

Before the

**U.S. COPYRIGHT OFFICE
LIBRARY OF CONGRESS**

In the matter of exemption to prohibition on circumvention
of copyright protection systems for access control technologies

Docket No. 2017-10

**Reply Comments Submitted on Behalf of
Petitioner Institute of Scrap Recycling Industries, Inc.**

**Proposed Class 5:
Computer Programs—Unlocking**

Christopher Connelly
Dylan Scher
Certified Law Students
Phil Malone
Jef Pearlman
Counsel for Petitioners

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Introduction

Petitioner Institute of Scrap Recycling Industries, Inc. (“ISRI”) submits this reply comment in support of its December 19, 2017 comment requesting an exemption for Proposed Class 5: Computer Programs – Unlocking. ISRI requested the expansion of the renewed unlocking exemption to cover (1) new (in addition to used) telephone handsets, tablets, mobile connectivity devices, and wearable wireless devices, and (2) any wireless devices that connect to a wireless telecommunications network, without limitation to the four existing enumerated categories.

This reply highlights new developments and data since our initial filing, along with additional examples. ISRI notes that its proposed exemptions for Class 5 were not opposed. Because there is no opposition to the proposals, and because they fully satisfy all of the substantive legal and evidentiary requirements for granting an exemption set forth in DMCA Section 1201(a)(1) and the Copyright Office’s Notice of Proposed Rule Making, the requested exemptions should be granted.

I. The Existing Unlocking Exemption Should Be Extended to Cover New Wireless Handsets, Tablets, Mobile Connectivity Devices, and Wearable Wireless Devices.

While the current exemption includes only used wireless devices, there is no reason to draw a distinction between new and used devices as a matter of copyright law. Excluding new devices from the exemption has adverse effects on recyclers, consumers, and reverse logistics service providers. Including new devices in the exemption will not contribute to illegal cell phone trafficking.

A. Excluding New Devices Has Adverse Effects on Electronics Recyclers, Consumers, and Reverse Logistics Service Providers.

Since 2015, electronic recyclers have increasingly obtained and needed to recycle and/or resell new devices, particularly wireless handsets, sometimes buying them in substantial numbers from companies that have extra unused devices. For instance, Joe Clayton of ARCOA reported that a sale of 1,500 iPhone 6s fell through because they were locked to T-Mobile. Another member’s data indicates that, in the last six months, the fact that a new iPhone 7 was locked to Sprint resulted in resale prices \$175 lower than prices for identical new phones that were locked to Verizon. When recyclers are unable to legally unlock such devices, the result is lower value to the original owner and lower profits for the recycler.

A related adverse effect can be found in the reverse logistics industry. Reverse logistics is the opposite of forward logistics: While forward logistics concerns the movement of goods from manufacturer to consumer, reverse logistics concerns their movement in the opposite direction, for example through returns. Electronics retailers experience a return rate of 8.8%, one of the highest return rates of any industry.¹ With the consumer electronics industry projected to

¹ Andria Cheng, *Consumers Return \$642.6 Billion in Goods Each Year*, MARKETWATCH (June 18, 2015, 3:03 PM ET), <https://www.marketwatch.com/story/consumers-return-6426-billion-in-goods-each-year-2015-06-18>.

generate \$351 billion in revenue in 2018,² of which smartphones will account for \$62.9 billion,³ returns of electronic devices will account for billions of dollars this year alone.

To handle this deluge of returns, phone manufacturers seek out third party service providers (3PSPs) to purchase smartphones and other devices that make their way back up the supply chain. A single deal between a manufacturer and a 3PSP can involve tens of thousands of devices per month, including new and unopened devices.⁴ Because locked phones are harder to repurpose and cannot be sold around the world, they are significantly less valuable than their otherwise identical unlocked counterparts.⁵

As previously explained, the adverse effects caused by not being able to unlock new devices are the same as those recognized as legitimate in the existing exemption for used devices—recyclers and 3PSPs are unable to engage in noninfringing unlocking of devices for the benefit of consumers, including companies, who are buying or selling used devices; consumers are denied the ability to acquire high-quality devices from resellers and use them on the network of their choice; and competition between new and formerly owned devices and between networks is reduced.

B. ISRI's Proposed Exemption Will Not Facilitate Criminal Trafficking of Cell Phones.

Granting this expanded exemption will not hamper efforts to stop illegal phone trafficking. In contrast to past proceedings, no one has raised concerns about phone unlocking and trafficking in this proceeding.

