

TABLE OF CONTENTS

I.	PROPOSED CLASSES OF WORKS TO WHICH COMMENTS ARE RESPONSIVE.....	1
II.	SUMMARY.....	4
III.	FACTUAL BACKGROUND.....	6
	A. Virgin Mobile	6
	B. Virgin Mobile Handsets.....	7
	C. Terms of Use	9
	D. Handset Provisioning Codes and Locks	10
	E. Unlocking and Reflashing	12
	F. MetroFLASH and Similar Services.....	13
IV.	ARGUMENTS	14
	A. Proponents' Burden: The Required Showing	14
	B. Infringing and Unlawful Uses	15
	1. Proponents of the Exemption Have Not Established by a Preponderance of Evidence that Unlocking Handsets Without Authorization Does Not Involve an Infringing Activity	15
	2. Unlocking Handsets and Use of Unlocked Handsets on Other Carriers is Unlawful and Infringing	18
	3. Exceptions to Copyright Inapplicable	19
	C. No Adverse Effect on Use	24
	1. No Likely Harm To Users of Handset Computer Programs in their Ability To Make Noninfringing Uses	24
	2. Harm to Copyright Owners	27
	3. Harm to Virgin Mobile and to Consumers	30
	4. The Harm of Granting Exemption Outweighs Potential Adverse Consequences to Users.....	34

D.	Statutory Factors.....	34
1.	Availability for Use of Copyrighted Works	35
2.	Availability for Use for Nonprofit, Archival, Preservation and Educational Purposes.....	35
3.	Impact of the Prohibition on Circumvention on Criticism, Comment, News Reporting, Teaching, Scholarship or Research.....	35
4.	Effect of Circumvention on Market for or Value of the Copyrighted Works.....	36
5.	Other Factors Librarian Considers Appropriate	36
E.	Environmental Interests: Reactions to Proponents' Perspective.....	38
V.	CONCLUSION	39

I. PROPOSED CLASSES OF WORKS TO WHICH COMMENTS ARE RESPONSIVE

Virgin Mobile USA, L.P. ("Virgin Mobile") submits its reply comments in response to the Copyright Office's October 6, 2008 Notice of Inquiry¹ ("Notice of Inquiry") and December 29, 2008 Notice of Proposed Rulemaking.² These comments are submitted in opposition to the following proposed classes:

Comment 5A, proposed by EFF: Computer programs that enable wireless telephone handsets to execute lawfully obtained software applications, where circumvention is accomplished for the sole purpose of enabling interoperability of such applications with computer programs on the telephone handset;

Comment 5B, proposed by MetroPCS: Computer programs that operate wireless telecommunications handsets when circumvention is accomplished for the sole purpose of enabling wireless telephones to connect to a wireless telephone communication network;

Comment 5C, proposed by Pocket: Computer programs in the form of firmware or software that enable mobile communication handsets to connect to a wireless communication network, when circumvention is accomplished for the sole purpose of lawfully connecting to a wireless communication network; and

Comment 5D, proposed by Wireless Alliance: Computer programs in the form of firmware that enable wireless telephone handsets to connect to a wireless telephone communication network, when circumvention is accomplished for the sole purpose of lawfully connecting to a wireless telephone communication network, regardless of commercial motive.

In 2006, the Librarian of Congress granted an exemption for the class of works "Computer programs in the form of firmware that enable wireless telephone handsets to connect to a wireless telephone communication network, when circumvention

¹ Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 73 Fed. Reg. 58,073 (Oct. 6, 2008) (hereinafter, "Notice of Inquiry").

² Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 73 Fed. Reg. 79,425 (Dec. 29, 2008).

is accomplished for the sole purpose of lawfully connecting to a wireless telephone communication network"³ (the "2006 Exemption"). Comments submitted in response to the Notice of Inquiry by MetroPCS Communications, Inc. ("MetroPCS"), Youghiogheny Communications-Texas, Inc. d/b/a Pocket Communications ("Pocket"), and The Wireless Alliance, LLC, ReCellular and Flipswap, Inc. (collectively, "Wireless Alliance") proposed variations of the 2006 Exemption that broaden or expand it in some way(s); and comments submitted by Electronic Frontier Foundation ("EFF") propose a new but related exemption to permit circumvention of software locks on wireless telephone handsets in order to achieve interoperability with software applications (collectively, the "Proponents," and, collectively, the "Comments").

Specifically, MetroPCS proposes changing the language of the 2006 Exemption by replacing the phrase "*lawfully* connecting to a wireless telephone communication network" with "enabling wireless telephones to connect to a wireless telephone communication network, regardless of whether the conduct is lawful."⁴ MetroPCS does not provide any details to support this change, simply noting in a footnote that the expansion is meant "to prevent wireless providers from using any loopholes to deny consumers the full, pro-competitive benefits intended by the Copyright

³ Statement of the Librarian of Congress Relating to Section 1201 Rulemaking ¶ 5 (Nov. 22, 2006), *available at* http://www.copyright.gov/1201/docs/2006_statement.html; Marybeth Peters, Register of Copyrights, Recommendation of the Register of Copyrights in RM 2005-11; Rulemaking on Exemptions from Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies 2, 42-53 (hereinafter, "2006 Recommendation") (Nov. 17, 2006), *available at* http://www.copyright.gov/1201/docs/1201_recommendation.pdf.

⁴ *Compare* Statement of the Librarian of Congress, *supra* note 3 at 2, with Comments of MetroPCS Communications, Inc. on the Notice of Inquiry at 2 (Dec. 2, 2008), *available at* <http://www.copyright.gov/1201/2008/comments/metro-pcs-communications.pdf> (hereinafter, "Comment 5B").

Office with this exemption."⁵ It is likely that the modification is meant to permit circumvention (from a copyright standpoint) where user agreements prohibit connecting to another network. MetroPCS also proposes changing the class of works from "[c]omputer programs in the form of firmware that enable wireless telephone handsets to connect to a wireless telephone communication network" to simply "[c]omputer programs that operate wireless telecommunications handsets."⁶ Similarly, Wireless Alliance expands the exemption by adding "regardless of commercial motive" so as to ensure that companies can use the exemption for profit purposes.⁷ Pocket makes a modification, adding the term "software" to the classes of works covered, as well as changing "telephone handsets" to "mobile communication handsets."⁸

Finally, EFF proposes a new exemption for a similar class of works, "[c]omputer programs that enable wireless telephone handsets to execute lawfully obtained software applications" (which, as a practical matter, will generally be the same "work" (*e.g.*, the operating software) as that described in the other Comments) to permit unlocking in order to enable interoperability of the applications with programs on the

⁵ *Id.* at 1 n.2.

⁶ Compare Statement of the Librarian of Congress, *supra* note 3, with Comment 5B at 2.

⁷ Comments of Jonathan R. Newman, The Wireless Alliance, LLC, et al. at 3 (Dec. 2, 2008), available at <http://www.copyright.gov/1201/2008/comments/wireless-alliance.pdf> (hereinafter, "Comment 5D").

⁸ Comments of Paul Posner, Youghiogheny Communications, LLC at 1 (Dec. 2, 2008), available at <http://www.copyright.gov/1201/2008/comments/posner-paul.pdf> (hereinafter, "Comment 5C").

handset.⁹ This exemption would permit unlocking for purposes akin to those rejected in the 2006 Recommendation of the Register of Copyrights ("2006 Recommendation") and that led the Register to recommend narrowing the 2006 Exemption to apply only "*when circumvention is accomplished for the sole purpose of lawfully connecting to a wireless telephone communications network.*"¹⁰

Virgin Mobile opposes each of these exemptions and any renewal of the 2006 Exemption. Virgin Mobile addresses the Comments simultaneously, as they each seek to allow circumvention of handset locks that protect, among other things, use of the handset on the wireless network for which it was intended and designed.

II. SUMMARY

Virgin Mobile opposes these exemptions on the grounds Proponents have not met their burden and because they will allow unauthorized use, alteration of and damage to copyrighted computer programs and other works contained on Virgin Mobile handsets. Unlocking and reflashing, jailbreaking or otherwise reprogramming a Virgin Mobile handset – a device that is comprised of copyrightable software, as well as hardware – exposes copyrighted works on the handset to damage and infringing and unlawful use. The Proponents have not provided any concrete evidence demonstrating that there are likely adverse effects of the § 1201(a) prohibition on circumvention that outweigh the risks to the legitimate interests of Virgin Mobile and other owners of works contained in wireless telecommunications handsets.

