carve-out from the Entity List prohibitions equally applicable to all listed entities, current and future, BIS’s objectives will not be met for the following reasons:

- U.S. participants will still need to limit their participation in standards bodies that have other listed entities as members. For those organizations, the Huawei-specific change will have no benefit. The harm to U.S. technological leadership that BIS wants to address with the amendment will continue. U.S. companies will still need to cede their leadership to Chinese and other foreign companies that are not affected by similar restrictions.
- In our experience, the unpublished technology that needs to be shared within standards organizations is generally not sensitive from an export control perspective. That is, it is generally AT-only or EAR99 technology. In light of this, most standard organizations – many of which have hundreds or thousands of members – do not need to have much experience in or a sophisticated compliance program regarding the EAR to be compliant. The application of the EAR’s Entity List-related prohibitions to such technology and the need to constantly screen membership lists against the regularly changing Entity List, however, create significant complexity, uncertainty, and regulatory burden for standards organizations and their members.

This complexity and burden create incentives for Chinese participants to balkanize the standards system. In other words, the unilateral controls create incentives for Chinese organizations to (i) set up barriers to full participation by non-Chinese entities in their Chinese standards and (ii) create “Chinese-first”

standards that, because of their huge market, require other countries to adopt or modify existing standards. This could lead to a divergence of standards between Chinese-led technology and U.S.-led technology, which will have significant economic and national security implications. For example, separate technologies could require U.S. companies to develop products that meet multiple standards, thus raising their development costs and making it harder to enter certain markets. In addition, worldwide standards are easier for U.S. companies and the U.S. government to get access to. It is more difficult to follow the development of, get access to, and be a product leader for Chinese-developed or -led standards.

- To hedge their bets and to not have the prospect of future additions to the Entity List affect an organization's long-term planning, leaders and members of U.S.-based standards development organizations will, without the requested change, be inclined to leave the United States. This could result in the exclusion of U.S. companies from key activities that involve technology releases to develop and establish standards. As they become non-U.S.-based, they have less incentive to exclude listed entities from their standardization activities. This will make it more difficult for U.S. companies to contribute to and lead standardization efforts. If the EAR's Entity List prohibitions have a *per se* carve-out for releases to members of standards organizations, then such concerns will disappear and U.S. participation in standards organizations will not be harmed as a result.

Finally, and most importantly, in our view, there is no policy reason for creating a carve-out for Huawei-related entities but not all other listed entities. Huawei is the most prominent company on the Entity List. The U.S. Government has identified it and its activities as a threat to U.S. national security and foreign policy interests in several settings. If BIS and its interagency colleagues concluded that a standards-related carve-out for Huawei advances U.S. national security, foreign policy, and economic security objectives, then certainly a carve-out for all other listed entities would also advance the same objectives. In other words, we respectfully request BIS apply to all other listed entities the same policy analysis that it applied to the Huawei entities when deciding to amend the scope of the Entity List prohibitions pertaining to standards. The answer will be the same we suspect and, in making such an amendment, BIS will achieve the broader objectives it cited as justifying the Huawei-related amendments.

B. Examples of Listed Entities that Are Members of Standards Organizations

The impact of the amendment being limited just to Huawei entities is not theoretical. Many standards organizations have or will likely have members that are on the Entity List. Although we do not have the resources to create a comprehensive list, the following are significant examples of which we are aware:

- Listed entities Dahua Technology, Sense Time, and Hikvision are members of a major standards organization generally known as MPEG (Moving Picture Experts Group), officially ISO/IEC JTC 1/SC 29/WG 11.

- Listed entity FiberHome Technologies Group is a member of 3GPP (3rd Generation Partnership Project), which unites seven telecommunications standards development organizations. It has thousands of participants.
- FiberHome is also a participant in the Institute of Electrical and Electronics Engineers Standards Association (IEEE SA). FiberHome is also involved in CCSA (China Communications Standards Association) and with multiple ITU (International Telecommunications Union) standards.
- FiberHome, Hikvision, and Dahua also participate in the ITU. ITU is significant because it is a treaty organization under the auspices of the United Nations.

C. Request for a Simple, Short *Per Se* Carve-Out from the Entity List Prohibitions for Standards-Related Activities

If BIS agrees with this request, we ask that BIS implement it simply and clearly. BIS promulgated the Huawei-related carve-out by amending the entries for nearly 200 (counting aliases) specific entities. Amending the nearly 1,100 remaining individual Entity List entries would result in an extremely confusing structure for members of standards organizations to have to sort through to determine compliance. Thus, we respectfully request BIS amend EAR section 744.16 so that it clearly and simply states that the EAR's prohibitions pertaining to releases of AT-only or EAR99 technology and software to those on the Entity List do not apply when such releases are for a "standards-related activity" or a "standards development activity," as these terms are defined, respectively, in the Trade Agreements Act of 1979 (19 U.S.C. § 2571(14)) and the Standards Development Organization Advancement Act of 2004 (15 U.S.C. § 4301(a)(7)).

