

The International Protection of Computer Software

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Abstract:

The computer software is among the most important outcomes of digital technology. It is the backbone of the digital environment thanks to its programs that process data, make presentations, design accounting statements, and support creativity and innovation. The commercial use of this software has increased in developed states, making it a cornerstone of their economies. Due to its significant importance and impact on modern life, international conventions and organizations have placed strong emphasis on intellectual property. Among these is the World Intellectual Property Organization (WIPO), which adopted the WIPO Copyright Treaty (WCT) and the WIPO Performances and Phonograms Treaty (WPPT) in 1996.

Based on what was said, we raise the following problematic, “to what extent is copyright suitable for the protection of software? What rights and forms of protection are established by international organizations and conventions?”

Keywords:

Protection, computer software, authors rights, international organizations, international conventions.

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الحماية الدولية لبرامج الحاسب الآلي

الملخص:

إن من أهم مفرزات التكنولوجيا الرقمية مصنفات الحاسب الآلي، والتي تعد العصب الرئيسي للمصنفات الرقمية لما تشمله من برمجيات كبرامج لمعالجة البيانات، وبرامج العروض التقديمية أو برامج القوائم المحاسبية، وغيرها من البرامج التي تساعد المبدعين على الإبداع.

ولقد أصبح الاستغلال التجاري لهذه المصنفات هو العماد وحجر الأساس لاقتصاديات الدول المتقدمة ونقطة الارتكاز الذي انطلق منه التطور الكبير الذي تشهده الدول في وقتنا الحالي.

ونظرا لأهمية هذا النوع من المصنفات والدور الذي تلعبه في كافة مجالات الحياة اهتمت المنظمات والاتفاقيات الدولية بهذه التكنولوجيا الحديثة، ولعل أهمها منظمة الويبو (المنظمة العالمية للملكية الفكرية)، التي أصدرت معاهدي الانترنت الأولى والثانية (معاهدة الويبو بشأن حق المؤلف WTC، ومعاهدة الويبو بشأن الأداء والتسجيل الصوتي WPPT) في عام 1996، أين أشارت في المعاهدة الأولى إلى المصنفات الرقمية.

ومن خلال ما سبق نطرح الإشكال التالي: ما مدى ملائمة حقوق التأليف لحماية البرمجيات وما هي الحقوق والحماية المقررة لها في ضوء المنظمات والاتفاقيات الدولية؟

الكلمات المفتاحية:

حماية، برامج الحاسب الآلي، حقوق التأليف، الاتفاقيات الدولية، المنظمات الدولية.

La protection internationale des logiciels informatiques

Résumé:

Les logiciels informatiques comptent parmi les réalisations les plus importants de la technologie numérique. Il constitue l'épine dorsale de l'écosystème numérique grâce à ses programmes qui traitent les données 'créent des présentations génèrent des états comptables et favorisent la créativité ainsi que l'innovation. L'utilisation commerciale de ces logiciels s'est largement développée dans les pays développés, où ils représentent la pierre angulaire de leurs économies.

"Compte tenu du rôle prépondérant de la propriété intellectuelle, les instances internationales, et plus particulièrement l'Organisation Mondiale de la Propriété Intellectuelle (OMPI), ont adopté en 1996 deux textes majeurs : le

Traité sur le droit d'auteur (WCT) et le Traité sur les interprétations et exécutions et les phonogrammes (WPPT). Dans ce contexte, la problématique suivante se pose : dans quelle mesure le droit d'auteur constitue-t-il un mécanisme adéquat pour la protection des logiciels, et quels sont les droits garantis par ces conventions internationales ?"

Mots clés:

protection , logiciels informatiques, droit d'auteur, conventions internationales, organisations internationales.

Introduction

Digital technology has brought about electronic books and publications, online cinematographic works, audio files and music tracks, and computer software, which constitute the backbone of the digital environment through the programs it includes, such as Microsoft Word. The latter is the product of Microsoft Company and includes different programs, such as Word for word processing, Access for data processing, PowerPoint for making presentations, and Excel for preparing accounting statements, and other programs that help writers and innovators.