⁹ Fred von Lohmann & Jennifer S. Granick, Comment of the Electronic Frontier Foundation at 1 (Dec. 2, 2008), *available at* <http://www.copyright.gov/1201/2008/comments/lohmann-fred.pdf> (hereinafter, "Comment 5A").

¹⁰ 2006 Recommendation at 53.

The Proponents have failed to demonstrate with sufficient evidence that a noninfringing use is likely to be adversely affected by the prohibition in the ensuing three years; instead they have put forth various conclusory statements with little evidentiary support. First, Proponents generalize that all unlocking and reprogramming is noninfringing, but do not explain their own methods of unlocking and, for instance, reflashing. Not all reflashing operations are limited to minor changes in variables, and infringing derivative works may result. Virgin Mobile's handsets come with customized software, and unauthorized use of that software in violation of contractual terms may be infringing and unlawful. Second, there is simply no adverse effect likely in the next three years on the non-infringing uses, as unlocked handsets are now available, or the ability to unlock them is provided, through numerous carriers. Rather, the exemption would have an adverse effect on the currently thriving pay-as-you-go industry that provides highly subsidized, inexpensive handsets, allowing lower-income, low-credit customers to obtain cellular service. Without effective locks, wireless carriers in this market cannot protect their reasonable investment and copyrighted works. Third, it is not always feasible or practical to provide additional protections on handsets for all copyrighted content, including applications. As a result, the proposed exemptions may expose software and content embedded in Virgin Mobile handsets to easy access for copying or modification. As shown in this reply comment below, the Proponents have failed to meet the high evidentiary burden necessary to warrant any renewal or modification of the exemption.

Rather than closing a loophole for wireless carriers, as MetroPCS suggests,¹¹ the modifications proposed by MetroPCS, Pocket and Wireless Alliance will

¹¹ See Comment 5B at 1 n.2.

create loopholes for organizations trying to take advantage of the exemption for bulk buying schemes or other unlawful purposes and will not serve any copyright related purpose. Further, EFF's proposed exemption, which would allow access to copyrighted works and thereby expose them to potentially infringing uses, is not warranted by any evidence that the prohibition has or is likely to have a substantial adverse effect on use of the identified class of works.

III. FACTUAL BACKGROUND

A. Virgin Mobile

Virgin Mobile provides wireless service and products. Since entering the wireless service market in 2002, Virgin Mobile has become one of the ten largest wireless service providers in the United States, with more than five million customers. Virgin Mobile's wireless service is operated on nationwide network facilities provided by Sprint Nextel Corporation.

Virgin Mobile was the first wireless carrier in the United States to offer a competitive pre-paid wireless service plan with attractive but inexpensive handsets. The company now offers an array of pay-by-the-minute and hybrid monthly plans ("pre-paid" plans), which allow customers to pay in advance for buckets of airtime and messages, and its customers can switch freely among these plans without penalty as their usage and needs change.¹² Following the acquisition of Helio LLC in 2008, Virgin Mobile also offers more traditional monthly plans with long-term commitments, but the pay-as-you-

¹² The service is somewhat akin to purchasing phone cards. The basic rate for pay-as-you-go service is 20 cents per minute, and there are a number of ways to prepay. For example, customers may spend \$20 dollars in exchange for a certain number of minutes that remain active for 90 days. Customers may also purchase discounted 30 day minute packs, starting at \$20 for 200 minutes.

go plans remain extremely popular. These pre-payment plans do not require a customer to agree to a set term length. This pre-paid option is a significant departure from many of Virgin Mobile's wireless competitors, which typically require customers to agree to one- or two-year commitments based on post-payment plan terms ("post-paid" plans).¹³ In response to Virgin Mobile's success, many of the largest wireless carriers have begun offering attractive pay-as-you-go services, which has benefited all domestic consumers, and the pre-paid market has become the most rapidly growing segment of the wireless industry.

B. Virgin Mobile Handsets

Virgin Mobile-branded wireless CDMA handsets have been customized per Virgin Mobile's specifications and are sold to customers for exclusive use with Virgin Mobile wireless service. Among the popular wireless handsets offered by Virgin Mobile are the Kyocera "Oystr," the Kyocera K325 "Cyclops," the Kyocera "Marbl" and the LG "Flare."

Virgin Mobile's handsets are sold with software and content that the handset manufacturer, Virgin Mobile and an array of third parties create. For example, the operating system that controls the handset may be a combination of third party software together with various programs developed by the handset manufacturer to allow the third party software to operate on the handset hardware. The operating system

¹³ Post-paid wireless plans require customers to commit to a minimum term of service with that wireless provider. The customer typically pays a monthly fee, priced according to minutes desired and other accessories such as text messaging. If a customer wishes to cancel the service prior to the term expiration, he or she will be assessed a termination fee. For example, Verizon Wireless charges a prorated early termination fee for termination prior to the end of the agreed minimum term. *See* Verizon Wireless, Customer Agreement, *available at* http://www.verizonwireless.com/b2c/globalText?textName=CUSTOMER_AGREEMENT&spName=footer/-customerAgreement.jsp (last visited Jan. 28, 2009).

software will also typically utilize a user interface that was customized and is owned by Virgin Mobile, including various Virgin Mobile graphics displayed on the handsets. Customized software developed or acquired by Virgin Mobile also includes security features, as well as copyrighted copyrightable applications, such as Contact Vault (an address book back-up application developed in-house by Virgin Mobile), and several default ringtones created by Virgin Mobile. The handset also may be loaded with third party applications and content, including games, graphics (e.g., wallpaper) and ringtones. The copyrights for the various third party works may be held by a number of entities. All of these works are stored in "flash" memory on the handset.

The handsets are sold by general retailers, such as Wal-mart, Target, and Radio Shack. Once the handset is purchased, the customer then activates the handset and selects a payment plan through Virgin Mobile's website or by calling a toll-free number and entering the provided information, including a handset's serial number ("ESN" or "MEID") and payment plan selection. Customers may choose between the pay-as-you-go plan mentioned above or a monthly payment plan depending on their needs. Each plan allows customers to add features to their handsets, such as text messaging or data packs.

Virgin Mobile's wireless handsets are provided at a highly subsidized retail price – with some models selling for as little as \$15 to \$20 – well below Virgin Mobile's per-unit cost of acquiring the handsets from manufacturers (between \$70 and well in excess of \$100). This highly subsidized price allows Virgin Mobile to provide wireless service to lower-income customers, who otherwise may not be able to afford the significant capital outlay to begin wireless service or who may not have the credit history necessary for other wireless plans – without requiring a commitment to use the service

for a specified period. Significantly, the subsidized handset in combination with the pay-as-you-go wireless plan allows many individuals to obtain a handset for emergency uses – which is usable even if their account is inactive for failure to make payments.

C. Terms of Use

The packaging in which the Virgin Mobile handsets are sold contains conditions of purchase ("Terms of Purchase") that expressly prohibit the purchaser from using the handsets on any network other than the Virgin Mobile service, altering any of the hardware or software on the handsets or exporting the handsets outside of the United States:

"THIS PHONE IS SOLD EXCLUSIVELY FOR USE WITH SERVICE THAT VIRGIN MOBILE USA PROVIDES. COMMERCIAL RESALE PROHIBITED EXCEPT BY AUTHORIZED VIRGIN MOBILE USA DEALERS. YOU MAY NOT ALTER ANY OF THE HARDWARE OR SOFTWARE IN THIS PHONE, OR EXPORT THIS PHONE FROM THE USA. BY PURCHASING THIS PHONE OR OPENING THE PACKAGE, YOU ARE AGREEING TO THESE TERMS."

Virgin Mobile customers who activate their handset with Virgin Mobile also agree to the Terms of Service. The Terms of Service constitute a binding contract which explicitly limits the right to use the Virgin Mobile handset on Virgin Mobile's network. Some relevant terms include:

(1) "Telecommunications services are provided by Virgin Mobile USA, L.P., using the nationwide Sprint PCS network exclusively with Virgin Mobile phones purchased from Virgin Mobile or an authorized retailer. You cannot use our service with any other phone or device or on any other network";¹⁴ and

¹⁴ Virgin Mobile USA, L.P., Terms of Service (Telecommunications Services), <http://web.virginmobileusa.com/about/terms-and-conditions> (last visited Jan. 28, 2009).

