

(1) PROVISIONS OF LAW ON THE SCOPE OF THE EXCLUSION FROM
PATENTABILITY OF PLANTS

ALBANIA: Article 5 (5) (a), (b) and (c) of the Law No. 9947 of 07/07/2008 "On Industrial Property"

Article 5 - patentable inventions

5. Biotechnological inventions shall also be patentable if they concern:

- a) biological material which is isolated from its natural environment or produced by means of a technical process even if it previously occurred in nature;
- b) plants or animals if the technical feasibility of the invention is not confined to a particular plant or animal variety;
- c) microbiological or other technical process, or a product obtained by means of such a process other than a plant or animal variety;

ALGERIA: Article 8(1) of the Ordinance No. 03-07 of 19/07/2003

8. En vertu de la présente ordonnance, les brevets d'invention ne peuvent pas être obtenus pour :

- 1) les variétés végétales ou les races animales, ainsi que les procédés essentiellement biologiques d'obtention de végétaux ou d'animaux;

ANTIGUA AND BARBUDA: Section 2 (2) (iv), (v) and (vi) of the Patents Act No. 23 of 29/12/2003

2. (2) The following, even if they are inventions within the meaning of subsection (1), shall be excluded from patent protection:

(iv) plants and animals other than micro-organisms;

(v) essentially biological processes for the production of plants or animals other than non-biological and microbiological processes;

(vi) plant varieties;

ARGENTINA: Article 6(g) and 7(b) of the Law No. 24.481 of 23/05/1995 on Patents and Utility Models (as last amended by Law No. 25.859)

Artículo 6 - No se considerarán invenciones para los efectos de esta ley:

g) Toda clase de materia viva y sustancias preexistentes en la naturaleza.

Artículo 7 - No son patentables:

b) La totalidad del material biológico y genético existente en la naturaleza o su réplica, en los procesos biológicos implícitos en la reproducción animal, vegetal y humana, incluidos los procesos genéticos relativos al material capaz de conducir su propia duplicación en condiciones normales y libres tal como ocurre en la naturaleza.

ARMENIA: *Article 10 (3) (a) and (e) of the Industrial Property Law of 10/06/2008*

(3) Within the meaning of this Law, the following shall not constitute patentable inventions:
(a) plant and animal varieties, as well as the natural biological processes of their raising;
(e) processes for modifying the genetic identity of animals, as well as animals resulting from such processes.

AUSTRALIA: *Section 18 (3) and (4) of the Patents Act No. 83 of 1990 as last amended by Act No. 106 of 2006*

18 Patentable inventions

(3) For the purposes of an innovation patent, plants and animals, and the biological processes for the generation of plants and animals, are not patentable inventions.

(4) Subsection (3) does not apply if the invention is a microbiological process or a product of such a process.

AUSTRIA: *Section 2 3) of the Patents Law BGBl. No.259/1970 as last amended by BGBl. No. 143/2001 (version of 2011 not available in English)*

Section 2 - Exceptions to Patentability

Patents shall not be granted in respect of:

3. plant or animal varieties (animal races) or essentially biological processes for the production of plants or animals; these exceptions shall not apply to microorganisms as such nor to microbiological processes and the products obtained by means of such processes.

AZERBAIJAN: *Article 7 (1) and (8) of the Law on Patents of 25/07/1997*

Article 7 - Conditions of patentability for invention

1. The following subject matter may be considered invention:

- strain of a microorganism;
- plant or animal cell culture;
- the use of a know device, process, substance, strain of microorganism for new purposes.

8. The following subject matter shall not be deemed inventions:

- plant varieties and animal breeds (this provision shall not apply to microbiological processes or to products which are obtained through such processes);

BAHAMAS: *Section 9 (1) (b) of the Industrial Property Act of 1965 - Cap. 324*

Refusal of application in certain cases.

9. (1) If it appears to the Registrar General in the case of any application for a patent.

(b) that it claims as an invention plants or animal varieties or essentially biological processes for the production of plants or animals,

he shall refuse the application.

BAHRAIN: Article 3 (1) and (2) of Law No. (14) for the year 2006 Amending some Provisions of Law Number (1) of the Year 2004 In respect of Patents and Utility Models

Article 3

(A) A patent shall not be granted in respect of:

1- Any invention which prohibition of commercial use in the Kingdom of Bahrain is imperative for the protection of public order or principles of morality; including the protection of humans life or health or that of animals or plants or to avert causing serious harm to the environment.

2- Animals

BARBADOS: Section 11 (1) (e) of the Patents Act No. 18, Cap. 314, of 26/07/2001

Unpatentable inventions

11. (1) Whether or not they constitute an invention within the meaning of this Act, the following are not patentable under this Act, namely:

(e) plant varieties, animal varieties and essentially biological processes for the production of plants other than microbiological processes and the products of those processes;

BELARUS: Article 2 (3) of the Law No. 160-Z of 16/12/2002 on Patents for Inventions, Utility Models, Industrial Designs, as last amended on 24/12/2007

Article 2 - The Conditions of Granting the Legal Protection to the Invention

3. In accordance with the present Law the following are not recognized patentable:

- the sorts of plants and breeds of animals;

BELGIUM: Article 4 of the Patent Law of 28/03/1984 (Consolidated version as of 01/01/2010)

Article 4

§ 1er. [Ne sont pas brevetables :

1) les variétés végétales et les races animales ;

2) les procédés essentiellement biologiques pour l'obtention de végétaux ou d'animaux.]

[§ 1^{er} bis. Les inventions portant sur des végétaux ou des animaux sont brevetables si la faisabilité technique de l'invention n'est pas limitée à une variété végétale ou à une race animale déterminée.]

[§ 1^{er} ter. Le § 1er, 2), n'affecte pas la brevetabilité d'inventions ayant pour objet un procédé microbiologique, ou d'autres procédés techniques, ou un produit obtenu par ces procédés.]

BOSNIA AND HERZEGOVINA: Article 6 (4) and (5) of the Patent Law of 28/05/2010

Article 6 - (Patentable Invention)

(4) According to the conditions laid down in paragraph (1) of this Article, an invention which concerns plants and animals shall be regarded as patentable if the technological feasibility thereof is not confined to a certain animal variety or animal breed and if the process for carrying out the invention is not essentially biological.

(5) A process for the production of plants or animals referred to in paragraph (4) of this Article is essentially biological if it entirely consists of natural processes such as crossing or selection.

BOTSWANA: Section 9 (2) (c) and (d) of the Industrial Property Act of 24/04/2010

Matter excluded from patent protection

9 (2) For the purposes of this Act, the following shall not be protected by patents, even if they are inventions:

(c) plants and animals other than micro-organisms;

(d) essentially biological processes for the production of plants or animals.

BRAZIL: Article 10 (IX) and 18 of the Industrial Property Law No. 9.279 of 14/05/1996 (as last amended by Law No. 10.196, of 14/02/2001)

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

IX. all or part of natural living beings and biological materials found in nature, even if isolated therefrom, including the genome or germoplasm of any natural living being, and the natural biological processes.

18. The following are not patentable:

I. anything contrary to morals, standards of respectability and public security, order and health;

II. substances, materials, mixtures, elements or products of any kind, as well as the modification of their physical-chemical properties and the respective processes for obtainment or modification, when resulting from the transformation of the atomic nucleus; and

II. all or part of living beings, except transgenic microorganisms that satisfy the three requirements of patentability—novelty, inventive step and industrial application—provided for in Article 8 and which are not mere discoveries.

Sole Paragraph. For the purposes of this Law, transgenic microorganisms are organisms, except for all or part of plants or animals, that express, by means of direct human intervention in their genetic composition, a characteristic normally not attainable by the species under natural conditions.

BULGARIA: *Articles 7 (1) 3) and 4) and 7a (3) and (4) of the Law on Patents and Utility Model Registration No. 27/2 of 1993 as last amended on 20/07/2007*

Exceptions to Patentability

Article 7

(1) Patents shall not be granted for:

3. plant or animal varieties;
4. essentially biological processes for obtaining plants and animals.

Patentability of biotechnological inventions

Art. 7a

(3) Inventions relating to plants or animals shall be considered patentable, if the technical realization of the invention is not reduced to a certain plant or animal variety.

(4) The prohibition under Art. 7, paragraph 1(4) shall not apply to the patentability of inventions relating to microbiological or other technical processes or products obtained by such processes, provided that they satisfy the requirements of Art. 6(1).

BURUNDI: *Article 17 of the Law No. 1/13 of 28/07/2009 on Industrial Property*

Article 17 - The following shall be excluded from patent protection:

- Plants and animals, including parts thereof, other than microorganisms, and essentially biological processes for the breeding of plants and animals and parts thereof, other than non-biological and microbiological processes;
- Animal breeds and plant varieties;

CANADA: Article 2 and 27(8) of the Canadian Patent Act (R.S.C., 1985, c. P-4)

Article 2: *"invention"* means any new and useful art, process, machine, manufacture or composition of matter, or any new and useful improvement in any art, process, machine, manufacture or composition of matter;

Article 27 (8): No patent shall be granted for any mere scientific principle or abstract theorem.

CAMBODIA: *Article 4 (v) and (vi) of the Law on Patents, Utility Models and Industrial Designs of 22/01/2003*

Article 4

The following inventions shall be excluded from patent protection:

(v) plants and animals other than micro-organisms, and essentially biological processes for the production of plants or animals;

(vi) plants varieties.

CAPE VERDE: Article 15 (1) (c) and (e), (2), and (3) of the Industrial property code, Law Decree No. 4/2007 of 20/08/2007

Artigo 15
Casos especiais de patenteabilidade

1. Pode ser patenteada:

c) Uma invenção que tenha por objecto vegetais ou animais, se a sua exequibilidade técnica não se limitar a uma determinada variedade vegetal ou raça animal;

e) Uma invenção que tenha por objecto um processo microbiológico ou outros processos técnicos, ou produtos obtidos mediante esses processos.

2. Entende-se por processo essencialmente biológico de obtenção de vegetais ou de animais qualquer processo que consista, integralmente, em fenómenos naturais, como o cruzamento ou a selecção.

3. Entende-se por processo microbiológico qualquer processo que utilize uma matéria microbiológica, que inclua uma intervenção sobre uma matéria microbiológica ou que produza uma matéria microbiológica.

CHILE: *Article 37 (b) and (f) of the Industrial Property Law No. 19.039 of 24/01/1991 (consolidated version of 2005 as last amended on 2007)*

Artículo 37 - No se considera invención y quedarán excluidos de la protección por patente de esta ley:

b) Las plantas y los animales, excepto los microorganismos que cumplan las condiciones generales de patentabilidad. Las variedades vegetales sólo gozarán de protección de acuerdo con lo dispuesto por la ley N° 19.342, sobre Derechos de Obtentores de Nuevas Variedades Vegetales. Tampoco son patentables los procedimientos esencialmente biológicos para la producción de plantas y animales, excepto los procedimientos microbiológicos. Para estos efectos, un procedimiento esencialmente biológico es el que consiste íntegramente en fenómenos naturales, como los de cruce y selección.

f) Parte de los seres vivos tal como se encuentran en la naturaleza, los procesos biológicos naturales, el material biológico existente en la naturaleza o aquel que pueda ser aislado, inclusive genoma o germoplasma. Sin embargo, serán susceptibles de protección los procedimientos que utilicen uno o más de los materiales biológicos antes enunciados y los productos directamente obtenidos por ellos, siempre que satisfagan los requisitos establecidos en el artículo 32 de la presente ley, que el material biológico esté adecuadamente descrito y que la aplicación industrial del mismo figure explícitamente en la solicitud de patente.

CHINA: *Article 25 (4) of the Patent Law of 28/12/2008*

Article 25 - Patent rights shall not be granted for any of the following:

(4) animal or plant varieties

The patent right may, in accordance with the provisions of this Law, be granted for the production methods of the products specified in Subparagraph (4) of the preceding paragraph.

COSTA RICA: Article 1 (3) and (4) (c) and (d) of the Law No.6867 of 25/04/1983 as last amended on 12/10/2000

Artículo 1 - Invenciones

3. Las obtenciones vegetales tendrán protección mediante una ley especial.

4. Se excluyen de la patentabilidad:

c) Las plantas y los animales.

d) Los procedimientos esencialmente biológicos para la producción de plantas o animales.

CROATIA: Articles 5 (4) and (5) and 6 1) of the Patent Act No. 173/2003 of 31/10/2003 as last amended by Law OG No 76/2008 of 23/07/2007

Article 5 - Patentable inventions

(4) According to the conditions set out in paragraph (1) of this Article, an invention which concerns plants or animals shall be considered patentable if the technical feasibility of the invention is not confined to a particular plant or animal variety and if the process for carrying out the invention is not essentially biological.

(5) A process for the production of plants and animals referred to in paragraph (4) of this Article is essentially biological if it entirely consists of natural processes such as crossing or selection.

Article 6 - Exclusion from patentability

Excluded from patent protection shall be:

1. inventions which concern animal breeds, plant varieties and essentially biological processes for the production of plants or animals, with the exception of inventions which concern non-biological and microbiological processes and products resulting from such processes, as provided for in Article 5, paragraph (4) of this Act; a microbiological process shall imply, under this Act, any process involving or performed upon or resulting in microbiological material.

CUBA: Articles 37 2) and 4) and 39 1) and 2) of the Decree-Law No. 68 of 14/05/1983) on Inventions, Scientific Discoveries, Industrial Designs, Trademarks and Appellations of Origin

Artículo 37

Se reconocen como objetos de invención:

2) Las variedades vegetales y las razas animales.

4) Las cepas de microorganismos.

Artículo 39

Se le concede Certificado de Autor de Invención exclusivamente a las invenciones que consisten en:

- 1) Variedades vegetales y razas de animales.
- 2) Cepas de microorganismos.

CZECH REPUBLIC: Section 4 (b) of the of the Law on Inventions, Industrial Designs and Rationalization Proposals No. 527 of November 27/11/1990 as last amended by Law No.116 of 06/04/2000 and Sections 2 (b) and (c) and 3 (c) of the Law of 21/06/2000, on the Protection of Biotechnological Inventions

Section 4
Exclusions from patentability

Patents shall not be granted in respect of:

b) plant or animal varieties or essentially biological processes for the production of plants or animals; this provision shall not apply to microbiological processes and the products thereof.

Law of 21/06/2000, on the Protection of Biotechnological Inventions

Section 2
Patentable biotechnological inventions

Biotechnological inventions are patentable, if they concern:

b) plants or animals, if the technical feasibility of the invention is not confined to a particular plant or animal variety, or

c) microbiological or other technical process and a product, other than a plant or animal variety, obtained by this way.

Section 3
Exclusions of patentability

Patents shall be not granted to

c) plant and animal varieties or essential biological processes for the production of plants or animals.

DENMARK: Section 1 (4) and (5) of the Consolidated Patent Act No.91 of 28/01/2009

1. (4) Patents shall not be granted in respect of plant or animal varieties. Patens may, however, be granted for inventions, the subject-matter of which is plants or animals if the technical feasibility of the invention is not confined to a particular plant or animal variety. In this Act a “plant variety” means a plant variety as defined in Article 5 of Council Regulation (EC) No. 2100/94 on Community plant variety rights.

(5) Patents shall not be granted in respect of essentially biological processes for the production of plants or animals. In this Act an “essentially biologically process” means a process consisting entirely of natural phenomena such as crossing or selection. Patents

may, however, be granted for microbiological processes or other technical processes or products obtained by such processes. In this Act a “microbiological process” means a process involving microbiological material, performed on microbiological material or resulting in microbiological material.

DJIBOUTI: Articles 26 (d) and 27 (a) of the Protection of Industrial Property Law No.50/AN/09/6th L of 21/06/2009

Article 26

Ne sont pas considérées comme des inventions :

d) les procédés essentiellement biologique d'obtention de végétaux ou d'animaux;

Article 27

Ne sont pas brevetables:

a) les végétaux et les animaux autres que les microorganismes;

DOMINICAN REPUBLIC: Article 2(2) (c) of the Industrial Property Law No. 20-00 of 08/05/2000 as last amended by Law No. 424-06

Article 2 - Items excluded from Protection by Patent of Invention

2) The following inventions shall not be patented nor shall they be published:

c) Plants and animals, except for microorganisms, and essentially biological procedures for the production of plants or animals that are not non-biological or microbiological procedures. Vegetable findings will be regulated by a special law, in compliance with article 27.3(b) of the TRIPS Agreement.

ECUADOR: Article 126 (c) of the Intellectual Property Law, Codification No. 2006-013

Article 126 - Se excluye de la patentabilidad expresamente:

c) Las plantas y las razas animales, así como los procedimientos esencialmente biológicos para obtenciones de plantas o animales.

EGYPT: Article 2 (4) of the Law on the Protection of Intellectual Property Rights No 82 of 03/06/2002

Article 2 - Patent of invention shall not be granted for the following:

(4) Plants and animals, whatever the level of rareness or strangeness thereof; and biological processes for the production of plants or animals; with the exception of micro-organisms and the non - biological and microbiological processes for the production of plant or animal.

ESTONIA: §§ 6 (2) 8) and 7 (2) 5) and 6) and (3) of the Patent Act (RT I 1994, 25, 406) of 16/03/1994 as last amended on 07/12/2011

§ 6. Subject of invention

(2) The following, inter alia, are not regarded as the subject of inventions:

8) plant and animal varieties;

§ 7. Unpatentable inventions

(2) The following biotechnological inventions shall not be protected by a patent:

5) essentially biological processes for the derivation of biological materials, plants or animals, except microbiological processes for the derivation of micro-organisms;

6) inventions the application of which is confined to a single plant or animal variety.

(3) For the purposes of this Act, "essentially biological process for the derivation of a biological material, plant or animal" means a process which consists entirely of natural phenomena such as crossing and selection.

ETHIOPIA: *Section 4 (1) (b) of the Proclamation concerning Inventions, Minor Inventions and Industrial Designs No. 123 of 10/05/1995*

4. Non-Patentable inventions

1. The following shall not be patentable:

b) Plant or animal varieties or essentially biological processes for the production of plants or animals.

FINLAND: Section 1 (4) and (5) of the Patents Act No. 550 of 15/12/1967 as last amended by Act No. 743/2011 of 17/06/2011

Section 1

(4) Patents shall not be granted for plant or animal varieties. Inventions which concern plants or animals shall nevertheless be patentable if the technical feasibility of the invention is not confined to a particular plant or animal variety. The concept of plant variety within the meaning of this Act is defined by Article 5 of Council Regulation (EC) No 2100/94 on Community plant variety rights.