The digital technology paved the way towards development, as the digital software enabled significant progress within a short period of time. In addition, it turned into a cornerstone of the economies of developed states. For instance, major United States companies, such as Facebook, Google, Apple, and Microsoft, are among the most profitable and contribute significantly to the gross domestic product thanks to the software and databases industry. Given their importance and impact on daily life, international conventions and organizations have paid particular attention to intellectual property. The World Intellectual Property Organization (WIPO), for example, WIPO adopted the WIPO Copyright Treaty (WCT) and the WIPO Performances and Phonograms Treaty (WPPT) in 1996 to safeguard copyrights and related rights. In this regard, the WCT addresses the protection of computer software.

Based on what was said, we raise the following problematic, "to what extent is copyright suitable for the protection of software? What rights and protection are established by the international organizations and conventions?" To answer this question, we used the descriptive and analytical methods and also reviews the relevant international conventions. Moreover, it is divided into two chapters: the first addresses the concept of software and the extent to which copyright is suitable for its protection, while the second focuses on the rights of software developers and the protection afforded to them by international organizations and conventions.

Chapter I: Innovation and software protection

Copyright theory provides that legal protection is conditional, as all legal systems require specific conditions to grant protection mainly regarding the software itself and its developer's rights. Before tackling the requirements of protection, we shall discuss the nature of the software.

Section I: The concept of software

Before defining the software, we must define the computer and shed light on its components.

Subsection 1: Definition of the computer and its components

Hardware refers to the physical components of a computer system, whereas software represents the intangible programs that operate it. Together, hardware and software form the overall computing environment. Hardware typically includes:

- ♦ Operating devices
- ♦ The input devices.
- ♦ The secondary storage devices.
- ♦ The output devices.

Subsection 2: Definition of the software

Microsoft Computer Lexicon¹ defines the software as the instructions that power the hardware. In addition, the Vocabulary Dictionary² of the Administrative Arab Organization³ defines software as detailed and clear written computer instructions⁴. Definitions of software include both narrow and broad interpretations⁵.

A. The narrow definition of the software

Software refers to a set of instructions transmitted from humans to machines to execute a given task. The term software covers three main types:

- 1) The Source Code: It is the codes written in a high-level language. Low-level languages interact directly with the computer hardware, often after being

¹ Richard Jean Paul Tremblay, *Introduction computer science*, McGraw-Hill. International edition, 2002, p.45.

² Microsoft Computer Dictionary, 2002, p. 45.

³ The Vocabulary Dictionary issued by the Administrative Arab Organization English/ Arabic/ French 1971, term 1441.

⁴ Salama Imad Mohamed, *The legal protection of the computer software and the issue of software piracy*, Wail House for Publication, 2005; p.49.

⁵ Mohamed Houssein Mahmoud Lotfi, *The legal protection of the computer software*, Culture House for Printing and Publication, 1987; p.15.

processed through assembly. As for the high-level language, it can be used in all the computers. The source code has two types:

- ✓ The operating software: It governs the computer's performance in executing tasks, and are part of the computer itself. In other words, they are the software that dominates the storage, input, and output of data in a way that allows the computer to execute its tasks, either regarding the internal operation or regarding those who deal with it.
 - ✓ The application software: It is a software issued in a high-level language and can be exploited by all the users, regardless of the type of computer, with some little modifications if necessary.
- 2) The translation software: It allows transforming the source code into object code.
 - 3) The object code: It is the software translated into the machine language.

B. The wide definition of the software

This definition covers three elements:

- 1) The software in its narrow meaning: It is the set of instructions that shall process data after its transfer from a written medium to the machine.
- 2) The software description: It is the full detailed presentation of the information orally, in writing, or in any other format to identify the operations that constitute the computer software, and of their interrelations.
- 3) The annex files: They are not computer software and target the simplification of the comprehension and the software application.