(2) the customer "may not alter any of the hardware or software on your Virgin Mobile phone. Virgin Mobile phones may not be purchased in bulk and sold to third parties."¹⁵

D. Handset Provisioning Codes and Locks

In order to make calls through the Virgin Mobile system, the handset must be provisioned with specific codes to recognize Virgin Mobile's virtual network. Among other information, the handset software must be configured to recognize the appropriate network identifier associated with Virgin Mobile. The handset may also be configured to include a number of other network provider variables, such as a preferred roaming list which is used when the handset is not in the user's home area. Finally, the handset is also configured with the user's phone number.

This provisioning software code is stored in the handset's flash memory. In order to protect such provisioning code and other software and content from being intentionally (or inadvertently) modified, or copied by a user or a third-party, Virgin Mobile's handsets are "locked" with a so-called "Master Subscriber Lock" ("MSL"). The MSL is unique for each handset and is kept in confidence by Virgin Mobile. The MSL is generated using proprietary algorithms embodied in software which is maintained as a carefully guarded trade secret.

To Virgin Mobile's knowledge, other carriers may use different technologies to recognize and connect to a network and/or different types of security. Virgin Mobile also understands that a number of other carriers, especially those who provide wireless service under post-paid plans (i.e., with contractual term commitments), now may provide unsecured handsets upon purchase, offer to unlock handsets they have

¹⁵ *Id.* (General).

sold to such customers or provide information for such customers to unlock the handsets themselves.¹⁶ Wireless service providers who use post-payment plans necessarily have more flexibility in whether and when to unlock various handsets; if a customer elects a longer term contractual plan, these providers can adjust the subsidy applied for the handset. For example, a traditional post-paid carrier may be able to offer an unsecured device at two different prices with and without a two-year contract – i.e., free and at a cost that reflects the provider's costs and includes a profit margin. On the other hand,

¹⁶ A review of the websites of some of the major wireless carriers found various terms regarding locks:

T-Mobile's Terms and Conditions provide that a "T-Mobile Device is designed to be used only with T-Mobile service; however, you may be eligible to have your Device reprogrammed to work with another carrier but you must contact us to do so." T-Mobile USA, Inc., Terms and Conditions, § 6 (effective June 28, 2008). <http://www.t-mobile.com/> (last visited Jan. 28, 2009).

Sprint's Terms & Conditions and Website Support Section provides that if a customer wishes "to obtain the software program lock code for your CDMA Sprint PCS phone, please visit Sprint.com or call . . . for information and eligibility requirements." Sprint Nextel Corp., Terms & Conditions, General Terms and Conditions (Your Device, Number & E-Mail Address; Caller ID), <http://nextelonline.nextel.com/~NASApp/onlinestore/en/Action/DisplayPlans?audience=--INDIVIDUAL> (last visited Jan. 28, 2009). These requirements include that a former customer must have completed a contract with Sprint. See http://support.sprint.com/doc/sp10943.xml?id16=where_do_i_get_the_software_programming_code_for_my_phone# (last visited Jan. 28, 2009).

Verizon Wireless's Customer Agreement provides that if a customer purchased a "wireless phone . . . from Verizon Wireless for use with a plan with a minimum term and want to reprogram [the] phone for use with another wireless carrier network, the default service programming code is set to '000000' or '123456.'" Verizon Wireless, Customer Agreement (Your Wireless Phone), *supra* note 12.

AT&T's Wireless Service Agreement provides that a customer agrees not to make any modifications to devices designed and purchased for use on AT&T's system, but that AT&T may modify the programming to enable the operation of the equipment on other systems. See AT&T, Wireless Service Agreement, Terms of Service (Device), <http://www.wireless.att.com/learn/articles-resources/wireless-terms.jsp> (last visited Jan. 28, 2009).

while Virgin Mobile does offer more traditional post-payment plans, a majority of Virgin Mobile's customers use its services and its subsidized handsets without a long-term commitment through the pre-payment model. Unlike carriers working in the post-payment market who have this built-in ability to adapt locking and pricing schemes depending on what plan the customer selects, handset locks allow Virgin Mobile to continue providing subsidized handsets for use with the pre-payment plan.

E. Unlocking and Reflashing

In order to unlock Virgin Mobile handsets, it is necessary to obtain the MSL described above. The MSL prevents the firmware, including the carrier-specific provisioning information, from being changed or reflashed. Once the MSL has been entered, the firmware may be "reflashed" via a serial port on the handset, manually changed via the keypad, or changed via an "over-the-air" communication.

In addition to being reprogrammed with carrier specific information, an unlocked handset may also be loaded, or "reflashed," with an entirely new binary operating system to control the handset. The reflash may either replace the entire flash memory, thus deleting content such as ringtones, or may be intelligent enough to leave such content on the handset. It is Virgin Mobile's understanding that the binary file that is reflashed onto the handset will typically be a generic version of the handset's system and available from the handset manufacturer, although it is certainly possible that such binary files could be illegally obtained from other sources.

F. MetroFLASH and Similar Services

While MetroPCS apparently does provide customers with the option of purchasing a MetroPCS handset,¹⁷ Virgin Mobile understands that MetroPCS has commenced a new service offering to unlock wireless handsets and are inducing customers to purchase third party handsets, including Virgin Mobile's, and bring them to MetroPCS for "reflashing" or other reprogramming for use on the MetroPCS system. MetroPCS markets this service as "MetroFLASH." The MetroFLASH service is clearly described and advertised on its website at <http://www.metropcs.com/metroflash>. The website encourages customers to bring existing handsets to MetroPCS ostensibly in order to reduce the cost of wireless service. In addition, the website provides a list of MetroFLASH supported handsets, which includes Virgin Mobile's Kyocera model. Like MetroPCS, Pocket also offers a reflashing service whereby Pocket will reflash most makes or models of CDMA mobile handsets. The website even provides a phone number by which a customer may call Pocket to determine whether his or her handset qualifies.¹⁸ To Virgin Mobile's knowledge, other carriers may be offering similar hacking and reflashing services.

As a result, these carriers allow customers to take their highly subsidized Virgin Mobile-branded handsets (costing \$15-20) and use them on, for example, MetroPCS's network, in clear violation of the Terms of Purchase and Terms of Service, at

¹⁷ The home page on the MetroPCS website offers a link to "Buy a Phone." MetroPCS Communications, Inc., <http://www.metropcs.com> (last visited Jan. 28, 2009).

¹⁸ Pocket, <http://www.pocket.com/index.php/faq/6> (last visited Jan. 29, 2009).

Virgin Mobile's expense.¹⁹ Importantly, the customer is not the one reflashing the handset and then taking it to use on a wireless provider of its choosing. Rather, these carriers are providing the reflashing services as a business strategy so that customers will then use the carrier-reflashed handset on that carrier's wireless service. As free-riders, these carriers bear none of the costs associated with the development, manufacture, marketing, distribution or sale of the handset.

IV. ARGUMENTS

A. Proponents' Burden: The Required Showing

The Register has described the burden of proof for establishing that an exemption is warranted as follows: the proponent of the exemption must show that "the prohibition has a substantial adverse effect on noninfringing use of that particular class of works" and must prove by a preponderance of the evidence that the harm is more likely than not.²⁰ To meet this burden the proponent of an exemption must demonstrate "distinct, verifiable, and measurable impacts" and "more than de minimis impacts."²¹ The Register has uniformly required actual evidence to support claims of adverse effect; speculation does not suffice. In the 2006 Recommendation, the Register stated that "the impetus for an exemption is the demonstration of *sufficient evidence* proving that a *particular noninfringing use*, one that *warrants an exemption*, has been *adversely*

¹⁹ In MetroPCS's declaratory judgment complaint filed against Virgin Mobile, MetroPCS admitted that it had reflashed "at least one CDMA handset previously on Virgin Mobile's network." Original Complaint ¶ 15, *MetroPCS Wireless, Inc. v. Virgin Mobile USA, L.P.*, No. 3:08-CV-01658 (N.D. Tex filed Sept. 19, 2008).

²⁰ Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 65 Fed. Reg. 64,556, 64,558-59 (Oct. 27, 2000) (Recommendation of the Register of Copyrights); *see also* 2006 Recommendation at 8; Notice of Inquiry at 58075.

