



**Billing Code: 3510-60-P**

**DEPARTMENT OF COMMERCE**

**National Telecommunications and Information Administration**

**Multistakeholder Process on Internet of Things Security Upgradability and Patching**

**AGENCY:** National Telecommunications and Information Administration, U.S. Department of Commerce.

**ACTION:** Notice of Open Meeting.

**SUMMARY:** The National Telecommunications and Information Administration (NTIA) will convene meetings of a multistakeholder process concerning Internet of Things Security Upgradability and Patching. This Notice announces the first meeting, which is scheduled for October 19, 2016.

**DATES:** The meeting will be held on October 19, 2016, from 10:00 a.m. to 4:00 p.m., Central Daylight Time.

**ADDRESSES:** The meeting will be held in the Trinity Ballroom at the Renaissance Austin Hotel, 9721 Arboretum Boulevard, Austin, Texas 78759.

**FOR FURTHER INFORMATION CONTACT:** Allan Friedman, National Telecommunications and Information Administration, U.S. Department of Commerce, 1401 Constitution Avenue, NW, Room 4725, Washington, DC 20230; telephone: (202) 482-4281; email: [afriedman@ntia.doc.gov](mailto:afriedman@ntia.doc.gov). Please direct media inquiries to NTIA's Office of Public Affairs: (202) 482-7002; email: [press@ntia.doc.gov](mailto:press@ntia.doc.gov).

**SUPPLEMENTARY INFORMATION:**

*Background:* In March of 2015 the National Telecommunications and Information Administration issued a Request for Comment to “identify substantive cybersecurity issues that

affect the digital ecosystem and digital economic growth where broad consensus, coordinated action, and the development of best practices could substantially improve security for organizations and consumers.”<sup>1</sup> We received comments from a range of stakeholders, including trade associations, large companies, cybersecurity startups, civil society organizations and independent computer security experts.<sup>2</sup> The comments recommended a diverse set of issues that might be addressed through the multistakeholder process, including cybersecurity policy and practice in the emerging area of Internet of Things (IoT).

In a separate but related matter in April 2016, NTIA, the Department’s Internet Policy Task Force, and its Digital Economy Leadership Team sought comments on the benefits, challenges, and potential roles for the government in fostering the advancement of the Internet of Things.”<sup>3</sup> Over 130 stakeholders responded with comments addressing many substantive issues and opportunities related to IoT.<sup>4</sup> Security was one of the most common topics raised.

Many commenters emphasized the need for a secure lifecycle approach to IoT devices that considers the development, maintenance, and end-of-life phases and decisions for a device.

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<sup>1</sup> U.S. Department of Commerce, Internet Policy Task Force, Request for Public Comment, Stakeholder Engagement on Cybersecurity in the Digital Ecosystem, 80 Fed. Reg. 14360, Docket No. 150312253-5253-01 (Mar. 19, 2015), *available at*: [https://www.ntia.doc.gov/files/ntia/publications/cybersecurity\\_rfc\\_03192015.pdf](https://www.ntia.doc.gov/files/ntia/publications/cybersecurity_rfc_03192015.pdf).

<sup>2</sup> NTIA has posted the public comments received at <https://www.ntia.doc.gov/federal-register-notice/2015/comments-stakeholder-engagement-cybersecurity-digital-ecosystem>.

<sup>3</sup> U.S. Department of Commerce, Internet Policy Task Force, Request for Public Comment, Benefits, Challenges, and Potential Roles for the Government in Fostering the Advancement of the Internet of Things, 81 Fed. Reg. 19956, Docket No 160331306-6306-01 (April 5, 2016), *available at*: <https://www.ntia.doc.gov/federal-register-notice/2016/rfc-potential-roles-government-fostering-advancement-internet-of-things>.

<sup>4</sup> NTIA has posted the public comments received at <https://www.ntia.doc.gov/federal-register-notice/2016/comments-potential-roles-government-fostering-advancement-internet-of-things>.