(5) Patents shall not be granted for essentially biological processes for the production of plants or animals. For the purposes of this Act a process for the production of plants or animals shall be considered essentially biological if it consists entirely of natural phenomena such as crossing or selection. What is said above shall be without prejudice to the patentability of inventions which concern a microbiological or other technical process or a product obtained by means of such a process. For the purposes of this Act 'microbiological process' means any process involving or performed upon or resulting in microbiological material.

FRANCE: Article L 611-19 of the Intellectual Property Code of 01/07/1994, updated version of 2010

Article L611-19

I - The following shall be unpatentable:

- 1) animal varieties;
- 2) plant varieties as defined in Article 5 of Regulation (EC) No. 873/2004 introducing new rules governing intellectual property ownership of Community plant variety rights;
- 3) essentially biological processes for the production of plants and animals. A process that consists entirely of natural phenomena such as crossing or selection shall be regarded as biological process.
- 4) processes for modifying the genetic identity of animals which are likely to cause them suffering without substantial medical benefit to man or animal, and also animals resulting from such processes.

II - Notwithstanding the provisions of (I) above, inventions which concern plants or animals shall be patentable if the technical feasibility of the invention is not confined to a particular plant or animal variety.

III - The provisions of I (3) shall be without prejudice to the patentability of inventions which concern a technical process, in particular a microbiological one, or a product obtained by means of such a process; any process involving or resulting in or performed upon a microbiological material shall be regarded as microbiological process.

GAMBIA: Section 3 (3) (ii) of the Industrial Property, Chapter 95:03; Act No. 12 of 1997, version of 2007

Section 3

Matters excluded from patent protection (3) The following, even if they are inventions within the meaning of subsection (2) of this section, shall be excluded from patent protection:

(ii) plant or animal varieties or essentially biological processes for the production of plants or animals, other than microbiological processes and the products of such processes;

GEORGIA: *Article 17 (c) of the Patent Law of 05/02/1999*

Article 17 - Objects that Cannot be Granted a Patent

A patent is not granted for:

c) inventions related to plant varieties and breeds of animals, as well as primarily biological methods for plant and animal breed selection. This rule does not apply to micro-biological methods and products obtained through such methods;

GERMANY: *Section 1, 2a (1) 1), (2) and (3) 2), 3) and 4) of the Patent Act of 16/12/1980 as last amended by Act of 31/07/2009*

Section 1

(1) Patents shall be granted for inventions in any technical field if they are novel, involve an inventive step and are susceptible of industrial application.

(2) Patents shall be granted for inventions within the terms of subsection (1) even if the subject matter concerns a product consisting of or containing biological material or a process by means of which biological material is produced, processed or used. Biological material that has been isolated from its natural environment or produced by means of a technical process may be the subject matter of an invention even if it had previously occurred in nature.

Section 2a

(1) Patents shall not be granted for

1. plant or animal varieties or for essentially biological processes for breeding plants or animals;

(2) Patents can be granted for inventions

1. having as subject matter plants or animals if the technical realization of the invention is not restricted to a particular plant or animal variety;

2. having as subject matter a microbiological or other technical process or a product obtained by means of such a process, unless a plant or animal variety is concerned.

Section 1a(3) shall apply *mutatis mutandis*.

(3) In accordance with this Act:

2. "microbiological process" shall denote any process involving the use of or intervention in microbiological material or by which microbiological material results;

3. "an essentially biological process" shall denote any process for breeding plants or animals based entirely on natural phenomena such as crossing or selection;

4. "plant variety" shall denote a variety in accordance with the definition of Regulation (EC) No. 2100/94 of the Council of July 27, 1994 on Community Plant Variety Types (OJ L 227, p. 1) in the valid version.

GHANA

The national excludes *Section 2 (e), (f) and (g) of the Patents Act, Act No. 657 of 2003*

Section 2 - Matter Excluded from Patent Protection.

The following inventions, even if they are inventions within the meaning of section 1, are excluded from patent protection:

(e) plants and animals other than micro-organisms;

(f) biological processes for the protection of plants or animals other than non-biological and micro-biological processes; and

(g) plant varieties

GREECE: *Article 5 (8) (b) of the Law on "Technology transfer, inventions, and technological innovation" No. 1733/1987 (FEK 171, A' of 22/9/1987) as last amended by Law No. 2359 of 15/11/1995*

Article 5 - Meaning

8. Patents shall not be granted in the following cases:

b. plant or animal varieties or biological processes for the production of plants or animals; this provision does not apply to microbiological processes or the products thereof.

GUATEMALA: *Article 91 (c) of the Industrial Property Law, Decree No. 57-2000 of 18/09/2000*

Materia que no constituye Invención

91. No constituirán invenciones, entre otros:

c) Los procedimientos biológicos tal como ocurren en la naturaleza y que no supongan intervención humana, salvo los procedimientos microbiológicos;

HONDURAS: *Article 7 of the Industrial Property Law, Decree Law No. 12-99-E of 30/12/1999*

Artículo 7 - No serán patentables:

1. Los procesos esencialmente biológicos para la obtención o reproducción de plantas animales o sus variedades, incluyendo los procesos genéticos o relativos a material capaz de conducir su propia duplicación, por sí mismo o por cualquier otra manera indirecta, cuando consistan en seleccionar o aislar material biológico disponible y dejarlo que actúe en condiciones naturales; y,

2. Las variedades y especies vegetales y las especies y razas animales.

HUNGARY: *Article 6 (4), (5), (6), (7), (8) and (9) of the Act XXXIII of 1995 on the protection of inventions by patents (Consolidated text of 01.03.2011)*

Patentability

Article 6

(4) The following shall not be patentable:

(a) plant varieties [Article 105(a)] and animal breeds;

(b) essentially biological processes for the production of plants or animals.

(5) Inventions which concern plants or animals shall be patentable if the technical feasibility of the invention is not confined to a particular plant variety or animal breed.

(6) Plant varieties may be granted plant variety protection under the provisions of Chapter XIII.

(7) A process for the production of plants or animals is essentially biological if it consists entirely of crossing, selection or other natural phenomena.

(8) The provisions of paragraph (4)(b) shall be without prejudice to the patentability of inventions which concern a microbiological or other technical process or a product obtained by means of such process.

(9) Microbiological process means any process involving or performed upon or resulting in microbiological material.

ICELAND: Article 1 §§ 4 and 5 of the Patents Act No. 17/1991 as last amended by Law no. 167/2007

Article 1

A patent shall not be granted for plant or animal varieties. It is however possible to grant patents for inventions pertaining to plants and animals if the implementation of the patent is not confined for technical reasons to a particular plant or animal variety. In this Act, plant variety refers to a plant variety as it is defined in the Act on Plant Variety Rights, No. 58/2000.

A patent shall not be granted on an essentially biological process for producing plants or animals. By an essentially biological process, this Act refers to a method that on the whole is based on natural phenomena such as crossing and selection. Nonetheless, patents may be granted for processes in the field of microbiology or other technical methods or the products of such processes. Process in the field of microbiology refers to any method that exploits microbiological material or produces microbiological material.

INDIA: Section 3 (i) and (j) of the Patent Act No. 39 of 1970 as last amended by Act No. 15 of 2005

3. What are not inventions

The following are not inventions within the meaning of this Act, -

(i) any process for the medicinal, surgical, curative, prophylactic [diagnostic, therapeutic] or other treatment of human beings or any process for a similar treatment of animals to render them free of disease or to increase their economic value or that of their products.

(j) plants and animals in whole or any part thereof other than micro-organisms but including seeds, varieties and species and essentially biological processes for production or propagation of plants and animals;

INDONESIA: Article 7 (d) of the Law on Patents No. 14 of 01/08/2001 and Section 4 (1) and (2) (b) and (c) of the European Communities (Legal Protection of Biotechnological Inventions) Regulations of 2000

Article 7

A Patent shall not be granted to an Invention regarding:

d. i. all living creatures, except micro-organism

ii. any biological process which is essential in producing plant or animal, except non-biological process or microbiological process.

IRELAND: *Section 10 (b) of the Patent Act No. 1 of 1992 as last amended by Act no. 31 of 2006*

10.—

A patent shall not be granted in respect of—

(b) a plant or animal variety or an essentially biological process for the production of plants or animals other than a microbiological process or the products thereof.

ISRAEL: *Article 7 of the Patents Law No. 5727 of 08/08/1967 as last amended by Law No. 5760-1999*

[Restriction on granting of patents]

7. Notwithstanding the provisions of section 2, no patent shall be granted for—

(2) new varieties of plants or animals, except microbiological organisms not derived from nature.

ITALY: *Articles 45 (4) (b), (5) and (5 bis), 81 ter (1) (b) and (2) and 81 quarter (1) (e) of the Code of the Industrial Property, Legislative Decree No. 30 of 15/02/2005 as last amended by Legislative Decree No. 131 of 13/08/2010*

Art. 45. Oggetto del brevetto

(4) Non possono costituire oggetto di brevetto:

b) le varietà vegetali e le razze animali ed i procedimenti essenzialmente biologici di produzione di animali o vegetali, comprese le nuove varietà vegetali rispetto alle quali l'invenzione consista esclusivamente nella modifica genetica di altra varietà vegetale, anche se detta modifica é il frutto di un procedimento di ingegneria genetica.

(5) La disposizione del comma 4 non si applica ai procedimenti microbiologici ed ai prodotti ottenuti mediante questi procedimenti, nonché ai prodotti, in particolare alle sostanze o composizioni, per l'uso di uno dei metodi nominati.

(5 bis) Non possono costituire oggetto di brevetto le invenzioni biotecnologiche di cui all'articolo 81-quinquies.

Art. 81-ter. Definizioni

1. Ai fini del presente codice si intende per:

b) procedimento biologico: qualsiasi procedimento nel quale si utilizzi un materiale microbiologico, che comporta un intervento su materiale microbiologico o che produce un materiale microbiologico.

2. Un procedimento di produzione di vegetali o di animali é essenzialmente biologico quando consiste integralmente in fenomeni naturali quali l'incrocio o la selezione.

Art. 81- quater. Brevettabilità

1. Sono brevettabili, purché abbiano i requisiti di novità e attività inventiva e siano suscettibili di applicazione industriale:

e) un'invenzione riguardante piante o animali ovvero un insieme vegetale, caratterizzato dall'espressione di un determinato gene e non dal suo intero genoma, se la loro applicazione non é limitata, dal punto di vista tecnico, all'ottenimento di una determinata varietà vegetale o specie animale e non siano impiegati, per il loro ottenimento, soltanto procedimenti essenzialmente biologici, secondo le modalità previste dall' articolo 170-bis, comma 6.

JAPAN: Article 2(1) and (2) of the Intellectual Property Basic Act (Act No. 122 of December 4, 2002, as last amended by Act No.119 of July 16, 2003)

Article 2 (1) The term "intellectual property" as used in this Act shall mean inventions, devices, new varieties of plants, designs, works and other property that is produced through creative activities by human beings (including discovered or solved laws of nature or natural phenomena that are industrially applicable), trademarks, trade names and other marks that are used to indicate goods or services in business activities, and trade secrets and other technical or business information that is useful for business activities.

(2) The term "intellectual property right" as used in this Act shall mean a patent right, a utility model right, a plant breeder's right, a design right, a copyright, a trademark right, a right that is stipulated by laws and regulations on other intellectual property or right pertaining to an interest that is protected by acts.

JORDAN: *Article 4 6) and 7) of the Law on Patents of Invention No. 32 for the Year 1999(as last amended by Law No. 28 of 2007)*

The following shall be excluded from patent protection'

6-Plants and animals, other than microorganisms

7-Biological processes for the production of plants or animals, other than nonbiological and microbiological processes

KENYA: Section 26(a)(b)of *The Industrial Property Act, 2001*

26. The following shall not be patentable:-

(a) plant varieties as provided for in the Seeds and Plant Varieties Act, but not parts thereof or products of biotechnological process; and

(b) inventions contrary to public order, morality, public health and safety, principles of humanity and environmental conservation

KYRGYZSTAN: *Article 5 (9) 9) of the Patent Law No. 8 of 14/01/1998, as last amended by Law No. 46 of 27/02/2003*

Article 5. Conditions of Patentability of an Invention

Shall not be deemed as inventions:

9) varieties of plants and breeds of animals;

The objects listed in items 5, 8, 9, of paragraph 9 shall be protected by separate laws.

LAO PEOPLE'S DEMOCRATIC REPUBLIC: *Section 21 of the Intellectual Property Law of 14704/2008*

Section 21: Invention and Devices which are not eligible for patent and petty patent
The invention and devices which are not eligible for granting patent and petty patent are discovery of invention already existed, discovery of scientific rules and theories, mathematics, business plans, regulations or methods, mental treatments or gambles, human and animal treatment, microorganisms and any components of natural microorganisms or extracts from animals or plants; the invention and devices contrary to state peaces and social order, health, environments, rules and laws, and national good traditional cultures.

LATVIA: *Sections 1 (13) and 14) and 10 (1) 2) and 3) and (2) of the Patent Law of 15/02/2007*

Section 1. Terms used in this Law

The following terms are used in this Law:

13) microbiological method – a method in which microbiological material is involved or in the result of which it appears or which has been carried out with biological material; and

14) biological method – a plant or animal production method which consists entirely of natural phenomena, such as crossing or selection.

Section 10. Biotechnological Inventions

(1) A patent shall be granted to biotechnological inventions, which:

2) pertain to plants or animals, if the technical feasibility of the invention does not confine itself to a particular plant or animal variety; and

3) pertain to microbiological or other technical method, or to the product obtained by means of such method, if it is not a plant or animal variety.

(2) A patent shall not be granted to plant or animal varieties or basically biological methods for the production of plant or animal varieties.

LEBANON: *Article 2 (e) and (f) of the Patent Law No. 240 of 14/08/2000*

Article 2

The invention is liable for protection if such is Novel, Creative and Applicable.

- A patent shall be issued for each invention related to:

e. Micro Organisms

f. Novel or discovered plant products provided that it complies with all the following conditions:

1. Distinguished from all previously known varieties by a rarely changeable specific and important advantage; or by several advantages that collectively form a Novel plant variety.
2. Homogeneity of advantages
3. Stability i.e. by the end of each production cycle it remains identical to its first definition.

LESOTHO: *Section 4 (b) of the Industrial Property Order, Order No. 5 of 1989, as last amended by Act No. 4 of 1997*

Matters excluded from patent protection

4. The following, even if they are inventions in terms of section 2, shall be excluded from patent protection,

(b) plant or animal varieties or essentially biological processes for the production of plants or animals, other than microbiological processes and the products of such processes;

LITHUANIA: *Article 2, § 3 2) of the Patent Law No. I-372 of 18/01/1994 as last amended by Law No. X-1119 of 10/05/2007*

Article 2 - Patentable inventions

Patents shall not be granted for:

2) plant or animal varieties or essentially biological processes for the production of plants or animals. This provision shall not apply to microbiological processes for the production of plants or animals or the products thereof, as well as to plants or animals, if technical implementation of the invention is not restricted to a concrete plant or animal variety;

LUXEMBOURG: *Article 5 (2) of the Patent Act of 20/07/1992 as last amended by Law of 24/05/1998*

Exceptions to patentability

Article 5 - The following shall be excluded from the protection provided by this Law:

2) plants or animal varieties or essentially biological processes for the production of plants and animals; this provision does not apply to microbiological processes or the products thereof

MADAGASCAR: *Section 8 (1) (ii) of the Industrial Property Law, Ordinance No. 89 019 of 31/07/1989*

8.—(1) Subject to the specific regulations in respect of the subject matters listed below, applications for patents or inventors' certificates shall not be admissible or shall be rejected where they concern:

(ii) plant or animal varieties or essentially biological processes for the production of plants or animals;

MALAYSIA: *Section 13 (1) (b) of the Patents Act No. 291 of 1983 as last amended by Act No. 1264 of 2006*

Section 13 - Non-patentable inventions

(1) Notwithstanding the fact that they may be inventions within the meaning of section 12, the following shall not be patentable:

(b) plant or animal varieties or essentially biological processes for the production of plants or animals, other than man-made living micro-organisms, micro-biological processes and the products of such micro-organism processes;

MALTA: *Section 4 (5) (e) and (f) and (6) of the Patents and Designs Act, Chapter 417, of 01/06/2002 as last amended by Act XVIII of 2005*

Section 4 - Patentable inventions

(5) A patent shall not be granted in respect of:

(e) plant and animal varieties:

Provided that patents shall not be granted for plant varieties only after a new form of plant variety protection is introduced in such form as may be prescribed:

Provided further that a patent may still be granted for a plant variety in respect of which a patent application is still pending on the date that a new form of plant variety protection is prescribed;

(f) essentially biological process of the production of plants or animals:

Provided that this is without prejudice to the patentability of inventions which concern a microbiological or other technical process or a product obtained by means of such a process;

(6) Inventions which concern plants or animals shall be patentable if the technical feasibility of the invention is not confined to a particular plant or animal variety.

MAURITIUS: *Section 11 (3) (d), (e), (f) and (g) of the Patents, Industrial Designs and Trademarks Act No. 25 of 2002*

11. Definitions

(3) The following, even if they are inventions within the meaning of subsection (1), shall be excluded from patent protection -

- (d) plants;
- (e) animals;
- (f) essentially biological processes for the production of plants and animals;
- (g) plant varieties;

MEXICO: *Article 16 I), II), III) and V) of the Industrial Property Law* of June 25, 1991, as amended by the Decree of June 28 2010 ENTRY INTO FORCE: June 29, 2010

Article 16

Novel inventions resulting from an inventive step and subject to industrial applicability under the terms of this Law shall be patentable, with the exception of:

- I. Essentially biological processes for obtaining, reproducing and propagating plants and animals;
- II. Biological and genetic material as found in nature;
- III. Animal breeds;
- IV. The human body and the living matter constituting it; and
- V. Plant varieties.

MONGOLIA: *Article 4 (5) 6) of the Patent Law of 25/06/1993, as last amended in 1999*

Article 4 - Objects of patents and patentability

5. The following shall not be considered to be inventions:

- 6) plant varieties and animal breeds arising from biological methods of breeding.

Sub-paragraphs 5) and 6) shall not apply in the case of substances used in conjunction with such methods of treatment and diagnosis or to microbiological methods and products cultivated by such methods.