²¹ Notice of Inquiry at 58075.

affected by the prohibition, e.g., the noninfringing use cannot be accomplished without circumvention."²²

The fact that a proposed exemption has been adopted in a previous rulemaking does not decrease the proponents' burden in any way. All proposed exemptions are reviewed *de novo* in each rulemaking proceeding; the proponents cannot rely on evidence presented in past rulemakings.²³ This is a key aspect of the § 1201 rulemaking proceedings: the exemptions are limited to three years in duration because the technology, markets and circumstances surrounding use may change dramatically from year to year, and certainly within three years. The use of a particular class of works might merit an exemption one year but not three years later. Congress understood that it could not legislate these types of exemptions on a permanent, going-forward basis.

B. Infringing and Unlawful Uses

1. Proponents of the Exemption Have Not Established by a Preponderance of Evidence that Unlocking Handsets Without Authorization Does Not Involve an Infringing Activity

The Proponents have offered virtually no concrete information as to how, as a technical matter, handsets are unlocked and reprogrammed or "reflashed", or the process of "jailbreaking" is accomplished, yet argue that the Register should conclude that such processes do not involve any infringing activity, whether by copying or the creation of derivative works. Nor have they explained why such allegedly non-infringing methods justify a broad exemption that would cover any method of reflashing or jailbreaking. There are several methods of locking handsets and various methods of

²² 2006 Recommendation at 18 (emphasis added in part).

²³ *See id.* at 8-9.

unlocking them, and there are different ways of reflashing or reprogramming a handset, as well. To generalize that all unlocking, reflashing, jailbreaking or reprogramming is noninfringing is not supported by any evidence, and in some cases is clearly untrue. Indeed, several courts have already found that unlocking and reflashing handsets for use on other carriers' networks constituted copyright infringement.²⁴

MetroPCS argues that its process for reflashing does not create a derivative work and does not otherwise infringe because the process is purportedly limited to changing specific variables related to the carrier information and is purely a "write (as opposed to read) operation." As an initial matter, MetroPCS does not state how handsets are unlocked in the first place.²⁵ As noted above, the MSL is generated using proprietary algorithms embodied in software which is maintained as a carefully guarded trade secret. Any illicit use of such proprietary algorithms or software would in fact (1) violate trade secret rights²⁶ and/or (2) if the algorithms and/or software are copied

²⁴ See, e.g., *TracFone Wireless, Inc. v. Dixon*, 475 F. Supp. 2d 1236, 1237-38 (M.D. Fla. 2007) (finding that unlocking whereby copyrighted software is erased, removed and/or disabled violates the Copyright Act and 17 U.S.C. § 1201); *TracFone Wireless, Inc. v. Thomas*, Case No. 3-07-CV-1495-N, Final Judgment and Permanent Injunction Against Defendant at 1-3 (N.D. Tex. Mar. 5, 2008) (finding that a bulk resale scheme, which included alteration of copyrighted and proprietary software computer code, violated the Copyright Act); *TracFone Wireless Inc. v. Bitcell Corp.*, No. 07-22249-CIV, 2008 U.S. Dist. LEXIS 41955 at *2, *7-9 (S.D. Fla. May 23, 2008) (finding copyright infringement from acting in a bulk resale scheme).

²⁵ MetroPCS's submission equates "unlocking" with "reflashing." This is not Virgin Mobile's understanding of the process, at least not with respect to the CDMA phones sold by Virgin Mobile. The MSL prevents the firmware, including the carrier-specific provisioning information, from being changed or reflashed. Once the MSL has been entered, the firmware may be "reflashed" via a serial port on the handset, manually changed via the keypad, or changed via an "over-the-air" communication.

²⁶ See, e.g., *S.O.S., Inc. v. Payday, Inc.*, 886 F.2d 1081, 1089 (9th Cir. 1989).

in the course of generating the MSL, as Virgin Mobile understands may be the case, infringe copyright rights in such algorithms and/or software.

MetroPCS also does not state how it "merely changes underlying variables accessed by the program" without reading *any* information off of the handset, nor is MetroPCS's proposed exemption limited to "minor" "write-only operation(s)."²⁷

Moreover, even taking MetroPCS at its word, it is not the only one engaging in reflashing or reprogramming processes, and the proposed exemptions arguably would apply even where reflashing is not merely a "write-only" operation and results in a derivative work.

As the 2006 Recommendation recognized, not all reflashing operations are limited to minor changes of variables,²⁸ and it is certainly possible that reflashing could result in derivative works which combine newly reflashed software with existing functionality.²⁹

It is believed that techniques already exist that allow for "intelligent" reflashing, such that ringtones and other content may be retained on the handset while much of the system software is reflashed with a new computer program. To the extent such reflashing allows for modification of non-insignificant parts of the copyrighted work, it would facilitate creating an infringing derivative work.

²⁷ Comment 5B at 8. Pocket does not attempt to describe its reflashing process. *See* Comment 5C. Likewise, EFF does not attempt to describe the jailbreaking process, and does not even argue that jailbreaking does not necessarily involve copying modifications or unauthorized use. *See* Comment 5A at 8.

²⁸ *See* 2006 Recommendation at 51 n.149 ("It may be that in some cases, it is possible 'to reflash the chip and totally redo all of the software within it.'" (quoting submission of T. Granick at 61 (Mar. 23, 2006))).

²⁹ In fact, MetroPCS's proposed exemption would broadly apply to all "computer programs that *operate* wireless telecommunications handsets," suggesting it may be interested in accessing and modifying more than just security mechanisms.

Even assuming that some methods of unlocking and then reflashing, jailbreaking or otherwise reprogramming handsets can be accomplished without copying or modifying software, the exemptions proposed by the Proponents are so broad as to encompass any and all methods of unlocking and reprogramming – even blatantly infringing methods.

2. Unlocking Handsets and Use of Unlocked Handsets on Other Carriers is Unlawful and Infringing

The Proponents' assertions that use of the altered handsets does not implicate copyright interests of the *wireless providers* are simply not true.³⁰ Even assuming MetroPCS's arguments, for instance, that reprogramming does not create an infringing derivative work are correct, the resultant use of such a reprogrammed handset would nonetheless be an unauthorized infringing use of Virgin Mobile's copyrighted works embedded in the firmware.³¹ Virgin Mobile handsets are sold with a customized operating system incorporating, among other things, Virgin Mobile's graphics, user interface, applications and ringtones. As described above, the Terms of Purchase and the Terms of Service specifically prohibit use of such handsets, including the Virgin Mobile customized software, on non-Virgin Mobile networks. As such, the software cannot be said to be "owned" for all purposes, and any copyright use that violates the Terms of Purchase or Terms of Service with Virgin Mobile exceeds the scope of the license and is

³⁰ See, e.g., Comment 5B at 9-10; Comment 5C at 4. The Wireless Alliance makes a similar incorrect assertion that "[t]here is no evidence over the past three years that the exemption has harmed copyright interests." Comment 5D at 10. Certainly, the unauthorized use of reprovisioned Virgin Mobile handsets has harmed Virgin Mobile's copyrights in its customized handsets. See *infra* Part C.3.

³¹ Note that MetroPCS itself recognizes that "the anti-circumvention prohibition was designed to keep copyright owners from having their works duplicated, displayed, or *used without their permission.*" Comment 5B at 9 (emphasis added).

infringing.³² Indeed, EFF recognizes this when it states that "it may be that under some circumstances jailbreaking can be accomplished without exceeding the scope of the authorization . . ."³³ Use of the handsets requires copying instructions from firmware into the handset's processor where the program is then run.³⁴ Accordingly, any unauthorized use of the software on Virgin Mobile's handsets after the handsets have been reprogrammed in violation of the contract(s) would generate unauthorized copies of such software, and would constitute infringement.³⁵

3. Exceptions to Copyright Inapplicable

Proponents argue that if unlocking and reflashing creates a copy or adaptation, then either fair use or 17 U.S.C. § 117 protects that conduct. This reliance is without merit.

Fair use cannot be said to apply in these circumstances. Rather, fair use is a fact-specific inquiry which requires an analysis of the particular circumstances of each case. The Copyright Office has made this point clear in striking down fair use arguments

³² See *DSC Commc'ns Corp. v. Pulse Commc'ns, Inc.*, 170 F.3d 1354, 1361-62 (Fed. Cir. 1999) (holding that possessor of copy of software not an owner for purposes of § 117 where agreement forbade use on other hardware); see *infra* Part IV.B.3.

