

Juridical Analysis on the Copyright of Modification and Customization of Android Software

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Abstract—Android is a mobile operating system developed by Google. It is usually used by several smartphones and tablets. The Android System (OS) is an open source, meaning developers can modify and customize the OS for each phone. Despite the fact that the creator of the Android system must have held the copyright on the appearance of the software which he created. This issue raises the problem: whether or not modifying and customizing the appearance of the Android System will infringe the copyright which is possessed by the holder. By researching, the author would seek on the status of the modified/customized Android Software and the legal consequences of the modified and customized Android System. The result of this legal research lies in the agreement that is proposed to modifier when they are about to download or install the software itself (by clicking yes/accept). This legal research is conducted by using normative legal research methods, using library research as a data collection technique and qualitative normative techniques as a data analysis technique, by juxtaposing legal theories as analytical knives.

Keywords: *copyrights, mobile operating system, modification and alteration*

I. INTRODUCTION

Android is a mobile operating system developed by Google [1]. It is based on modified version of the Linux Kernel and other open source software, and is designed primarily for touchscreen mobile devices, such as smartphones and tablets[2] The source code for Android is open-source, meaning it is developed in private by Google, with the source code released publicly when a new version of android is released. Google publishes most of the code under the non-copyleft

Apache License version 2.0. which allows modification and redistribution[3], usually called *rooting*. While the license does not grant rights to the “Android” trademark,[4] so the device manufactures and wireless carriers have to license it from Google under individual contracts. Associated Linux kernel changes are released under the copyleft GNU General Public License version 2, developed by the Open Handset Alliance, with the source code publicly available at all times. Typically, Google collaborates with a hardware manufacturer to produce a flagship device (part of the Nexus series) featuring the new version of Android, then makes the source code available after that device has been released.[5]

Rooting is the process of allowing users of smartphones, tablets, and other devices running the Android mobile operating system, in order to attend privilege control (known as root access) over various Android subsystem. Rooting is performed with the goal of overcoming limitations that carriers and hardware manufacturer put on some devices. Thus rooting gives the ability (or permission) to alter or replace system applications and settings, run specialized applications (“apps”) that require administrator-level permissions, or perform other operations that are otherwise inaccessible to a normal Android user. On Android, rooting can also facilitate the complete removal and replacement of the device's operating system, usually with a more recent release of its current operating system.

The process of rooting varies widely by device, but usually includes exploiting one or more security bugs in the firmware of the device[6] Once an exploit is discovered, a custom recovery image that will skip the digital signature check of firmware update that typically includes the utilities needed to run apps as root can be installed.[7]

Rooting, as mentioned above, may not grant rights

to the “Android” trademark. However, besides trademark, the operating system of the Android itself is also protected under the copyright law (encompasses copyrights). This is due to the fact that Copyrights relates to literary and artistic creations, such as book, music, paintings and sculptures, films and technology based works,[8] such as computer programs and electronic databases,[9] including the Android operating system. Copyright legislation is part of the wider body of law known as intellectual property (IP) which refers broadly to the creations of human mind. IP Rights is granted over the innovations and creations in order to protect the interest of innovators and creators [9].

Copyright-protection of an operating system of Android therefore raises the problem whether or not the party who roots the Android operating system would be recognized as unlawful action (infringe the copyright that is owned by Android) since rooting means to modify and customize the operating system. This article would elaborate the copyright law established by International Law and Indonesian National law in relation with computer program and mobile operating system, as well as the status of the Android Operating System that has been rooted and the liability that should be charged to the party who root the Android operating system.

II. ANALYSIS

A. *Copyrights Law Established by International Law*

Copyright provision is basically establish in The Berne Convention for the Protection of Literary and Artistic Works (hereinafter “The Berne Convention”).[10] The Berne Convention is further has it protocol, established by the World Intellectual Property Organization (WIPO), which called World International Property Organization Copyright Treaty[10] and World International Property Organization Performance and Phonograms Treaty.[11] The Berne Convention covers the copyright of the literary and artistic works which state in Article 2(1).[9] The literary works shall include, *inter alia*, every production in the literary, scientific and artistic domain, whatever may be the mode or form of its expression, such as books, pamphlets and other writings; lectures, addresses, sermons and other works of the same nature.[11] Further, the WIPO Copyright Treaty also established, under its fourth Article, that the

literary works shall also include computer programs whatever the mode or form of their expression[4]. In light of this, as a computer program, the Android operating system should be considered as literary works for Android operating system is a system software that manages computer hardware and software resources and provides common services for computer programs.[12] Thus, Android operating system should be protected under the copyrights law.