MONTENEGRO: *Article 7 (1) 3) and (2) of the Patent Law of 31/10/2008*

Exceptions to Patentability

Article 7

(1) Patent protection shall not be granted in respect of:

- 3) a plant or animal variety or an essentially biological process for the production of a plant or animal, except:

-a biotechnological invention concerning a plant or animal, if the technical feasibility of the invention is not confined to a particular plant or animal variety;

- a microbiological or other technical process, or a product obtained by means of such process other than a plant or animal variety.

(2) For the purposes of this Law:

1) "plant variety" shall have the meaning laid down in the law governing the protection of new plant varieties;

2) an "essentially biological process" for the production of plants or animals shall be a process consisting entirely of natural phenomena such as crossing or selection;

3) a "microbiological process" shall be a process involving or performed upon or resulting in microbiological material;

4) "biotechnological inventions" are inventions that concern a product consisting of or containing biological material or a process by means of which a biological material is produced, processed or used.

MOROCCO: Article 24 (b) of the *Law No. 97-17 on the Protection of Industrial Property (2000)*

24. The following may not be patented:

(b) plant varieties, which are subject to the provisions of Law No. 9/94 on the Protection of Plant Varieties.

MOZAMBIQUE: *Article 30 (2) (b) of the Industrial Property Code, Decree No. 04 of 12/04/2006*

Article 30 - Exceptions to patentability

2. The following are excluded from patent protection:

b) All or part of living beings, although microbiological processes and products obtained from such processes are patentable.

NETHERLANDS: *Articles 1, 2a (2) (c) and (d), and 3 (1) (c) and (d) of the Patents Act of 15/12/1995(Text as it applies on 03/06/2009)*

Article 1

In this Kingdom Act and the provisions based on it the terms listed below shall have the following meaning:

Microbiological process: any process whereby microbiological material is used, which affects microbiological material or which results in microbiological material;

Plant variety: a variety within the meaning of Article 5(2) of Regulation (EC) No. 2100/94 of the Council of the European Union of 27 June 1994 on Community plant variety rights (Official EC Journal L 227);

Article 2a

2. Inventions within the meaning of the first paragraph in any event include inventions with respect to:

c. plants or animals, provided that the practicability of that invention is not technically limited to certain plant or animal varieties; or

d. a microbiological or other technical process through which biological material is obtained, processed or used, or a product obtained using such a process.

Article 3

1. No patent shall be issued for:

c. plant or animal varieties;

d. essentially biological processes consisting entirely of natural phenomena such as crossings or selections in order to produce plants or animals and the products obtained thereby;

NICARAGUA: Articles 6 (c) and 7 (a) of the Law on Patents, Utility Models and Industrial Designs No. 354 of 19/09/2000 as last amended by Law No. 634 of 13/09/2007

Subject Matter not Constituting an Invention

6. The following among other things shall not constitute inventions:

(c) biological processes as occurring in nature which do not entail human intervention for the production of plants and animals, with the exception of microbiological processes;

Subject Matter Excluded from Patent Protection

7. Patent protection shall not be granted for:

(a) the registration of animals;

NIGERIA: Section 1 (4) (a) of the Patents and Designs Act, Chapter 344, of 01/12/1971, version of 1990

1. (4) Patents cannot be validly obtained in respect of-

(a) plant or animal varieties, or essentially biological processes for the production of plants or animals (other than microbiological processes and their products);

NORWAY: Section 1, §§ 4 and 5 of the Patents Acts No.9 of 15/12/1967

A patent cannot be granted in respect of plant or animal varieties. Inventions that concern plants or animals may, however, be patentable if usage of the patent is not technically limited to one particular plant or animal variety. The King may, by regulation, determine what should be considered a plant or an animal variety.

A patent cannot be granted for what are essentially biological processes to produce plants or animals. An essentially biological process means, for the purpose of this legal text, a process, which consists entirely of natural phenomena such as crossing or selection. A patent may, on the other hand, be granted for microbiological or other technical processes or for a product produced by such processes. A microbiological process means, for the purpose of this legal text, any process involving, performed upon or resulting in the production of microbiological material.

OMAN: *Sections 2 (1) (e) of the and 11 (2) (c) and (d) and (4) (b) of the Law on Industrial Property Rights, Royal Decree No. 67 of the 2008*

Section 2

(1) The following shall be excluded from patent protection:

(e) Animals other than micro-organisms, and essentially biological processes for the production of animals and their parts, other than non-biological and microbiological processes;

Section 11

(2) For the purposes of this Act, “exploiting” a patented invention means any of the following acts:

(c) when the patent has been granted in respect of a plant or plant variety:

- (i) producing or reproducing (multiplying);
- (ii) conditioning for the purpose of propagation;
- (iii) offering for sale;
- (iv) selling or other marketing;
- (v) exporting;
- (vi) importing;
- (vii) stocking for any of the purposes mentioned in (i) to (vi), above;

(d) The provisions of paragraph (c) shall also apply in relation to

- (i) varieties which are essentially derived from the protected variety, where the protected variety is not itself an essentially derived variety,
- (ii) varieties which are not clearly distinguishable from the protected variety and
- (iii) varieties whose production requires the repeated use of the protected variety.
- (iv) a variety shall be deemed to be essentially derived from another variety (“the initial variety”) when:

- it is predominantly derived from the initial variety, or from a variety that is itself predominantly derived from the initial variety, while retaining the expression of the essential characteristics that result from the genotype or combination of genotypes of the initial variety;

- it is clearly distinguishable from the initial variety; and

- except for the differences which result from the act of derivation, it conforms to the initial variety in the expression of the essential characteristics that result from the genotype or combination of genotypes of the initial variety.

(4)

(b) With respect of patents granted for plants and plant varieties, the rights under those patents shall not extend to:

(i) acts done privately and for non-commercial purposes;

(ii) acts done for experimental purposes; and

(iii) acts done for the purpose of breeding other varieties, including essentially derived varieties;

(iv) within reasonable limits and subject to the safeguarding of the legitimate interests of the patent owner, any acts practiced by farmers to use for propagating purposes, on their own holdings, the product of the harvest which they have obtained by planting, on their own holdings, the patented variety or an essentially derived variety.

PAKISTAN: Section 7 (4) (b) of the Patent Ordinance No. LXI of 2000 as last amended by Patent Ordinance No. 2(1)/2002

7. Patentable Inventions

(4) A patent shall not be granted-

(b) for plants and animals other than micro-organisms, and essentially biological processes for the production of plants or animals other than non-biological and microbiological processes;

PANAMA: Article 15 1), 2) and 5) of the Law No. 35 of 10/05/1996 Enacting Provisions on Industrial Property

Article 15. The following inventions relating to living matter, are exempted from patent:

1. Cases that are essentially biological for the obtainment or reproduction of plants, animals or their varieties, whenever the DIGERPI considers that they attempt against the morality, integrity or dignity of human beings;

2. Vegetable species and animal species and breeds;

5. Vegetable varieties;

PARAGUAY: *Article 5 (b) of the Patents Law No. 1630 of 29/11/2000*

Artículo 5.- De las materias excluidas de protección por patente. Son materias excluidas de protección por patente:

b) las plantas y los animales excepto los microorganismos, y los procedimientos esencialmente biológicos para la producción de plantas o animales, que no sean procedimientos no biológicos o microbiológicos.
Tampoco podrán ser objeto de una nueva patente, los productos o procedimientos comprendidos en el estado de la técnica, conforme a lo establecido en esta ley, por el simple hecho de atribuírsele un uso distinto al que está comprendido en la patente inicial.

PHILIPPINES: *Article 22 4) of the Intellectual Property Code, Act No. 8293 of 06/06/1997 as last amended by Act No. 9502 of 2008*

Non-Patentable Inventions

22. The following shall be excluded from patent protection:

4. Plant varieties or animal breeds or essentially biological process for the production of plants or animals. This provision shall not apply to micro-organisms and non-biological and microbiological processes.

POLAND: *Articles 29 (1) (ii) and (2), 75¹, 93¹ (iii) and 93² (iii) of the Industrial Property Law of 30/06/2000, as last amended by Act of 29/06/2007*

Article 29

1. Patents shall not be granted for:

(ii) plant or animal varieties or essentially biological processes for the production of plants or animals; this provision does not apply to microbiological processes or the products thereof,

2. The process for the production of plants or animals, referred to in section (1)(ii), is essentially biological if it consists entirely of natural phenomena such as crossing or selection.

Article 75¹

On the territory of the Republic of Poland supplementary protection rights shall be granted on the conditions laid down in the regulations concerning the creation in the European Union of supplementary protection certificates for medicinal products and plant protection products.

Article 93¹

Any reference in this Chapter:

(iii) to "microbiological process" means any process involving or performed upon or resulting in microbiological material.

Article 93²

1. The following, in particular, shall be considered as biological inventions eligible for patent protection:

(iii) inventions which concern plants or animals, if the technical feasibility of the invention is not confined to a particular plant or animal variety.

PORTUGAL: *Articles 53 (3) (b) and 54 (1) (d), (e) and (f), (2) and (3) of the Industrial Property Code, Decree-Law No. 36 of 05/03/2003 as last amended by Law No. 16 of 01/04/2008*

Article 53. Limitations on patents

3 The following are also not patentable:

b) Plant and animal varieties and essentially biological processes for obtaining plants or animals;

Article 54. Special cases of patentability

1 The following may be patented:

d) An invention relating to plants or animals, if its technical feasibility is not confined to a particular plant variety or breed of animal;

e) A biological material isolated from its natural environment or produced on the basis of a technical process, even if it pre-exists in a natural state;

f) An invention relating to a microbiological process or other technical processes or products obtained by means of these processes.

2 An essentially biological process for obtaining plants or animals is any process that consists wholly of natural phenomena, such as crossing or selection.

3 A microbiological process is any process involving or performed upon or resulting in microbiological material.

QATAR: *Article 4 (b) of the Patent Law no. 30 of 2006*

Article 4

The patent subject may be in the form of material product, an industrial process or a manufacturing technique. Subject to the law hereby, patentability shall not include:

b) Plants and animals researches, and essentially biological processes for the production of plants or animals other than microbiological processes and its productions.

REPUBLIC OF KOREA: Article 2(i) of the *Patent Act of the Republic of Korea*. Last amended on January 30, 2009 by Act No. 9381.

The definitions of terms uses in this Act are as follows:

- (i) "invention" means the highly advanced creation of a technical idea using the law of nature;

REPUBLIC OF MOLDOVA: *Articles 6 (4) (b) and (c) and 7 (1) (b) and (c) of the Law on the Protection of Inventions No. 50-XVI of 07/03/2008*

Article 6 - Patentable inventions

(4) Inventions in the field of biotechnology shall be deemed patentable if they concern:

b) plants or animals if the technical feasibility of the invention is not confined to a particular plant or animal variety;

c) a microbiological process or other technical process, or a product obtained by means of such a process other than a plant or animal variety

Article 7 - Exceptions to Patentability

(1) Patents shall not be granted within the meaning of this Law in respect of:

b) plant or animal varieties;

c) essentially biological processes for the production of plants or animals; this provision shall not apply to microbiological processes or the products thereof;

ROMANIA: *Articles 7 (b) and 9 (b) of the Patent Law No. 64/1991 as republished in the OJ, Part I, No. 638/18.IX.2007*

Article 7 - A patent shall be granted for any invention having as a subject-matter a product or a process, in all technological fields, provided that it is new, involves an inventive step and is susceptible of industrial application.

Inventions in the field of biotechnology shall be patentable if they relate to:

b) plants or animals, if the technical feasibility of the invention is not limited to a particular plant variety or animal breed;

c) a microbiological process or other technical process or a product, other than a plant variety or animal breed, obtained by means of said process;

Article 9 - Patents shall not be granted under this Law in respect of:

b) plant varieties and animal breeds, as well as the essentially biological processes for the production of plants or animals. This provision shall not apply to microbiological processes or products obtained thereby;

RUSSIAN FEDERATION: *Article 1350 (1) and (6) 1) of the Patent Act (Chapter 72)*

Article 1350. Conditions of Patentability of an Invention

1. A technical solution in any area related to a product (including a device, substance, microorganism strain, cell culture of plants or animals) or method (process of affecting a material object using material means) shall be protected as an invention.

An invention shall be granted the legal protection if it is new, involves an inventive step, and is industrially applicable.

6. Legal protection as inventions shall not be granted to:

1) varieties of plants, breeds of animals and biological methods of obtaining thereof with the exception of microbiological methods and products obtained by the use of such methods;

RWANDA: Article 8 6) and 7) of the Law No. 31/2009 of 26/10/2009 on the protection of intellectual property

Article 18 - Matters excluded from patent protection

The following shall be excluded from patent protection even if they constitute inventions under article 5 (7): of this Law;

6° plants and animals, including their parts, other than micro-organisms, and essentially biological processes for the production of plants or animals and their parts, other than non-biological and microbiological processes and products obtained from those processes;

7° animal and plant varieties;

SAINT VINCENT AND THE GRENADINES: Section 13 (2) (h) of the Patents Act, Chapter 314, Act No. 39 of 2004

13. Patentable inventions

(2) For the purposes of this Act the following are excluded from patent protection-

(h) any plant or animal variety or any biological process for the generation of plants or animals, not being a microbiological process or the product of such a process.

SAN MARINO: Article 2 (4) (c), (5) and (7) (b) of the Law on Industrial Property No. 79 of 25/05/2005 as last amended in 2011

Article 2 - (Subject-matter of the patent and exclusions from patentability)

4. The following inventions are not patentable:

c) inventions concerning animal varieties or essentially biological processes for the production of animals varieties; this provision shall not apply to microbiological processes and the products thereof;

5. An essentially biological process means a process, which consists entirely of natural phenomena such as crossing or selection.

7. For the purpose of this Single Text:

b) "microbiological process" means any process involving, performed upon or resulting in microbiological material.

SAUDI ARABIA: *Article 45 (c) of the Law of Patents, Layout-Designs of Integrated Circuits, Plant Varieties, and Industrial Designs of 16/07/2004*

Article Forty Five:

In the application of provisions of this Law, the following shall not be regarded as inventions:

(c) Plants, animals and processes – which are mostly biological – used for the production of plants or animals, with the exception of micro-organisms, non- biological and microbiology processes.

SERBIA: *Articles 7, § 3 and 9, § 1 3) and § 2 of the Patent Law of 27/12/2011*

Patentable inventions

Article 7

In accordance with paragraph 1 of this Article, patent shall be granted for an invention for a product consisting of or containing biological material, or the process of which biological material is produced, processed or used, including:

2) plants or animals, if the technical feasibility of the invention is not confined to a particular plant or animal variety;

3) a microbiological or other technical process or a product obtained by means of such a process.

Exceptions to Patentability

Article 9

Patent or petty patent shall not be granted in respect of:

3) a plant or animal variety or an essentially biological process for the production of a plant or animal, provided that this provision shall not apply to microbiological processes or the products obtained by means of such process.

Plant variety referred to in item 3) of paragraph 1 of this Article means any plant grouping within a single botanical classification of the lowest known rank, which grouping, irrespective of whether the conditions for the grant of a plant breeders' rights are fully met, can be:

1) defined by the expression of the characteristics that results from a given genotype or combination of genotype,

2) distinguished from any other plant grouping by the expression of at least one of the said characteristics,

3) considered as a unit with regard to its suitability for being propagated unchanged;

Essentially biological process referred to in item 3) paragraph 1. of this Article for the production of plants or animals is a process consists entirely of natural phenomena such as crossing or selection;

Microbiological process referred to in item 3) paragraph 1. of this Article means any process involving or performed upon or resulting in microbiological material .

SINGAPORE: *Article 13 of the Patents Act (Chapter 221) 2005*

Patentable inventions

13.—(1) Subject to subsection (2), a patentable invention is one that satisfies the following conditions:

- (a) the invention is new;
- (b) it involves an inventive step; and
- (c) it is capable of industrial application.

[40/95]

(2) An invention the publication or exploitation of which would be generally expected to encourage offensive, immoral or anti-social behaviour is not a patentable invention.

(3) For the purposes of subsection (2), behaviour shall not be regarded as offensive, immoral or anti-social only because it is prohibited by any law in force in Singapore.

SLOVAKIA: *Articles 3 (b), (c) and (d), 5 (2) (b) and (c), and 6 (1) (a) and (b) of the Patent Act No. 435/2001 as last amended by Act No. 202/ 2009 Coll.*

Article 3

Definition of terms

For purposes of this Act

b) microbiological process shall mean any process using microbiological material or performed upon microbiological material or process result of which is microbiological material,

c) essentially biological process for creation plants or animals shall mean a process based exclusively on natural phenomena such as breeding or selection,

d) reproduction shall mean a generative or vegetative reproduction,

Article 5

Patentability of Inventions

(2) Patents pursuant to paragraph 1 shall be also granted for biotechnological inventions concerning to a product consisting of or containing biological material, or to a process by means of which biological material is produced, processed or utilised, including cases when invention relates to

b) a plant or an animal, if a technical feasibility of an invention is not reduced to a particular plant or animal variety

c) a microbiological or other technical process or to a product obtained by such process,

Article 6

Exceptions to patentability

(1) Patents shall not be granted to

a) plant and animal varieties,

b) essentially biological processes for creation plants or animals,

SLOVENIA: *Articles 2 (1) (b), (2) and (3) and 4 of the Decree on the legal protection of biotechnological inventions of 2003*

Article 2

(1) For the purposes of this Decree.

(b) “microbiological process” means any process involving or performed upon or resulting in microbiological material.

(2) A process for the production of plants or animals is essentially biological if it consists entirely of natural phenomena such as crossing or selection.

(3) “Variety” shall be taken to mean a plant grouping within a single botanical taxon of the lowest known rank, which grouping, irrespective of whether the conditions for the grant of a plant variety right are fully met, can be:

(a) defined by the expression of the characteristics that results from a given genotype or combination of genotypes,

(b) distinguished from any other plant grouping by the expression of at least one of the said characteristics, and

(c) considered as a unit with regard to its suitability for being propagated unchanged.

Article 4

(1) The following shall not be patentable:

(a) plant and animal varieties; and

(b) essentially biological processes for the production of plants or animals.

(2) Inventions which concern plants or animals shall be patentable if the technical feasibility of the invention is not confined to a particular plant or animal variety.

(3) Paragraph 1(b) shall be without prejudice to the patentability of inventions which concern a microbiological or other technical process or a product obtained by means of such a process.

