

Examination Guidelines for Computer-Implemented Inventions are now in force

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After a very long wait, the Brazilian Patent Office finally published the Examination Guidelines for computer-implemented inventions, which went into effect on 6 December 2016, date on which they were published in the Brazilian Official Gazette. The guidelines underwent a process of public consultation and the final version introduced no relevant divergence from the draft document that had been distributed. A translation of the guidelines is enclosed.

The Guidelines are divided into 5 main chapters regulating, in sequence:

- what is (not) an invention;
- the classes of computer-implemented inventions;
- the treatment to be given to algorithms, on-board software and text processors;
- the patentability criteria; and
- the structure of an application claiming a computer-implemented invention.

The document recognizes the possibility of having a computer program protected both through Law 9279/96 — the Industrial Property Law (IPL), by a patent claiming the method it consubstantiates, and as a computer program per se through Law 9609/98, which instituted copyright-like protection to computer program code.

Law 9279/96, in its Article 10, defines classes of creations that are not considered to be inventions. Therefore, in principle, nothing that fits one of the fields listed in this article would be patentable.

The set of non-patentable creations specifically commented about in the guidelines comprises mathematical methods; business, accounting, financial, education, publicity, lottery, and supervision or auditing methods; diagnostic or therapeutic methods applied directly to a body; and the presentation of information.

It is to be noted, however, that exceptions to each of these categories are also foreseen, meaning that the bar is not absolute and can be circumvented in some situations. All exceptions are related to the requirement that the invention is inserted in a technical field, solves a technical problem and imparts a technical effect.

The guidelines summarize the exceptions by defining three different classes of methods that are patentable for using physical or abstract variables to create a physical effect or a product, regardless of the product being physical or virtual.

But, maybe, the most relevant point to note is that the guidelines accept as patentable a claim defining digital media characterized by having recorded thereon instructions to execute a method that is considered to be patentable. For several years, we have been advising our clients that this kind of wording was admitted in the draft guidelines, and seeing the confirmation of this advice in the final document is quite rewarding.

As always, we are at your entire disposal for more detailed comments.

MINISTRY OF INDUSTRY AND FOREIGN TRADE AND SERVICES
NATIONAL INSTITUTE OF INDUSTRIAL PROPERTY
RESOLUTION / INPI/PR NO. 158, OF NOVEMBER 28, 2016

Subject: Introducing the guidelines for the examination of patent applications involving computer-implemented inventions.

THE PRESIDENT AND THE DIRECTOR OF PATENTS OF THE NATIONAL INSTITUTE OF INDUSTRIAL PROPERTY – INPI, in the exercise of the powers given by means of Decree 8,854 of September 22, 2016,

Considering the need to establish better practices and procedures during processing of a patent application by the INPI,

Considering that the public administration should observe the principles of efficiency, in order to reduce bureaucracy, and of publicity as a manner to ensure legal certainty to the Industrial Property System in Brazil,

Considering the social interest and the technological and economic development of the country.

DECIDE:

Article 1. To establish the guidelines for examination of patents applications involving computer-implemented inventions, which is appended to the instant Resolution.

Article 2. To those cases not encompassed hereby, the General Guidelines of Examination of Patent Applications will apply.

Article 3. This Resolution comes into force on the date of its publication in the Electronic Journal of Industrial Property.

Luiz Otávio Pimentel
President

Julio César Castelo Branco Reis Moreira
Director of patents

**MINISTRY OF INDUSTRY AND FOREIGN TRADE AND SERVICES
NATIONAL INSTITUTE OF INDUSTRIAL PROPERTY
DIRECTORATE OF PATENTS, COMPUTER PROGRAMS AND INTEGRATED
CIRCUIT TOPOGRAPHIES - DIRPA**

**GUIDELINES FOR THE EXAMINATION OF PATENT APPLICATIONS INVOLVING
COMPUTER-IMPLEMENTED INVENTIONS**

SUMMARY

The purpose of this document is to establish the Guidelines for Examination adopted by the BRPTO [Brazilian Patent and Trademark Office] to assist the technical examination of patent applications involving computer-implemented inventions in accordance with the provisions of the Brazilian Industrial Property Law - IPL No. 9,279/96 and the procedures set forth in the Normative Acts in force.