In any case, while ISRI strongly opposes illegal trafficking, this is the wrong forum to address any concerns about trafficking that might remain. As ISRI detailed in its 2015 reply comments, concerns about phone trafficking do not implicate copyright interests and do not provide any basis for denying an exemption for unlocking new phones and other devices.

ISRI explained in its initial comment that companies impacted by phone trafficking have been successful in litigation against phone traffickers with non-DMCA causes of action, including unfair competition, tortious interference, conspiracy, and fraud.⁶ As the NTIA comments

² *Retail Revenue from Consumer Electronics/Technology Sales in the U.S. from 2012 to 2018 (in Billions of U.S. Dollars)*, STATISTA, <https://www.statista.com/statistics/641924/us-consumer-electronics-technology-retail-market-size/> (last visited Jan. 31, 2018).

³ *Retail Revenue from Consumer Technology Product Sales in the United States in 2018 (in Billions U.S. Dollars), by Segment*, STATISTA, <https://www.statista.com/statistics/789957/us-consumer-electronics-technology-retail-market-size-segment/> (last visited Jan. 31, 2018).

⁴ *See, e.g., RFI ID 141 - ***ON HOLD*** Global Phone Manufacturer Looking for Global Support of Returns*, REVERSE LOGISTICS ASS'N, http://rla.org/quotefuturerfq_onhold.php (last visited Jan. 30, 2018); *see also RFI ID 143 - ***CLOSED*** Global Manufacturer Looking for Asset Management of Returned Goods*, REVERSE LOGISTICS ASS'N (Nov. 2, 2010), <http://rla.org/quotefuturerfq.php>.

⁵ *See What Is a Locked Phone and Why Do Carriers Lock Them?*, THE HORN BY GAZELLE.COM (Jan. 29, 2014), <https://www.gazelle.com/thehorn/2014/01/29/what-is-a-locked-phone-and-why-do-carriers-lock-them/>.

⁶ ISRI 2015 Reply Comment at 7-8; *see also STOP CELL PHONE TRAFFICKING*, <http://stopcellphonetrafficking.com> (“Since 2005, wireless service providers have filed 230 lawsuits against more than 680 traffickers in federal courts nationwide, resulting in damages awards totaling more than \$800 million.”) (last visited Mar. 13, 2018).

reiterated, this was true even during the periods when earlier unlocking exemptions were in place.⁷

II. The Existing Unlocking Exemption Should Be Extended to Cover All Wireless Devices.

Because there are substantial adverse effects on noninfringing uses of a wide range of wireless devices beyond those currently covered by the exemption, all wireless devices that connect to a wireless telecommunications network ought to be exempted from the DMCA's prohibition against circumvention of technological prevention measures. The proliferation of wireless devices is expected to grow exponentially and in unforeseeable ways. Locking in the current limited exemption would substantially burden innovation and competition, as individuals and organizations would be required to wait to seek new exemptions on a three-year timeline that is far too sluggish for the explosively growing Internet of Things (IoT).

Recent developments discussed below illustrate this breakneck pace of development of new devices.

A. The IoT Utilizes a Wide Range of Technologies, Including Wireless Telecommunications Networks, to Connect a Rapidly-Expanding Range of Wireless Devices.

The International Telecommunication Union, a specialized agency of the United Nations that analyzes information and communication technologies, has offered the following observations regarding the IoT:

The Internet of things (IoT) can be perceived as a far-reaching vision with technological and societal implications.

From the perspective of technical standardization, the IoT can be viewed as a global infrastructure for the information society, enabling advanced services by interconnecting (physical and virtual) things based on existing and evolving interoperable information and communication technologies (ICT). . . .

NOTE – The IoT is expected to greatly integrate leading technologies, such as technologies related to advanced machine-to-machine communication, autonomic networking, data mining and decision-making, security and privacy protection and cloud computing, with technologies for advanced sensing and actuation.⁸

The IoT relies on a patchwork of technologies which include Bluetooth and Wi-Fi, but also traditional wireless telecommunications (including LTE and other cellular) networks.⁹

⁷ Sixth Triennial Section 1201 Rulemaking: Recommendations of the National Telecommunications and Information Administration to the Register of Copyrights 41 (Sept. 18, 2015).

⁸ INT'L TELECOMM. UNION, OVERVIEW OF THE INTERNET OF THINGS, REC. ITU-T Y.2060, at 2 (2012).

⁹ *See id.* at 8.

In 2015, there were at least 265 million devices connected to the IoT by cellular technology.¹⁰ This number is expected to grow rapidly: Analysts estimate that, by 2021, the number of devices using cellular technology to connect to the IoT will soar to 910 million.¹¹ The proliferation of these devices is expected to outpace that of devices using any other technology to connect.¹² While a few examples of devices are discussed below, this rapid pace of innovation generally will make it highly impractical for the Copyright Office to individually scrutinize every new device that comes along and will render the only every three year review period increasingly absurd.