SOUTH AFRICA: *Section 25 (4) (b) of the Patents Act No. 37 of 1952 as last amended by Act No. 20 of 2005*

25. Patentable inventions

(4) A patent shall not be granted

(b) for any variety of animal or plant or any essentially biological process for the production of animals or plants, not being a micro-biological process or the product of such a process.

SPAIN: *Article 5 2) and 3) of the Law about Patents of Invention and Utility Models No. 11 of 20/03/1986 as last amended by Law No. 10 of 29/04/2002*

Artículo 5

No podrán ser objeto de patente:

2. Las variedades vegetales y las razas animales. Serán, sin embargo, patentables las invenciones que tengan por objeto vegetales o animales si la viabilidad técnica de la invención no se limita a una variedad vegetal o a una raza animal determinada.

3. Los procedimientos esencialmente biológicos de obtención de vegetales o de animales. A estos efectos se considerarán esencialmente biológicos aquellos procedimientos que consistan íntegramente en fenómenos naturales como el cruce o la selección.

Lo dispuesto en el párrafo anterior no afectará a la patentabilidad de las invenciones cuyo objeto sea un procedimiento microbiológico o cualquier otro procedimiento técnico o un producto obtenido por dichos procedimientos.

SRI LANKA: *Section 62 (3) (b) of the Intellectual Property Act No. 36 of 2003*

Definition of Invention. 62

(3) The following, notwithstanding they are inventions within the meaning of subsection (1), shall not be patentable—

(b) plants, animals and other micro organism other than transgenic micro organism and an essentially biological process for the production of plants and animals other than non-biological and microbiological processes:

Provided however, that a patent granted in respect of micro-organisms shall be subject to the provisions of this Act;

SWEDEN: *Article 1a §§ 1 and 2 of the Patents Act No. 837 of 01/12/1967 as last amended by Law No. 161 of 01/04/2004*

1a. Patents are not granted on plant and animal varieties. A patent may, however, be granted for an invention which concerns plants or animals, if the technical feasibility of the invention is not confined to a particular plant or animal variety. The concept of a plant variety is defined in Chapter 1, Article 3, of the Act on the Protection of Plant Breeders' Rights (1997:306).

Patents are not granted for essentially biological processes for the production of plants or animals. As an essentially biological process for the production of plants or animals shall be considered any process which in its entirety consists of natural phenomena such as crossing or selection. A patent may, however, be granted for an invention that concerns a microbiological process or another technical process or a product made by means of such a process. As a microbiological process shall be considered any process which is performed on microbiological material or through which such material is used or is produced.

SWITZERLAND: *Article 2 (2) (b) of the Federal Patents Law of 25/06/1954 as last amended on 01/07 2009*

Article - 2

B. Exclusion de la brevetabilité

2 Ne peuvent pas non plus être brevetés:

b. les variétés végétales et les races animales, ainsi que les procédés essentiellement biologiques d'obtention de végétaux ou d'animaux; sont toutefois brevetables, sous réserve de l'al. 1, les procédés microbiologiques, ou d'autres procédés techniques, les produits ainsi obtenus et les inventions qui portent sur des plantes ou des animaux et dont la faisabilité technique n'est pas limitée à une variété végétale ou à une race animale.

TAJIKISTAN: *Article 6, § 8 of the Law on Inventions of 28/02/2004*

Article 6 - Conditions for patentability of an invention

The following shall not be recognized as patentable within the meaning of the provisions of this Law:

- plant varieties and animal breeds;

THAILAND: *Section 9 1) of the Patent Act B.E. 2522 of 11/03/1979 as amended by the Patent Act (No.2) B.E 2535 and the Patent Act (No.3) B.E. 2542*

9. The following inventions are not protected under this Act:

(1) naturally occurring microorganisms and their components, animals, plants or extracts from animals or plants;

THE FORMER YUGOSLAV REPUBLIC OF MACEDONIA: *Articles 3 and 26, §1, of the Law on Industrial Property No. 07-1006/1 of 12/02/2009*

Definitions

Article 3

Certain terms used in this Law shall have the following meaning:

- "Plants" shall be living plants or living parts of plants, including also fresh fruit and seeds;

- "Plant products" shall be products of plants in which have not been processed or which underwent simple preparation: grinding, drying or pressing, with the exception of the plants themselves;

Exceptions to patentability

Article 26

A patent may not protect an invention:

- which relates to new animal types and plant varieties and clear biological procedures for creating animals and plants, with the exception of biotechnological inventions, for which the technical feasibility is not restricted to a certain type, and microbiological processes and products generated from such processes;

TUNISIA: *Article 3, § 1 of the Patents Law No.2000-84 of 24/08/2000*

3. A patent may not be issued for:

— varieties of plants, animal breeds or essentially biological processes for the production of plants or animals, provided that this provision shall not apply to biological processes used in medicine or to products obtained using such processes;

TURKEY: *Article 6, § 3 (b) of the Decree-Law No. 551 on the Protection of Patent Rights of 27/06/1995 as last amended by Law No. 4128 of 7/11/1995*

Article 6

Patent shall not be granted for inventions in respect of following subject matter.

b/ Plant and animal varieties/species or processes for breeding/plant or animal varieties/species, based mainly on biological grounds.

TURKMENISTAN: *Section 2 (2) and (3) of the Law on patents of 01/10/1993*

Section 2. The Conditions of Patentability of Invention

2. The objects of invention are:

- cultivation of plant and animals cells;

3. Inventions are not recognized to be patentable:

- varieties of plants and brands of animals;

UGANDA: *Section 7 (2) (b) of the Patents Act of 15/10/1993 as last amended on 05/03/2002*

7. Definition of invention.

(2) The following shall not be regarded as inventions within the meaning of subsection (1)—

(b) plant or animal varieties or essentially biological processes for the production of plants or animals, other than biological processes and the products of those processes;

UKRAINE: *Article 6 (2) and (3) of the Law on the Protection of Rights to Inventions and Utility Models No. 3687-XII of 15/12/1993 as last amended in 2003*

Article 6 - Conditions of Granting the Legal Protection

2. The object of an invention (utility model), to which the legal protection is granted under this Law, may be:

a product (device, substance, microorganism strain, plant or animal cells culture etc.);

a process (method) as well as the novel use of a known product or process.

3. According to this Law, the legal protection shall not extend to such technology objects:

plant varieties and animal breeds;

processes of the reproduction of plants and animals that are biological in its basis and do not belong to non-biological and microbiological processes;

(...)

UNITED ARAB EMIRATES: *Article 6 (1) (a) of the Federal Law No (31) of 2006 pertaining to the Industrial Regulation and Protection of Patents, Industrial Drawings, and Designs*

Article 6

1-No letters patent or utility certificate shall be issued for the following:

a - Plant varieties, animal species, or biological methods of producing plants or animals. Exceptions shall be allowed for the microbiological methods and their products.

UNITED KINGDOM: *Schedule A2, section 76A (3) (f), (4) and (11) of the Patents Act of 1977, consolidated version of 01/10/2011*

SCHEDULE A2 (section 76A)
BIOTECHNOLOGICAL INVENTIONS

3. The following are not patentable inventions –

(f) any variety of animal or plant or any essentially biological process for the production of animals or plants, not being a micro-biological or other technical process or the product of such a process.

4. Inventions which concern plants or animals may be patentable if the technical feasibility of the invention is not confined to a particular plant or animal variety.

11. In this Schedule:

“essentially biological process” means a process for the production of animals and plants which consists entirely of natural phenomena such as crossing and selection;

“microbiological process” means any process involving or performed upon or resulting in microbiological material;

“plant variety” means a plant grouping within a single botanical taxon of the lowest known rank, which grouping can be:

a) defined by the expression of the characteristics that results from a given genotype or combination of genotypes; and

(b) distinguished from any other plant grouping by the expression of at least one of the said characteristics; and

(c) considered as a unit with regard to its suitability for being propagated unchanged.

UNITED REPUBLIC OF TANZANIA: *Section 3 (1) (vi) and (vii) of the Industrial Property Act No. 4 of 28/03/2008*

Matters excluded from patent protection.

3. (I) The following shall be excluded from patent protection:

(vi) plants and animals, including their parts, including DNA, cells, seeds, varieties and species other than micro-organisms, and essentially biological processes for the production of plants or animals and their parts, other than non-biological and microbiological processes;

(vii) animal and plant varieties;

UNITED STATES OF AMERICA: *Sections 161 to 164 of the Patent Law, 35 U.S.C. of 01/01/1953, 2007 version*

35 U.S.C. 161 Patents for plants.

Whoever invents or discovers and asexually reproduces any distinct and new variety of plant, including cultivated sports, mutants, hybrids, and newly found seedlings, other than a tuber propagated plant or a plant found in an uncultivated state, may obtain a patent therefor, subject to the conditions and requirements of this title.

The provisions of this title relating to patents for inventions shall apply to patents for plants, except as otherwise provided.

35 U.S.C. 162 Description, claim.

No plant patent shall be declared invalid for noncompliance with section 112 of this title if the description is as complete as is reasonably possible.

The claim in the specification shall be in formal terms to the plant shown and described.

35 U.S.C. 163 Grant.

In the case of a plant patent, the grant shall include the right to exclude others from asexually reproducing the plant, and from using, offering for sale, or selling the plant so reproduced, or any of its parts, throughout the United States, or from importing the plant so reproduced, or any parts thereof, into the United States.

35 U.S.C. 164 Assistance of the Department of Agriculture.

The President may by Executive order direct the Secretary of Agriculture, in accordance with the requests of the Director, for the purpose of carrying into effect the provisions of this title with respect to plants (1) to furnish available information of the Department of Agriculture, (2) to conduct through the appropriate bureau or division of the Department research upon special problems, or (3) to detail to the Director officers and employees of the Department.

URUGUAY: *Article 13 (b) of the Law No. 17.164 Regulating Rights and Obligations Relating to Patents, Utility Models and Industrial Designs No. 1.827*R of 02/09/1999*

13. The following shall not be considered inventions for the purposes of this Law:

(b) plants and animals, with the exception of microorganisms and essentially biological processes for the production of plants or animals, except for non-biological or microbiological processes;

UZBEKISTAN: *Article 6, §§ 8 and 9 of the Law on Inventions, Utility Models and Industrial Designs of 29/08/2002 (version of 2008 not available in English)*

Article 6. Patentability requirements for an invention

The following shall be recognized as inventions:

- strains of micro-organisms;
- plant and animal cell cultures;
- application of previously known devices, methods, substances and strains of micro-organisms for a novel purpose.

The following shall not be recognized as inventions:

- plant varieties and animal breeds;

VANUATU: *Article 3 (3) (a) and (b) of the Patents Act No. 2 of 21/07/2003*

Inventions not patentable

3.

(3) The following inventions are not patentable:

(a) plants or animals other than micro-organisms;

(b) biological processes for the production of plants or animals other than non-biological and micro biological processes;

VIETNAM: Article 59 5) and 6) of the Law on Intellectual Property No. 50/2005/QH11 of 29/11/2005 as last amended by Order No. 12/2009/L-CTN of 29/06/2009

Article 59.- Subject matters not protected as inventions

The following subject matters shall not be protected as inventions:

5. Plant varieties, animal breeds;

6. Processes of plant or animal production which are principally of biological nature other than microbiological ones;

YEMEN: Article 6 4) of the Law No. 2 of 12/01/2011 on Patents, Utility Models, Layout Designs of Integrated Circuits and Undisclosed Information

Article 6

Patents shall not be issued for the following:

4. Plants or animals, or the methods used to produce plants or animals with the exception of micro organisms, nonbiological methods and microbiological processes

ZIMBABWE: Section 2A of the Patents Act (Chapter 26:03) No. 26 of 1971 as last amended by Act 9 of 2002

2A Inventions for which patent may not be granted A patent shall not be granted under this Act for:

(b) plants and animals, other than micro-organisms; or

(c) essentially biological processes

(2) PROVISIONS OF LAW ON THE PATENTABILITY, OR EXCLUSION FROM PATENTABILITY, OF SOFTWARE-RELATED INVENTIONS

ALBANIA: Articles 5(1), (2) and (3) and 112 of the Law on Industrial Property No. 9947 of 07/07/2008

Article 5 - Patentable Inventions

1. Patents shall be granted for inventions, in all fields of technology, provided that they are:
 - a) new;
 - b) involve an inventive step; and
 - c) are susceptible of industrial application.
2. The following in particular shall not be regarded as inventions within the meaning of paragraph 1:
 - a) discoveries, scientific theories and mathematical methods;
 - b) aesthetic creations;
 - c) schemes, rules and methods for performing mental acts, playing games or doing business, and programs for computers;
 - ç) presentations of information.
3. Paragraph 2 shall exclude patentability of the subject-matter or activities referred to therein only to the extent to which a patent application or a patent relates to such subject-matter or activities as such.

Article 112 - Definition and Conditions of Protection

1. For purposes of this law:
 - a) "industrial design" (hereinafter called a "design"), means the characteristics of the external form of a product, in general the ornamental or aesthetic aspect of a product as a whole or of its parts, which give it a particular appearance and which are not excluded from protection pursuant to paragraph 3 of this article.
 - b) "Product" means any industrial or handicraft item, including inter alia parts intended to be assembled into a complex product, packaging, get-up, graphic symbols and typographic typefaces, but excluding computer programs.
 - c) "complex product" means a product which is composed of multiple components which can be replaced permitting disassembly and re-assembly of the product.
 - ç) Industrial designs may be two-dimensional, three-dimensional or in combinations.
2. To secure protection, the design should be new and have an individual character. A design applied to or incorporated in a product which constitutes a component part of a complex product shall only be considered to be new and to have individual character:
 - a) if the component part, once it has been incorporated into the complex product, remains visible during normal use of the latter, and
 - b) to the extent that those visible features of the component part fulfil in themselves the requirements as to novelty and individual character.'Normal use' within the meaning of letter "a" of this paragraph shall mean use by the end user, excluding maintenance, servicing or repair work.
3. A design right shall not subsist in features of appearance of a product;
 - a) which are solely dictated by its technical function.
 - b) which must necessarily be reproduced in their exact form and dimensions in order to permit the product in which the design is incorporated or to which it is applied to be mechanically connected with or placed in, around or against another product so that either product may perform its function.
4. Notwithstanding paragraph 3, letter "b" of this article, a design right shall, under the conditions set out in article 113, subsist in a design serving the purpose of allowing multiple assembly or connection of mutually interchangeable products within a modular system.

ALGERIA: Article 7 6) of the Ordinance No. 03-07 of 19/07/2003

7. Au sens de la présente ordonnance, ne sont pas considérés comme inventions :
6) les programmes d'ordinateurs;

ANDORRA: Article 2(2) (c) and (3) of the Patent Act of 10/06/1999

Article 2 - Conditions of patentability

(2) The following, in particular, shall not be regarded as inventions within the meaning of paragraph (1):

(c) schemes, rules and methods for performing mental acts, playing games or doing business, and programs for computers;

(3) The provisions of paragraph (2) shall exclude patentability of the subject-matter or activities referred to in that paragraph only to the extent to which a patent application or patent relates to such subject-matter or activities as such.

ANGOLA: Law No. 3/92 on Industrial Property of 28/02/1992

No provision of law

ANTIGUA AND BARBUDA: Patent Act No. 23 of 2003

No specific provision of law

ARGENTINA: Article 6(c) of the Patents Act No. 24.481 of 1996 as amended by Law 25.859 of 2003 and Annex III of the Patentability Guidelines of INPI

Artículo 6

No se considerarán invenciones para los efectos de esta ley:

c) Los planes, reglas y métodos para el ejercicio de actividades intelectuales, para juegos o para actividades económico-comerciales, así como los programas de computación;

ANEXO III

PROTECCIÓN DE LAS PATENTES RELACIONADAS CON PROGRAMAS DE COMPUTACIÓN.

De acuerdo al art. 4 LP, son patentables las invenciones nuevas, que impliquen una actividad inventiva y que sean susceptibles de aplicación industrial.

No obstante, el art. 6 LP establece que no se consideran invenciones, en particular:

a) Los descubrimientos, las teorías científicas y los métodos matemáticos.

b) Las obras literarias o artísticas o cualquier otra creación estética, así como las obras científicas.

c) Los planes, reglas y métodos para el ejercicio de actividades intelectuales para juegos o para actividades económico-comerciales, así como los programas de computación.

d) Las formas de presentación de la información.

La exclusión de la patentabilidad de los programas de computación, junto con otras materias como las obras literarias o artísticas, los descubrimientos o las teorías científicas, o los planes, reglas y métodos para el ejercicio de actividades económico-comerciales, se debe a que estas materias no tienen la naturaleza de invenciones, siendo vinculadas a actividades intelectuales, mentales y/o teóricas.

En general, para analizar la patentabilidad de las reivindicaciones presentadas debe analizarse que no estén comprendidas por las exclusiones enunciadas en el art. 6, que sean de carácter técnico y que con su implementación se logre un efecto técnico.

1.3 Materia excluida por el art. 6.

Toda reivindicación cuyo objeto sea alguna de las materias o actividades enunciadas en la lista de exclusiones enunciadas en el art. 6 debe ser denegada independientemente de los aparatos o métodos utilizados para llevar a cabo la actividad excluida.

2.3 Análisis del carácter técnico y del efecto técnico obtenido por la invención.

Las características de la invención se dividen “a priori” en características técnicas y características no técnicas. Las características técnicas son las que le dan carácter técnico a la invención. Las características excluidas (no técnicas) no se tienen en consideración para evaluar la novedad y la actividad inventiva.

El objeto reivindicado se analiza de acuerdo con la “esencia” de la invención. Si este núcleo de la invención no tiene carácter técnico, la invención no se considera patentable.

El carácter técnico de la invención se determina cuando ésta está dirigida a solucionar un problema técnico de la industria.

Si se determina que la reivindicación incluye solamente características no técnicas debe ser rechazada.

Con respecto al efecto técnico, la invención reivindicada es examinada en su totalidad para determinar si existe el mismo. Si de la ejecución de la invención tal como está reivindicada no se deriva efecto técnico alguno, la reivindicación debe ser rechazada.

Solicitudes vinculadas a programas de computación.