II. BIS Should Make it Clear, Through Interpretation or Amendment, that Releases of Technology and Software Necessary to Promulgate a Standard are Within the Scope of the Entity List Carve-Out

A. Reason for the Request

Apparently for the sake of convenience and to bound the scope of the carve-out from the Huawei-related Entity List prohibitions to prevent abuse, BIS adopted the already existing definitions of “standard” and “standards organization” in Office of Management and Budget (OMB) Circular A-119. The Circular’s objective is stated in its first sentence, which is to establish “policies to improve the internal management of the Executive Branch with respect to the U.S. Government’s role in the development **and use of standards** and conformity assessment.” (Emphasis supplied). In other words, the Circular recognizes that standards organizations need to be involved in many types of activities necessary to *promulgate* a standard so that it is effective – and that the Executive Branch should adopt policies to facilitate such activities. The Circular refers to the definition of such “standards-related activity” in the Trade Agreements Act of 1979,³ which is “the development, adoption, or application of any standard, technical regulation, or conformity assessment procedure.”

Similarly, the Standards Development Organization Advancement Act of 2004 (SDOAA) defines “standards development activity” as “any action taken by a standards development organization for the purpose of developing, promulgating, revising, amending, reissuing, interpreting, or otherwise maintaining a voluntary consensus standard, or using such standard conformity assessment activities, including actions relating to the intellectual property policies of the standards development organization.”⁴ In standards organization parlance, these “development” activities are needed to “promulgate” the standard. The SDOAA incorporates by reference OMB Circular A.119. In particular, the SDOAA adopts the Circular’s definition of “standards development organization.”⁵

The purpose of the SDOAA was to allow standards development organizations to file for and gain protection from antitrust prohibitions associated with their standards-related activities if they fell within the act’s criteria. The U.S. government concluded that standards development activities, as defined in the SDOAA, were pro-competitive and legitimate. The SDOAA’s policy objectives are thus similar to those of BIS when it created the Entity List carve-out, which is to not let unrelated laws or regulations inadvertently get in the way of U.S. participation and leadership of legitimate standards organizations.

BIS’s amendment to the Entity List entries is limited to the release of unpublished technology “for the purpose of contributing to the *revision* or *development* of a

³ 19 U.S.C. § 2571(14).

⁴ 15 U.S.C. § 4301(a)(7).

⁵ See *id.* § 4301(a)(8).

‘standard.’” BIS did not explicitly carve-out other standards-related activities that, as recognized in the Circular and the SDOAA, are a normal part of a standard’s promulgation. Also, unlike the SDOAA, BIS did not define “standards *development* activities” or cross reference to the existing definitions in U.S. law of the term. Applying a dictionary definition of “revision” suggests that it does not apply to a standard that is completed and final. As you know, the EAR defines “development” to include all stages prior to an item’s being in “production,” e.g., no longer being modified.⁶ However, “standards development activities” are clearly defined in U.S. standards law (the SDOAA) as including activities all stages of a standard’s promulgation, such as its maintenance and conformity assessment.

Given these arguably conflicting definitions and the fact that technology needs to be released at many stages of a standard’s promulgation, we respectfully request BIS to resolve the definitional uncertainty in a way that furthers BIS’s objective of the rule, i.e., to ensure “U.S. technological leadership” through full participation in standards bodies by U.S. companies. A simple way for BIS to resolve this uncertainty and also remain consistent with its objectives, those in OMB Circular A.119, and those in the SDOAA would be for BIS to clearly state that “standards-related activities” and “standards development activities,” as defined in U.S. law, are excluded from the scope of the Entity List prohibitions.

B. Examples of Standards-Related Activities That May Require the Release of Unpublished Technology to Members that Are Listed

The following are common examples of standards-related activities that can occur after a standard is “developed,” in the ordinary and the EAR-defined⁷ senses of the word, but that are within the scope of “standards development activity,” as defined in the SDOAA. To reiterate: This conflict between, on the one hand, the dictionary and EAR definitions of “developed” and, on the other hand, the SDOAA’s definition (which includes a wide range of promulgation activities) is the ambiguity we respectfully request BIS resolve through interpretation or amendment.