Besides the provision regarding the copyright itself, the Berne Convention also establishes the obligation for state parties to protect the work that is granted copyrights, notwithstanding that the work is created outside the territory of the particular country as stated in Article 2(6) of the Berne Convention. Moreover, as the Berne Convention only provides with the general framework of the protection of copyrights, the Berne Convention that attribute its Union to determined several obligations within its the national legislation. This is included but not limited to the obligation concerning the technological measures[9] and the obligations concerning rights management information.[9].

Article 11 of the WIPO Copyright Treaty, in regard with the obligation concerning the technological measures, constitutes that state parties provide adequate legal protection and effective legal remedies against the circumvention of effective technological measures that are used by authors in connection with the exercise of their rights under this Treaty or the Berne Convention and that restrict acts, in respect of their works, which are not authorized by the authors concerned or permitted by law. On the other hand, based on Article 12 of the WIPO Copyright Treaty, the obligations concerning rights management information means that provide adequate and effective legal remedies against any person knowingly performing any of the following acts knowing, or with respect to civil remedies having reasonable grounds to know, that it will induce, enable, facilitate or conceal an infringement of any right covered by this Treaty or the Berne Convention, which one of them, is to remove or alter any electronic rights management information without authority.

Rooting an Android system as mentioned above, is to modify and customize the operating system which means to attend privilege control (known as root access) over various Android subsystem. One can replace system applications and settings, run specialized applications (“apps”) that require administrator-level permissions, or perform other operations that are otherwise inaccessible to a normal Android user. For this reason, rooting an Android operating system shall be considered that the rooter has altered electronics rights management

information. Since this rooting activity or even the device or application (software) that is used to root the Android system can be bought in markets, then rooting shall also be considered to be done without authority's permission.

B. Copyrights Law Under Indonesian Law

Indonesia is a sovereign state, Indonesia has the ability to coordinate with another state within the international scope. The consequences of this coordinate, Indonesia is entitled to obligations provided by the international convention which has been ratified. One of the international convention which has been ratified by Indonesia, is the Berne Convention, through the Presidential Decree Number 18 Year 1997 on the Validation of the Berne Convention[13] the WIPO Copyright Treaty, as has been ratified by the Presidential Decree Number 19 Year 1997 on the Validation of the WIPO Copyright Treaty,[14] and lastly, Indonesia has participated as a member of the agreement establishing the World Trade Organization that includes Trade Related Aspects of Intellectual Property Rights, by enacting law number 7 of 1994. [15]

The delegation of obligations constituted in the convention regarding the copyrights, have been governed within the Indonesian law by promulgating Law Number 28 Year 2014.[16] As provided in Article 4 WIPO Copyright Treaty *juncto* Article 10 of the TRIPS Agreement, Law Number 28 Year 2014, in Article 40(1) and 59(1) [15] governed that computer programs is considered to be works that is protected under the copyrights law[15]. According to the Indonesian copyright law number 28 year 2014, the computer program means a set of instructions that are expresses in the form of languages, codes, schemes, or in any form that is intended for a computer to perform specific functions or to achieve certain outcomes.[15] Android is based on a modified version of the Linux Kernel, which means that Android still comply the scheme, code, and the language with the one in the Linux Kernel, even though the code, scheme, and language does not have to be the same, these shows that Android have language, code, and scheme that is mentioned in Article 1(9) of Law Number 28 Year 2014 on copyrights and hence, Android Operating System is a computer program and the author or the copyright holder is entitled to enjoy

the exclusive right of the copyright, written in Article 4 Law Number 28 Year 2014, comprising moral rights[15] and economic rights.[15]

