BRAZIL

GUIDELINES FOR EXAMINING PATENT APPLICATIONS INVOLVING INVENTIONS IMPLEMENTED BY COMPUTER PROGRAM

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TABLE OF CONTENTS

1 Introduction

The purpose of this document is to present the examination guidelines which have been adopted by the INPI to assist the technical examination of patent requirements for inventions implemented by computer program in accordance with the Industrial Property Law (LPI) as well as with the administrative acts in force.
The patent application relating to inventions implemented by computer program, being based on a process, is framed only in the nature of an invention patent. The patent application which takes the utility model, in accordance with Article 9 of the LPI, should relate to: "on object of practical use, which presents a new form or disposition..," which is not the case with inventions implemented by computer program.
As with a patent application for an invention, applications involving creations implemented by computer program should meet the necessary legal requirements, most specifically those of the LPI, notably novelty, inventive activity and industrial application.

2 What is considered an invention

Article 10 of the LPI doesn't consider any of the following as inventions or models of utility: "discoveries, scientific theories, and mathematical methods; purely abstract concepts; plans, principles or commercial, accounting, financial, educational, advertising, lottery and supervisory methods; literary, architectural, artistic and scientific works, or any aesthetic creation, computer programs in themselves; the presentation of information; game rules; operational or surgical methods and techniques, as well as therapeutic or diagnostic methods for the human or animal body; and all or part of the living natural bodies or biological material found in nature, even if isolated therefrom, including the genome or germplasm of any natural living being, and natural biological processes."

A creation is considered an invention when the resources utilized to arrive at the solution of the problem which is being resolved are not found in the field included in sections of Art. 10 of the LPI. In accordance with the current understanding, it is necessary that the invention fit into a technical sector, resolve technical problems, constitute a solution for those problems, and possess a technical effect. In this way, it is necessary that the request shows the technical nature of the problem to be solved, of the solution proposed, and the effect achieved. It is worth mentioning that, to evaluate the material outlined in Art. 10 of the LPI, the claims should be considered in their entirety. For example, a method that recognizes banknotes by their images, colors and texts, is passable for patentability as long as it outlines the techniques for recognizing the patterns. In this case, despite the reference to bank notes and its application to banking, the method does not comply with section III of Art. 10 of the LPI.

For a patent for an invention implemented by a computer program, the framing of the object of the patent application in the exemptions of the sections of Art. 10 does not depend on whether the category of claim is a process or product defined merely by its functionality. For the purposes of analyzing a process implemented by a computer program, it is irrelevant whether such a process is performed in a

general-purpose computer (i.e. a personal computer) or a specific kind of computer (PIC, FPGA, etc.).
The following items will analyze the cases referring to items of Art.10 that may involve creations implemented by computer program

2.1 A Computer Program in itself

A computer program itself, referred to in section V of Art. 10 of the LPI, refers to the literal elements of creation, such as the source code, understood as an organized set of instructions written in natural or code language. The computer program itself is not considered to be an invention, so it is not the object of patent protection because it is merely an expression of a technical solution and is intrinsically dependent on the programming language.
A set of instructions in a language, object code, source code, or source code structure, even if creative, is not considered an invention, even though it provides technical effects. For example, changes in the source code of the program which bring the benefit of greater speed, smaller size (either the source code or the space occupied in memory), modularity, etc. although they are technical effects, belonging to the scope of author's rights, are not considered an invention and therefore are excluded from patentability.
However, an industrial creation (process or product associated with the process) implemented by computer program that solves a problem found in the technique and has a technical effect that does not solely concern how this computer program is written, can be considered an invention.
In the evaluation of the technical effect, we consider the effects achieved throughout all steps developed by the invention implemented by computer program. Examples of technical effects achieved by computer program implemented inventions are: optimization (of runtimes, hardware resources, memory usage, access to a database), user interface enhancement (not merely aesthetic), file management, and data commutation, among others. It is important to note that if technical effects are due to changes in the computer program code, and not in the method,