On August 2, 2016, after reviewing these comments, NTIA announced that the next multistakeholder process on cybersecurity would be on IoT security upgradability and patching.<sup>5</sup>

The matter of patching vulnerable systems is now an accepted part of cybersecurity.<sup>6</sup> Unaddressed technical flaws in systems leave the users of software and systems at risk. The nature of these risks varies, and mitigating these risks requires various efforts from the developers and owners of these systems. One of the more common means of mitigation is for the developer or other maintaining party to issue a security patch to address the vulnerability. Patching has become more commonly accepted, even for consumers, as more operating systems and applications shift to visible reminders and automated updates. Yet as one security expert notes, this evolution of the software industry has yet to become the dominant model in IoT.<sup>7</sup>

To help realize the full innovative potential of IoT, users need reasonable assurance that connected devices, embedded systems, and their applications will be secure. A key part of that security is the mitigation of potential security vulnerabilities in IoT devices or applications through patching and security upgrades.

The ultimate objective of the multistakeholder process is to foster a market offering more devices and systems that support security upgrades through increased consumer awareness and understanding. Enabling a thriving market for patchable IoT requires common definitions so that manufacturers and solution providers have shared visions for security, and consumers know what

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<sup>5</sup> NTIA, *Increasing the Potential of IoT through Security and Transparency* (Aug. 2, 2016), available at: <https://www.ntia.doc.gov/blog/2016/increasing-potential-iot-through-security-and-transparency>.

<sup>6</sup> See, e.g. Murugiah Souppaya and Karen Scarfone, *Guide to Enterprise Patch Management Technologies, Special Publication 800-40 Revision 3*, National Institute of Standards and Technology, NIST SP 800-40 (2013) available at: <http://nvlpubs.nist.gov/nistpubs/SpecialPublications/NIST.SP.800-40r3.pdf>.

<sup>7</sup> Bruce Schneier, *The Internet of Things Is Wildly Insecure — And Often Unpatchable*, Wired (Jan. 6, 2014) available at: [https://www.schneier.com/blog/archives/2014/01/security\\_risks\\_9.html](https://www.schneier.com/blog/archives/2014/01/security_risks_9.html).

they are purchasing. Currently, no such common, widely accepted definitions exist, so many manufacturers struggle to effectively communicate to consumers the security features of their devices. This is detrimental to the digital ecosystem as a whole, as it does not reward companies that invest in patching and it prevents consumers from making informed purchasing choices.

The immediate goal of this process will be to develop a broad, shared definition or set of definitions around security upgradability for consumer IoT, as well as strategies for communicating the security features of IoT devices to consumers. One initial step will be to explore and map out the many dimensions of security upgradability and patching for the relevant systems and applications. A goal will be to design and explore definitions that are easily understandable, while being backed by technical specifications and organizational practices and processes. A final step will be to develop a strategy to share these definitions throughout the broader development community, and ultimately with consumers. This may include raising awareness in the consumer space to help consumers understand security options and drive market forces.

Stakeholders will determine the shape of the conversation and the process. NTIA has announced that the scope of the discussion will be around consumer devices, but stakeholders will ultimately determine which technologies, sectors, and applications will be discussed in the process, and covered by the resulting definitions and framework.

While we anticipate a technical discussion in the process of exploring security upgrades, NTIA does not expect this discussion to develop new technical standards. This multistakeholder process is not a formal standards development process. Stakeholders may wish to use existing standards in their discussion and definitions, or may wish to call for new standards or standards processes as part of their recommendations.

Stakeholders will determine the exact nature of the outcome of this process. Because it is unlikely that a one-size-fits-all solution will be feasible in this dynamic space, stakeholders will need to determine how to scope and organize the work through sub-groups or other means. Success of the process will be evaluated by the extent to which stakeholders embrace and implement the consensus findings within their individual practices or organizations, and work to promulgate them throughout the community. Although the stakeholders determine the outcome of the process, it is important to note that the process will not result in a new law or regulation.