- A “conformity assessment,” as defined in section 3 of the Circular, is “a demonstration, whether directly or indirectly, that specified requirements relating to a product, process, system, person, or body are fulfilled. Conformity assessment includes sampling and testing, inspection, supplier’s declaration of conformity, certification, and management system assessment and registration. Conformity assessment also includes accreditation of the competence of those activities.” In plain English, companies need to confirm that their products can communicate and work with one another. If a Wi-Fi thermostat is designed to be changed remotely, the thermostat vendor and the Wi-Fi router vendor need to make sure they can work together. Such efforts will generally require the release of technology before and after the standard is developed. If U.S.

⁶ 15 C.F.R. § 772.1.

⁷ *Id.*

persons are limited in their ability to perform such activities with standards organization members because the organization is uncertain about whether the release is permitted or if it needs to occur after the standard is “developed” (in the EAR sense of the word), then U.S. technology leadership will suffer and the goals of the OMB Circular A.119 and the BIS amendment will not be met.

- Another example of a “conformity assessment activity” is the development of formalized test and certification programs to verify compliance with the standards. In order to ensure that products being put on the market operate with one another and are safe, secure, and compliant, standards organizations must develop test standards and processes for standards. Such standards and processes ensure that test equipment vendors and test houses are properly executing tests. For example, when a company submits a product to the test house and the test house generates a report on the product’s performance, a standards body will often state or certify that the product conforms to the standard. Alternatively, if a product is shown to fail conformance, then the standards body may take action to revoke the certification.
- Another example of normal standards-related activity is the validation of the standard through test beds. After a standard is drafted, companies need to get together to make sure their products under development will actually work within one another consistent with the standard. By actually plugging in and turning on their products together on test beds, they can see if there are implementing issues or whether there was a problem in the way the standard was developed. Indeed, fixes to standards are quite common after such real-world testing of the standard. On the one hand, the standard has been developed because it exists. On the other hand, it might need to be revised if it does not work as intended or there are ambiguities in the standard causing confusion or interoperability problems. It is common that there are issues in early versions of a standard that need be resolved. In either event, BIS amendment does not clearly state that such activities are within the scope of the Entity List carve-out.
- Another example of how the scope of BIS’s amendment is not clear pertains to situations where unpublished technology needs to be released to foreign governments for a standards organization to explain a standard or resolve a regulatory issue. For example, if an organization needs a government to allocate a frequency band or approve the use of the standard in the country, it may need to prove to the government that the technology and the standard are mature. The government may also want to understand the potential for interference with its country’s telecommunication systems. Each would require the standards organization to prepare answers to the government’s questions, which may require members, including members that are listed entities, to share unpublished technology that is not in the text of the standard itself. Also, if a government states that it is going to regulate a product, companies sometimes need to be able to show why they can or cannot comply with the new regulation. To help describe an industry opinion on the question, a standards organization

may need to release unpublished standards-related technology.

- Finally, it is important that support for implementing standards in products be allowed. To do so, requires the release to standards organization members of technology and standards-related software to support the testing and evaluation of products and services that implement support for a standard.

C. Request for an Interpretation or an Amendment to EAR § 744.16 to Make It Clear that “Standards-Related Activities” and “Standards Development Activities” are Within the Scope of the Entity List Carve-Out

We appreciate BIS’s resolution of issues pertaining to the release to Huawei-related entities of unpublished technology that are members of standards organizations in order to revise and develop standards. We realize that BIS was responding to informal industry requests to solve this issue and why BIS did not publish the carve-out as a proposed rule first. We are not objecting or criticizing the process. However, in solving this one problem, the amendment highlighted that not all normal standards-related activities are necessarily related to the *revision* or “development,” as defined in the EAR, of a standard. That is, as discussed above, if one were to apply the EAR’s definition of “development,” then one could come to the conclusion that the carve-out does not apply to many types of normal standards promulgation activities referred to in the Circular and U.S. law. If one applied the definition of “standards development activity” from the SDOAA in defining what “development” means in the EAR, one would come to the opposite conclusion.

In our view, BIS could resolve the definitional and policy ambiguity in one of two ways. One way would be for BIS to confirm in the preamble response to this comment that the Entity List carve-out’s reference to “development” activities is identical to the existing definition of “standards development activities” in the SDOAA. A better response that would result in less ambiguity and uncertainty for future readers of the regulations who might not think to refer back to the preamble would be to amend the scope of the Entity List carve out so that it adopts by cross reference the SDOAA’s definition of “standards development activities.” Either way would resolve all uncertainty about whether the ordinary promulgation and standards-related activities are within the scope of the carve-out. Adopting the SDOAA definition would, however, have the added benefit of resolving for BIS any concerns about whether companies could conspire to create a fake organization in order to release technology subject to the EAR under the carve-out. U.S. law already recognizes as legitimate activities those that meet the definition in the SDOAA. Thus, just as BIS did with respect to adopting the already existing definitions in the Circular, incorporating by reference directly analogous definitions from existing standards organization law to implement BIS’s stated objectives would make policy sense.