the creation is not considered an invention.
It should be noted that creations indicated in other sections of Art. 10, whether or not implemented by computer program, are not considered inventions, not because they are implemented by a computer program, but because it is a mathematical method, focusing on section I, Art. 10 of the LPI.
The simple interaction between the computer program and the hardware (e.g. conventional access to memory, buses, input and output devices) does not guarantee that the creation implemented by such a program is considered an invention. It is necessary to discern a technical effect beyond this interaction, since the technical effect of an invention must be intentionally and directly controlled by the proposed invention, regardless of whether this technical effect is realized internally or externally in the processing unit. Therefore, inventions which, for example, the direct intention of which is to cause a reduction in memory access time, better control of a robot element or better coding of a received radio signal, satisfy the criterion of technical effect, even when internal to the computer, as there is in these cases a direct random relation between the invention and such effects.
Although modifications in the way it is written, the computer program generate indirect physical effects, such as variations of electric current, this is not enough to impart a technical character to a creation implemented by computer program.
Section V of art. 10 of the LPI, mentions that the "computer program itself" is not considered an invention, it only separates and distinguishes protection systems when it comes to inventions that may involve computer programs. That is to say, a computer program can be part of a process that achieves a technical effect, which means that there are two objects to be protected: the process that achieves the technical effect and the computer program. It is concluded, therefore, that creations involving computer programs have two forms of protection: the direct author for the computer program and the direct patent for problems that solve technical problems, achieving technical effect and not related to changes in the code.

2.2 Mathematical Methods

A method that solves a unique mathematical problem (e.g. deductions, operations, equations) is not considered an invention, since it affects the matter excluded by section I of Art. 10 of the LPI. The fact that a mathematical method is implemented by a computer program is irrelevant to the framing of such a method in section I of Art. 10 of the LPI. On the other hand, for a method implemented by a computer program involving mathematical concepts to be considered an invention, it is necessary that the method be intrinsically linked to an application having a practical technical character. Thus, a concept that involves a mathematical concept is not immediately a matter excluded by section I of Art. 10 of the LPI. In the examination of the claimed object, if this problem applies the mathematical concept to obtain a technical solution for the resulting effects are technical and not purely mathematical.

For example, a particular method of numerical integration is not considered an invention because it presents purely mathematical results, which is the operation of integration, and is therefore not the object of protection. However, an engine control system that uses this numerical integration technique in order to obtain a result of greater speed of performance or stability, can be considered an invention, since it is applied to a technical problem, produces technical effect and therefore does not is framed as a mathematical method. In this case, the technique of numerical integration is not protected and remains public domain and can be used in other solutions of different technical problems.

Creations involving mathematical concepts can be considered inventions when applied to technical problems and manipulate information associated with physical quantities or abstract data. A method of seismic data filtering that allows noise reduction, a method of image processing for data compression or generation of special effects such as zoom, m method that implements a control that promotes a substantial improvement in the dynamic behavior of a particular vehicle or robot, are examples of methods that manipulate information associated with physical quantities,

respectively seismic, image and measured by motion sensors. Methods involving cryptography or competing data can also be considered as an invention, even if they refer to abstract data, because they refer to technical problems such as data tracking and optimization of hardware resources, rather than to the mathematical method. In this way, an encryption method that uses abstract data in a specific way and has as a result a virtual product (e.g. data protected by a security key) can be considered an invention, since it solves a problem of guaranteeing security of the information that travels in a communication channel.

2.3 Commercial, accounting, financial, educational, advertising, lottery or supervisory methods

In general, a commercial, accounting, financial, educational, advertising, lottery or supervisory method can by implemented by a computer program. However, section III of Art. 10 of the LPI, determines that schemes, plans, principles or methods, that are commercial, accounting, financial, educational, advertising, lottery or supervisory are not considered inventions. The fate of this method to be implemented by computer program is irrelevant to the framing of such a method in section III of Art. 10 of the LPI, including: business feasibility analysis, market analysis, auctions, consortiums, incentive programs, point of sale methods POS, transfer of funds, banking methods, tax processing, insurance, equity analysis, financial analysis, audit methods, investment planning, retirement plans, medical covenants, online shopping methods, among others.

If the subject matter is a method that presents financial, accounting, educational, publicity or lottery and inspection steps, then this method focuses on section III of Art. 10, it is not considered an invention. For example, a method of international money transfer (through a bank or electronic teller machine), which, among its functional stages, includes calculations and rate of service is not considered an invention, since the financial steps of this method are so intrinsically linked to the object, it would not be possible to contemplate their existence separately from these. However, a process that presents some of its

stages that relate to section III of Art. 10 of the LPI may be considered an invention as long as such steps are removed and the remaining material has an application in a technical field producing technical effects.
A method of operating a bank machine characterized by the steps of reading the user's card, identifying and comparing a password with the card information, provides a non-financial technical solution: user authentication. Thus, such a method can be considered an invention. Other solutions concerning communication protocols, encryption applied to bank accounts or conversion of data formats can also be considered inventions. On the other hand, the steps of operating the banking machine relating to the financial part of a method, such as a method of transferring funds or a method of checking balances, are not considered to be invention.