B. Consumers Suffer Adverse Effects Because the Current Exemption Excludes a Wide Range of Devices.

Tangible harms have already begun to materialize as a consequence of consumers' inability to lawfully unlock devices as varied as security systems, farming equipment, and GPS trackers. These devices are just a few recent examples of why any attempt to limit the unlocking exemption to certain categories of devices is bound to leave out far more devices than it includes. A broad exemption is necessary to ensure that, because the underlying copyright issues involved in unlocking to switch carriers are the same across connected devices, consumers who own and recyclers who resell different types of devices will be treated alike.

i. Security Systems

Cellular connectivity, either as a primary means of communication or a backup, is a common feature in security systems for good reason: If WiFi or a landline goes down, the alarm system will still provide a vital lifeline to the outside world. One alarm system with such capability is Google's Nest Secure.¹³ However, Nest Secure owners cannot choose which network provides their cellular backup. During the preparation of this reply comment, T-Mobile launched the first nationwide plan for narrowband IoT (NB-IoT) on January 9, 2018¹⁴ and touted itself as "the *exclusive* cellular backup provider for Nest Secure."¹⁵

There are other home alarm systems that integrate cellular connectivity. Some, such as ADT, offer cellular backups, while others, like SimpliSafe, are based primarily on cellular

¹⁰ *Number of Connected Devices/Things by Technology Worldwide from 2015 to 2021 (in Millions)*, STATISTA (on file with author).

¹¹ *Id.* That estimate is on the low end, with other analysts anticipating that the number of devices using cellular technology to connect to the IoT will soon surpass one billion. *See, e.g.*, Department of Commerce, Comments of the GSM Association in the Matter of the Benefits, Challenges, and Potential Roles for the Government in Fostering the Advancement of the Internet of Things 1 (June 2, 2016),

https://www.ntia.doc.gov/files/ntia/publications/gsm_iot_comments_6-2-16.pdf (1.2 billion by 2020); ERICSSON MOBILITY REPORT ON THE PULSE OF THE NETWORKED SOCIETY 11 (June 2016), <https://www.ericsson.com/assets/local/mobility-report/documents/2016/Ericsson-mobility-report-june-2016.pdf> (1.5 billion by 2021).

¹² ERICSSON MOBILITY REPORT, *supra* note 11, at 11.

¹³ *Nest Secure*, NEST, <https://tinyurl.com/ycerysmf> (last visited Mar. 13, 2018).

¹⁴ *T-Mobile Launches Nation's First Plan for Narrowband IoT*, T-MOBILE (Jan. 9, 2018), <https://newsroom.t-mobile.com/news-and-blogs/narrowband-iot.htm>.

¹⁵ *T-Mobile Cellular Backup*, T-MOBILE (emphasis added), <https://www.t-mobile.com/offers/nest-security-pack> (last visited Jan. 24, 2018).

connectivity.¹⁶ However, different security systems do not necessarily offer cellular connectivity that works for different consumers. SimpliSafe offers coverage throughout most of the country, but there are some spots with no connectivity.¹⁷ Further, even being in an area with coverage does not guarantee a signal in any particular location. Some consumers have asked about what to do when they are in an area with limited cellular coverage.¹⁸ Prohibiting consumers from unlocking their security systems in order to switch to a better or cheaper wireless carrier threatens consumer choice and inhibits competition. A consumer wishing to unlock a security system from one wireless provider stands in the same position from a copyright law standpoint as one wishing to unlock a phone, and there is no legal reason to treat them differently under the DMCA.

ii. Farming Equipment

IoT devices are also proliferating among farmers. AT&T offers agriculture-based IoT devices.¹⁹ A December 2017 report detailed how AT&T's IoT solutions reduced water usage by 60% and pump energy usage by 20-30%.²⁰ Other recent reports explain that Verizon's wirelessly connected IoT sensors have significant benefits for food safety.²¹ For instance, oyster cultivators have been able to ensure freshness and quality.²² IoT devices are seen in other agricultural areas, such as vineyards.²³ Verizon's AgTech: Vineyard "provides predictive irrigation recommendations to farmers to manage vine stress," "helps reduce water usage," and "helps increase operational efficiency, sustainability, crop quality and yield."²⁴ Crop farmers also use these irrigation devices.²⁵ Golf courses can even use these devices for maintenance.²⁶ Just as farmers who wish to modify the software on their tractors may do so without violating the

¹⁶ See *Cellular Backup*, ADT (Sept. 11, 2017), <https://www.adt.com/resources/cellular-backup>; *Don't Buy a Wireless Alarm Until You've Read This*, SIMPLISAFE, <https://simplisafe.com/wireless-security-systems> (last visited Mar. 13, 2018).