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1 INTRODUCTION

The purpose of this document is to establish the Guidelines for Examination adopted by the INPI to assist the technical examination of patent applications referring to computer-implemented inventions in accordance with the provisions of the Industrial Property Law – IPL, as well as the administrative acts in force.

A patent application related to computer-implemented inventions, due to being based on a process, has always the nature of patent of invention. The application for a utility model patent, in accordance with the provisions of Article 9 of the IPL must refer to "an object having a practical use that exhibits a new form or arrangement...", and this does not apply to inventions implemented by a computer program.

Like any application for a patent of invention, those applications involving creations that are implemented by a computer program shall fulfill the legal requirements, more specifically those provided for in the IPL, namely the requirements of novelty, inventive step and industrial application.

2 WHAT IS DEEMED TO BE AN INVENTION

The IPL, in its Article 10¹, does not deem the following to constitute inventions or utility models: "discoveries, scientific theories and mathematical methods; purely abstract concepts; commercial, accounting, financial, educational, advertising, lottery and fiscal nature schemes, plans, principles or methods; literary, architectural, artistic and scientific works or any aesthetic creation; computer programs per se; presentation of information; rules of games; operating or surgical techniques and therapeutic or diagnostic methods, for use on the human or animal body; natural living beings, in whole or in part, and biological material, including the genome or germ plasm of any natural living being, when found in nature or isolated therefrom, and natural biological processes".

A creation is deemed an invention when the resources used to solve the problem cannot be found in a field included in any of the items of Article 10 of the IPL. According to the current understanding, an invention must belong to a technical field and must solve technical problems, being the solution to these problems, and must exhibit a technical effect. Thus, the application has to evidence the technical character of the problem to be solved, of the proposed solution and the achieved effects. It should be noted that, in order to assess whether the claimed subject matter falls under Article 10 of the IPL, the claims must be taken into account as a whole. For example, a method to identify banknotes by means of their patterns of images, colors and texts is deemed to be patentable, as it refers to a technique for pattern recognition. In this case, in spite of reciting banknotes and the application thereof in a bank network, the method does not fall under Article 10 (III) of the IPL.

¹ Article 10 - The following are not considered to be inventions or utility models:

I - discoveries, scientific theories and mathematical methods;

II - purely abstract concepts;

III - schemes, plans, principles or methods of a commercial, accounting, financial, educational, publishing, lottery or fiscal nature;

IV - literary, architectural, artistic and scientific works or any aesthetic creation;

V - computer programs per se;

VI - the presentation of information;

VII - rules of games;

VIII - operating or surgical techniques and therapeutic or diagnostic methods, for use on the human or animal body; and

IX - natural living beings, in whole or in part, and biological material, including the genome or germ plasm of any natural living being, when found in nature or isolated therefrom, and natural biological processes.

For a patent application that is related to an invention implemented by a computer program, the fact that the object of the patent application falls under the exceptions set forth in items of Article 10 is irrespective of whether the claim category relates to either a process or a product merely defined by its function. For the purposes of assessing a computer-implemented process, it is irrelevant whether such a process is carried out in a general use computer (personal computer) or in a specific use computer (PIC, FPGA, and so on).

The following items will analyze cases related to items of Article 10 that can involve computer-implemented inventions.

2.1. Computer program per se

The computer program per se, as referred to in Article 10 (V) of the IPL, relates to the literal elements of the creation, such as the source code, understood as constituting an organized set of instructions written in a natural or encoded language. The computer program per se is not considered to be an invention, and therefore is not the object of patent protection as it is a mere 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 deemed to constitute an invention, notwithstanding any technical effects that might be provided thereby. For example, alterations in the program source code, which provide the benefits of higher speed, smaller size (of either the source code or the space occupied in memory), modularity, and so on, in spite of being technical effects, belong to the scope of the computer program per se. The computer program, which is the object of copyright, is not considered to be an invention and is therefore excluded from patentability.