En el caso particular de solicitudes vinculadas a programas de computación, estas invenciones deben ser de carácter técnico. Si bien la ley 24481 no exige explícitamente este requisito, como lo hace para la novedad, la actividad inventiva y la aplicación industrial (art.4 LP), a partir de la mención de la aplicabilidad industrial, puede inferirse del texto legal la necesidad de que la invención, aporte una solución técnica a un problema técnico. Así, expresamente, se exige que la descripción de la invención debe permitir la comprensión del problema técnico planteado, a través de una mención al estado de la técnica conocido por el inventor, y una descripción detallada de la invención, destacando las ventajas de la misma con respecto a dicho estado de la técnica (art. 12 RLP) y las reivindicaciones deben definir el objeto a proteger conteniendo las características técnicas de la invención que conforman la solución aportada (ver C, III, 2).

Habitualmente las solicitudes vinculadas a programas de computación presentan materia que comprende parte de equipamiento o “hardware”, y parte de programa o “software”, presentándose estos dos componentes interrelacionados de modo que resulta dificultoso el poder separarlos, por lo que la invención debe examinarse en su conjunto y determinar el efecto técnico que la puesta en práctica de la invención produce. Cuando efectivamente el efecto técnico tiene lugar, aunque se trate de un efecto conocido, la invención será patentable a condición de reunir el resto de los requisitos de novedad, actividad inventiva y aplicación industrial establecidos por el art. 4 L.P..

Una computadora puede entenderse como un dispositivo que comprende a un procesador con la capacidad de ejecutar operaciones de un conjunto limitado de operaciones, en forma secuencial de acuerdo a instrucciones almacenadas en listas denominadas “programas”, a valores almacenados en sus registros internos y a parámetros físicos presentes en sus circuitos de entrada y salida, que determinan los diferentes estados del procesador.

El conjunto limitado de operaciones forma parte del diseño del procesador, por lo cual todos los programas que pueda ejecutar el procesador y los “efectos técnicos” asociados a los mismos están predeterminados. Es decir que no es posible escribir un programa que produzca una relación de entrada/salida que no esté implícita en el diseño del procesador. Bajo este punto de vista, puede concluirse que el efecto técnico es del procesador (cubierto por patentes) y no del programa (cubierto por derecho de autor).

El carácter técnico puede encontrarse en los efectos técnicos obtenidos de la ejecución, por parte del hardware del computador, de las instrucciones contenidas en el programa de computación, si dichos efectos solucionan un problema técnico.

Una invención basada en métodos matemáticos como parte de un procedimiento técnico, que no busca protección para el método matemático como tal, puede ser patentable, siempre que además cumpla con los requisitos de novedad y actividad inventiva.

Una reivindicación de un procedimiento técnico ejecutado bajo el control de un programa no se considera referida a un programa de computación como tal, por lo que puede ser patentable, siempre que además cumpla con los requisitos de novedad y actividad inventiva. En el caso de datos físicos, que pueden representar una imagen o parámetros y valores de control de un proceso industrial, puede considerarse que el procesamiento de dichos datos físicos tiene carácter técnico.

Como ejemplo puede citarse "Método computarizado de análisis mediante espectroscopia de plasmas producidos por láser para el control de la calidad de células solares."

En la patente se describen dos programas uno para el control del barrido de las muestras que se encarga del posicionamiento del sólido al inicio del análisis, y otro que se encarga del muestreo y de la introducción de los parámetros del análisis.

El conjunto tiene efecto técnico y puede ser patentable en la medida que sea novedoso y tenga actividad inventiva.

Por el contrario, valores económicos, financieros, etc. obtenidos mediante un computador, no tienen la consideración de datos físicos, dado que requieren una actividad mental para su evaluación, con lo cual cae dentro de las exclusiones del art.6 LP.

El procedimiento o método que tiene un efecto sobre la manera en que un procesador funciona, también es de naturaleza técnico. Por ejemplo, modificaciones en el sistema operativo o en el funcionamiento de la interfaz de usuario, que tienen como consecuencia por ejemplo el ahorro de memoria, el incremento de la velocidad o la mejora de la seguridad. A modo de resumen, en relación con el tema planteado, corresponde distinguir las siguientes situaciones:

- Un programa de computación, reivindicado por sí mismo, o como grabación en un portador de registro, no es patentable independientemente de su contenido, por haber sido pensado como trabajo no técnico.
- La situación no cambia cuando dicho programa de computación es ejecutado por una computadora conocida.
- Sin embargo, si el objeto reivindicado realiza una contribución técnica al arte previo, la patentabilidad no debe ser denegada simplemente porque un programa de computación está involucrado en su implementación.
- Todas aquellas invenciones vinculadas con programas de computación que den solución técnica a un problema concreto en el campo de la técnica podrán ser considerados patentables.

ARMENIA: Article 10 (c) of the Patent Law of 10/06/2008

Article 10. The Exception to Legal Protection

(1) Within the meaning of Article 9 of this Law the following shall not be subject to legal protection:

- (c) methods of organization and management of economy;

AUSTRALIA : Patent Act No. 83 of 30/10/1990 as last amended by Act No. 35 of 2012

No explicit provision of law

AUSTRIA (EU): Section 1 (2) 3) and (3) of the Patents Law 1970 (BGBl. No. 259/1970), as last amended by Act No. 143/2001 (last amended version of 2010 not available in English)

Patentable Inventions

1.—

(2) The following in particular shall not be regarded as inventions:

- 3. schemes, rules and methods for performing mental acts, for playing games or for doing business, and programs for computers;

(3) The provisions of subsection (2) shall exclude patenting of the subject matter or activities referred to in that subsection only to the extent to which protection is demanded for them as such.

BAHRAIN: Law No (1) for the year 2004 On Patents and Utility Models amended by 2006

No explicit provision of Law

BARBADOS: Patents Act, Cap. 314, No. 18 of 26/07/2001

No explicit provision of law

BELARUS : Article ... of the Law No. 160-Z on Patents for Inventions, Utility Models and Industrial Designs of 16/12/2002

BELGIUM (EU) : Article 3 §§1 3) and 2 of the Patent Law of 28/03/1984 (Official Consolidation of 01/01/2010)

Article - 3

§ 1er. Ne sont pas considérées comme des inventions au sens de l'article 2 notamment :

3) les plans, principes et méthodes dans l'exercice d'activités intellectuelles, en matière de jeu ou dans le domaine des activités économiques, ainsi que les programmes d'ordinateurs ;

§ 2. Les dispositions du paragraphe 1er n'excluent la brevetabilité des éléments énumérés aux dites dispositions que dans la mesure où la demande de brevet ou le brevet ne concerne que l'un de ces éléments, considéré en tant que tel.

Website of the Belgian Patent Office

http://economie.fgov.be/fr/entreprises/propriete_intellectuelle/Brevets/conditions_brevetabilite/#.UhYu2kpiouM

La notion d'invention

Avant tout, il doit s'agir d'une véritable invention. Aucune définition légale de l'invention n'existe. Toutefois on définit généralement l'invention par le fait qu'elle doit avoir un caractère technique, ce qui signifie qu'elle apporte une solution technique à un problème technique ou qu'elle apporte une contribution technique à l'état de la technique.

Il s'ensuit que ne sont pas, en tant que tels, considérés comme des inventions :

Les programmes d'ordinateur. Ce n'est que si le programme d'ordinateur engendre un effet technique particulier ou si, en combinaison avec un équipement, il satisfait aux autres conditions de brevetabilité, qu'il pourra éventuellement être protégé par un brevet. Une invention mise en oeuvre par un programme d'ordinateur qui apporte une solution technique à un problème technique est donc susceptible d'être protégée par un brevet.

Un logiciel par lequel des données occupent moins de place dans la mémoire de l'ordinateur pourrait par exemple constituer une 'invention'. Les programmes d'ordinateur sont par contre protégeables, en tant que tels, par le droit d'auteur.

BELIZE: Patents Act, Chapter 253, of 21/06/2000 as last amended in 2005
No explicit provision of law

BHUTAN: Industrial Property Act of the Kingdom of Bhutan of 2001
No explicit provision of Law

BOSNIA AND HERZEGOVINA: Article 6 (6) and (7) of the Patent Law of 28/05/2010

Article 6 Patentable inventions

(6) The following, in particular, shall not be regarded as inventions within the meaning of paragraph (1) of this Article:

d) computer programmes

(7) The provision of paragraph (6) of this Article shall apply only to the extent in which a subject matter of the application for the protection of an invention is such an element or an activity as such.

BOTSWANA: Section 9 (1) (e) of the Industrial Property Act of 24/04/2010

9. Matters excluded from patent protection

(1) For the purposes of this Act, the following shall not be regarded as inventions and shall be excluded from patent protection —

(e) a computer program.

BRAZIL: Article 10 V of the Industrial Property Law No. 9.279 of 14/05/1996 as last amended by Law No. 10.196 of 14/02/2001

10. The following are not considered to be inventions or utility models:

V. computer programs per se;

BRUNEI DARUSSALAM: Patents Order of 17/10/2011

No explicit provision of Law

BULGARIA (EU) : Article 6 (2) 3) and (3) of the Patent Law No. 27/2 of 1993 as last amended by Law No. 59/20 of July 2007

Patentable Inventions

Article - 6

(2) The following shall not be regarded as inventions:

3. schemes, rules and methods for performing mental acts, playing games or doing business, and programs for computers;

(3) The provisions of paragraph (2) shall apply to the subject matter referred to only to the extent that legal protection is sought for the subject matter as such.

BURUNDI: Article 18 of the Law No. 1/13 of 28/07/2009 on Industrial Property

Article 17:

The following shall be excluded from patent protection:

- Discoveries, scientific theories and mathematical methods;

- Plans, principles or methods in the field of economic activities, in the performance of purely intellectual activities or in games;
- Methods of surgical or therapeutic treatment of the human or animal body as well as diagnostic methods. This provision shall not apply to the products used for the implementation of one of these methods;
- Natural substances, even if they had been purified, synthesized or isolated in another manner. This provision shall not apply to processes making it possible to isolate these natural substances from their original environment;
- Known substances for which a new use has been discovered;
- Plants and animals, including parts thereof, other than microorganisms, and essentially biological processes for the breeding of plants and animals and parts thereof, other than non-biological and microbiological processes;
- Animal breeds and plant varieties;
- Inventions whose exploitation is contrary to public order or morality, it being understood that the exploitation of said invention is not contrary to public order or morality owing to the sole fact that such exploitation is prohibited by legislation;
- Pharmaceutical products, up until January 1, 2016.

Article 18:

The provisions of Article 17 shall not apply:

- to process inventions which consist in full or in part of procedures which are carried out by a computer and run by a computer program;
- to product inventions consisting of elements of an invention implemented by computer, in particular, a machine-readable computer code stored on a material medium such as a diskette, a computer hard drive or a computer memory and a universal calculator, the novelty of which in relation to prior art primarily stems from its combination with a specific software. It is understood that persons filing patent applications concerning computer programs and inventions relating to computers covered by paragraph 1 have waived their right to any copyright protection.

CAMBODIA: Law on Patents, Utility Models and Industrial Designs of 22/01/2003, as supplemented by Decree No. 706 of 29/06/2006

No explicit provision of law

CANADA: Patent Act (R.S., 1985, c. P-4, Act current to 28/02/2011)

No explicit provision of law

MANUAL OF PATENT OFFICE PRACTICE

16.02 Subject-matter

As with any invention, in order to be patentable under the Patent Act the claimed subject-matter of a computer-implemented invention must fall within one of the five categories found within the section 2 definition of "invention", namely art, process, machine, manufacture or composition of matter.

The following sections set out how the five categories of invention apply to computer-implemented inventions in particular, and consequently refine the more general guidance provided in Chapter 12 of this manual.

A computer-implemented invention may be claimed as a method (art, process or method of manufacture), machine (generally, a device that relies on a computer for its operation), or product (an article of manufacture). Certain subject-matter relevant in the computer arts may

not be claimed as such, including computer programs 16.08.04, data structures 16.09.02, and computer-generated signals 16.09.05.1

A guiding principle in respect of computer-related inventions was provided by the Federal Court of Appeal in *Schlumberger*, which noted that "the fact that a computer is or should be used to implement a discovery does not change the nature of that discovery", and also that the presence of a computer cannot effect the "transforming into patentable subject-matter [of] what would, otherwise, be clearly not patentable".

16.03.02 Patentability and programming

A computer program is not, by itself, statutory subject-matter. However, if the result of running the program on a computer is to provide a novel and inventive technological solution to a technological problem, then the program is viewed as modifying the technological nature of the computer as a whole. The program in such cases is not a discrete element of a claim to the computer.

In considering whether a program will bestow patentability on an otherwise-known computer, the goal is therefore to identify whether it provides a novel and inventive technological solution to a technological problem.

In cases where the computer program expresses a statutory method (i.e. a series of steps which provides a technological solution to a technological problem), the program will be considered to be technological in nature. If the method is also both novel and inventive, then the programmed computer would be patentable. Thus, as noted in 16.02.03, where a computer implements the entirety of a patentable method, the computer is patentable. If the method, while technological, is not novel and inventive then it is not sufficient to render the computer patentable. Note that where the computer only implements part of a patentable method, care must be taken to base the assessment only on those parts of the method which take place on the computer, and not on the basis of the method as a whole.

On the other hand, where the computer program expresses a non-statutory method, the non-statutory method itself is not a patentable contribution, regardless of whether it is novel and inventive. The patentability of the computer claims in such cases will depend on additional elements defining how the computer is adapted to implement the method. These additional elements may or may not be novel and inventive, depending on their nature and complexity and the state of the art in programming at the relevant date. Where inventive effort is needed to enable a computer to implement a method in a novel way, a technological solution to a technological problem has been contributed.

In determining whether the program's design is inventive or not, the examiner will be guided by the description. Paragraph 80(1)(d) of the Patent Rules states that the description shall "describe the invention in terms that allow the understanding of the technical problem, even if not expressly stated as such, and its solution".

Thus, it should be clear from the description what technical (technological) problem is being addressed, and what solution is being proposed by the inventors. Where the examiner is considering whether ingenuity was required in reducing an algorithm to a specific series of operations to be carried out by the computer program, the level of detail included in the description will be informative.

Where the application includes no details regarding how the computer program is to operate, this suggests the applicant considers the manner of implementing their method to be uninventive. It can be appropriately concluded by the examiner that there is no invention in the reduction to practice of the method. This conclusion is not prejudicial to the applicant,

since even if the applicant were incorrect in considering the development of the program to be uninventive it would nevertheless follow that the description would not be enabling. Given the lack of disclosure, the programmer would be called upon to exercise inventive effort in determining how the program is to operate.

Where a greater level of detail is provided, the examiner must consider whether the specific implementation is an inventive solution to a technological problem in respect of the operation of the computer, and thereby determine if the computer itself has been contributed.

CAPE VERDE: Industrial Property Code, Decree-Law No. 4/2007 of 20/08/2007 Industrial Property Code
No explicit provision of Law

CHILE: Industrial Property Law No. N° 19.039 (Consolidated Law of 2006)
No explicit provision of law.

CHINA: Patent Law of 12/03/1984 as last amended on 27/12/2008
No explicit provision of law

Rule 4.2, Part II, Chapter I of the SIPO Guidelines of 2010
Rules and methods for mental activities

“Mental activities” refer to human’s thinking movements. They originate from human’s thinking, and produce abstract results through inference, analysis and judgment, or, via human’s thinking movement, produce results by indirectly acting on the nature. Rules and methods for mental activities are rules and methods governing people’s thinking, expression, judgment, and memorization. Because they do not use technical means or apply the laws of nature, nor do they solve any technical problem or produce any technical effect, they do not constitute technical solutions. Rules and methods for mental activities not only fail to comply with article 2.2, but also fall to be circumscribed as provided in Article 25.1 (2). Therefore, rules and methods instructing people on how to perform this kind of activities cannot be granted patent rights.

In determining whether or not a claimed subject matter in a patent application involving rules and methods for mental activities is a patentable subject matter, the following principles shall be followed.

(1) If a claim concerns only rules and methods for mental activities, it shall not be granted a patent right. If a claim, except for the title of the subject matter, is defined by rules and methods for mental activities in the whole contents, in substance it concerns only rules and methods for mental activities, and it shall neither be granted a patent right. Examples include the following:

Method of examining patent application

Methods and system of managing organization, production, commercial activities, or economy, etc.;

Traffic rules, schedules, competition rules;

Methods of deduction, inference, or operations;

Rules of classifying books, methods of editing dictionary, methods of searching information, methods of classifying patents:

Rules and methods of editing calendar;

Operating instructions of an instrument or apparatus;

Grammar of various languages, rules of coding Chinese characters;

Computer languages, computing rules;

Short-cut arithmetic methods and relevant pithy formulae;

Mathematical theories and methods of conversion;
Methods of psychological test;
Methods of teaching, lecturing, training, and beast training;
Rules and methods of various games or entertainment;
Methods of statistics, accounting, or bookkeeping;
Music books, food recipes, or chess manuals;
methods of keeping fitness;
methods of disease survey and methods of population census;
methods of presenting information; and
computer program per se.

(2) Except the cases described above in point (1), if a claim in its whole contents contains not only matter of rule or method for mental activities but also technical features, then the claim, viewed as a whole, is not a rule or method for mental activities, and shall not be excluded from patentability under Article 25.

Rule 2(2), Chapter 9, Part II, SIPO Guidelines of 2010

Besides cases said in 1), if all the contents of a claim include not only rules and methods for mental activities but also technical features, for example, the contents defining the above mentioned devices for computer games include rules for games and technical features as well, then the claim as a whole is not rules and methods for mental activities, and shall not be excluded from patentability in accordance with Article 25.

In accordance with Article 2.2 "invention" in the Patent Law means any new technical solution relating to a product, a process or improvement thereof. An invention application relating to computer programs is the subject matter of patent protection only if it constitutes a technical solution.

If the solution of an invention application relating to computer programs involves the execution of computer programs in order to solve technical problems, and reflects technical means in conformity with the laws of nature by computers running programs to control and process external or internal objects, and thus technical effects in conformity with the laws of nature by computer running programs to control and process external or internal objects, or the effect obtained is not restrained by the laws of nature, the solution is not a technical solution as provided by Article 2.2, and is not the subject matter of patent protection.

For example, if the solution of an invention application relating to compute programs in order to perform control of an industrial process, a measurement or test process, completes a series of control during various stages of industrial process in accordance with the laws of nature through execution of a kind of industrial process control program by a computer, and thus industrial process control effects in conformity with the laws of nature are obtained, the solution is a solution as provided for in Article 2.2 and is the subject matter of patent protection.