On this basis, the target protection covers all the instructions to any machine (computer and others) that can process information to achieve a given aim. The protection covers, also, the instructions addressed to the customer, whether in the form of software description or otherwise. The importance of this wide concept does not only lie in protecting elements not mentioned in the narrow meaning of the software, as WIPO had adopted it when designing its texts to protect the software. Thus, WIPO may have taken the wide definition of the computer software with its three elements.

We can deduce that the difference between the two definitions is superficial, as it covers only the integration of new elements in the wide definition, which are not found in the narrow, which is limited to the instructions

given to the machine, unlike the wide that covers the detailed description of the software and its appendices in the cycle of protection, all along with the instructions to the machine. We can distinguish the software from the databases, as the latter is an organized set of files that include information on a given topic; these files are divided into bytes, which are in turn divided into bits. This structure helps easy access to the right and the interaction, either through inputting or retrieving data⁶, Comparing the two concepts is based on the existence of two elements, namely the data and programs. Thus, we must distinguish the nature of the program, the software which is a set of operation instructions, and the users' cyber content⁷.

Section II: The copyrights and their protection to the software

We shall discuss the copyrights and computer software, and the suitability of copyrights law to the software protection.

Subsection 1: The property right and the computer

Patent law was the first legal tool used to attempt protection of software since its emergence. Nevertheless, a big gap was found between the nature of software, which is an intangible mental work, and the legal system, whose provisions and principles provided that the innovation should be tangible⁸.

The shift towards narrowing the chances of granting patents to computer software was clear, as some international conventions and domestic laws excluded computer software from the cycle of patents. Besides, most of the legal policies, if not all, agreed to protect the computer software, as they were seen as literary works protected by the copyrights⁹.

International conventions indicate that the Berne Convention¹⁰ for the Protection of Literary and Artistic Works makes no explicit reference to computer software. It also does not list computers among the literary and artistic works enumerated in Article 2, which states that "literary and scientific works"

⁶ Mohamed Fahmi Tolba et al, the comprehensive encyclopedia for the computer vocabulary, Delta Computer 02 Encyclopedia, the printing house of the modern Egyptian office; p.137.

⁷ Michele C Kane; when is a computer program not a computer program; The Perplexing World Created by Proposed U.C.C. Article 2B, 1998; p.1015.

⁸ Al Mostashar Farouk al Khanfaoui, the computer encyclopedia and cyber system, book 01, software law, modern book house, 2001, p. 187.

⁹ Order 03-07 of July 19, 2003 relating to patents, Official Gazette No. 44, issued on July 22, 2003.

¹⁰ Berne Convention for the protection of the literary and artistic works, 09/09/1886, amended in Paris in 1896, Berlin 1908, Berne 1914, Rome 1928, Brussels 1948, Stockholm 1967, and Paris, 1979.

include every production in the literary, scientific, and artistic fields, regardless of the mode or form of expression—such as books, pamphlets, other writings, lectures, addresses, and similar works. Nevertheless, the Convention can be interpreted as implicitly extending protection to computer software, given that it adopts an open-list approach to the types of works covered.

As for the European position ¹¹ on the legal protection of computer software, a directive was issued to member states on 14 May 1991 concerning the legal protection of software. It clarified that what is eligible for protection is the software's *expression*, not its underlying ideas or concealed principles; therefore, not all elements of a software program fall under protection. The directive established key principles, including:

- The subject of protection is the *expression* of the software in any form.
- Protection of the software's expression does not extend to the ideas and principles underlying that expression.