However, an industrial creation (process or product associated with the process) implemented by a computer program, which solves a problem found in the art and achieves a technical effect that is not only concerned with how this computer program is written, can be considered to be an invention. Upon assessing the technical effect, the effects achieved throughout all the steps developed by the computer-implemented invention are taken into account. Examples of technical effects achieved by computer-implemented inventions are: optimization (of run times, hardware resources, memory usage, database access), improvement (not merely aesthetical) of the user interface, file management, data transmission, among others. It is important to note that, if the technical effects result from changes in the code of the computer program, rather than in the method, the creation is not considered an invention.

It should be emphasized that creations that fall under other items of Article 10, whether or not implemented by a computer program, are not deemed to be an invention. For example, a mathematical method implemented by a computer program is not deemed to be an invention, not because it is implemented by a computer program, but due to being a mathematical method, thus contravening Article 10 (I) of the IPL.

The simple interaction between the computer program and the hardware (for example, conventional access to memory, buses, input and output devices) does not ensure that the creation implemented by such a program might be deemed to constitute an invention. It is necessary to perceive a technical effect beyond such interaction since the technical effect of an invention must necessarily be intentional and directly controlled by the proposed invention, regardless of whether such technical effect is carried out externally or internally to the processing unit. Therefore, inventions which have the direct intent, for example, of causing a reduction in the time required access the memory; of better controlling a robotic element; or better encoding a received radio signal do fulfill the

criterion of technical effect, even when occurring internally to the computer, since in these cases there is a direct causal relationship between the invention and these effects.

Although changes in the form in which the computer program is written generate indirect physical effects, such as electric current variations, this is not sufficient to confer a technical character to a creation implemented by a computer program.

Item V of Article 10 of the IPL, by stating that the "computer program per se" is not considered to be an invention only separates and distinguishes the protection systems when one is faced with inventions that can involve computer programs. It is worth mentioning that, a computer program can be part of a process that reaches 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 then concluded that creations involving computer programs can be protected in either of two ways: copyright for the computer program (itself) and patent for processes that solve technical problems, achieving the technical effect that is not related to changes in the code.

2.2 Mathematical Methods

A method that solves a problem that is exclusive of the mathematical field (e.g., deductions, operations, mathematical equations) is not deemed to be an invention as it falls under subject matter that is excluded from protection under item I of Article 25² [sic] of the IPL. The fact that a mathematical method is implemented by a computer program is irrelevant for such a method to fall under article 10 (I) of the IPL.

On the other hand, for a method implemented by a computer program involving mathematical concepts to be considered an invention, such a method has to be intrinsically linked to an application having a practical technical character. Thus, a process involving a mathematical concept is not immediately subject matter excluded from protection in accordance with item I of Article 10 of the IPL. While examining the claimed object, if this process applies the mathematical concept to obtain a technical solution to a technical problem, such a process can be considered an invention provided that the resulting effects are technical rather than purely mathematical.

For example, a particular method of numerical integration is not deemed an invention by presenting purely mathematical results, which is the integration operation, not being therefore subject to patent protection. However, an engine control system that uses this numerical integration technique so as to obtain a result of increased actuation speed or stability can be considered an invention, as it is applied to a technical problem, it produces a technical effect and, therefore, does not represent a mathematical method. In this case, the numerical integration technique is not covered and remains in the public domain and can be used to solve further distinct technical problems.

Creations that involve mathematical concepts may be deemed to constitute an invention when applied to practical technical problems and when they manipulate information associated with physical quantities or abstract data. A method of filtering seismic data that allows the reduction of noise, a method of image processing for data compression or for generating special effects such as zooming, a method implementing a control that promotes a substantial improvement in the dynamic behavior of a certain vehicle or robot, are examples of methods that manipulate information associated with physical quantities, respectively, seismic data, image data and data measured by motion sensors.

Methods involving data encryption or compression can also be deemed to constitute an invention even if they refer to abstract data, as they relate to technical problems such as data security and optimization of hardware resources, rather than the mathematical

² The correct citation would be Article 10.

method itself. Therefore, an encryption method using abstract data in a specific manner and which results in a virtual product (data protected by an encryption key) can be deemed to be an invention, as it solves the problem of ensuring security to information that is communicated through a communication channel.