¹⁷ See *100% Cellular Connection, Built-In*, SIMPLISAFE, <https://simplisafe.com/coverage-check> (last visited Mar. 13, 2018).

¹⁸ *Cellular Service in Places with No Signal*, SIMPLISAFE (June 10, 2010), <https://simplisafe.com/forum/customer-support-forum/getting-simplisafe/cellular-service-places-with-no-signal>.

¹⁹ See *M2X*, AT&T, <https://m2x.att.com/iot/industry-solutions/iot-data/agriculture/> (last visited Mar. 13, 2018).

²⁰ AT&T 10X CASE STUDY: RICE FARMERS USE INTERNET OF THINGS TO ENABLE WATER AND EMISSIONS REDUCTIONS 4 (Dec. 2017), <http://about.att.com/content/dam/csr/otherpdfs/10x-Precision-King-FINAL.pdf>.

²¹ *How Verizon's Internet of Things Technology Can Feed a Food Safety Revolution*, VERIZON (Dec. 13, 2017), www.verizon.com/about/news/how-verizons-internet-things-technology-can-feed-food-safety-revolution (describing how Verizon's network enables transparency key to improving food safety).

²² *When Every Second Counts: How Verizon IoT Sensors Help Barnegat Oyster Collective Deliver Fresh, Safe Seafood*, VERIZON (Dec. 20, 2017), <http://www.verizon.com/about/news/when-every-second-counts-how-verizon-iot-sensors-help-barnegat-oyster-collective-deliver-fresh>.

²³ See *Connected Vineyards: How the Internet of Things is Enhancing the Winemaking Industry*, ERICSSON (Oct. 2015), <https://www.ericsson.com/assets/local/news/2015/10/iot-connected-vineyards.pdf>.

²⁴ *AgTech: Vineyard FAQ*, VERIZON, <https://law.stanford.edu/wp-content/uploads/2015/03/Verizon-AgTech-Vineyard-FAQ.pdf> (originally available at <https://solutionslab.vzw.com/document/ag-tech-faq>).

²⁵ See *Precision Farming at its Finest*, VERIZON (Sept. 7, 2016), <http://www.verizon.com/about/news/precision-farming-its-finest>.

²⁶ *The Greg Norman Company and Verizon Join Forces to Disrupt the Golf Industry*, VERIZON (Mar. 29, 2017), www.verizon.com/about/news/greg-norman-company-and-verizon-join-forces-disrupt-golf-industry.

DMCA,²⁷ farmers who wish to unlock IoT devices in order to switch the carriers to which those devices connect should be able to do so; there is no basis in copyright law to prevent such switching.

iii. GPS Trackers

A third example of devices that consumers and other parties should be able to lawfully unlock is automobile GPS trackers. These devices are directly hooked up to wireless carriers, much like a cellphone. For instance, Verizon offers the Hum, which allows for vehicle health monitoring and tracking.²⁸ T-Mobile's SyncUP DRIVE similarly allows parents to monitor driving behavior, set speed alerts, and track car locations.²⁹ These devices are important for teen safety in the twenty-first century. They allow parents to know where their children are, and can even provide location and speed alerts.

However, the practice of locking GPS trackers to a particular wireless carrier poses a substantial threat to consumer choice. For instance, consumers who buy a T-Mobile IoT device cannot use it with a plan from Verizon or any other carrier. This places substantial limits on competition that are already being felt in the marketplace. This is not a theoretical concern; multiple individuals have sought advice on how to unlock their child GPS tracking device, or on what GPS devices are available that connect to their wireless carrier.³⁰ Preventing consumers from switching carriers places artificial limitations on consumer freedom, something that is not a proper purpose of copyright law. Rather, consumers should have the ability to select tracking devices and IoT plans based on their respective merits—such as coverage, price, and support—without fear of running afoul of the DMCA.

Security systems, farming equipment, and GPS trackers are just a few examples that demonstrate the adverse effects caused by consumers' inability to lawfully unlock wireless devices. There will be far more devices that rely on wireless connectivity in the next few weeks, the next few months, and the next one, two, and three years, and many of them will raise issues of carrier unlocking. Allowing this unlocking will promote consumer choice and competition among carriers for these devices and many others. This will ensure consumers can take advantage of technology in this rapidly growing space.