If the solution of an invention application relating to computer programs involves execution of programs in order to process a kind of external technical data, completes a series of technical process on the technical data in accordance with the laws of nature through execution of a kind of technical data process program by a computer, and thus technical data process effects in conformity with the laws of nature are obtained, the solution is a solution as provided for in Article 2.2 and is the subject matter of patent protection.

If the solution of an invention application relating to computer programs involves execution of computer programs in order to improve the internal performance of computer system, completes a series of setting or configuration to parts of a computer system in accordance with the laws of nature through execution of a kind of internal performance improvement program by a computer, and thus internal performance improvement effects of the computer system in conformity with the laws of nature are obtained, the solution is a solution as provided for in Article 2.2 and is the subject matter of patent protection.

COSTA RICA: Article 1 (2) (a) of the Law on Patents, Industrial Designs and Utility Models No. 6867 of 25/04/1983 as last amended by Law No. 8632 of 25/05/2008

Inventions

Article 1

2.–

The following shall not be considered inventions for the purposes of this Law:

(a) discoveries, scientific theories, mathematical methods and computer programs, taken separately;

CROATIA: Article 5(6) 5) of the Patents Law No. 173/2003 as last amended by Act No. 76/2007

PATENTABLE INVENTION

Article 5

(6) The following in particular shall not be considered to be the inventions within the meaning of paragraph (1) of this Article:

5. computer programs.

Rule 1.9, SIPO Guidelines, PART B, Chapter B –I

1.9 Computer-implemented inventions

Programs for computers are a form of "computer-implemented invention", an expression intended to cover claims which involve computers, computer networks or other programmable apparatus whereby one or more of the features of the claimed invention are realised by means of a program or programs. Such claims may e.g. take the form of a method of operating said apparatus, the apparatus set up to execute the method, or the program itself. Insofar as examination practice is concerned, no distinctions are made on the basis of the overall purpose of the invention, i.e. whether it is intended to fill a business niche or to provide some new entertainment, etc.

The basic patentability considerations in respect of claims directed to computer programs are in principle the same as for other subject-matter. While "computer programs" are included among the items listed in Art. 5(6) PA as exclusions, if the claimed subject-matter has a technical character it is not excluded from patentability by the provisions of Art. 5(6) PA. If a computer program is capable of bringing about, when running on a computer, a further technical effect going beyond normal physical effects (e.g. electrical currents), it is not excluded from patentability. This further technical effect may be known in the prior art. A further technical effect which lends technical character to a computer program may be found e.g. in the control of an industrial process or in processing data which represent physical entities or in the internal functioning of the computer itself or its interfaces under the influence of the program and could, for example, affect the efficiency or security of a process, the management of computer resources required or the rate of data transfer in a communication link.

As a consequence, a computer program may be considered as an invention within the meaning of Art. 5(1) PA if the program has the potential to bring about, when running on a computer, a further technical effect which goes beyond the normal physical interactions between the program and the computer. A patent may be granted on such a claim if all other requirements of the law, in particular with regard to novelty and inventive step, are met. Such claims should not contain program listings, but should define all the features which assure patentability of the process which the program is intended to carry out when it is run.

In assessing whether there is an inventive step, the examiner must establish an objective technical problem which has been overcome.

The solution of that problem constitutes the invention's technical contribution to the art. The presence of such a technical contribution establishes that the claimed subject-matter has a technical character and therefore is indeed an invention within the meaning of Art. 5(1) PA. If

no such objective technical problem is found, the claimed subject-matter does not satisfy at least the requirement for an inventive step

CUBA: Article 21.3 (i) of the Decree-Law No. 290 of 20/11/2011 on Inventions and Industrial Designs and Models

Materia patentable

Artículo 21.3

No se consideran invenciones:

i) los programas de computación, las obras científicas y artísticas y literarias, y las creaciones estéticas;

CYPRUS (EU): Article 5 (2) (c) of the Patent Law of 01/04/1998, No. 16(1) (version of 2006 not available in English)

Patentable Inventions

Art. 5.

(2) The following, in particular, shall not be regarded as inventions within the meaning of paragraph (1):

(c) schemes, rules and methods for performing mental acts, playing games or doing business, and programs for computers;

CZECH REPUBLIC (EU): Section 3 (2) (c) and (3) of the Law on Inventions, Industrial Designs and Rationalization Proposals No. 527 of 27/11/1990 as last amended by Act No. 207/2000 Coll. and Act No. 378/2007

Section 3

Patentability of inventions

(2) The following shall not be regarded as inventions:

(c) schemes, rules and methods for performing mental acts, playing games or doing business, and programs for computers;

(3) The patentability of the subject-matter or activities referred to in the Subsection 2 is excluded only to that extent to which an application or a patent relates to such subject-matter or activities as such.

DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA: Invention Law of 13/05/1998

No explicit provision of law

DEMOCRATIC REPUBLIC OF THE CONGO: Article 12 of the Law No. 82-001 of 07/01/1982 on Industrial Property

Article 12

Subject to the provisions relating to Chapter 6 of this Title, and without prejudice to the express legal or regulatory provisions, the following shall not be considered patentable:

3. financial or accounting methods, game rules and all other systems of an abstract nature, in particular programs or series of instructions for the sequence of operations of a calculating machine;

DENMARK (EU) : Section 1 (2) (iii) of the Consolidate Patent Act No. 108 of 24/01/2012

Section 1.-

(2) In particular the following subject-matter or activities as such shall not be regarded as inventions:

(iii) schemes, rules or methods for performing mental acts, playing games or doing business or programs for computers,

DJIBOUTI: Article 26 (g) of the Protection of Industrial Property Law No. 50/AN/09/6th L of 21/06/2009

Article 26

The following shall not be considered inventions:

(g) computer programs;

DOMINICA: Patent Act No. 8 of 07/10/1999

No explicit provision of law

DOMINICAN REPUBLIC: Article 2 (1) e) 3 of the Law on Industrial Property No. 20-00 of 18/04/2000 as least amended by Law No. No. 424-06 of 2006

Article 2 - Items excluded from Protection by Patent of Invention

1) Any subject matter that does not conform to the definition in Article 1 of the present Law shall not be considered an invention and, as such, shall be excluded from patent protection for inventions.

In particular, the following shall not be considered inventions:

e) Computer software.

ECUADOR: Article 125 (d) of the Intellectual Property Law (Consolidation No. 2006-13)

Article 125

- The following shall not be considered inventions:

(d) plans, rules and methods for the pursuit of intellectual activities, the playing of games, or economic and business activities, and also computer programs or software, where they do not form part of an industrially applicable invention; as such?

EGYPT: Law on the Protection of Intellectual Property Rights No. 82 of 2002

No explicit provision of Law

EL SALVADOR: Law on the Promotion and Protection of Intellectual Property Rights (Legislative Decree No. 604 of 15/07/1993)

No explicit provision of Law

ESTONIA (EU): § 6(2) 5) of the Patent Act (Act No. RT I 1994, 25, 406, as last amended by Act No. RT I, 28.12.2011 of 07/12/2011)

§ 6. Subject of invention

(2) The following, inter alia, are not regarded as the subject of inventions:

5) algorithms for computers and computer programs;

ETHIOPIA: Section 4 (1) (c) of the Proclamation of the Industrial Property Law No. 123 of 10/05/1995

4. Non-Patentable Inventions

1. The following shall not be patentable:

c) Schemes, rules or methods for playing games or performing commercial or industrial activities and computer programmes

FINLAND (EU): Section 1(2) 3) of the Patents Act No. 550 of 15/12/1967 as last amended by Act No. 743 of 17 /06/2011

Section 1

2. The following, as such, shall not be regarded as inventions:

(3) schemes, rules and methods for performing mental acts, playing games or doing business, and programs for computers;

FRANCE (EU) : Article L611-10 (2) (c) and (3) of the Intellectual Property Code, Law No. 92-597 of 01/07/1992 (as last amended on 13/08/2013)

Article L611-10

2. Ne sont pas considérées comme des inventions au sens du premier alinéa du présent article notamment :

c) Les plans, principes et méthodes dans l'exercice d'activités intellectuelles, en matière de jeu ou dans le domaine des activités économiques, ainsi que les programmes d'ordinateurs ;

3. Les dispositions du 2 du présent article n'excluent la brevetabilité des éléments énumérés auxdites dispositions que dans la mesure où la demande de brevet ou le brevet ne concerne que l'un de ces éléments considéré en tant que tel.

DIRECTIVE EXAMEN DEMANDE DE BREVET, Title I, Section C, Chapter VII

1.6.

PROGRAMMES D'ORDINATEURS

Les programmes d'ordinateurs et les logiciels sont considérés comme des œuvres de l'esprit pouvant faire l'objet d'un droit d'auteur. En tant que tels, ils ne sont pas considérés comme des inventions brevetables. En conséquence, si une revendication a pour seul objet un programme d'ordinateur considéré en tant que tel, cette revendication doit être rejetée.

Bien que les "programmes d'ordinateurs" figurent parmi les éléments exclus de la brevetabilité, si l'objet revendiqué présente un caractère technique, il n'est pas exclu de la brevetabilité. Ainsi peuvent faire l'objet d'un brevet :

- des machines commandées par un programme d'ordinateur, dans la mesure où les revendications énoncent les caractéristiques techniques
- des procédés à finalité industrielle incluant des étapes programmées, dès lors que ces procédés consistent en une succession d'étapes concrètes, matériellement exécutées, permettant d'obtenir un effet technique et industriellement

Si un programme d'ordinateur est capable de produire, lorsqu'il est mis en oeuvre sur un ordinateur, un effet technique supplémentaire allant au-delà de ces effets techniques normaux consistant à faire fonctionner l'ordinateur, il n'est pas exclu de la brevetabilité.

Un tel effet technique susceptible de conférer un caractère technique à un programme d'ordinateur peut résider, par exemple, dans la commande d'un processus industriel, dans le traitement de données représentant des entités physiques ou dans le fonctionnement interne de l'ordinateur proprement dit ou de ses interfaces sous l'influence du programme. Il peut, par exemple, avoir une incidence sur l'efficacité ou la sécurité d'un procédé, sur la gestion des ressources informatiques nécessaires ou bien encore sur le débit de transfert des données dans une liaison de communication permettant ainsi de résoudre un problème technique.

Les revendications doivent définir toutes les caractéristiques assurant la brevetabilité du procédé que le programme doit mettre en oeuvre lorsqu'il est exécuté ; par contre, les listes de programme ne doivent pas y figurer, et sont éventuellement jointes en annexe à la fin de la description.

Dans ces hypothèses, les formulations suivantes sont acceptées:

- programme d'ordinateur comprenant des portions /moyens / instructions de code de programme pour l'exécution des étapes du procédé selon la revendication (X) lorsque ledit programme est exécuté sur un ordinateur
- produit programme d'ordinateur comprenant des portions / moyens / instructions de code de programme enregistré sur un support utilisable dans un ordinateur, comprenant :
 - des moyens de programmation lisibles par ordinateur pour effectuer l'étape A,
 - des moyens de programmation lisibles par ordinateur pour effectuer l'étape B,
 - des moyens de programmation lisibles par ordinateur pour effectuer l'étape C.

GAMBIA: Industrial Property Act of 1989 as last amended on 2007
No explicit provision of Law

GEORGIA: Article 16 (1) (c) of the Patent Law of 05/02/1999 as last amended on 2010

Article 16 - Objects that cannot be regarded as an Invention

1. The following shall not be regarded as an invention:
 - c) algorithm, computer program;

GERMANY (EU): Section 1 (3) 3) and (4) of the Patent Law of 16/12/1980 (as last amended by the Act on Improvement of Enforcement of Intellectual Property Rights of 31/07/2009)

Section 1

(3) In particular, the following shall not be regarded as inventions within the terms of subsection (1):

3. schemes, rules and methods for performing mental acts, playing games or doing business as well as programs for computers;

(4) The provisions of subsection (3) shall constitute a bar to patentability only when protection is sought for said subject matters or activities as such.

GUIDELINES FOR PATENT EXAMINATION

3.3.3.2.1.

Basic Requirements Pursuant to Sec. 1 to 5 Patent Law

Patent protection shall only be granted for inventions relating to a field of technology. Patent protection is available for systematic teaching using controllable natural forces to achieve a result with clear cause and effect (BGH, BIPMZ 1970, p. 21 –rote Taube- and 2000, p.276, p.

278 -Sprachanalyseeinrichtung-). The "direct" utilisation of controllable natural forces is not mandatory for the technical character of a teaching (cf. BGH, BIPMZ 2000, p. 273, p. 275 -Logikverifikation-), but the result must be based on controllable natural forces and not on evaluative activity of the human mind.

The following subject-matter or activities are not considered to be inventions within the meaning of the Patent Law and are not patentable (Sec. 1 (2) Patent Law):

- a) discoveries, scientific theories and mathematical methods (eg. Archimedes' principle, methods for solving a system of equations);
- b) aesthetic creations (eg. purely decorative designs of a surface or a body);
- c) schemes, rules and methods for performing mental acts, playing games or doing business (eg. Schemes for acquiring special skills; methods for solving brainteasers or schemes for organising commercial services) and computer programs (for details cf. paragraph 4.3.);
- d) presentations of information (eg. literature, news or message contents).

The exclusion of the subject-matter or activities mentioned under a) to d) is only applicable to the extent that protection is sought for them as such (Sec. 1 (2), (3) Patent Law), ie. they are only excluded from patent protection insofar as they are claimed irrespective of any concrete implementation. Where they are utilised to solve a concrete technical problem, they are generally patentable in this context (BGH, Mitt. 17 2001, p. 553, p. 555-Suche fehlerhafter Zeichenketten-).

The exceptions to patentability under Sec. 2 Patent Law should be noted (cf. paragraphs 2.6.3. and 4.2.).

4.3. Applications Comprising Computer Programs or Rules

4.3.1. Patent Protection for Inventions with Computer Programs, Program-Related Processes, Rules or the Like

Inventions involving a computer program, an arithmetical or organisational rule, other software characteristics or a program-related process are in principle eligible for patent protection provided they contain a technical teaching. A technical teaching is a systematic teaching using controllable natural forces to achieve a result with clear cause and effect (BGH, last stated in BIPMZ 2000, p. 276, p. 278 -Sprachanalyseeinrichtung-).

4.3.2. Programs, Rules as such Excluded from patentability within the meaning of Sec. 1 (2) Patent Law, are as follows:

- a) schemes, rules and methods for performing mental acts, playing games or doing business (eg. a plan for learning certain skills, a method for solving mental exercise problems, or a plan for organising a commercial service) and programs for computers (see also paragraph 4.3.3.), and
- b) presentation of information (eg. literature, contents of news).

The subject-matter mentioned in items a) and b) are, by act of law, not regarded as inventions; however, patentability is excluded only to the extent to which protection is sought for the subject-matter as such (Sec. 1(3) Patent Law) ie. it is excluded from patent protection only in so far as it is claimed in isolation from a specific function. But when used to solve a specific technical problem it is – in that context – in principle patentable (BGH, Mitt. 2001, p. 553, p. 555 -Suche fehlerhafter Zeichenketten-).

Consequently, this exclusion does not apply to the program-related inventions ie. for technical instructions contained in programs or technical instructions drafted as a process or apparatus. Insofar as technical processes or apparatus are claimed in connection with subject-matter mentioned in Sec. 1 (2) and (3) Patent Law, they are in principle patentable. This is true, above all, for programs performing procedural steps in conventional technical fields (cf. BGH, Mitt. 2001, p. 553, p. 555 –Suche fehlerhafter Zeichenketten-).

4.3.3.

Technical Character of Program-Related Inventions

A program-related invention has technical character, if, in order to solve the problem underlying the invention, it makes use of natural forces, technical measures or technical

means (e.g. hydraulic flows, electric currents in circuit elements and control systems, or computer signals), or if the solution is the result of technical considerations (cf. BGH, BIPMZ 2000, p. 273, p. 275 Logikverifikation-).

Whether or not this is the case, must at first be ascertained by taking into account the features of the patent claim, considering the contents of the relevant application documents. In doing so, the claimed subject-matter shall be considered as a whole. The individual features must not be regarded separately. All features pertaining to the solution of the problem, ie. all features of the patent claim, shall be taken into account, even though they are non-technical features (cf. also paragraph 3.3.3.2.4.). The link with technology must be established in the patent claim (cf. BGH, BIPMZ 2000, p. 273, p. 274 -Logikverifikation-). On the basis of an assessment of the subject-matter defined in the patent claim it must be established whether the subject-matter of the application relating to a process or a program for a computer or to a corresponding apparatus meets the requirements for technical character, pursuant to Sec. 1 (1) Patent Law. This includes the possibility of evaluating individual features of a claim differently, provided there are justified reasons for doing so, by taking account of the context on the basis of the understanding of a skilled person. However, the result of the assessment must not be made dependent on whether the subject-matter is novel and inventive; nor should the assessment be biased towards what was already known and what, by comparison, is novel in the claimed teaching. The crucial issue is how the main substance of the claimed teaching is to be understood and evaluated from the skilled person's point of view at the time of filing the application (cf. BGH, BIPMZ 2000, p. 273, p. 275 -Logikverifikation- with further references). Differences as compared to the state of the art are not investigated during the examination as to whether the invention has technical character, but later, during the examination as to novelty and inventive step.

4.3.4.

Process / Program / Circuit / Data Processing Unit

In case of program-related inventions the technical character does not depend on the existence of a fixed circuit scheme (special purpose circuit). The same inventive idea underlying such technical scheme may also be patentable as a process, specifically in terms of combining software with programmable hardware. The decisive point is that the invention teaches and requires the use of technical means or technical considerations to solve the problem (cf. also paragraph 4.3.3.).

Program-related inventions may have a technical character even if the technical means used for the solution, ie. data processing units or computer, circuit or control elements are already known. It is not detrimental if each of the individual elements separately operates in a known way.

The technical character of a process carried out by means of a program cannot be challenged on the ground that an ordinary data processing unit is used for the intended purpose. Rather, the characterising instructions in the claimed teaching must solve a specific technical problem.

In these circumstances, the claimed teaching may also be protected as a computer program or in any other form which uses a data processing system (cf. BGH, Mitt. 2001, p. 553, p. 555 -Suche fehlerhafter Zeichenketten-). This applies particularly to manufacturing and control processes for technical installations, machines and devices. A program-related operating process for a control device, for instance, may be technical, if known control elements operating according to a programmed instruction have to be used to solve the problem.