2.3 Commercial, accounting, financial, educational, advertising, lottery or fiscal nature methods

Generally speaking, a method of commercial, accounting, financial, educational, advertising, lottery or fiscal nature can be implemented by means of a computer program. However, Article 10 (III) of the IPL states that commercial, accounting, financial, educational, advertising, lottery or fiscal nature schemes, plans, principles or methods are not deemed to constitute inventions. The fact that this method is implemented by a computer program is irrelevant for such a method to fall under article 10 (III) of the IPL. Examples of creations that fall under Article 10 (III) of the IPL include: business viability analysis, market analyses, auctions, consortiums, incentive programs, POS (Point of Sale) methods, transfer of funds, banking methods, processing of taxes, insurance, asset analyses, financial analysis, auditing methods, investment planning, pension plans, medical insurance plans, online purchasing methods, methods for selling airway tickets over the Internet, among others.

If the claimed subject matter is a method containing financial, accounting, educational, advertising, lottery or fiscal nature steps, then the method contravenes Article 10 (III), not being deemed an invention. For example, a method for the international transfer of funds (through a banking network or using an automatic teller machine), which among its functional steps includes exchange rate and service fee calculations, is not deemed to constitute an invention, as the financial steps of such a method are so intrinsically associated with the object that it would not be possible for one to conceive its existence separately from these steps. However, a process having some steps falling under item III of article 10 of the IPL can be deemed an invention provided that these steps are removed and the remaining subject matter finds application in a technical field to produce 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 card information, provides a non-financial technical solution: user's authentication. Therefore, this method can be deemed to be an invention. Other solutions related to communication protocols, encryption applied to bank accounts or data format conversion, can also be considered to be inventions. On the other hand, steps for operating a bank machine relative to the financial part of a method, such as, for example, a method of funds transfer or a method for checking balances, are not deemed to constitute an invention.

2.4 Therapeutic or diagnostic methods for use on the human or animal body

Methods where one of the described steps refers to a therapeutic or diagnostic procedure for use on the human or animal body are not deemed to constitute inventions (item VIII, article 10 of the IPL).

A method of processing electrocardiographic signals that optimizes the calculation of non-stationary signals allowing for one to obtain parameters that can assist a physician to diagnose pathologies can be considered an invention, as this method is not conclusive as to the outcome of the diagnosis, and neither can be considered to be applied on the human or animal body. If the proposed method provides a conclusion as to the disease diagnosis, but contains no steps describing the application on the human or animal body, the same can be considered an invention.

2.5 Presentation of information

Any creation implemented by a computer program solely characterized by the content of the information, such as music, text, image, is considered to be presentation of information and therefore contravenes Article 10 (VI) of the IPL. Nevertheless, creations that exhibit technical functionality that are not the mere presentation of information can be deemed an invention. The method associated with the functional aspects of a user interface, that provide technical effects, can be deemed an invention.

The subject matter claimed in a claim that defines a graphic interface in which icons are displayed on the upper part of the screen with a scroll bar shown at the right hand side, with no function, is deemed to constitute presentation of information. On the other hand, a claim relative to a graphic interface that associates personal notes to passages of an electronic document through XML tags can configure a technical solution that is liable to patent protection.

When a creation that generated encoded information has a technical character, it can be deemed to constitute an invention. Also, if the encoded information has a functional and structural relation with the recording carrier, process or apparatus, they can also be deemed to constitute an invention. This is because the claimed subject matter is related to the carrier, the process or the apparatus that presents information, not only the presentation of information per se. A process for recording data with a specific encoding on a carrier (HD, CD, DVD, and so on) or a recording process that uses volumetric features of the carrier, thereby increasing the storage capacity, or a recording apparatus (recorder) employing these processes may be deemed to constitute an invention. Nevertheless, a carrier that is only characterized by its informational content contravenes Article 10 (VI) of the IPL. Further information relative to claims involving recording carrier can be found at section 6.4.