2.4 Therapeutic or diagnostic methods for the human or animal bodies

Methods in which one of the described steps refers to a therapeutic or diagnostic procedure, for application in the human or animal body, are not considered inventions (section VIII, Art. 10 of the LPI).
A method of processing electrocardiographic signals that optimizes the calculation of non-stationary signals allowing the obtainment of parameters that may assist the physician in the diagnosis of pathogenesis can be considered an invention, since such a method is not conclusive as to the result of the diagnosis, nor can it be considered as being applied to the human or animal body. If the proposed method concludes as to the diagnosis of the disease, but has no stage describing the application in the human or animal body, it may be considered an invention.

2.5 Presentation of information

Any criticism implemented by a computer program characterized solely by its information content, such as music, text, image, is considered information presentation, therefore it is covered in section VI of Art. 10 of the LPI. However, creations that present technical functionality that are not mere presentations of information can be

considered inventions. The method associated with the functional aspects of an interface user, which brings technical effects can be considered invention.
The subject matter of a claim defining a graphic interface in which the icons are shown on the upper screen with a scroll bar shown on the right side without any functionality is considered to be information display. On the other hand, a claim that deals with graphical interface that associates personal annotations with snippets of an electronic document through XML tags can configure a technical solution patentable.
When a creation generating coded information has a technical character, it can be considered an invention. Even if the encoded information has a functional and structural relationship to a recording, processing or apparatus medium, these may still be considered as inventions. This is because the object claimed refers to the support of, the process, or the apparatus that presents information and not only to the presentation of the information. A data recording process with specific codification in a medium (HD, CD, DVD, etc.) or a recording process using volumetric characteristics of the medium, thereby increasing the storage capacity, or a recording apparatus (re) employing these processes may be considered an invention. However, a support characterized solely by its informational content is related to section VI of Art. 10 of the LPI. Further information regarding claims involving recording media is found in Section 6.4.

3 Classes of processes in inventions implemented by computer program

From the foregoing section, we conclude that there are three classes of processes related to inventions implemented by computer program. It should be noted that, in the same way as any invention, the processes listed below, in order to be patentable, must comply with Industrial Property Law (LPI) 9279/96, as well as the administrative acts in force, achieve a technical effect and solve a technical problem so that the possibility of granting patents for purely abstract creations is removed.

i) Process which uses physical quantities to generate a product or physical effect

This class encompasses processes that manipulate physical quantities to achieve the transformation or reduction of a product to a different state or into a new product. The fact that a process belongs to this class is an indication that this creation implemented by computer program can be considered an invention.

Examples: Temperature control of a furnace to transform a product; stabilization of the dynamic behavior of a vehicle along a pre-established trajectory; an automatic transmission system in vowels; printing control; control of industrial machines.

ii) Process which uses physical quantities to generate a virtual product

In this class are the processes that manipulate the physical grates converted into digital signals to transform these signals into a product stored in a device.

Examples: Data processing that represent physical characteristics (dimension, color, delay) generating a virtual product (video, music, image), image processing and audio involving the physical quantities amplitude and phase delay.

iii) Process that uses abstract quantities to generate a virtual product

The processes included in this class manipulate abstract quantities, without representing physical quantities, for transforming a virtual product into another virtual product stored in a device. Examples: data compression, encryption, database management, data communication protocols.

4 Algorithm, embedded software and word processors

The concepts of algorithm, embedded software and word processors are recurrently found in claims involving creations implemented by computer program and can generate doubts as to the framing of the creation in the sections of Art. 10 of the LPI.

4.1 Algorithm

An algorithm is a sequence of logical steps to be followed to solve a certain problem. According to this definition, an algorithm consists of a method or process and therefore must be claimed as such. In order to be an invention, it is necessary that such method or process does not fall within the sections of Article 10 of the LPI.

For example, an algorithm (claimed as a method) that stabilizes the movement of a robotic arm by means of control techniques, has the purpose of solving a technical problem producing technical effect and is considered an invention. However, an algorithm that proposes to merely solve a mathematical function is considered a mathematical method, and, therefore, it is not considered an invention because it affects Art. 10 of the LPI.