As for the project of WIPO to protect the software, the Organization called a set of governmental experts in 1971 to protect the computer software. Later in July 1974, a group of experts in protecting the software had been formed until 1977. The experts had studied the suitable methods to protect the computer software in three meetings, namely in 1989, 1984, and 1985. In collaboration with them, WIPO managed, in 1978, to establish a model of rules that protect the computer software. During the last meeting, it was clear that most of the industrialized states, and some developing states, advocated protecting the software by copyright law. As for TRIPS Agreement¹², which involved rules to be respected by states to ensure the minimum protection of the copyrights, the member states could choose the suitable method to enforce and include these provisions in their laws. In this regard, paragraph 1 of Article 10 states that computer programs—whether in source code or object code—are to be protected as literary works under the Berne Convention. Furthermore, Article 9 clarifies that copyright protection applies only to the expression of ideas, not to ideas, procedures, methods of operation, or mathematical concepts themselves.

Subsection 2: The copyright suitability law for the software protection

¹¹ European commission ; The task of making decisions within the framework of the Union and mediating between the member states of the European Union ; 2013.

¹² TRIPS treaty, one of the appendices of the convention of establishing WTO (Appendix C), 15 (04) 1994 in Marrakech, came into force on 01 January 1995.

As previously mentioned, most of the laws, if not all, and all the international conventions included the software within the publications and literary works because it has the same innovation conditions; therefore, it shall be protected in case of innovation¹³. We can perceive the innovation in computer software as a creativity, because the innovation does not mean finding a new situation that had not existed¹⁴. However, it means getting the necessary applications to solve issues that face the users. To enjoy protection of copyright law¹⁵, the innovation, in general, must add the personal touch to the software algorithms in the form of descriptive orders that facilitate the cognition and application of the software that has its own methods of presenting ideas and other elements that distinguish it from the other software. International copyright conventions have emphasized the protection of creative works, including the Berne Convention, the 1961 Rome Convention¹⁶ concerning the protection of performers, phonogram producers, and broadcasting organizations, as well as the TRIPS Agreement. Article 9(1) of the TRIPS Agreement incorporates Articles 1 to 21 of the Berne Convention, with the exception of Article 6, which is excluded from its application.

Paragraph 05 of Article 02 of Berne Convention provides that the work must be an intellectual innovation, while TRIPS Agreement provided that the intellectual work subject to protection must have an innovative aspect that shows the personal touch of the author. Article 10/2 of this Agreement provided that to enjoy protection, the compiled data or the other materials must represent an intellectual creativity due to selection or organization of their contents. Article 03 of WCT refers to Articles 02 to 06 of Berne convention. In addition to creativity, we find the installation, as it is necessary to express the innovative idea through tangible physical representation. This expression may be a writing on paper, a painting, a sculpture, a photograph, a voice, a light, a movement, or any medium that ensures the steadiness of the file in a form that ensures stability and continuity, either when the expression is connected directly to the addressed, or indirectly through a device.

¹³ Nazih Mohamed al Sadek al Mahdi, the civil protection of the computer software, researches in law, computer, and internet, Faculty of Sharia and Law, University of UAE, 1-3 May 2004, Vol. 02, 2004, p.527.

¹⁴ Naim Meghabgheb, the protection of the computer, the methods, and the gaps (Vol. 01), Beirut, al Halabi legal publications, 2006, p.44.

¹⁵ Mostefa Mohamed Arjaoui, the civil protection of the computer software in the statutory laws, the researches of the law, computer, and internet congress, 1/3 May 2000, Faculty of Sharia and Law, University of UAE, Vol. 02, 2004, p. 372.

¹⁶ The international Radio Regulations, issued by the International Union for Telecommunications in 1947.

In addition to creativity and installation, the copyrights in some laws require deposit at a given party. As for the formal condition, the international conventions advocate the notion that protecting the copyrights is not limited to formal conditions, such as deposit and registration. In this regard, Article 02 of the Berne Convention states that if a State Party requires specific conditions to protect the copyrights, like deposit, registration, and approval, these conditions are not required if an approval of protecting the copyrights is found on the published copies of the file. Besides, Article 03 of WCT provides for the application of provisions 02 to 06 of Berne Convention.