*Matters to Be Considered:* The October 19, 2016, meeting will be the first in a series of NTIA-convened multistakeholder discussions concerning IoT security upgradability and patching. Subsequent meetings will follow on a schedule determined by those participating in the first meeting. Stakeholders will engage in an open, transparent, consensus-driven process to understand the range of issues in security upgradability, and develop a set of definitions useful to both industry and consumers. The multistakeholder process will involve hearing and understanding the perspectives of diverse stakeholders, including a range of IoT manufacturers, solution providers, security experts, and consumer advocates.

The October 19, 2016, meeting is intended to bring stakeholders together to share the range of views on security upgradability and patching, and to establish more concrete goals and structure of the process. The objectives of this first meeting are to: 1) briefly review the importance of patching and the challenges in the existing ecosystem; 2) briefly share different perspectives on existing technologies and practices; 3) engage stakeholders in a discussion of key security upgrade dimensions, features, and concerns; 4) engage stakeholders in a discussion of logistical issues, including internal structures such as a small drafting committee or various

working groups, and the location and frequency of future meetings; and 5) identify concrete goals and stakeholder work following the first meeting.

The main objective of further meetings will be to encourage and facilitate continued discussion among stakeholders to build out a mapping of the range of issues, and develop a consensus view of a consolidated set of potential definitions. Discussions will also cover best practices for sharing security information with consumers. This discussion may include circulation of stakeholder-developed strawman drafts and discussion of the appropriate scope of the initiative. Stakeholders may also agree on procedural work plans for the group, including additional meetings or modified logistics for future meetings. NTIA suggests that stakeholders consider setting clear deadlines for a working draft and a phase for external review of this draft, before reconvening to take account of external feedback.

More information about stakeholders' work will be available at:

<https://www.ntia.doc.gov/other-publication/2016/multistakeholder-process-iot-security>.

*Time and Date:* NTIA will convene the first meeting of the multistakeholder process on IoT Security Upgradability and Patching on October 19, 2016, from 10:00 a.m. to 4:00 p.m., Central Daylight Time. Please refer to NTIA's website, <https://www.ntia.doc.gov/other-publication/2016/multistakeholder-process-iot-security>, for the most current information.

*Place:* The meeting will be held in the Trinity Ballroom at the Renaissance Austin Hotel, 9721 Arboretum Boulevard, Austin, Texas 78759. The location of the meeting is subject to change. Please refer to NTIA's website, <https://www.ntia.doc.gov/other-publication/2016/multistakeholder-process-iot-security>, for the most current information.

*Other Information:* The meeting is open to the public and the press on a first-come, first-served basis. Space is limited. To assist the agency in determining space and webcast technology

requirements, NTIA requests that interested persons pre-register for the meeting at <https://www.ntia.doc.gov/other-publication/2016/multistakeholder-process-iot-security>.

The meeting is physically accessible to people with disabilities. Requests for sign language interpretation or other auxiliary aids should be directed to Allan Friedman at (202) 482-4281 or [afriedman@ntia.doc.gov](mailto:afriedman@ntia.doc.gov) at least seven (7) business days prior to each meeting. The meetings will also be webcast. Requests for real-time captioning of the webcast or other auxiliary aids should be directed to Allan Friedman at (202) 482-4281 or [afriedman@ntia.doc.gov](mailto:afriedman@ntia.doc.gov) at least seven (7) business days prior to each meeting. There will be an opportunity for stakeholders viewing the webcast to participate remotely in the meetings through a moderated conference bridge, including polling functionality. Access details for the meetings are subject to change. Please refer to NTIA's website, <http://www.ntia.doc.gov/other-publication/2016/multistakeholder-process-iot-security>, for the most current information.

Dated: September 14, 2016.

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Kathy D. Smith,

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[FR Doc. 2016-22459 Filed: 9/16/2016 8:45 am; Publication Date: 9/19/2016]