4.2 Embedded software

The concept of embedded software adopted is that it refers to a computer program that determines the performance of a dedicated device. In this context, the functionality associated with the behavior of this device may be patented in the form of a process (provided such a process is considered an invention), as the dedicated device may be patented in the product form. However, the computer program is not patentable not to be considered an invention.

The fact that a creation is embedded is not a determining criterion to exclude it from Article 10 of the LPI, since the method associated with the behavior of the device may not be considered an invention. However, if the contribution to the state of the art lies in the structural (and not the functional) characteristics of the dedicated device, it may be patentable even if the method is not considered an invention.

4.3 Processing and word processors

Word processors are the software or computer used to edit texts. As a computer software, word processors are not considered to be inventions because they are covered by section V of Art. 10 of the LPI.

On the other hand, word processing is considered a process applied to a text and may be considered an invention, such as an audio or video processing method. For example, a method for compressing text that uses statistical information to represent the text more efficiently is considered an invention. However, a text corrector method, if claimed as a set of linguistic rules, is not considered an invention by section II, Art. 10 of the LPI, since it is a purely abstract conception that concerns the construction of the language itself.

5 Patentability Criteria

5.1 Novelty

For the purposes of examining the novelty of patent applications implemented by computer programs the same rules apply to the examination of novelty of any patent of invention.

5.2 Inventive activity

According to Art. 13 of the LPI, "the invention is endowed with inventive activity whenever, for an expert in the field, it is not evident or obvious from the state of the art."
The fact that the invention resolves new technical problems and reaches new functionalities is an indication that there is inventive activity. Even when the technical problem is not new, it is still possible to have inventive activity.
An invention implemented by a computer program relating to a product / process formerly implemented by specific hardware has no inventive step when it constitutes merely equivalent realizations.
An invention implemented by a computer program relating to a product / process formerly implemented by specific hardware has no inventive step when it constitutes merely equivalent realizations.
Still, the mere automation of an existing manual method (involving only human agents) by an invention implemented by computer program, also has no inventive activity. By mere automation is meant the direct correspondence between the manual and the automated method.
Consider that it is known from the state of the art a method characterized by mixing the compound X with the compound Y. An application claiming an inventive industrial theft formed by the gears A, B, C and allowing automation of this same process can be patented. In addition, the method of operation of the theft and the manner in which the elements affecting theft may be protected in order to implement said mixture, as long as it is considered inventive.
In this case, the protection afforded to such a method impedes the operation of said theft and not to the known method of mixing the technique, therefore it is not a question of protection of a mere automation, since it is

considered inventive in the state of the art. However, a claim claiming a "robbery" method characterized by mixing compound X with compound Y "cannot be protected since the claimed method is not considered to be inventive since it constitutes mere automation of a known method.
In the case of a CAD program which from a list of electronic components determines the best trace of the conductor tracks on a printed circuit board that implements a desired electronic circuit, a claim claiming the method of routing these tracks based on the hierarchy of components optimizing the layout constitutes patented material. The granted patent must therefore refer to the functionality achieved by the hardware and process set implemented by the computer program, responsible for the technical effect achieved and not for the computer program, even if all the hardware described already belongs to the state of the art.
For the purpose of inventive step, the technical effects intrinsic to the invention implemented by computer program must be taken into account. Indirect technical effects are attributes of the computing system and not of the invention. Some of the technical effects achieved are more fruitful of the qualities of the computer being used than properly resulting from the invention, particularly as regards processing speed, ability to process large amounts of data and uniformity and accuracy of results. Thus, it is necessary to distinguish the technical effects achieved by the invention from the technical effects inherited from the computer system used.

5.3 Industrial Application

Inventions implemented by computer program may be claimed as methods and/or products. The fact that a method is implemented by a computer program does not de-characterize its industrial application. In this way, the same rules apply to the examination of the industrial application of any patent of invention.

6 STRUCTURE OF A PATENT APPLICATION FOR AN INVENTION IMPLEMENTED BY COMPUTER PROGRAM

6.1 Title

The title should be concise, clear and precise, identifying the subject of the request contemplating the categories of claims filed. Expressions or words such as: software, computer program, method of doing business, therapeutic method, financial method, because they fit directly in the restrictions present in Article 10 of the LPI, are not accepted.