Chapter II: Software Copyright and Protection

We shall focus on the copyright of the software developer, and on how to protect them.

Section I: The software copyrights

The software developers have moral rights and economic rights.

Subsection 1: The literary rights of the software developers

The literary rights are permanent and non-transferable rights; i.e., they cannot be sold, rented, seized, or waived. These rights include the right of attribution, the right to decide on publication, the right of withdrawal, and the right to preserve the integrity of the work.

The right of attribution: This is one of the most important moral rights granted to an author. It ensures that the intellectual work is attributed to its creator and bears the name of the individual who created the software.

The right to decide on publication: Also known as the right to disclose the work, it grants the author full freedom to decide when and whether the work should be made available to the public. Only the creator has the authority to assess the readiness of the intellectual work for public use. This right is also one of the main moral rights that transfer to the author's heirs after death.

The right of withdrawal: This allows the author to withdraw their work from circulation for any reason they deem appropriate.

The right to integrity: The author has the right to protect the work from any alteration or distortion that could harm its reputation or change its intended purpose. The Berne Convention recognizes the following moral rights:

- The right to claim authorship of the work.
- The right to object to any distortion, modification, or violation that would harm the work's reputation.

TRIPS Agreement did not apply Article 06 of Berne Convention, Article 09/01 of the Agreement provided that the member states shall respect the provisions of Articles 01 to 21 of Berne Convention. However, the member states shall not be

bound by the obligations set out in Article 6bis of Berne convention. The main issue is about the applicability of the right to modify or withdraw the computer software due to the difficulty of its application, as it may harm the financial interests of the software user, mainly if the nature of the software requires continuous updates due to the development and renewal of the modern techniques.

Subsection 2: The material rights of the software developer

The material right refers to the developer's exploitation of the work to get financial benefit. These rights differ from the moral rights in the fact that they are temporary and can be managed by the developer, who can sell, rent, seize, or waive them. These rights include the right to reproduce to get financial benefits. In this regard, Article 09 of the Berne Convention provided that any sound or visual recording shall be considered a reproduction for the purposes of this Convention. In addition, Rome Convention on protecting the performers, producers of phonograms, and broadcasting organizations defined reproduction as creating a copy.

In addition, the direct exploitation of the work includes selling or renting it by the author or his agent. Moreover, the author has the right to import, export, translate, or convert his work. The projection of these rights on the program developer shows that the author or legal holder of the work can copy, modify, translate, or convert the work for the following purposes:

- ✓ Copying the software refers to using it in accordance with the license.
- ✓ Copying the software refers to modifying or converting the original version of the software in a way that suits the licensee and his computer.
- ✓ Copying the software to study the ideas and scientific theories, on which it is based, aka the reverse engineering, where permitted by law.
- ✓ Copying the program refers to adjusting the language of the original version to the machine language.
- ✓ Copying the software to adjust it and redress the mistakes to avoid its reoperation or to increase its efficiency.
- ✓ Copying the software with good intention, or to secure the net to which the software belongs¹⁷.

As for the right to translating the software, we find two points:

¹⁷ Houssem Dine Abd al Ghani al Seghir, commenting on the protection of the computer software in the law of protecting the copyrights, on 10/01/2000, paper submitted to the National Democratic Party ; p.02.

The 1st is about translating the data that appear on the screen or software façade to understand the use instructions.

The 2nd is about rewriting the software in another language, or converting the software from an object code, or vice versa.

As for the right to convert the software, the software possessor has the right to make the necessary adjustments to facilitate its use, without causing the creation of a new software.

Section II: The computer software in the light of the international conventions and organizations

We shall tackle the protection of the computer software by the international organizations and the international conventions.

Subsection 1: WIPO and WTO

WIPO and WTO are the two main organizations that deal with the copyrights.