³³ See Comment 5A at 8 (emphasis added).

³⁴ See *MAI Sys. Corp. v. Peak Comp., Inc.*, 991 F.2d 511, 518 (9th Cir. 1993) (noting that loading of copyrighted software into RAM creates a copy of that software in violation of the Copyright Act); U.S. Copyright Office, DMCA Section 104 Report at xxii (Aug. 2001), available at <http://www.copyright.gov/reports/studies/dmca/sec-104-report-vol-1.pdf> (explicitly finding that the text of the Copyright Act, including the definition of copies, shows that making temporary copies implicates the reproduction right if the reproduction persists long enough to be perceived, copied or communicated); 2 Melville B. Nimmer & David Nimmer, *Nimmer on Copyright* § 8.08[A][5][a] (2008) (noting that "the input of a work into a computer results in the making of a copy, and hence, . . . such unauthorized input infringes the copyright owner's reproduction right" (footnotes omitted)).

³⁵ See *DSC Commc'ns Corp.*, 170 F.3d at 1361-62.

in the 2003 and 2006 submissions. In so doing, the Copyright Office explained that "[f]air use involves a case-by-case analysis that requires the application of the four mandatory factors to the particular facts of each particular use. . . . [S]weeping generalizations are unfounded."³⁶ Even if a particular instance of unlocking a handset and reprogramming it for another network could be considered a fair use under an analysis of the fair use factors³⁷ – because the use was for educational reasons, for instance – it cannot be said that fair use applies across the board to all instances of hacking and reprogramming handsets.

Nor is § 117(a)(1) applicable as Proponents contend. Section 117's legislative history indicates that the exemption is intended to address the specific situation whereby a copy is made by the lawful possessor in the course of its intended use, namely while loading a program,³⁸ and courts consistently agree with this

³⁶ Marybeth Peters, Register of Copyrights, Recommendation of the Register of Copyrights in RM 2002-4; Rulemaking on Exemptions from Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies at 55 (Oct. 27, 2003) (hereinafter, "2003 Recommendation"), *available at* <http://www.copyright.gov/1201/docs/register-recommendation.pdf> (footnote omitted); *accord* 2006 Recommendation at 29.

³⁷ 17 U.S.C. § 107

³⁸ Final Report of the National Commission on New Technological Uses of Copyrighted Works at 13 (1979) (hereinafter, "The CONTU Report"), *available at* <http://digital-law-online.info/CONTU/PDF/Chapter3.pdf> ("Because the placement of a work into a computer is the preparation of a copy, the law should provide that persons in rightful possession of copies of programs be able to use them freely without fear of exposure to copyright liability."). Congress approved of the CONTU Report's recommendations when it enacted § 117 and it is therefore similar to legislative history. *See* 2 Nimmer & Nimmer, *supra*, § 8.08[A][3]–[4]; *Madison River Mgmt. Co. v. Bus. Mgmt. Software Corp.*, 387 F. Supp. 2d. 521, 537 (M.D.N.C. 2005) ("It is widely accepted that Congress looked to and followed the recommendations contained in the Final Report of the National Commission on New Technological Uses . . . of Copyrighted Works when it enacted § 117.").

interpretation.³⁹ As a result, under § 117(a)(1), an owner of a copy of a computer program may make or authorize the making of another copy or adaptation provided that such a new copy or adaptation is created as *an essential step* in the utilization of the computer program.⁴⁰

Thus, § 117 is a limited exception meant to assure that purchasers of software can use that software as created and intended without fear of liability. This is quite the opposite of allowing a customer to modify copyrighted protected binary code in order to enable a handset to work with another carrier with which it was explicitly not designed or intended to work.

The key criteria for an "essential step" is whether the copy or adaptation was "necessary to enable the use for which it was both *sold* and purchased."⁴¹ It is a step that is "indispensable" or "necessary" for the program's use.⁴²

Permitting copyright infringement so that a handset can be used on a network for which it was not designed and on which it is forbidden for use by contractual provisions can hardly be deemed essential for the intended operation of the handsets, and is antithetical to the purpose of § 117. This was Congress's intention. Yet, this is exactly what the Proponents want the Register to find. While reflashing or jailbreaking might be

³⁹ See *Madison River Mgmt. Co.*, 387 F. Supp. 2d. at 537-538 (noting that "it is only a copy made by the very act of installing a program into a computer that is privileged" by § 117(a)(1) and finding that the alleged infringer could make use of the software without copying the copyrighted database); *Micro-Sparc, Inc. v. Amtype Corp.*, 592 F. Supp. 33, 35 (D. Mass. 1984) (holding that the permission to copy in § 117(a)(1) is strictly limited to inputting programs).

⁴⁰ 17 U.S.C. § 117(a)(1).

⁴¹ The CONTU Report at 13 (emphasis added).

⁴² See *Apple Computer Inc. v. Formula Int'l, Inc.*, 594 F. Supp. 617, 622 (C.D. Cal. 1984).

convenient for customers, it is hardly indispensable for use nor is it reasonably necessary.⁴³ Handsets are provided for use on the Virgin Mobile network and are perfectly capable of functioning as such. The test is not what may "effectively utilize"⁴⁴ the software in any way the copy holder pleases, but whether the modification is "an essential step in the utilization."⁴⁵

The one case cited by the Proponents does not lead to a different result. In *Krause v. Titleserv, Inc.*,⁴⁶ a copyright owner created computer programs exclusively for Titleserv's business, but then refused to assign copyright rights to Titleserv. Titleserv had paid substantial sums of money to develop these computer programs. In order to meet its changing business needs and to continue to effectively utilize the program designed for its use, Titleserv made a number of modifications that would be made in the normal course of its operation, including correcting programming bugs, changing source code to add new clients and adapting the program to add more customer direct access.

Krause comports with § 117's requirement that a modification only should allow a program to be used as intended. Titleserv's modifications were necessary for the program to be utilized effectively as a part of Titleserv's business, the use for which it was intended. Without being able to add new clients or to improve the software to meet

⁴³ See *Apple Computer*, 594 F. Supp. at 622 (noting that the alleged infringer's use was convenient, but not essential as it was more than was reasonably necessary to utilize the program). See also 2 Nimmer & Nimmer, *supra*, § 8.08[B][2] & n.98 (noting *Apple Computer* court's test for § 117's adaptation exception).

⁴⁴ See *Madison River*, 387 F. Supp. 2d. at 538 (emphasis in original) (citation omitted).

⁴⁵ 17 U.S.C. § 117(a)(1).

⁴⁶ 402 F.3d 119 (2d Cir. 2005). *Krause* has been described as a minority view, having a particularly broad interpretation of the term "essential." See 2 Nimmer & Nimmer, *supra*, § 8.08[N][1][b] (*Krause* "represents a more liberal construction than other courts' requirement that a step be 'absolutely essential' to qualify under the statutory language").

changing business needs, the computer programs would have become useless. These facts are quite different than the situation here. Unlike Titleserv, customers have no need to make any modifications if the handsets are used as intended.

Irrespective of the fact that reflashing and jailbreaking are not an essential step, § 117 also does not provide protection from infringement due to the ownership requirement. Customers are not "owner[s] of a copy of a computer program" (the software on the handset) as required by § 117(a).⁴⁷ Ownership does not depend on formal title, but rather whether the party "exercises sufficient incidents of ownership over a copy of the program to be . . . considered an owner."⁴⁸ In *DSC Communications Corp. v. Pulse Communications, Inc.*⁴⁹ the court found that the possessor of the copy was not an owner for purposes of § 117 where an agreement prohibited the possessor of the copy from using the software on hardware other than the hardware provided by the copyright holder. The court held that the possessors of the copy of the software could not rely on § 117 because they were not the owners of the software.⁵⁰

Similarly, customers purchasing Virgin Mobile handsets are contractually prohibited from altering the handset or using the handset on another carrier's service.⁵¹

⁴⁷ 17 U.S.C. § 117(a)(1).

⁴⁸ *Krause*, 402 F.3d at 124.

⁴⁹ 170 F.3d 1354 (Fed. Cir. 1999)

⁵⁰ *Id.* at 1361-62. ("If [the copy holders] were 'owners of copies' of the software, section 117 would allow them to use the software on any hardware, regardless of origin. Because the . . . agreements substantially limit the rights of the [copy holders] compared to the rights they would enjoy as 'owners of copies' of the . . . software under the Copyright Act, the contents of the agreements support the characterization of the [copy holders] as non-owners of the copies of the . . . software.")