3 CLASSES OF PROCESSES IN COMPUTER-IMPLEMENTED INVENTIONS

From the exposed in the previous section, it can be concluded that there are three classes of processes related to computer-implemented inventions. It should be noted that similarly to any invention, in order for the processes listed below to be patentable, they should agree with the Industrial Property Law (IPL) 9279/96, as well as the normative acts in force, achieving a technical effect and solving a technical problem so as no patents are granted for purely abstract creations.

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

In this class are processes that manipulate physical quantities to transform or reduce a product to a different state or into a new product. The fact that a process belongs to such a class indicates that said computer-implemented creation can be deemed an invention. Examples: temperature control of a furnace for transforming a product; stabilization of the dynamic behavior of a vehicle along a pre-established path; an automatic transmission system in vehicles; printing control; control of industrial machines;

ii) Process that uses physical quantities to generate a virtual product:

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

Examples: processing of data representing physical characteristics (dimension, color, delay) generating a virtual product (video, music, image), image and audio treatment involving physical quantities of amplitude and phase delay;

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

Processes included in this class manipulate abstract quantities, which are those created in the process environment without representing physical quantities, to transform a virtual product into another virtual product stored in a device. Examples: data compression, encryption, database management, data communication protocols.

4 ALGORITHM, ONBOARD SOFTWARE AND TEXT PROCESSORS

The concepts of algorithm, onboard software and text processors are often found in applications involving computer-implemented creations and can cause doubt as to the classification of the creation into items of Article 10 of the IPL.

4.1 Algorithm

Algorithm is a sequence of logical steps to be followed in order to solve a given problem. According to this definition, an algorithm consists of a method or a process and, therefore, should be claimed as such. To be deemed an invention, such a method or process must not fall under the provisions of items of Article 10 of the IPL.

For example, an algorithm (claimed as a method) that stabilizes the motion of a robotic arm by way of control techniques is intended to solve a technical problem by producing a technical effect and is deemed to be an invention. However, an algorithm merely intended to solve a mathematical function is deemed to be a mathematical method and, therefore, cannot be considered an invention for falling under the provisions of Article 10 of the IPL.

4.2 Onboard Software

The adopted concept of onboard software is that which refers to a computer program that dictates the behavior of a dedicated device. In this context, both the functionality associated with the behavior of the device can be the object of patent protection as a process (provided that such a process is considered an invention) and the dedicated device can be patented as a product. Nevertheless, the computer program is not patentable for not being deemed an invention.

The fact of a creation being onboard is not a determining criterion to exclude it from Article 10 of the IPL, since the method associated with the behavior of the device cannot be deemed an invention. Nonetheless, if the contribution to the state of the art lies in the structural characteristics (rather than the functional ones) of the dedicated device, the same can be patentable even if the method is not deemed an invention.

4.3 Text processors and processing

Text processors are the software or computer program that are used to edit text. Due to being a computer program, text processors are not deemed to constitute inventions for contravening the provisions of Article 10 (V) of the IPL. On the other hand, processing of text is considered to be a process that is applied to a text and can be deemed an invention, such as a method for processing audio or video. For example, a method for compressing text using statistical information to represent the text in the most efficient manner is considered to be an invention. Nevertheless, text correction method, if claimed as a set of linguistic rules, is not deemed to constitute an invention under the provisions of Article 10 (II) of the IPL due to consisting of a purely abstract conception relatively to the construction of the language itself.

Text processing methods that provide technical effects to be implemented in text processors may be deemed to constitute inventions. For example, a method to search

for words in a text processor that uses indexes following a specific methodology capable of providing faster and more efficient results, can be deemed to constitute an invention.

5 PATENTABILITY CRITERIA

5.1 Novelty

For the purposes of novelty examination of patent of invention applications implemented by computer programs the same rules as used for examining novelty of any patent of invention are applicable.

5.2 Inventive step

According to Article 13 of the IPL, "an invention shall be taken to involve inventive activity when, for a person skilled in the art, it does not derive in an evident or obvious manner from the state of the art".