A. WIPO

It was established by Stockholm Convention on 14/07/1969. Then, it came into force in 1974. Later in 1974, WIPO turned into one of the UN specialized agencies. It aims at supporting the copyrights all over the world, encouraging the creative activity, developing competencies, fostering collaboration among states without harm to their sovereignty and equality, and increasing cooperation among international organizations to encourage the respect of the international conventions that protect the copyrights. In addition, it helps the developing states and supports their national institutions in the field of copyrights. Furthermore, it supports the procedures that aim at making and amending the domestic laws of the member states to suit the international obligations and facilitate joining the related conventions. Algeria joined this Organization by Order 02/75 on 09/01/1975. Therefore, some jurisprudents believe it is necessary to enact laws that ensure the efficient protection of the computer software. Article 01 of the Organization convention tells that it protects the computer software based on:

- ✓ The software in its narrow meaning.
- ✓ The software description.

✓ The software annexed files¹⁸.

B. World Trade Organization WTO

The General Agreements of Tariffs and Trade GATT made on 30 October 1947, which turned later into WTO in Marrakech in 1994, are the main events of the 21st century because of the long-term economic, legal, and procedural effects they brought about. WTO represents an international system that manages the economic relations of the states and includes principles and criteria about the role of governments in managing the international trade after the technological development and the illegal exploitation of the copyrights. Besides, it has other missions with IMF and IBRD. Thus, they represent the pyramid of the world trade system.

In the early 80s, due to the losses in most big states resulting from piracy and violation of the innovators' rights, the states prepared for the 08th Round in Uruguay, where the copyrights were included in the discussions and granted protection. Despite the developing states refused integrating these rights within the organization, the pressures of the big states and corporations, including the multinational ones, won. The negotiations lasted 08 years and ended up with the final document, which was approved on 15/12/1993 and signed in the official ministerial congress in Marrakech from 12 April to 16 April 1994. Thus, WTO was assigned with the enforcement of Uruguay agreement, which represents the mother agreement that gathers all the other 28 agreements included in the final document. These agreements are divided into three sets, namely:

1. On the goods.
2. On the services.
3. The Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) focuses on the commercial dimensions of intellectual property. Its primary objectives are to liberalize trade and to strengthen the protection of copyrights and related economic interests¹⁹.

¹⁸ Abd al Rahman Jamil Mohamed Houcine, the legal protection of the computer software, comparative study, magister thesis in private law, Faculty of Higher Studies, National University of Success, Palestine, 2008, p. 87.

¹⁹ Abdellali Samira, the legal system of the producers of phonograms and audiovisual recordings, Magister thesis in laws, intellectual property, Faculty of Laws, Ben Aknoun, Algeria, viva date 20 May 2008, p.178.

Subsection 2: The protection of the computer software in the international conventions

In this section, we examine the protection of computer software under both classical and modern international conventions.

A. The protection of the computer software in the light of the classical international conventions:

The Paris Agreement for the Protection of Industrial Property and the Berne Convention are considered the foundational international instruments governing intellectual property rights.

A.1. Protection of the computer software in the light of Paris Agreement for the Protection of the Industrial Property 1883:

Industrialized nations sought to safeguard industrial property at the international level through unified agreements, leading to the adoption of the Paris Agreement²⁰. Thus, Paris Agreement was signed in 1883, which internationalized the industrial property²¹, mainly the patent system. In addition, the framework of protection inside the Union gained power. According to jurisprudence, this agreement was dictated by various circumstances, namely the attempt to unite the states, align the views, achieve harmony, and unify the protection of the industrial property. As for computer software, the Agreement did not point to the issue; thus, it is excluded from the scope of patent protection.

A.2. Protection of the computer software in the light of Berne Convention 1886:

It was the 1st convention to embrace the copyrights. It was made in Switzerland by the developed states in 1886. Later, it witnessed different amendments; the last was in 1979. It enumerates the literary work, called the protected works, whether literary, scientific, artistic, or other works, as provided by Article 02. Nevertheless, the Convention did not point to the protection of the computer software explicitly. However, we can deduce it did so implicitly because it is part of the literary and scientific works, and because paragraph 01

²⁰ Houssem Dine Abd al Ghani al Seghir, What's new in business relations, 2008, Alexandria, p.07.