6.2 Descriptive report

The disclosure of the invention should be clear and sufficient so that one skilled in the art can reproduce the invention. Small source code snippets may be presented if this is considered useful for understanding the invention. It is of fundamental importance that the state of the technique considered relevant is described and that the technical problems are highlighted in a precise and clear way. Thereafter the objects of the invention must be defined and the proposed solution to such problems, or limitations unresolved hitherto, must be explained in a clear, convincing and detailed manner.

Except when there is a respective technical term in Portuguese of common use among the technicians in the assumption, technical terms or abbreviations of foreign language should not be translated. So, usual terms of the technique such as bitmap, boot, buffer, byte, cache, CDMDA, default, desktop, dial-up, drivers, firewall, host, HTML, login, hub, mouse, online, pixel, plug -in, prompt, QPSK, RAM, among others, should not be translated. Once such terms become the correspondents in Portuguese, usually employed in the technique, these are preferred. Other terms that already have common use should be used in Portuguese, such as browser (navegador), bus (barramento), device (dispositvo), database (banco de dados), floppy disk (disquete), hard disk (disco rígido), multimedia (multimedia), network (rede), password (senha), router (roteador), switch (computador), among others.

6.3 Drawings

Drawings are optional, but if so, the computer implemented invention may be described in its main blocks in terms of its functionalities, i.e. the flowcharts of the method implemented by computer program should have their inventive steps presented by words and/or small sentences that represent these features, such as "user inserted the card?". Thus, drawings showing a physical overview of the system, flowcharts describing its main features and data structures, and, if the invention relates to the user interface, should be presented for a better understanding of the invention, some of the principal features of the presentation.

6.4 Claims

Inventions implemented by a computer program may be claimed as process (method) or product (system, apparatus or equipment associated with the process) and must clearly state which type of claim is being referred to.

A process claim involves a set of actions and therefore should not contain the expression "means to" when such an expression can be interpreted as "device for". A product claim must involve the technical means used and not a set of actions. Otherwise, both claims will lack clarity as to the category of claim. It should be noted that the term "means for" does not necessarily imply lack of clarity and definition simply because it is embedded in a process claim (method). For example, a process independent claim directed to a "wireless data transmission method" could contain a sub-step "B" in which "the data are shared between several sub-steps" A, B, C, D, etc. " in a code division multiple access (CDMA) network which includes means for data compression by adopting symmetric arithmetic coding algorithms; the mere fact that this sub-stage contains the expression "means for" does not make the whole claim automatically indefinite or unclear, since a technician in the subject could easily delimit that the subject matter of protection is limited to the use of the "means" that perform the data compression.

The claims may not contain snippets of source code so as not to lead to problems of dubious interpretation in relation to section V of Art. 10 of the LPI. Computer

program claims are not accepted, as this wording directly focuses on section V of Art. 10 of the LPI.
Claims involving material that affects the Art. 10 are not to be considered as focussing on such an article merely because they describe that the desired function or results are achieved by the use of, for example, a computer or a component of a computer (such as a processor), or through internet.
Some claims do not describe the solution of a problem, but the description of the problem itself. Such wording should not be included in the context of the claim because protection should focus on the proposed solution and not on the problem presented.

6.4.1 Process claims

Process claims should be written as a sequence of steps describing the achieved functionalities. For example: "Method for automatic clutch control characterized by the steps of measuring the engine speed , generating a sliding reference signal, comparing the engine speed and the inlet speed, controlling the clutch engagement" Such claims must be written either as a method or as a process, since both refer to a set of steps to achieve a technical result.

6.4.2 Product claims

Product claims must be written in terms of their physical constituents (devices, memories, etc.), or in terms of means plus functions. "means plus functions" are understood as expressions in which the construction contains means or devices for performing functions without defining specific technical characteristics thereof. For example, "means to encode", "device to encode", "encode to encode". It should be noted that a product claim must always refer to its physical elements and not just its function. In cases where the invention relates to different equipment working together, the invention must be defined in a system claim, and the interrelation between such equipment and its functions should be made explicit.
It is not patentable the equipment associated with a creation implemented by computer program, defined in the form of means plus functions, in which all the contribution

resides in material that affects any section of Article 10 of the IPI. Thus, an apparatus for calculating the solution of a differential equation characterized only by means to execute the fourth-order Runge Kutta method is not patentable since its contribution resides in the mathematical method, which focuses on section I of the LPI. An apparatus that performs the simple numerical implementation of a decomposition of a given function by using Wavelet Transform is also not patentable, also focusing on Art. 10 of the LPI.