The fact that the invention solves new technical problems and achieves new functionalities is an indication of inventive step. Even when the technical problem is not new, there is nevertheless a possibility of existence of inventive step.

An invention that is implemented by a computer program related to a product/process formerly implemented by specific hardware may not evidence inventive step where it provides achievements that are merely equivalent.

Moreover, the mere automation of an already existing manual method (which only involves human agents), by way of an invention implemented by a computer program also fails to evidence inventive step. By mere automation it is intended the direct correspondence between the manual and the automated methods.

Considering that a method that is characterized by mixing compound X with compound Y is known in the art. An application covering an inventive industrial robot formed by gears A, B, C that enables automation of the same process can be patented. Also, a method to operate the robot and the manner by which the elements comprising the robot should interact with each other so as to implement said mixture can be patented as long as they are deemed inventive. In this case, protection conferred to this method lies on the operability of said robot and not precisely on the mixing method that is known in the art, and therefore it does not relate to protection being granted to a mere automation, since it is deemed inventive over the prior art. However, a claim covering a "method implemented by a robot characterized by mixing compound X with compound Y" cannot be covered since the claimed method is not deemed inventive as it constitutes a mere automation of an already known method.

In the case of a CAD program that determines, based on a list of electronic components, the preferred path design of conducting lines on a printed circuit board that implements a desired electronic circuit, a claim that covers the method for routing these lines based on the hierarchy of the components to optimize the layout constitutes patentable subject matter. The granted patent should therefore refer to the functionality achieved by the set formed by the hardware and the process implemented by a computer program, that accounts for the technical effect having been achieved, rather than the computer program per se, even if all the hardware described therein is already contemplated in the prior art.

For the purposes of inventive step, there should be taken into account the intrinsic technical effects of the invention implemented by a computer program. Indirect technical effects are attributes of the computing system not of the invention. Some of the achieved technical effects are the result of qualities of the computer being used rather than the actual results of the invention, particularly concerning the processing speed, the ability

to process large amounts of data and uniformity and precision of the results. Therefore, one must distinguish the technical effects achieved by the invention and the technical effects derived from the computing system that is used.

5.3 Industrial application

Inventions that are implemented by computer programs can be claimed as methods and/or products. The fact of a method being implemented by a computer program does not deprive the same of its industrial application. Therefore, the same rules apply to examination of industrial application of any patent of invention.

6 STRUCTURE OF A PATENT APPLICATION FOR A COMPUTER PROGRAM IMPLEMENTED-INVENTION

6.1 Title

The title should be concise, clear and precise, identifying the object of the application, contemplating the categories of the claims. Expressions or words such as: software, computer program, method of conducting business, therapeutic method, financial methods, due to falling under the restrictions present in Article 10 of the IPL, are not acceptable.

6.2 Specification

Disclosure of the invention should be clear and sufficient to enable a skilled person to reproduce the invention. Small sections of the source code may be presented if deemed useful to the understanding of the invention.

It is a point of fundamental importance that the prior art deemed relevant be described and that the technical problems be pointed out in a clear and precise manner. Subsequently, the objects of the invention should be defined and the solution that is proposed for such problems or limitations not formerly solved should be explicitly stated in a clear, convincing and detailed manner.

Except when there exists a corresponding technical term in Portuguese of common use among the person skilled in the art, technical terms or acronyms in a foreign language should not be translated. Thus, terms that are common in the art such as, for example, *bitmap*, *boot*, *buffer*, *byte*, *cache*, *CDMA*, *default*, *desktop*, *dial-up*, *drivers*, *firewall*, *host*, *HTML*, *login*, *hub*, *mouse*, *online*, *pixel*, *plug-in*, *prompt*, *QPSK*, *RAM*, *inter alia*, should not be translated. Once these terms start having corresponding terms in Portuguese, which are usually employed in the art, these will be preferred. Other terms that are already of common use should be used in Portuguese, such as: *browser* (navegador), *bus* (barramento), *device* (dispositivo), *database* (banco de dados), *floppy disk* (disquete), *hard disk* (disco rígido), *multimedia* (multimídia), *network* (rede), *password* (senha), *router* (roteador), *switch* (comutador), among others.