²¹ Paris Agreement for the protection of the Industrial Property, 20 March 1883, amended in Brussels on 14 December 1900, Washington on 02 June 1911, La Hague on 06 November 1921, London on 02 June 1934, Lisbon on 31 October 1951, and Stockholm on 04 July 1967.

of Article 02 mentioned the works as examples, not exclusively, and left the door open for new works that deserve protection. In this regard, the Convention granted the national legislator the ability to identify the protection works and to exclude others (see paragraphs 02 and 04 of the Article, and paragraphs 01 and 02 of Article 02 bis).

B. The protection of the computer software in the light of the modern conventions

To cope with the technological development and the resulting works and innovations, TRIPS Agreement, WTC, and WPPT were made. They are the most important in the modern era.

B.1. The protection of the computer software in the light of TRIPS Agreement 1994:

As previously mentioned, the agreement is one of the appendices of the convention on the establishment of WTO in Marrakech in 1994. It came into force on 01/01/1995. It adopted part of Berne Convention and referred to its provisions in paragraph 01 of Article 09 entitled “Relation to the Berne Convention”, in section 01 entitled “Copyright and Related Rights”, of the 2nd part entitled “Standards Concerning the Availability, Scope, and Use of Property Rights”. Thus, we deduce the implicit recognition of the computer software protection, because it is a literary work protected by copyright law.

In addition, paragraph 01 of Article 10, entitled “Computer Programs and Compilations of Data” provided for protecting the computer programs under the Berne Convention 1971, confirming that the computer software is a literary works, whether in source code or object code (See paragraph 01 of Article 10 of TRIPS Agreement). Thus, TRIPS Agreement removed the vagueness in the provisions of Berne Convention regarding this issue²².

B.2. The protection of the computer software by WTC 1996:

WTC first appeared to protect the online-published works, and to cope with the spread of internet use, which raised issues about its concept and the legal nature of the digital works. The Convention was made on 20 December 1996 under supervision of WIPO. WTC aimed at making balance between the rights of its holders, the right to education, and the right to information. This

²² Oussama Ben Yettou, the protection of the computer software between the copyrights law and the patent law, Magister thesis in laws, intellectual property, Faculty of Laws and Political Sciences, Batna, 2014/2015, p.148.

Treaty adopted the content of Article 02 of Berne Convention, which enumerated the works protected. In addition, it confirmed its adoption of TRIPS dictations regarding the legal nature of the computer software, and considered it a literary work to be protected by copyright law, in accordance with paragraph 01 of Article 02 of Berne Convention²³.

Conclusion

Upon our study to the question of legal protection of the computer software, we found out that:

- ✓ The computer software is not entitled to be patent subject due to the contradiction of its nature, as it is a mental work that processes data and information, and the nature of the patents legal system that covers the producible innovations. Therefore, the international conventions and domestic laws excluded it from the patents cycle.
- ✓ WIPO adopted the protection of computer software in its texts that target a unified national protection.
- ✓ Berne Convention implicitly provided for protecting the computer software, as it adopted the open list system regarding the protectable works.
- ✓ TRIPS Agreement relied on the reference system to adopt Berne Convention, and on TRIPS treaty. In addition, its 10th Article explicitly provided for protecting the computer software.
- ✓ WTC 1996 adopted Article 02 of Berne Convention, which enumerated the protectable works, and TRIPS Treaty regarding the nature of the computer software, which it considered as a literary work in Article 04.

In the end, we can say that despite the international efforts to protect the computer software, protection against electronic crimes does not fully meet expectations.

²³ Osama Bin Yato, Hamza Abdali, Protecting computer programs in light of Algerian legislation and international conventions, Al Maaref Magazine, Volume 10, Issue 19, Amhand Akli University of Bouira, year 2015, p.149.