A program does involve a technical teaching, in particular, where it is integrated into technical processes, for example, where it processes results of measurements, controls process flows or acts in another way as a control element.

This is the case, for example, in an anti-lock braking system for wheel brakes: The sensors and valves are linked via control signals in accordance with a program-related process, whereby a signal triggered by the movement of a monitored wheel changes the brake pressure by activating a valve (cf. BGH, BIPMZ 1981, p. 70-Antiblockiersystem-).

An invention enabling the automatic indication of different parameters determined by measurements combined according to a given method of calculation provides a technical teaching (cf. BGH, BIPMZ 1992, p. 255-Tauchcomputer-).

A program-related teaching may generally be protected by a patent if it concerns the functional capability of the data processing system as such and consequently enables the direct interaction of its constituent elements (cf. BGH, BIPMZ 1991, p. 345 -Seitenpuffer-).

4.3.5.

Formulating the Teaching in the Claim

An apparatus (computer) which is configured in a specific way has in principle technical character due to its concrete embodiment. This applies even if, for example, texts are edited on the computer. For the purpose of assessing the technical character of an apparatus it is not relevant whether the apparatus produces a (further) technical effect, whether technology is enriched by it or whether it makes a contribution to the state of the art (BGH, BIPMZ 2000, p. 276 -Sprachanalyseeinrichtung-).

The teaching concretely formulated in the claim is not necessarily patentable just because the claim is directed to a physical object. The question as to whether the subject-matter of a claim is patentable cannot be answered solely in the light of what category it belongs to. Rather the main thrust of the claimed teaching is decisive.

A teaching falling within the prohibition on patenting (computer program as such) does not become patentable merely because it is set out in a patent application in a form which is stored on a conventional data carrier (BGH, Mitt. 2001, p. 553 -Suche fehlerhafter Zeichenketten-).

The case is different where the features of the claim in question characterised as a device serve to solve a concrete technical problem (cf. BGH, BIPMZ 2000, p. 276-Sprachanalyseeinrichtung- , BGH, Mitt. 2001, p. 553, p. 556 -Suche fehlerhafter Zeichenketten-).

4.3.6.

Cases of Doubt

For determining the technical character of the invention, it is sufficient if compliance with the requirements of technicality is established prima facie in consideration of the above stated principles. If sound reasons are given that the invention is technical, remaining doubts do, as a rule, not justify the denial of its technical character.

4.3.7.

Presentation of the Application

Applications must be drafted in the German technical language. However, they may contain the customary foreign-language technical terms from the field of data processing.

In addition to or instead of structural features (circuit details) also customary operation-related and function-related data are allowed in the patent claims.

The description may be supplemented by diagrams which concern the operational steps of data processing.

It may include a data flow chart, where the time sequence of related operations with the data and data carriers is indicated, as well as a program flow chart showing all the possible paths that data can take through the program.

Short excerpts from a program for data processing units in a customary, exactly defined program language may be permitted in the description, if they are conducive to intelligibility.

4.4.

Documents for the First Publication of the Patent Application (Offenlegungsschrift)

The patent applications are published to inform the public of the possible creation of industrial property rights.

If the examination as to obvious defects cannot be concluded before the expiry of the relevant period for laying the application open for public inspection (18 months, Sec. 31 (2) No. 2 Patent Law), the uncorrected documents of the patent application shall be published.

The application shall, as a rule, be laid open to the public even if it is the subject of an appeal, except for appeals against the inspection of the files itself, against its date or against the proposed contents of the first publication of the patent application (Offenlegungsschrift). The patent application is not published and no reference pursuant to Sec. 32 (5) Patent Law is made, if the patent specification has already been published.

The originally filed documents must be used for the first publication of the patent application, provided these are printable. If the drawings are missing on receipt of the application, although the application contains a reference to drawings or if the abstract is missing, and if these documents are filed subsequently in due time, they shall be incorporated in the documents for the first publication of the application (Offenlegungsschrift).

If the whole application or parts thereof is/are not drafted in German, the German translation shall be incorporated in the publication of the patent application (Offenlegungsschrift) instead of the foreign-language documents, provided it was filed in due time and complies with the requirements under Sec. 14 Patent Ordinance.

For the printing of the patent application (Offenlegungsschrift), after the examination as to obvious defects by the examiner, also such documents shall be used which were subsequently filed because the original documents were not printable or contained obvious errors, or were submitted upon the request of the Examining Section to remedy an obvious defect. Other unsolicited new documents filed by the applicant shall be included in the files but not used for the first publication of the patent application (Offenlegungsschrift), not even if expressly so requested by the applicant. In the latter case the applicant shall be briefly notified accordingly.

In all cases in which the publication of the patent application (Offenlegungsschrift) is not based exclusively on the documents received on the filing date, a note shall be made on the title page of the first publication of the patent application (Offenlegungsschrift), stating that the contents of the publication are not identical with the documents filed on the date of filing.

GHANA: Patent Act, Act No. 657 of 2003

No explicit provision of Law

GREECE (EU) : Articles ... of the Law on "Technology transfer, inventions and technological innovation" No. 1733 of 1987

No provision in WIPO lex.

GRENADA: Sections ... of the Industrial Property Bill of 2002

Not updated in WIPO lex.

GUATEMALA: Section 91 (g) of the Industrial Property Law, Decree No. 57 of 18/09/2000

Materia que no constituye Invención 91.

No constituirán invenciones, entre otros:

g) Los programas de ordenador aisladamente considerados.

GUINEA BISSAU: Industrial Property Code of 1996

No explicit provision of Law

GUYANA: Patents and Designs Act (Cap. 90:03) of 01/01/1938 as last revised in 1972
No explicit provision of Law

HONDURAS: Article 5 6) of the Industrial Property Law, Decree Law No. 12-99-E of 30/12/1999

Artículo 5

No se considerará invención, y en tal virtud quedará excluida de protección por patente:

6) Los programas de computación aisladamente considerados

HUNGARY (EU): Article 1 (2) (c) and (3) of the Law on the Protection of Inventions by Patents No. XXXIII of 1995 (Consolidated text of 01/03/2011)

Patentable inventions

Article 1

(2) The following in particular shall not be regarded as inventions within the meaning of paragraph (1):

(c) schemes, rules and methods for performing mental acts, playing games or doing business, and programs for computers,

(3) Patentability of the subject matters referred to in paragraph (2) shall be excluded only to the extent to which a patent application or the patent relates to such subject matter as such.

ICELAND: Article 1 (2) 3) of the Patent Act No. 17 of 1991 as last amended by Act No. 167/2007

Article 1

The principal innovations which are not considered to be inventions are those which concern exclusively:

3. a scheme, rule or method for performing mental acts, for playing games or for doing business, or a programme for a computer;

INDIA: Section 3 (k) of the Patent Act No. 39 of 1970 as last amended by the Patents Amendment Act No. 15 of 2005

3. What are not inventions.

The following are not inventions within the meaning of this Act, -

(k) a mathematical or business method or a computer programme per se or algorithms;

Manual of Patent Office Practice and Procedure, 2010

08.03.06.10 A mathematical or business method or a computer programme per se or algorithms are not patentable.

a. Under this provision (Section 3 (k)), mathematical methods, business methods, computer programmes per se and algorithms are not considered as patentable inventions. In relation to computer programs, the law provides a qualification that what is not patentable is only computer program per se.

d. Claims directed at 'computer programme products' are computer programme per se stored in a computer readable medium and as such are not allowable.

- e. If a claim in a patent application is not directed at a computer programme per se it could be patentable, if all other patentability conditions are met. This provision thus necessitates distinguishing computer programmes per se from other types of inventions that uses or implements computer programmes.
- f. The computer programmes are often claimed in the form of algorithms as method claims or system claims with some 'means' indicating the function of flow charts or process steps. The algorithm related claims may be even wider than the computer programme claimed by itself, for a programme represents a particular set, the algorithm expresses the principles generally and gives way for different programmes to be written based on the same algorithm and as such are not patentable.
- g. Essentially, all computer programmes need a combination with some hardware for their functionality. In an application for patent for a new hardware system, the possibility of a computer programme forming part of the claims cannot be ruled out. It has to be carefully considered as to how integrated is the novel hardware with the computer programme. Further, it is also to be considered whether the machine is programme specific or the programme is machine specific. A computer programme which may work on any general purpose known computer does not meet the requirement of patentability.
- h. Method claims, whether independent or dependent, reciting computer programs without process limitations in the form of hardware features are not allowable. For a method reciting computer programme to be patentable, it must clearly recite into it limiting hardware integers that enable the program to function.
- i. Claims directed at computer programs coupled to hardware, enabling the hardware to perform a certain function may be allowable, if such an invention meets all other conditions of patentability.

INDONESIA: Law No. 14 of 10/08/2001 regarding Patents
No explicit provision of Law

IRAN (ISLAMIC REPUBLIC OF): Patent, Industrial Design and Trademark Registration Act of 29/10/2007

No explicit provision of Law

IRAQ: Law No. 28 of 1999

No explicit provision of Law

IRELAND (EU): Section 9(2) (c) and (3) of the Patent Act No. 1 of 27/02/1992, as last amended by Law No. 31 of 2006

9.-

(2) Any of the following in particular shall not be regarded as an invention within the meaning of subsection (1):

(c) a scheme, rule or method for performing a mental act, playing a game or doing business, or a program for a computer,

(3) The provisions of subsection (2) shall exclude patentability of subject-matter or activities referred to in that subsection only to the extent to which a patent application or patent relates to such subject-matter or activities as such.

ISRAEL: Patent Law no. 5727 of 1967 as last amended by Law No. 5760-1999
No explicit provision of Law

(ITALY (EU): Article 45 (2) (b) and (3) of the Industrial Property Code, Legislative Decree No. 30 of 15/02/2005

Article 45 (Oggetto del brevetto)

2. Non sono considerate come invenzioni ai sensi del comma 1 in particolare:

b) i piani, i principi ed i metodi per attività intellettuali, per gioco o per attività commerciale ed i programmi di elaboratore;

3. Le disposizioni del comma 2 escludono la brevettabilità di ciò che in esse è nominato solo nella misura in cui la domanda di brevetto o il brevetto concerne scoperte, teorie, piani, principi, metodi, programmi e presentazioni di informazioni considerati in quanto tali.

JAMAICA: Patents Act of 1857 as last amended in 1975
No explicit provision of Law

JAPAN: Article 2 (3) and (4) of the Patent Law No. 121 of 13/04/1959, as last amended by Act No. 63 of 2011

2. Definitions

(3) "Working" of an invention in this Law means the following acts:

(i) in the case of an invention of a product (including a computer program, etc., hereinafter the same), manufacturing, using, assigning, etc. (assigning and leasing and, in the case where the product is a computer program, etc., including providing through a telecommunications line, hereinafter the same), importing or offering for assignment, etc. (including displaying for the purpose of assignment, etc., hereinafter the same) thereof;

(ii) in the case of an invention of a process, the use thereof; and

(iii) in the case of an invention of a process for manufacturing a product, in addition to the action as provided in the preceding paragraph, acts of using, assigning, etc., importing or offering for assignment, etc. the product manufactured by the process.

(4) A "Computer program, etc." in this Law means a computer program (a set of instructions given to an electronic computer which are combined in order to produce a specific result, hereinafter the same in this subsection) and any other data that is to be processed by an electronic computer equivalent to a computer program.

EXAMINATION GUIDELINES FOR PATENT AND UTILITY MODEL

1.1.1 Categories of Software-Related Inventions

(1) Invention of a process

When a software-related invention is expressed in a sequence of processes or operations connected in time series, namely procedure, the invention can be defined as an invention of a process (including an invention of a process of manufacturing a product) by specifying such a procedure.

(2) Invention of a product

When a software-related invention is expressed as a combination of multiple functions performed by the invention, the invention can be defined as an invention of a product by specifying such functions.

A program or data can be defined in the following manners:

(a) "A computer-readable storage medium having a program recorded thereon" can be defined as "an invention of a product." "A computer-readable storage medium having

structured data recorded thereon" can also be defined as an invention of a product, where processing performed by a computer is specified by the data structure recorded thereon.
(b) "A program" which specifies a multiple of functions performed by a computer can be defined as "an invention of a product."

2. Requirements for Patentability

This section explains requirements for patentability, statutory invention and inventive step which are particularly important in examining patent applications for software-related inventions.

However, it is not necessary to refer to this chapter when it can be judged based on "Part II: Chapter 1," whether the claimed invention qualifies as a statutory invention.

2.1 Inventions ruled by Patentability Requirements

(1) Patentability requirements are applied to "claimed inventions".

(2) The claimed invention is identified on the basis of the statement in a claim. In this case, the significance of matters (terms) to define the invention is interpreted taking into consideration the descriptions of the specification, drawings and the common general knowledge as of the filing.

2.2 Statutory Invention

To be qualified as a "statutory invention" prescribed in the Patent Act, the claimed invention shall be "a creation of technical ideas utilizing a law of nature." (See Part II: Chapter 1, 1)

2.2.1 Basic Concept

The basic concept to determine whether software-related invention constitutes "a creation of technical ideas utilizing a law of nature" is as follows.

(1) Where "information processing by software is concretely realized by using hardware resources," the said software is deemed to be "a creation of technical ideas utilizing a law of nature." (See 3. Examples 2-1 to 2-5 in this Chapter.)

2.2.2 Actual Procedure for Judgment

The actual procedure to judge whether a software-related invention is "a creation of technical ideas utilizing a law of nature" (statutory invention) or not is as follows.

(1) Identify the claimed invention based on the definitions in a claim. When the identified invention does not require special judgment and treatment for software-related inventions in judging whether the claimed invention constitutes "a creation of technical ideas utilizing a law of nature," "Part II: Chapter 1. 'Industrially Applicable Inventions'" shall be referred to. (Note*)

(2) Where information processing by software is concretely realized by using hardware resources (e.g. an arithmetic unit such as a CPU, a storage means such as memory) in the claimed invention, in other words, when information processing equipment (machine) or its operational method particularly suitable for the use purpose is constructed by concrete means in which software and hardware resources are cooperatively working so as to include arithmetic operation or manipulation of information depending on the said use purpose, the claimed invention constitutes "a creation of technical ideas utilizing a law of nature."

(3) Where information processing by software is not concretely realized by using hardware resources, the claimed invention does not constitute "a creation of technical ideas utilizing a law of nature."

2.2.3 Notes

(1) It should be noted that the invention to be judged is the claimed invention. Therefore, even if an invention wherein "information processing by software which is concretely realized by using hardware resources" is described in the detailed description of the invention or drawings, when the same effect is not stated in a claim, the claimed invention is deemed as "non-statutory."

(2) Even if the current claimed invention does not constitute "a creation of technical ideas utilizing a law of nature," when it can be turned into "a creation of technical ideas utilizing a law of nature" by amending the definition of the claim on the basis of the statements in the detailed description of the invention, it is recommendable that the examiner suggest how to

amend the definition of the claim simultaneously when notifying the applicant of the reason for refusal.

(3) It should be noted that the judgement whether the claimed invention is "a creation of technical ideas utilizing a law of nature", should be made interpreting the significance of the matters (terms) to define the invention noting that the category of the invention is irrelevant ("an invention of a process" or "an invention of a product").

(4) When a claimed invention is sought for "a program language" so that it is deemed to be an artificial arrangement, it is not "a creation of technical ideas utilizing a law of nature." (See Part II: Chapter 1, 1.1 (4))

(5) When a claimed invention is sought for "program listings" so that it is deemed to be a mere presentation of information, it is not "a creation of technical ideas utilizing a law of nature." (See Part II: Chapter 1, 1.1 (5)(b))

2.2.4 "Structured Data" or "Data Structure"

"Structured data" (including "a computer-readable storage medium having structured data recorded thereon") or "data structure" should be judged based on "2.2.1 Basic Concept" in this Chapter.

2.3 Inventive Step (Nonobviousness)

2.3.1 Basic Concept

(1) Whether or not a claimed invention involves an inventive step is determined whether the reasoning that a person skilled in the art could have easily arrived at a claimed invention based on cited inventions can be made by constantly considering what a person skilled in the art would do after precisely comprehending the state of the art in the field to which the invention pertains as of the filing. (See Part II: Chapter 2, 2.4 (1))

(2) Concretely, after finding the claimed invention and one or more cited inventions (Note*), one cited invention most suitable for the reasoning is selected. And comparison of the claimed invention with the cited invention is made, and the identicalness and the difference in matters defining the inventions are clarified. Then, the reasoning for lacking an inventive step of the claimed invention is attempted on the basis of the contents of the selected invention, other cited inventions (including well-known or commonly used art) and the common general knowledge. The reasoning can be made from various and extensive aspects. For example, the examiner evaluates whether the claimed invention falls under a selection of an optimal material, a workshop modification of design, a mere juxtaposition of features on the basis of cited inventions, or whether the contents of cited inventions disclose a cause or a motivation for a person skilled in the art to arrive at the claimed invention.

(Note*) Since the invention should be viewed as a whole, it is inappropriate to identify the claimed invention separating the aspect of artificial arrangement and that of automation technique.

(3) If advantageous effects of the claimed invention over a cited invention can be clearly found in the description in the specification, etc., it is taken into consideration as facts to support to affirmatively infer the involvement of an inventive step. (See Part II: Chapter 2, 2.4(2))

(4) When the reasoning can be made as a result of the above method, the claimed invention should be denied its inventive step. When the reasoning cannot be made, the claimed invention should not be denied its inventive step. (See Part II: Chapter 2, 2.4(2))

(5) Attempts are usually made in the field of software technology to combine methods or means used in different fields or apply them to another field in order to achieve an intended object. Consequently, combining technologies used in different fields and applying them to another field is usually considered to be within the exercise of an ordinary creative activity of a person skilled in the art, so that when there is no technical difficulty (technical blocking factor) for such combination or application, the inventive step is not affirmatively inferred unless there exist special circumstances (such as remarkably advantageous effects).

2.3.2 Problems to be solved by the Invention

The problems in connection with "software-implementation" or "computerization" are often mere general problems common to such computer technologies. "In order to improve the level of decision by using AI (Artificial Intelligence) or Fuzzy Logic," or "in order to make input-operation easier by using GUI (Graphical User Interface)" are examples of such problems to be solved by the invention. The judgement of "inventive step" should be made taking into consideration these generally known problems as of the filing.