III. “Software” Should be Included in the Standards-Related Carve-Out

The standards-related carve-out in the interim final rule applies to the release of “technology.” We respectfully request that “software” be added to the carve-out in the final rule to the same degree as “technology” because, as described in the examples below, software is often released to members of standards organizations to develop and promulgate a standard.

- Standards organizations developing codecs, particularly those involved with audio and video products, need to share software as part of the standards development process. (A codec is a device or computer program that encodes or decodes a digital data stream or signal.) For example, standards organization members often need to be able to compare the performance of a particular proposal to another. A member can assess the performance of a proposal by running code, such as that needed to generate encoded video, and then decoding it. It can then compare the quality of the original image (before encoding) and the resulting image (after decoding) to determine the quality. Members can then consider other aspects of the algorithm’s performance, such as its complexity and number of bits required to encode the image, to determine which proposal to select.
- Standards are often developed from ideas provided by many companies. Software allows members to incorporate their ideas into a design the standards body is developing so that the other members can see how the idea would work. Such software is not “production code,” *i.e.*, that which is needed to produce the product. Rather, it is that which is designed to show performance aspects of a proposed standard.
- The Bluetooth SIG releases software to members to aid in compliance testing of products that implement Bluetooth specs. The SIG also releases software tools to aid in the development of specifications and test documents, such as drawing tools.
- ECMAScript, which is developed by Ecma International, is a standard for scripting languages. (Languages such as Javascript are based on the ECMAScript standard.) This defines a programming interface and includes examples of how to code and how to test for standards compliance. As such, it needs to be routinely shared with standards organization members.
- Another type of software commonly released as part of standards development and promulgation efforts is reference software that is part of the actual standard. For example:
 - A software language called ASN.1 is commonly used in standards to specify key aspects of the coding of information. The standards development organization 3GPP, for example, uses it in its standards to show the detailed

encoding of information elements in order to provide precision. That is, the ASN.1 representation is precise. Text in a standards document are less so.

- Standards bodies often use and share among members a software language called TTCN for use in test equipment to test protocols. Test equipment executes the TTCN. TTCN is a precise representation of the protocol. It then serves as part of the test and conformance processes.
- There are also standards organizations that have executable implementations of the standard in addition to the text of standard. Such software is created when it is not cost effective for a member to do its own implementation, such as when all those in the industry needs the implementation. That is, it is often cheaper for the members to collaboratively develop such software rather than for each member to develop such software on its own. Software collaboratively developed by the members also generally guarantees interoperability.

IV. Conclusion

SIA appreciates all that BIS has done to address many of the unintended impacts on U.S. leadership in standards organizations as a result of the Entity List's broad prohibition on the release of otherwise uncontrolled unpublished technology to representatives of listed entities who are members of a standards organization. As described above, however, there is more work to be done to fully implement BIS's policy vision for the amendment. Without implementing the relatively minor, friendly fixes we are suggesting, U.S. companies will eventually need to cede their leadership to Chinese and other foreign companies that are not affected by similar prohibitions. Such limitations exist as a result of legal prohibitions, but they also exist as a result of market and opportunistic reactions to uncertain and complex U.S. prohibitions on technology and software releases.

If BIS agrees that our requests are warranted, we respectfully submit that they could be implemented simply by the addition of a sentence such as the following to the end of EAR section 744.16(a):

The requirements imposed by this paragraph do not apply to the release of "technology" or "software" controlled for anti-terrorism reasons only or that is EAR99 when such a release is for a "standards-related activity" or a "standards development activity," as these terms are defined, respectively, in the Trade Agreements Act of 1979 (19 U.S.C. § 2571(14)) and the Standards Development Organization Advancement Act of 2004 (15 U.S.C. § 4301(a)(7)).

Such a fix (i) addresses all the issues we have identified that affect U.S. leadership in standards organizations, (ii) is very simple, (iii) is consistent with U.S. standards law, and (iv) furthers the national security and foreign policy objectives of the EAR with

respect to the control over sensitive, unpublished technology and software to end uses, end users, and destinations of concern.

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SIA appreciates the opportunity to submit these comments. Please contact Erik Pederson at epederson@semiconductors.org if you request any additional information relating to these comments.

Comment uploaded to: <https://www.regulations.gov/comment?D=BIS-2020-0017-0001>

Courtesy email to Susan.Kramer@bis.doc.gov