The moral rights of the author, based on Article 6 of Law Number 28 Year 2014 on Copyrights, allows the author to have the copyright management information and copyright electronic information[15] Besides giving a clear describe about what part of the author's work that is protected under the copyrights law[15] these information also entails obligations which are constituted under Article 11-12 of the Berne Convention, namely, the obligations concerning rights management information and the obligations concerning technological measures. These entailing obligations are stipulated further under Article 7(3) of Law Number 28 Year 2014 on Copyrights. Seemingly, this article protect the author's moral right regarding the prohibition to remove, change, or damage the works that has been protected under the copyright law[15]. Law Number 28 of 2014 on Article 5 also provides that the author is eternally inherent to defend their rights in the event of a distortion of their works, mutilation of works, modification of works, or other acts which will be prejudicial to their honor or reputation.[15]

By regulating the copyrights on electronic information and management information, indicates that Indonesian Copyrights law, indicates that Indonesia has acted in line with the international law. Therefore, it is unlawful to alter Android Operating System which includes but not limited to rooting activity, based on Indonesian law.

C. Individual Liability For Rooting an Android Operating System

Since now we know that rooting Android operating system is not consistent with neither international law nor the Indonesian law, then there would be legal consequences entailing the party who root the Android operating system. These legal consequences is established by the law in the form of liability. For this reason, the writer would seek to know which party should be held responsible for rooting Android Operating System, as well as, the form of liability, whether it is civil individual liability, nor criminal liability.

In order to elaborate further on the liability for rooting an Android Operating System, it is important to understand the status of the rooted Android Operating System beforehand. This legal status can be determined by referring to the android agreement that was proposed to the user before he set up his device for the first time.

This agreement is commonly named as End User License Agreement (hereinafter the “EULA”). Take, for example, the agreement that is provided by app.legaltemplates.com, [17] the Android Company would give provisions to its end user regarding the license grant (rights for usage), disclaimer on warranties, limitation of liability, restrictions on use, and infringement of the Android Operating System [18].

The license grant to the end user is only to install, access, and use the application on a single mobile device by the end user. The end user is restricted to modify, improve, enhance, or to remove, alter, obscure any proprietary notice of the Android Operating System. If there is any failure from the user to comply with the EULA, then the license and any rights afforded to the end user shall automatically be terminated by the Company and the user must cease all use of the application and uninstall the application. [18] All these provisions are considered to be agreed by the end user by clicking or touch “yes” or “accept” command button, including, without limitation, the acknowledgement of the user that the usage of or reliance upon the application and any third party content and services accessed thereby is at your sole risk and discretion. Moreover, company shall not be held liable under no circumstances that for any indirect, incidental, consequential, exemplary damages arising out of or in connection with the user’s access or use the application. This can be related that the Android Company will not take any responsibility for the consequences resulting from rooting activity. [17]

Since the Android Company has declared that they will not be responsible for any consequence that should be entailed by the party who root their operating system, and keeping in mind that rooting activity is not consistent with the regulation, both internationally and nationally, then the liability for the rooting Android should be the party who root their operating system. In light of this, the writer would like to differentiate the liability from two perspectives, namely the civil liability and criminal liability.

1. Civil Liability

As an illegal activity, then rooting causes high probability for the Android Company to loss profits and damages, as rooting access infringe the moral right of the copyrights of the Android Operating System (obligation concerning

management information). According to Article 1243 Indonesian Civil Code [19], the wrongdoer should be held liable for committing unlawful act that cause loss of profits to the Company. The liability should be in form of compensation for costs, damages, interests for the breach of the obligations, pursuant to Article 1246 Indonesian Civil Code. [19]

2. Criminal Liability

Referring to Article 112 of Law Number 28 Year 2014 on Copyrights, [18] modification, changing, deleting, altering a computer program that is protected under the copyright law is a violation of Article 7(3) of Law Number 28 Year 2014 on Copyrights. This violations is met by rooting the Android Operating System. The legal consequences for acting not line with the law, is to be sentenced to imprisonment for up to 2 (two) years and/or a fines up to IDR 300,000,000.00 (three hundred million rupiahs). [15]

III. CONCLUSIONS

Android operating system is an open source and thus, the operating system is open for rooting. An Operating system, as considered as computer program, is protected under the copyright law as according to Article 4 of WIPO Copyright Treaty. However, according to the international law, rooting activity is unlawful as it infringe the moral rights of the Author or the Copyright Holder. Besides, rooting activity also inconsistent with the obligations concerning the management information and technical measures information, pursuant to Article 11-12 of the Berne Convention. Since Indonesia has ratified the Berne Convention, WIPO Copyright Treaty and TRIPs, then Indonesia has enacted law number 28 year 2014 which provides the provisions written in the international conventions on copyright as mention above. In light of this, as the Berne Convention established that alteration of works that is protected under the copyrights law is unlawful, then in Indonesia, if we refer to Article 7(3) of Law Number 28 year 2014, rooting activity is also considered to be unlawful.