However, if an apparatus associated with a creation implemented by a computer program that includes material that affects Art. 10 of the LPI is also characterized by its physical components, or which, by their interconnection or specific technical characteristics, perform such functions or methods this may be patentable. In this case, it is necessary to verify if there is contribution in the characteristics of the apparatus. For example, a fee-based pre-paid consumption manager that catches a remote-control device to allow the monitoring and control of inputs by (water, gas, electric power), although it may have a monetary aspect, or it is a control system considered an invention.

Further, if an apparatus claim embodying a method falling within Art. 10 of the LPI contains in its characterizing part only apparatus structural features or defined the interconnections of devices, it may be patentable.

The use of terms such as "means to" in the category of product claim should not be used when it causes uncertainty and lack of clarity. In this case, the claim shall technically specify, instead of the term "means for", the means sought and shall include numerical references to the drawings.

When there is no reasoning, it is forbidden to use the term "means for" because it improperly extends the scope of protection. For example, the expression "means for storing data" should not be permitted when the descriptive report specifies that for the proposed invention the desired results are achieved, there is a need to use a "DRAM" and there are no reasonable grounds for supposing that the invention may function properly with any type of memory.

When a system claim cannot be defined in structural terms it can be described in terms of its functionality. The present invention relates to a system for automatically controlling the transmission of mechanical gear changes comprising a fuel choke and a mechanical gear shift transmission comprising:
i) a device for detecting the effective gear ratio used during each starting operation, and
ii) memory to store the effective gear ratio used during each operation."

6.4.3 Support claim

A memory claim or recording medium characterized by containing a computer program is not considered an invention because its contents relate to Art. 10 of the LPI. For example, claims of the type: "Computer-read recording medium having a recorded data structure characterized by said computer program comprise structures A and B" or "Computer-read recording medium characterized by a computer program." However, a computer read memory having written instructions for execution on a computer comprising steps X, Y, Z is considered to be patentable if such steps do not relate to Art. 10 of the LPI.

A claim claiming physical support (CDROM, Rom, etc.) containing a mathematical, financial, commercial, accounting, educational, advertising, or supervisory, therapeutic or diagnostic method (or computer program implementing it) is not an invention by section I of Article 10 of the LPI, since the method already falls within this section. However, claims relating to a physical carrier are accepted, characterized in that a method claimed in claim 1, wherein said method is considered an invention, is recorded. In this case, it is considered that the physical support does not contain mere presentation of information or computer program.

In the case of an invention, it is the physical data recording medium itself which must be pleaded for its physical characteristics and not for the information contents recorded on it. In addition, supports already known in the art such as CD, DVD, Blu-Ray, pen-drive, etc., with a change in data structure, may be considered inventions. The use of the term "recording media" in the claim is not accepted by making the

claim very comprehensive and ambiguous, as it may refer either to a recording method or to the physical medium (recording medium).

6.5 Summary

The Summary is an effective tool when searching for documents and should allow a quick and accurate location of these documents. The Summary should be concise containing the main technical characteristics of the invention, should indicate the technical sector to which it belongs, allow a clear understanding of the problem and the proposed solution. When illustrated by drawing, the Summary must count reference signs, in parentheses, corresponding to the technical characteristics.

7 DEFINITIONS

Apparatus claim – a category of product claim which is a machine or device described in terms of its functional capabilities or structural characteristics, used to fabricate a product or perform a non-manufacturing process or activity.

Computer – Machine or equipment capable of automatically processing data according to a program and generating results. Usually consists of input, output, storage media and arithmetic, logic and control units.

Firmware – computer program written in non-volatile memory, for example EPROM memory, E2PROM (EEPROM) or FLASH, responsible for lower level routines in microprocessor system such as BIOS routines.

Flowchart – a graphical representation of a given process or workflow.

Hardware – physical components, peripherals and equipment that make up a computer system, for example, boards, CPUs, drives, modems, etc.,

Internet – a set of networks interconnected by gateways and by protocols that make it function as a single virtual network.

Methods of doing business – related to the commercial, accounting, financial, advertising and supervisory methods mentioned in section III of Article 10 of the LPI.

Recording media – physical media, such as floppy disk, CDROM and DVD, capable of being read by computer, where data or the computer program is recorded.

Protocol – set of rules and formats used by two or more computers to exchange information between them.

System – set of units that interact with each other in order to obtain result(s) that cannot be obtained by any of them alone.

Virtual – What is made or simulated through electronic means.