⁵¹ *See supra* Part III.A.

As a result, like the agreements at issue in *DSC Communications*, these contractual terms severely limit a customer's right to use the computer software and thereby indicate that he or she is not an owner of the copy. Not only are these customers expressly violating binding provisions by reprogramming or reflashing their handsets for use on another network, but they also cannot rely on the protection of § 117 to avoid copyright infringement.

C. No Adverse Effect on Use

In order to demonstrate that an exemption for a particular use is warranted, proponents of the exemption must also show by the preponderance of the evidence that the prohibition on circumvention has or is likely to have a "substantial adverse effect" on the noninfringing use in the ensuing three-year period. As the Register has stated: "[F]or proof of 'likely' adverse effects on noninfringing uses . . . a proponent must prove by a preponderance of the evidence that the harm alleged is more likely than not; a proponent may not rely on speculation alone to sustain a prima facie case" ⁵² Moreover, there must be "a causal nexus between the prohibition on circumvention and the alleged harm." ⁵³ The Proponents have simply made conclusory statements only and have failed to provide any actual evidence whatsoever of a likely substantial adverse effect in this case.

1. No Likely Harm To Users of Handset Computer Programs in their Ability To Make Noninfringing Uses

The Proponents have offered no evidence of likely harm to users of handset software and firmware in their ability to make noninfringing uses. Several

⁵² 2006 Recommendation at 8.

⁵³ *Id.*

Proponents cite threat of litigation as a potential harm, but the lawsuits that have been brought by carriers against entities involved in unlocking and reflashing handsets for use on other networks, are being brought and, with respect to the cases decided thus far, have been won, on other grounds.⁵⁴ In cases brought by TracFone against bulk purchasers and resellers of locked handsets in which courts have considered § 1201(a)(1) violations, courts have found violations in spite of the current exemption on the grounds that the defendants' activities did not come within the scope of the exemption because they were performed for the purpose of reselling the handsets, not "for the sole purpose of lawfully connecting to a wireless telephone communications network."⁵⁵

Nor would the exemption apply, in any event, with respect to the services currently being offered by MetroPCS and others⁵⁶ to unlock handsets on behalf of potential customers. By MetroPCS's own admission, "MetroPCS, through its well-received MetroFLASH program, has unlocked a significant number of [handsets] for its customers."⁵⁷ Provision of services and the tools used to provide such services to unlock

⁵⁴ See, e.g., *Virgin Mobile USA, LLC v. Blue Oceans Distrib., LLC*, No. CV06-511-S-EJL, 2007 U.S. Dist. LEXIS 10783, *10-11 (D. Idaho Feb. 14, 2007); *TracFone Wireless, Inc. v. Dixon*, 475 F. Supp. 2d 1236, 1238 (M.D. Fla. 2007); *TracFone Wireless, Inc. v. Thomas*, Case No. 3-07-CV-1495-N, Final Judgment at 1-7; *TracFone Wireless, Inc. v. Bitcell Corp.*, No. 07-22249-Civ., 2008 U.S. Dist. LEXIS 41955 at *1-13; *TracFone Wireless, Inc. v. Pan Ocean Commc'ns, Inc.*, Case No. 05-61956-Civ-N, Final Judgment at 1-4 (S.D. Fla. Aug. 7, 2006); *TracFone Wireless, Inc. v. Sol Wireless Group, Inc.*, Case No. 05-23279-CIV-N, Final Judgment at 1-4 (S.D. Fla. Feb. 28, 2006); *TracFone Wireless, Inc. v. GSM Group, Inc.*, 555 F. Supp. 2d 1331 (S.D. Fla. 2008); *TracFone Wireless, Inc. v. Reideman*, 6:06-CV-01257-N, Final Judgment at 1-6 (M.D. Fla. Jan. 8, 2008).

⁵⁵ See *TracFone Wireless Inc. v. GSM Group, Inc.*, 555 F. Supp. 2d 1331, 1336 (S.D. Fla. 2008) (citation omitted); *TracFone Wireless, Inc. v. Dixon*, 475 F. Supp. 2d 1236, 1238 (M.D. Fla. 2007).

⁵⁶ See *supra* Part III.A.

⁵⁷ Comment 5B at 12 (footnote omitted).

customers' handsets is a violation also of § 1201(a)(2). The exemptions promulgated pursuant to these rulemaking proceedings do not apply; they only exempt activities that would otherwise violate § 1201(a)(1)(A).⁵⁸

Proponents further argue that the 2006 Exemption has increased the availability of handsets and that not renewing the exemption would thus lead to a decrease in their availability.⁵⁹ Yet, they provide no concrete support for this conclusion. To the contrary, if anything, the increase in affordable handsets has come from businesses like Virgin Mobile that offer highly subsidized handsets in connection with pre-paid wireless services, so that more people can afford wireless service. And more unlocked handsets are available now than in 2006 due to changes in industry practice which permits users to reuse their handsets on other carriers' networks after fairly carrying out their contractual obligations. For example, Sprint Nextel unlocks handsets after a customer's Sprint contract expires.⁶⁰

Finally, MetroPCS claims that locked handsets "chill the ability of consumers to switch wireless providers."⁶¹ It argues that the exemption is necessary to permit customers who have purchased handsets to use their handsets on other compatible networks, especially after their contractual obligations have expired. But because many

⁵⁸ The rulemaking applies only to exemptions to section 1201(a)(1)(A) – which prohibits the act of circumventing technological measures that control access to copyrighted works. Section 1201(a)(2) prohibits the provision of circumvention services or trafficking in technology, products, devices or components. 17 U.S.C. §1201(a)(2).

⁵⁹ See Comment 5B at 12-13; see also Comment 5D at 13.

⁶⁰ Katie Hafner, *Sprint Nextel Settles Lawsuit Over Switching to New Carriers*, N.Y. Times, Oct. 27, 2007 at C4. See also *supra* note 6.

⁶¹ Comment 5B at 13.

carriers, especially with respect to post-paid plans, now permit customers to unlock handsets after their contracts are completed or may provide unlocked handsets, consumers who wish to have the ability to use their handsets with different carriers now have plenty of services to choose from that will allow them to do so. Eliminating the option of purchasing a subsidized handset does not increase customer choices – it decreases it.

Moreover, the practice, described above, of purchasing a subsidized Virgin Mobile handset and never activating it on the Virgin Mobile network, but instead immediately unlocking it for use with another wireless provider, is of course not a matter of "switch[ing] wireless providers." Rather, the purchaser is obtaining a Virgin Mobile handset specifically for unlawful use on another network. Preventing this free-riding by customers and network providers such as MetroPCS is not equivalent to *chilling* their customers' ability to switch wireless networks.

2. Harm to Copyright Owners

The Proponents have argued that there are no copyright interests protected by the locks on handset firmware or software that justify enforcing the prohibition on circumvention in these cases.⁶² In recommending to adopt the current exemption in the 2006 Recommendation, the Register stated that the software locks at issue appeared to have no benefit to the author or copyright owner of the work to which access is controlled by the locks, but benefited a third party (i.e., the wireless carriers) to control use of the hardware.⁶³ The Register adopted a fifth factor to address the lack of an apparent

⁶² See Comment 5B at 9; Comment 5C at 4; Comment 5A at 8-9; Comment 5D at 10.

⁶³ See 2006 Recommendation at 52.

copyright interest at stake with respect to the software at issue.⁶⁴ It is simply not the case, however, that there are no copyright interests protected by the software locks at issue here.

Copyrighted software, such as ringtones, applications, games and photos, may be accessible once a handset is unlocked. Unlocking a Virgin Mobile handset unlocks it for all purposes – not just for purposes of connecting to another wireless telephone communications network or for interoperability – thereby exposing copyrighted content on the handset. This is so because the MSL for the pre-paid handsets sold by Virgin Mobile, and to its knowledge, other CDMA pre-paid providers, operates as a key to virtually all content and software works on such handsets. Once the MSL has been unlocked, all of the content and software works stored in the handset's flash memory may be accessed and copied, including for example, "thumbnail" images, screen savers, wallpapers, ringtones, animations, video screens, games and other applications.