²⁷ Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 80 Fed. Reg. 65944, 65954 (Oct. 28, 2015).

²⁸ Chris Ziegler, *Verizon's Hum Connected Car Gadget is Now a Teen Driver's Worst Nightmare*, THE VERGE (Feb. 17, 2016), <https://www.theverge.com/2016/2/17/11026184/verizon-hum-teen-driver-location-speed-tracking-update>.

²⁹ *Introducing T-Mobile SyncUp DRIVE, the Un-Carrier Way to Connect Your Car*, T-MOBILE NEWSROOM (Nov. 7, 2016), <https://newsroom.t-mobile.com/news-and-blogs/tmobile-syncup-drive.htm>.

³⁰ See, e.g., *Re: Kid Gps Trackers Smartwatches*, AT&T COMMUNITY FORUMS (Jul. 27, 2017, 4:15 PM), <https://forums.att.com/t5/Wearables/Kid-gps-trackers-smartwatches/td-p/5171760> ("I too would like to know if there is a way to unlock the Gizmo..."); *Looking for Kids Device*, AT&T COMMUNITY FORUM (Aug. 4, 2015, 7:53 PM), <https://forums.att.com/t5/Wearables/Looking-for-kids-device/td-p/4291000> ("[D]oes AT&T have a device similar to the Verizon gizmo pal?? I would love to have something like it but do not want to switch providers.").

C. *Given the Speed with Which Technology Is Advancing, Requiring Users of a Multitude of Wireless Devices to Wait for the Next Triennial and Then to Independently Demonstrate Adverse Effects Will Harm Innovators and Consumers.*

According to a mid-2017 estimate, ninety percent of the data in the world had been created within the preceding two years—and the speed at which data was being created was only expected to increase!³¹ In the not-too-distant future, “every car, house, dog, bridge, tunnel, cup, clock, watch, pacemaker, cow, streetlight, . . . pipeline, toy and soda can” will likely be connected to the IoT.³² Analogizing to Moore’s law suggests that the IoT will not only continue to expand, but will do so exponentially.³³

In this context, three years is an eternity. Development of the IoT will be stymied if the Copyright Office insists on separate consideration of each class of wireless device, from cars to soda cans, in painfully slow, three-year cycles. While some of the smart devices suggested above are fanciful, in a rapidly-expanding IoT the safe bet is that some of the most important and successful devices and applications will be things that are today unexpected or even unimagined. A broad exemption for the unlocking of wireless devices would allow consumer use of, and competition among, these technologies to proceed unimpeded.

Conclusion

ISRI’s proposed exemptions should be granted because they fully satisfy all of the substantive legal and evidentiary requirements for granting an exemption set forth in DMCA Section 1201(a)(1) and the Copyright Office’s Notice of Proposed Rule Making. Adverse effects have been and will continue to be felt by consumers, recyclers, and other parties wishing to make non-infringing uses of copyrighted works—the software contained in wireless devices. No oppositions have been filed, and the rationale that supported the current, limited exemption applies with equal force to the extensions ISRI now requests. Allowing the unlocking of new as well as used wireless devices—and eliminating the four enumerated device categories—will promote consumer choice and competition in this rapidly-expanding technological space without causing harm to any legitimate copyright interests.

³¹ Elise De Geyter, *Security, Privacy, Trust Remain Challenges for the Internet of Things*, INTELL. PROP. WATCH (July 6, 2017), <https://www.ip-watch.org/2017/06/07/security-privacy-trust-remain-challenges-internet-things>.

³² Marc Goodman, *Hacked Dog, a Car That Snoops on You and a Fridge Full of Adverts: The Perils of the Internet of Things*, GUARDIAN (Mar. 11, 2015), <https://www.theguardian.com/technology/2015/mar/11/internet-of-things-hacked-online-perils-future>; see also Lee Raine and Janna Anderson, *The Internet of Things Connectivity Binge: What Are the Implications?*, PEW RES. CTR. (June 6, 2017), www.pewinternet.org/2017/06/06/the-internet-of-things-connectivity-binge-what-are-the-implications (describing various other kinds of devices that will be connected to the Internet of Things).

³³ See David McKinney, *Lessons of Moore’s Law Guide Intel Internet of Things*, IOT@INTEL (Sept. 14, 2015), <https://blogs.intel.com/iot/2015/09/14/lessons-of-moores-law-guide-intel-internet-of-things> (“Just as Moore’s Law predicted the rapid expansion of the number of transistors that could fit on an integrated circuit, it can now be used to describe the rapid growth of networks supporting IoT.”).