6.3 Drawings

The drawings are optional, however, if applicable, the invention implemented by computer can be described in its main blocks in terms of its functionalities, that is, the flow charts of the method implemented by a computer program should have the inventive steps thereof presented by means of keywords and/or small sentences that represent these functionalities, such as, for example, *"did the user insert the card?"*. Therefore, there should be presented, for a better understanding of the invention, drawings depicting an overview of the system in physical terms, flow charts describing the main

functionalities thereof and data structures, and if the invention refers to a user interface, some of the main display screens.

6.4 Claims

Inventions that are implemented by computer programs may be claimed as a process (method) or product (system, apparatus or equipment associated with the process) and should clearly indicate to which type of claim it refers.

A process claim should seek protection for a set of actions and, therefore, should not contain the expression "*means to*" when such expression can be interpreted as "*device to*". A product claim should seek the technical means used, rather than a set of actions. Otherwise, both claims will be unclear as to the category of the claim. It should be noted that the expression "means to" does not necessarily lead to lack of clarity and definition due to being included into a process (method) claim. For example, an independent process claim directed to a "method of wireless data transmission" could contain among several sub-steps "A, B, C, D. etc", a substep "B" in which "data is shared on a code division multiple access (CDMA) network including means to compress data using symmetric algorithms of arithmetic coding;" wherein the simple fact that the substep contains the expression "means to" does not cause the claim to be automatically indefinite or unclear, given that a skilled person could easily determine that the subject matter to be protected is limited to the use of the "means" to perform data compression.

Claims cannot contain portions of source codes so as not to lead to issues of doubtful interpretation under Article 10 (V) of the IPL. Computer program claims cannot be accepted since this wording directly falls under item V of Article 10 of the IPL.

Claims involving subject matter that falls under Article 10 will still be deemed to fall under this article if they only describe that the function or desired results are achieved by the use, for example, of a computer or computer component (such as a processor), or over the Internet.

Some claims do not describe the solution to a problem, but the description of the problem per se. This wording should not be present in the set of claims since protection should be given to the proposed solution rather than the presented problem.

6.4.1 Process claims

Process claims should be described as a sequence of steps describing the achieved functionalities. For example: "A method for automatically controlling a clutch characterized by the steps of measuring the engine speed, generating a slip reference signal, comparing the engine speed and the inlet rate, controlling the clutch actuation". These claims should be drafted as a method or process claim, since both of them refer to a set of steps to achieve a technical result.

6.4.2 Product claims

Product claims should be written in terms of their physical constituents (devices, memories, etc), or in terms of means plus function. "Means plus function" are intended to be expressions where the construction contains means (modes) or devices to perform functions without specifically defining the technical features thereof. For example, "means to encode", "device to encode", "encoder to encode". It should be noted that a product claim should always refer to the physical elements thereof, not only its function. In cases where the invention relates to different apparatuses working together, the invention must be defined in a system claim and the interrelation between these apparatuses and their functions should be clarified.

The apparatus associated with a creation implemented by a computer program, as defined in the form of means plus function where the entire contribution thereof lies on subject matter that falls under any of the items of Art. 10 of the IPL is not patentable. Therefore, an apparatus for solving a differential equation only characterized by means to execute the fourth-order Runge-Kutta method is not liable to patent protection as the contribution thereof lies on a mathematical method, which falls under item I of Article 10 of the IPL. An apparatus that performs the mere numerical implementation of a decomposition of a given function by using the Wavelet Transform is also not liable to patent protection for falling under Article 10 of the IPL.

Nevertheless, if an apparatus associated with a computer-implemented creation that includes subject matter that falls under Article 10 of the IPL is further characterized by their physical components, which due to the interconnection or specific technical features thereof carry out these functions or methods, it can be patentable. In this case, it is necessary to verify whether there is a contribution in the apparatus features. For example, a fee-based pre-paid input consumption manager that is comprised of a remote control device to enable monitoring and control of the supplied inputs (water, gas, electric power), notwithstanding the fact of comprising a monetary aspect, that is, the charging for consumption, consists of a control system that is deemed to be an invention.