In this regard, the MSL functions much like a lock on the front door of a home. While it is possible to keep one's precious valuables in a safe, it is not practical, nor should it be necessary, to keep every door in the house locked or to lock down everything of value in a home. Similarly, it is not practical and in some cases even possible, to unlock a handset solely to gain access to provisioning information. Once the front door is open anyone can enter at any time. Not only do the re-provisioner and handset holder gain access to the network provisioning data, but to all software and content that is not protected by additional locks or DRM.

⁶⁴ See *infra* Part IV.D.5.

If a handset has been unlocked, a knowledgeable user could obtain access to the entire operating system, as well as applications or content owned by Virgin Mobile (such as the contacts back-up program or ringtones owned by Virgin Mobile) or third parties. While it may be possible on some handsets to provide additional protections for certain applications or content, on the handsets Virgin Mobile sells it is neither practical, affordable, or in some cases, even technically feasible to protect all such software and content. As such, an unintended consequence of permitting circumvention of locks controlling access to software on wireless telephone handsets for purposes of connecting to a wireless telephone communication network may be to expose the proprietary operating system of the handset, as well as applications and content on the handset, to unauthorized access and potential copying or modification.

It is true that certain CDMA handsets utilize "digital rights management" technologies ("DRM") to protect access to certain content and software works, and Virgin Mobile utilizes DRM on some of its handsets with respect to its music and video on demand features. Some CDMA vendors also use DRM with respect to ringtones. However, it is not in any way practical to protect all of the software and content on every handset with DRM for several reasons. First, DRM is quite complex and costly to administer on the network side. Second, use of DRM with respect to certain types of programs and/or content would be overly taxing on the handset given the need to quickly access such content. For example, DRM is not suitable for so-called internal assets, such as thumbnails, etc. Finally, many CDMA handsets, particularly some of the less expensive handsets, do not support DRM. Accordingly, DRM systems cannot be used to protect all the content and software works on a handset, and cannot be used in many of

the less expensive handsets at all. Thus, the Proponents' suggestions that all such content can be protected by DRM is yet another example of how their proposed exemptions may serve their own interests, but would result in less flexibility and greater costs to customers, particularly purchasers of inexpensive handsets.

Finally, in the cases where handsets are "reflashed" with new operating systems, such reflashed operating systems may not include the same level of security features as specified by Virgin Mobile. Once such security is compromised, third parties might be able to gain access, for example, via BlueTooth connectivity, to Virgin Mobile copyrighted works, as well as to customer private information such as their personalized address books. These important privacy concerns are not addressed by the Proponents.

3. Harm to Virgin Mobile and to Consumers

The principal benefit of the exemption appears to be to enable entities like MetroPCS, Pocket and bulk buyers of subsidized handsets to free-ride unfairly on the subsidies provided by Virgin Mobile and other similar carriers in the pre-paid market by inducing customers to purchase, reflash and use Virgin Mobile and similar handsets in a manner that clearly violates the contracts that accompany the handsets. The DMCA rulemaking exemptions should not be used in this way to provide an advantage to a particular company within a competitive industry and thereby alter the competitive landscape.

Virgin Mobile has put extensive time, research, and capital into developing its brand and perfecting its pre-paid service. Virgin Mobile provides handsets at a substantially subsidized rate, thereby servicing low-income, weak-credit consumers first entering the wireless market. In fact, approximately 35% of Virgin Mobile's customers are from lower-income households that previously lacked access to an

attractive wireless service.⁶⁵ Virgin Mobile is able to provide this service at such a subsidized price through the reasonable expectation that these customers will activate the handset purchased with Virgin Mobile.

If this exemption were to be renewed, Virgin Mobile may have understandable difficulty continuing this pay-as-you-go service with subsidized handsets. The real societal harm lies with the individuals who may no longer have a viable means to enter the wireless market with a top wireless provider or who will have much more limited wireless choices. An M.I.T. study found that wireless access is extremely important to Americans for personal safety, and has a substantial impact on economic productivity and earning power.⁶⁶ Importantly, the study's author explains that the handset "is particularly important to blue collar, minority, less educated and low-income segments of Americans, even though those groups are far less likely to own [handsets]."⁶⁷ In the current economic environment, many customers who stop using Virgin Mobile's service do not select a competitive offering; instead, they forego wireless service entirely. If handset prices increased, many customers would not have access to any wireless service and may then suffer from some of the disadvantages – including increased personal and economic security – which the M.I.T. study found wireless service to mitigate.

⁶⁵ Virgin Mobile, Powerpoint Presentation at the Federal Communications Commission (Oct. 23, 2008).

⁶⁶ Nicholas P. Sullivan, *Cell Phones Provide Significant Economic Gains for Low-Income American Households* (Millennium Research Council, Apr. 2008) at *14-16.

⁶⁷ *Study: Phoning in a Major Economic Boost for U.S.? \$11 Billion in Jobs, Income Possible if Cell Phones Put in Hands of Low-Income Americans Now Without Them* (New Millennium Research Council, Mar. 2008) (citation omitted).

MetroPCS positions itself as serving "lower income, credit challenged, underbanked and newly employed customers" for whom the cost of a new handset may be prohibitive, and thereby argues that the exemption is important to its servicing this market because these "customers are especially sensitive to the cost of a handset."⁶⁸ The DMCA exemptions should not be used to condone violations of the law to support business models that rely on pilfering from others to provide cheap services.⁶⁹

At the same time, there is no comparable societal harm in a wireless provider fairly recouping costs of heavily subsidized handsets. The DMCA may not be intended to protect business interests that have nothing to do with protecting copyright interests, but nor are the DMCA § 1201(a)(1) exemptions intended to protect business models.

MetroPCS argues that "locks are often used inappropriately to prevent a wireless handset from being used on compatible networks of other service providers."⁷⁰

⁶⁸ Comment 5B at 5. Ironically, MetroPCS charges as much as \$40-\$50 for its reflashing service, a cost that far exceeds the purchase price of many Virgin Mobile handsets.

⁶⁹ Interestingly, Virgin Mobile services that market even better. It allows first time handset users – who would not have a previously acquired handset – to obtain wireless service without passing a credit check or commitment to a minimum amount of expenditures over a one- or two-year period. And it provides an even lower cost service than MetroPCS does – even after potentially taking advantage of Virgin Mobile's subsidized handsets. Virgin Mobile charges only \$20 for every 200 minutes (*see* Virgin Mobile USA, <http://www.virginmobileusa.com/rates/minute.do> (last visited Jan. 28, 2009)), whereas MetroPCS charges a minimum of \$30 per month, with prices typically ranging between \$45-50 per month (*see* MetroPCS, <http://www.metropcs.com/plans/default.aspx> (last visited Jan. 28, 2009)). Furthermore, the cost of unlocking a handset (\$40 at MetroPCS), MetroPCS MetroFLASH (*see* <http://www.metropcs.com/metroflash/> (last visited Jan. 28, 2009)), can be double the price of buying an entirely new handset distributed by Virgin Mobile (\$15-\$20 charge). Moreover, the handsets offered by MetroPCS are significantly more expensive than Virgin Mobile's, to the extent that it is sufficiently cheaper for a customer to purchase a Virgin Mobile handset *and* pay to have it reflashed by Metro PCS than to purchase one of MetroPCS' handsets.

⁷⁰ Comment 5B at 7.

Yet, it is not inappropriate for Virgin Mobile to use locks to prevent their customers from violating agreement terms and jeopardizing Virgin Mobile's investment, and, at the same time, protect copyrighted software. What is inappropriate is for companies like MetroPCS to create a business model around inducing customers to unlawfully acquire and use Virgin Mobile's and others' low cost handsets on MetroPCS's network. The result is that Virgin Mobile is subsidizing another company's business: it is left with a loss for the inactivated handset, while the free-riding MetroPCS gets the entire gain. The real losers in the end are consumers who will have to bear the cost of Virgin's loss or, if Virgin is required to change its service in response, will be unable to obtain such low cost wireless service with so little money up front. If handset unlocking becomes widespread, the retail cost of handsets for lower income consumers selecting pay-as-you-go products would likely quadruple to ensure that providers make a return on the initial sale of mobile handsets.