The legal status of rooting access can determined the party who should be held liable for rooting activity and the form of liability that entails rooting activity. The legal status of the rooted Android Operating System is written in the agreement when the Android user is about to set up his device EULA), which majority, would declare that the Android company will not be held liable for anything that result from the rooting activity. This shows that the party who should be held responsible for violating the copyright of the Android Operating System

is the party who occasionally root his software, whether in form of civil liability, or criminal liability. The civil liability is usually in the form of compensation for costs, damages, and interest for breaching an obligation pursuant to Article 1243 and 1246 Indonesian Civil Code. While the criminal liability should be done by referring to Article 112 of Law Number 28 Year 2014.

- Republic of Indonesia 1994 Number 57).*
- [16] Indonesia, Law Number 28 Year 2014 (*State Gazette of the Republic of Indonesia 2014 Number 266, Supplement to Official Gazette of Republic of Indonesia Number 5599*)
- [17] <https://www.termsfeed.com/blog/sample-eula-template/>; accessed on 11 July 2019
- [18] <https://legaltemplates.net/form/end-user-license-agreement/>; accessed on 11 July 2019
- [19] Indonesia, Civil Code (*Staatsblad 1847 Number 23*), Article 1243

REFERENCES

- [1] Morrill, Dan (September 23, 2008). "Announcing the Android 1.0 SDK, release 1". *Android Developers Blog*. Google. Archived from the original on March 5, 2017. Retrieved March 11, 2017.
- [2] "Android Language Breakdown". Open Hub. October 25, 2017. Archived from the original on December 14, 2017. Retrieved December 15, 2017.
- [3] Boulton, Clint (October 21, 2008). "Google Open-Sources Android on Eve of G1 Launch". eWeek. Retrieved February 17, 2012; See Also Paul, Ryan (November 6, 2007). "Why Google chose the Apache Software License over GPLv2 for Android". *Ars Technica*. Condé Nast. Archived from the original on March 12, 2017. Retrieved March 11, 2017.
- [4] Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299, 33 I.L.M. 1197 (1994) [hereinafter TRIPS Agreement]
- [5] "Frequently Asked Questions: What is involved in releasing the source code for a new Android version?". *Android Open Source Project*. Archived from the original on August 3, 2010. Retrieved February 16, 2012.
- [6] Zhang, Hang; She, Dongdong; Qian, Zhiyun (2015-01-01). "Android Root and Its Providers: A Double-Edged Sword". *Proceedings of the 22Nd ACM SIGSAC Conference on Computer and Communications Security*. CCS '15. New York, NY, USA: ACM: 1093–1104. doi:10.1145/2810103.2813714. ISBN 9781450338325.
- [7] "ChainsDD/su-binary". GitHub. Retrieved 2016-10-08.
- [8] World Intellectual Property Organization., United States., United States., & United States. (1997). *Understanding Copyright and Related Rights*. (WIPO Switzerland, 2016), ISBN 978-92-805-2799-5
- [9] WIPO Performances and Phonograms Treaty, Dec. 20, 1996, S. Treaty Doc. No. 105-17,36 ILM 76 (1997)
- [10] World Intellectual Property Organization Copyright Treaty, adopted Dec. 20, 1996, WIPO Doc. CRNRIDC/94;
- [11] World Intellectual Property Organization. 1982. *Berne Convention for the Protection of Literary and Artistic Works: texts*. [Geneva]: World Intellectual Property Organization.
- [12] Stallings (2005). *Operating Systems, Internals and Design Principles*. Pearson: Prentice Hall. p. 6.; See also Dhotre, I.A. (2009). *Operating Systems*. Technical Publications.
- [13] Indonesia, Presidential Decree Number 18 Year 1997 (*State Gazette of the Republic of Indonesia 1997 Number 35*), Considerans
- [14] Indonesia, Presidential Decree Number 19 Year 1997 (*State Gazette of the Republic of Indonesia 1997 Number 36*), Considerans
- [15] Indonesia, Law Number 7 Year 1994 (*State Gazette of the*