Also, if a claim for an apparatus that implements a method that falls under Article 10 of the IPL only contains in the characterizing portion thereof structural characteristics of an apparatus or defines interconnections between devices, it can be patentable. The use of terms such as "means to" in a product claim category should be avoided when it leads to lack of definition and clarity. In this case, instead of the expression "means to" the claim should technically specify the claimed means and should include the numeric references included in the drawings. Where there is no support, the use of the expression "means to" is forbidden, as it unduly broadens the scope of protection. For example, the expression "means to store data" should not be allowed when the specification specifies that for the proposed invention to achieve the intended results, there is the need for using a "DRAM memory" and there are no reasonable motivations to believe that the invention could work properly with any type of memory.

Where a system claim cannot be defined in structural terms, it can be described in terms of its functionality. Example: "A system for automatically controlling a mechanical change-gear transmission comprising a fuel throttle, a change-gear mechanical transmission characterized in that it comprises: i) a device for detecting the effective gear ratio used during each start operation, ii) a memory for storing the effective gear ratio used during each start operation".

6.4.3 Carrier claim

A memory or recording media claim characterized by containing a computer program is not deemed to be an invention as its content falls under Article 10 of the IPL. For example, claims of the type: "A computer-readable recording carrier having a recorded data structure characterized in that said computer program comprises structures A and B" or "A computer-readable recording carrier characterized by a computer program" are not acceptable. However, a computer-readable memory having recorded therein instructions for execution on a computer comprising steps X, Y, Z is deemed patentable if such steps do not fall under Article 10 of the IPL.

A claim for a physical carrier (CDROM, ROM, and so on) containing a mathematical, financial, commercial, accounting, educational, advertising, or fiscal nature, therapeutic or diagnostic method (or the computer program implementing it) does not represent an invention under item I of Article 10 of the IPL, since the method already falls under said provisions. However, claims related to a physical carrier characterized in that it contains recorded therein a method as claimed in the preceding claim are acceptable, provided

that this method is considered an invention. In this case, the physical carrier is deemed to not contain mere presentation of information or computer program.

In the case of an invention that refers to the physical carrier per se for recording data, it should be claimed by means of their physical characteristics rather than by the information content recorded therein. In addition, carriers already known in the state of the art such as CD, DVD, Blu-Ray, pen-drive, etc., with an alteration in the data structure can be deemed an invention. The use of the expression "*recording means*" in the claim is not acceptable for rendering the claim too broad and ambiguous, as it can both refer to a recording method and the physical medium (recording carrier).

6.5 Abstract

The abstract is an effective instrument for searching documents and should allow for their fast and correct identification. The abstract should be concise containing the main technical features of the invention and should indicate the technical field to which the invention belongs and enable a clear understanding of the problem and the proposed solution. When illustrated by means of drawings, the abstract should contain reference signals, between brackets, corresponding to these technical features.

7 DEFINITIONS

Apparatus claim - a category of product claim that is a machine or a device described in terms of their functional abilities or structural characteristics used to manufacture a product or perform a process or non-manufacturing activity.

Computer - machine or equipment that is able to automatically process data in accordance with a program and generating results. It usually consists of an input, an output, storage means and arithmetic, logical and control units.

Firmware - computer program recorded in a non-volatile memory, for example, EPROM, E2PROM (EEPROM) or FLASH memory, which is responsible for lower level routines in the micro processed system such as for example, BIOS routines.

Flow chart - a graphical representation of a certain process or work flow

Hardware - physical components, peripheral components and equipment comprising a computer system, for example, boards, CPU, drives, modem, etc.

Internet - set of networks interconnected by *gateways* and by protocols that cause it to function as a single virtual network.

Methods of making business - related to commercial, accounting, financial, advertising and fiscal nature methods mentioned in Article 10 (III) of the IPL.

Recording media - physical carrier, such as a floppy disk, CDROM and DVD, which can be read by a computer, where data or the computer program is recorded.

Protocol - set of rules and formats used by two or more computers for exchanging information with each other.

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

Virtual - That which is made or simulated through electronic means.