Wireless Alliance dismisses the arguments relating to the loss of a subsidy, noting that wireless providers recoup their investment through contractual relationships.⁷¹ Yet, this incomplete argument only addresses post-paid plans, completely ignoring pre-paid plans, which do not require the customer to commit to continue service and pay a minimum amount for a specified period of time. It also ignores the fact that many post-paid plans now offer the customer the ability to unlock the handsets after the terms of the

⁷¹ *See* Comment 5D at 14 ("Wireless providers may claim they need software locks because they subsidize the price of the handset and they want to make up the difference by ensuring that the customer uses the carrier's service. However, every new customer signs a contract that provides for a minimum monthly fee and a hefty early termination penalty. These contracts ensure that carriers will recoup, at a minimum, any subsidy provided to the subscriber As a result, a carrier receives every legitimate benefit for the purchase subsidy it provides.").

contract have been fulfilled. While the long-term post-paid contracts may allow the wireless carrier to recoup the cost of any subsidy, the pre-paid plans aimed at low-income and low-credit customers do not.

4. The Harm of Granting Exemption Outweighs Potential Adverse Consequences to Users

In the 2006 and 2003 Recommendations, the Register expressly weighed the adverse consequences on particular users against the benefits of the technological measures to copyright owners.⁷² In this case, it is clear that the harm of allowing the locks to be circumvented far outweighs the benefits to users who desire to unlock the software embedded in the handsets for purposes of connecting to a wireless telephone communications network or of enabling interoperability of applications with the handset software.

D. Statutory Factors

The four statutory factors set forth in § 1201(a)(1)(C)(i)–(iv) weigh heavily in favor of denying the exemption. The factors are:

- (i) the availability for use of copyrighted works;
- (ii) the availability for use of works for nonprofit archival, preservation, and educational purposes;
- (iii) the impact that the prohibition on the circumvention of technological measures applied to copyrighted works has on criticism, comment, news reporting, teaching, scholarship, or research;
- (iv) the effect of circumvention of technological measures on the market for or value of copyrighted works; and
- (v) such other factors as the Librarian considers appropriate.⁷³

⁷² See 2006 Recommendation at 13; 2003 Recommendation at 107, 117-18.

⁷³ 17 U.S.C. 1201(a)(1)(C).

1. Availability for Use of Copyrighted Works

The copyrighted works primarily at issue here are the operating software for wireless telephone communications handsets and secondarily other applications and content that are affected by the unlocking and reflashing of handsets. There is no demonstrated likely adverse effect of the § 1201 prohibition of circumvention on the availability of wireless telephone communications handset operating software, as described above in Part III.C.1 ("No Likely Harm to Users of Handset Computer Programs in their Ability to Make Noninfringing Uses"). If anything, it is far more likely that the availability of inexpensive (to the consumer) handsets will be greater without an exemption that allows free-riding. There is also no demonstrated likely adverse effect of the §1201 prohibition of circumvention on the availability of software applications and content on wireless telephone communications handsets. It is quite foreseeable, however, that an exemption permitting handsets to be unlocked could adversely affect the availability of proprietary applications and content on Virgin Mobile and other handsets, where it is not practical to apply separate technological measure to protect access to those works.

2. Availability for Use for Nonprofit, Archival, Preservation and Educational Purposes

There is no demonstrable effect on any of these uses.

3. Impact of the Prohibition on Circumvention on Criticism, Comment, News Reporting, Teaching, Scholarship or Research

There is no demonstrable effect on any of these uses.

4. Effect of Circumvention on Market for or Value of the Copyrighted Works

The software, including operating systems, proprietary applications and content available on wireless telephone communications handsets is becoming increasingly sophisticated. The value of all of these works could be compromised if, when handset are unlocked for purposes of connecting to a wireless network or interoperability, the code for such works becomes accessible to customers and others and can thus be copied onto another device via a USB or serial port and/or transmitted to others on Virgin Mobile and other handsets, where it is not practical to apply separate technological measure to protect access to those works.

5. Other Factors Librarian Considers Appropriate

In the 2006 Recommendation, the Register developed a fifth factor to use in analyzing any proposed exemption that would permit circumvention of technological measures that appear to be used to protect business interests unrelated to the protection of copyright interests:

When application of the prohibition on circumvention of access controls would offer no apparent benefit to the author or copyright owner in relation to the work to which access is controlled, but simply offers a benefit to a third party who may use § 1201 to control the use of the hardware which . . . may be operated in part through the use of computer software or firmware, an exemption may well be warranted.⁷⁴

In this case, the software locks not only support a business model, they also clearly protect copyrighted works. Just as CSS is used for DVDs to protect the business model of those selling DVDs, the software locks are used to protect handsets from unlawful use. Protecting handsets from unlawful use is very much related to

⁷⁴ 2006 Recommendation at 52.

copyright interests. Wireless telephone "handsets" are not simply pieces of hardware; they are comprised of software and other copyrighted works, as much as they are of hardware. The copyrightable content embedded in a handset – the operating systems, applications, graphics and ringtones – are as integral a part of the handset as the hardware. A handset without software is merely a piece of plastic and/or metal, just as a DVD without any content is a merely a plastic disc. To say that the locks simply control the use of hardware, and not the embedded copyrighted works, is like saying CSS simply controls access to a tangible disc – ignoring the fact that what is being protected is the code comprising a work that is embedded in the disc.

On the other hand, the requests for the proposed exemptions are specifically directed at non-copyright purposes - to reprogram the handset so that it can be used on a different network than for which it was originally programmed or to obtain interoperability – not to gain access to use or otherwise experience the copyrightable works on the handsets for socially beneficial reasons – the types of uses the § 1201(a)(1) rulemaking proceedings were intended to address. It is important to consider whether there is any copyright interest in granting the exemption, particularly in light of the fact that the burden is on the proponents of the exemption to prove that the exemption is warranted. In this case, no copyright related interests are protected by granting the exemption.

**E. Environmental Interests:
Reactions to Proponents' Perspective**

Finally, the Proponents point to environmental benefits of the exemption. They argue that without the exemption more handsets will end up in "landfills."⁷⁵ This is not the proper forum to address these concerns, and the considerations are irrelevant to the factors to be considered in a DMCA rulemaking. In any event, the Proponents provide no actual evidence to support the likelihood of this "massive waste problem."⁷⁶ Their conclusory statements that the exemption will result in fewer used handsets amassing in landfills is not supported by any evidence, only speculation; and the evidence Virgin Mobile does have contradicts such conjecture.

The wireless industry has its own recycling program in which customers can easily take part. Virgin Mobile runs the "Pass-It-On" recycling program in which unwanted handsets are recycled, or, where possible, donated.⁷⁷ To make it especially easy to recycle handsets, Virgin Mobile includes a postage-paid return mailing pouch in every handset packet to increase recycling rates at no cost or burden to its customers. Verizon Wireless runs the HopeLine Recycling Program in which used handsets are donated and then refurbished or recycled.⁷⁸ A number of charities and other organizations (including Wireless Alliance) accept and recycle handsets. In short,

⁷⁵ See Comment 5D at 7; Comment 5B at 18.

⁷⁶ Comment 5D at 14.

⁷⁷ Virgin Mobile Pass-It-On Recycling Program, <http://virginmobileusarecycle.com> (last visited Jan. 28, 2009).

⁷⁸ Verizon Wireless Call2Recycle, <http://www.verizonwireless.com/b2c/aboutUs/communityservice/recycleFaqs.jsp> (last visited Jan. 28, 2009).

consumers wishing to dispose of old handsets have no dirt of places to take them for recycling and are encouraged by many to do so.

In addition, there is no evidence to suggest that the majority of users would not desire to purchase new handsets periodically, whether or not they could switch carriers with their existing handsets at will, particularly as wireless handset technology continues to improve from year to year, nor that the exemption has had or will have any impact on their decisions to upgrade. In any event, it appears that a significant number of Virgin Mobile handsets are being unlocked and reprogrammed when first purchased in order to use them on a different network (i.e., they are never activated on the Virgin Mobile network). In other words, the unlocking is not primarily being conducted by or on behalf of former Virgin Mobile customers who want to save and reuse their old Virgin Mobile handsets on another network. Thus, this exemption will have little or no effect on the number of handsets ending up in landfills.

V. CONCLUSION

The Proponents, individually and collectively, have failed to demonstrate that renewing the 2006 Exemption or adopting any of related exemptions they have proposed are warranted by the evidence. None of the Proponents has met its burden of proof. The Proponents have not shown by a preponderance of the evidence, that "the harm alleged" caused by the prohibition of circumvention for this class of works "is more likely than not;" nor have they demonstrated that the particular desired use of the computer programs at issue are noninfringing, or that the use is likely to be adversely affected by the prohibition on circumvention.