2.3.3 A Person having Ordinary Skill in the Art

A person skilled in the art of software-related inventions is expected: to have common general knowledge both of the applied field of the said software-related inventions and computer technology (e.g., systematization technology); to use ordinary technical means for research and development; to exercise ordinary creative activity in changing design; and to be able to comprehend all the state of the art in the field of technology to which the invention pertains (state of the art in the applied field of the said software and the computer technology) as of the filing.

In addition, a person skilled in the art is supposed to be able to comprehend as his/her own knowledge all technical matters in the field of technology relevant to a problem to be solved by an invention.

Further, there may be cases where it is more appropriate to think in terms of "a group of persons" than a single person. (See Part II: Chapter 2, 2.2 (2))

2.3.5 Effects of the Invention

Since alleged general effects such as "can be processed quickly", "can process a large amount of data", "can obtain uniform results" are often obtained as a result of computerization, the said results cannot usually be said to be unforeseeable from the knowledge of the state of the art.

2.3.6 Notes

(1) Reference to the fact of commercial success or the equivalent

The fact of commercial success or the equivalent can be referenced as the fact effective to affirmatively infer the existence of an inventive step. However, it is limited to cases where conviction is gained to believe that the fact is based on the feature of the claimed invention according to the assertion or the proof of the applicant, rather than other causes such as selling techniques or advertisement.

(2) Treatment of a case where a different feature merely exists in data contents

The novelty of the claimed invention cannot be affirmatively inferred when it is ascertained that a different feature between the claimed invention and the cited invention merely exists in data contents.

(3) Recording a program or data on a computer-readable storage medium

Where the different feature between the original claimed invention and the cited invention is within the scope of the ordinary creative activity of a person skilled in the art, inventive step cannot be affirmatively inferred, even if a limitation of "recording a program or data on a computer-readable storage medium" is added to the claim.

(4) A medium which can transmit information

When the claimed invention is only specified by a feature inherent to the information transmission medium, for example, "a medium which transmits, or can transmit certain information," the claimed invention cannot be patented because of a lack of "novelty" or "inventive step."

Since the feature "a medium which can transmit certain information such as a program or data" is a feature inherent to an ordinary communication network, "a medium which can transmit certain information" is not effective to specify the "information transmission medium" as a product. There is thus no difference between the claimed invention and an ordinary communication network, causing the claimed invention to lack novelty.

JORDAN: Law on Patents No. 32 of 1999, as last amended by Law No. 28 of 2007

No explicit provision of Law

KAZAKHSTAN: Patent Law No. 427 of 16/07/1999 as last amended in 2012
Only in Russian

KENYA: Industrial Property Act No. 3 of 27/07/2001

No explicit provision of Law

Guideline for the examination of Patents, Utility Models, and Industrial Designs

6.7 Computer programs

In the particular case of inventions in the computer field, program listings in programming languages cannot be relied on as the sole disclosure of the invention. The description, as in other technical fields, should be written substantially in normal language, possibly accompanied by flow diagrams or other aids to understanding, so that the invention may be understood by those skilled in the art who are deemed not to be programming specialists. Short excerpts from programs written in commonly used programming languages can be accepted if they serve to illustrate an embodiment of the invention.

Matters excluded from patentability

Section 21(3) sets out a list of exclusions from patentability, namely:

21(3)(a) - a discovery, scientific theory or mathematical method;

Note. The fact that a known material has an unknown property is a discovery and as such is not itself patentable, but an application or use of that material may be patentable eg in a particular process. Similarly, finding a new substance or micro-organism occurring in nature is a discovery, but the process of isolating and extracting it, and the material so obtained, could be patentable.

21(3)(b) - a scheme, rule or method for performing a mental act, playing a game or doing business;

What is the position in regard to patents on computer programs?

Note:

(i) although rules for games cannot be patented (again they are covered by copyright), apparatus for playing a particular game (eg comprising board, pieces and rules) may be patentable

(ii) "methods of doing business" is an exclusion of importance. Methods of book keeping, trading stocks and shares etc are generally not patentable

26(b)

- Inventions contrary to public order, morality, public health and safety, principles of humanity and environmental conservation.

Probably the most important exclusions, as indicated above, are business methods and methods of medically treating humans and animals. It is particularly important to note that such methods may be patentable in some other countries, including the United States, so IPERs drawn up by USPTO and US equivalent patents should be checked carefully to ensure that they do not cover claims to business methods or to diagnostic, therapeutic or surgical methods for the treatment of humans or animals.

Equally it important to note that sections 21(3) and 26 does not exclude computer programmes.

KUWAIT: Law No. 4 of 1962 relating to Patents, Designs and Industrial Models as amended by Law No. 3 of 2001

Available only in Arabic

KYRGYZSTAN : Article 12 of the Patent Law of 14/01/1998 as last amended in 2003

LAO PEOPLE'S DEMOCRATIC REPUBLIC: Intellectual Property Law of 14/01/2008

No explicit provision of Law

LATVIA (EU): Section 9 (2) 3) and (3) of the Patent Law of 15/02/2007

Section 9. Subject-matter of an Invention and Non-patentable Subject-matter

(2) Within the meaning of this Law, the following shall not be considered as inventions:

3) schemes, methods of performing mental acts, playing games or doing business, as well as computer programs; and

(3) The patenting of the subject-matter referred to in Paragraph two of this Section shall be excluded only to the extent to which patent protection is sought for the se subject-matters as such.

LEBANON: Patents Law No. 240 of 07/08/2000

No explicit provision of Law

LESOTHO: Industrial Property Order No. 5 of 1989, as last amended by Act No. 4 of 1997

No explicit provision of Law

LIBERIA: Industrial Property Act of 2003

No explicit provision of Law

LIBYA: Law on Patents and Industrial Designs and Models No. 8 of 1959

No explicit provision of Law

LITHUANIA (EU): Article 2 (2) 3) of the Patent Law No. I-372 of 18/01/1994 as last amended by Law No. X-1119 of 10/05/2007

Article 2. Patentable Inventions

The following shall not be regarded as inventions:

3) schemes, rules and methods of games, intellectual or economic activities, as well as programmes for computers;

LUXEMBOURG (EU): Article 4 (2) (c) and (3) of the Patent Act of 20/07/1992

Patentable Inventions. Art. 4

2. The following in particular shall not be regarded as inventions within the meaning of paragraph 1:

(c) schemes, rules and methods for performing mental acts, playing games or doing business, and programs for computers;

3. The provisions of paragraph 2 shall exclude patentability of the subject matter or activities referred to in that provision only to the extent to which a patent application or a patent relates to those subject matters or activities as such.

MADAGASCAR: Industrial Property Law, Ordinance No. 89—019 of 31/07/1989
No explicit provision of Law

MALAWI: Patents Act, Chapter 49:02 of 1957
No explicit provision of Law

MALAYSIA: Patents Act No. 291 of 1983 as last amended on 2006
No explicit provision of Law

Guidelines for patent examination of 2011

3.6 Programmes for computers

A computer program is a set of instructions for controlling a sequence of operations of a data-processing system. It closely resembles a mathematical method. It may be expressed in various forms and may be presented in a format suitable for direct entry into a particular computer or may require transcription into a different format. It may be presented in terms either of software or in combination with hardware. A data-processing operation can be implemented either by means of a computer programme or by means of special circuits and the choice may have nothing to do with the inventive concept but be determined purely by factors of economy or practicality. With this point in mind, examination in this area should be guided by the following approach:

A computer programme claimed by itself or as a record on a carrier is not patentable, irrespective of its content. The situation is not normally changed when the computer programme is loaded into a known computer. If, however, the subject-matter as claimed makes a technical contribution to the prior art, patentability should not be denied merely on the ground that a computer programme is involved in its implementation. This means, for example, that programme-controlled machines and programme-controlled manufacturing and control processes should normally be regarded as patentable subject-matter. It follows also that, where the claimed subject-matter is concerned only with the programme-controlled internal working of a known computer, the subject-matter could be patentable if it provides a technical effect.

As an example, consider the case of a known data-processing system with a small fast working memory and a larger but slower further memory. Suppose that the two memories are organised under programme control, in such a way that a process which needs more address space than the capacity of the fast working memory can be executed at substantially the same speed as if the process data were loaded entirely in that fast memory. The effect of the programme in virtually extending the working memory is of a technical character and might therefore support patentability. Where patentability depends on a technical effect, the claims must be so drafted as to include all the technical features of the invention which are essential for the technical effect.

Where patentability is admitted then, generally speaking, product, process and use claims would be allowable

MALTA (EU): Article 4 (2) (c) and (3) of the Patents and Designs Act, Chapter 417, of 01/06/2002, as amended by Acts IX of 2003 and XVIII of 2005

Article 4 - Patentable Inventions

(2) The following, in particular, shall not be regarded as inventions within the meaning of subarticle (1):

(c) schemes, rules and methods for performing mental acts, playing games or doing business and programs for computers;

(3) The provisions of subarticle (2) shall exclude the patentability of the subject matter or activities referred to in that subarticle only to the extent to which a patent application or patent relates to such subject matter or activities as such.

MAURITIUS: Patents, Industrial Designs and Trademarks Act No. 25 of 2002
No explicit provision of Law

MEXICO: Article 19 IV of the Industrial Property Law of 25/06/1991, last amended version of 06/12/2005

Artículo 19

- No se considerarán invenciones para los efectos de esta Ley:

IV.-Los programas de computación;

MONGOLIA : Article 4 (5) 2) of the Patent Law of 25/06/1993, as last amended in 1999

Article 4. Criteria and eligibility for patents

5. The following shall not be considered as inventions:

2) computer programs and algorithms;

MONTENEGRO: Article 5 (2) 4) and (3) of the Law on Patents of 22/10/2008

Article 5. Patentable Inventions

(2) The following, in particular, shall not be regarded as inventions, within the meaning of this Law:

4) computer programs,

(3) The provisions of paragraph 4 of this Article shall exclude patentability of subject matter or activities only to the extent to which the application for a patent or a patent relate to the subject matter or activity as such.

MOROCCO: Article 23 (3) of the Law No. 17-97 of 15/02/2000 concerning Protection of Industrial Property as implemented by the Decree No. 2-00-368 of 07/06/2004

23. The following shall not be considered inventions for the purposes of Article 22 above:

(3) schemes, rules and methods for performing mental acts, playing games or doing business, and computer programs;

The provisions of this Article shall only preclude the patentability of the elements enumerated in said provisions where the patent application or patent concerns only one of these elements considered as such.

MOZAMBIQUE: Article 30 (1) d) of the Industrial Property Code, Decree No. 4 of 12/04/2006

Article 30 Exceptions to patentability

1. The following shall not be considered inventions for the purposes of this diploma:
d) Computer programmes;

NEPAL: The Patent, Design and Trade Mark Act No. 2022 of 1965 (version of 2006)
No explicit provision of Law

NETHERLANDS (EU): Article 2 (2) (c) and (3) of the Patent Act of 15/12/1994, (Text as it applies on 03/06/2009)

Article 2.

2. The following in particular shall not be regarded as inventions within the meaning of the first paragraph:

c. schemes, rules and methods for performing mental acts, playing games or doing business, as well as computer programs;

3. The second paragraph applies only insofar as it concerns the subject matter or activities referred to as such.

NEW ZEALAND: Section 11 of the Patents Act No. 68 of 2013

11 Computer programs

(1) A computer program is not an invention and not a manner of manufacture for the purposes of this Act.

(2) Subsection (1) prevents anything from being an invention or a manner of manufacture for the purposes of this Act only to the extent that a claim in a patent or an application relates to a computer program as such.

(3) A claim in a patent or an application relates to a computer program as such if the actual contribution made by the alleged invention lies solely in it being a computer program.

Examples

A process that may be an invention

A claim in an application provides for a better method of washing clothes when using an existing washing machine. That method is implemented through a computer program on a computer chip that is inserted into the washing machine. The computer program controls the operation of the washing machine. The washing machine is not materially altered in any way to perform the invention.

The Commissioner considers that the actual contribution is a new and improved way of operating a washing machine that gets clothes cleaner and uses less electricity.

While the only thing that is different about the washing machine is the computer program, the actual contribution lies in the way in which the washing machine works (rather than in the computer program per se). The computer program is only the way in which that new method, with its resulting contribution, is implemented.

The actual contribution does not lie solely in it being a computer program. Accordingly, the claim involves an invention that may be patented (namely, the washing machine when using the new method of washing clothes).

A process that is not an invention

An inventor has developed a process for automatically completing the legal documents necessary to register an entity.

The claimed process involves a computer asking questions of a user. The answers are stored in a database and the information is processed using a computer program to produce the required legal documents, which are then sent to the user.

The hardware used is conventional. The only novel aspect is the computer program.

The Commissioner considers that the actual contribution of the claim lies solely in it being a computer program. The mere execution of a method within a computer does not allow the method to be patented. Accordingly, the process is not an invention for the purposes of the Act.

(4) The Commissioner or the court (as the case may be) must, in identifying the actual contribution made by the alleged invention, consider the following:

- (a) the substance of the claim (rather than its form and the contribution alleged by the applicant) and the actual contribution it makes:
- (b) what problem or other issue is to be solved or addressed:
- (c) how the relevant product or process solves or addresses the problem or other issue:
- (d) the advantages or benefits of solving or addressing the problem or other issue in that manner:
- (e) any other matters the Commissioner or the court thinks relevant.

(5) To avoid doubt, a patent must not be granted for anything that is not an invention and not a manner of manufacture under this section.

NICARAGUA: Section 6 (f) of the Industrial Property Law No. 354 of 19/09/2000 as last amended by Decree No. 16-2006

Subject Matter not Constituting an Invention 6.

The following among other things shall not constitute inventions:

(f) economic, advertising or business plans, principles, rules or methods, and those relating to purely mental or intellectual activities or the playing of games; computer programs in isolation.

NIGERIA: Industrial Property Act (Chapter 344) No. 60 of 1970 (as last amended in 1990)
No explicit provision of Law

NORWAY: Section 1, §2 3) of the Patent Act No. 9 of 15/12/1967 (as amended up to Act No. 8 of 01/07/2010)

Section 1.

Subject matters not regarded as inventions include anything which merely consists of:
3. schemes, rules or methods for performing mental acts, playing games or doing business, or programs for computers;

OMAN: Section 2 (2) of the Royal Decree No. 67/2008 on Industrial Property Rights and their Enforcement

Section 2

(2) The provisions of subsection (1) (dealing with exclusions from patentability, n.d.r.) shall not apply to the following inventions:

(a) Process inventions which, in whole or in part, consist of steps that are performed by a computer and are directed by a computer program; and

(b) Product inventions consisting of elements of a computer-implemented invention, including in particular:

- (i) Machine-readable computer program code stored on a tangible medium such as a floppy disk, computer hard drive or computer memory; and
- (ii) a general purpose computer whose novelty over the prior art arises primarily due to its combination with a specific computer program.

PAKISTAN: Patents Ordinance No. LXI of 02/12/2000 (as amended by the Patents Amendment Ordinance of 2002)

No explicit provision of Law

From the Intellectual Property Organization of Pakistan
(<http://www.ipo.gov.pk/patent/Default.aspx>) :
Unpatentable Inventions In Pakistan

- Discoveries of Laws of nature.
- A productions.
- Method or producing sound.
- Computer Programs (Software).
- Perpetual motion machines.
- a method of writing music.
- A fancy name for an article.
- A trade mark.
- The discovery of new properties of known substance.
- A system of alphabet.
- Chemical & Pharmaceutical product (till 2004).
- A system of shorthand.
- Literary, dramatic, musical and artistic works.
- Doctor's prescriptions and Patent Medicines.
- A system of indexing.
- Mere charts, diagrams, or printed sheets.
- A surgical operation.
- Articles harmful to public health & their prosperity.
- Treatment of human beings, animals, flowers & plants.
- Purely scientific & mathematical formulas & principles.

PANAMA: Article 14 4) of the Law No. 35 of 10/05/1996 on Industrial Property

Article 14. For the purpose of this Law the following, among others, shall not be considered inventions:

- 4. Software programs per se, that refer to uses designated for computers;

PAPUA NEW GUINEA: Industrial Property Act No. 30 of 19/07/2000
No explicit provision of Law

PARAGUAY: Article 4 (d) of the Patents Law No. 1630 of 29/11/2000 as last amended by Law No. 2.593/2005

Artículo 4.- De las materias excluidas como invención.
No se considerarán invenciones, entre otros, los siguientes:
d) los programas de computación aisladamente considerados;

PHILIPPINES: Section 22 of the Intellectual Property Code, Act No. 8293 of 06/06/1997(as last amended by Act No. 9502 of 2008)

Non-Patentable Inventions 22.

The following shall be excluded from patent protection:

2. Schemes, rules and methods of performing mental acts, playing games or doing business, and programs for computers;

POLAND (EU): Article 28 (v) of the Industrial Property Law of 30/06/2000, as amended by Act of 23/01/2004 and Act of 29/06/2007

Article 28

The following in particular shall not be regarded as inventions within the meaning of Article 24:

(v) programs for computers,

PORTUGAL (EU): Article 52 (1) d) of the Industrial Property Code, Decree-Law No. 36 of 05/03/2003 as last amended by Law No. 16 of 01/04/2008

Article 52. Limitations on Object

1 The following are exceptions to the previous article:

d) Schemes, rules or methods for intellectual acts, playing a game or doing business and computer programs, as such, with no contributions;

COMPUTER IMPLEMENTED INVENTIONS (CII) – from the Portuguese Institute of Industrial Property website: <http://www.marcaspatentes.pt/index.php?section=340> -

Conditions which need to be checked for a CII

In order for a CII not to be excluded from patentability, according to Art. 52 of the IPC (Industrial Property Code), it has to be a technical solution to a technical problem and has to involve technical considerations or represent a technical contribution in a technological domain.

The cases which are excluded from patentability, according to Art. 52 of the IPC, are those that do not present any technical contribution, as such; a mathematical method, as such, a method of negotiation, as such etc, or which does not present any technical contribution. In addition, there are computer programs, as such, without any technical contribution.

What is the meaning of “as such” in for example, “mathematical method as such”?

The expression ‘as such’ limits the object in question to its stated elements, that is, to its essential characteristics, those which do not possess a technical nature. In the case of a mathematical method, the aforementioned limitation consists of a mere description, for example, of the steps to an algorithm of calculation.

What is an invention with a “technical” character?

An invention that shows technical character is an invention in any field of technology. By this we mean that for technology, knowledge is the use of tools in all the practical services (trade services, craft services), as such with the capacity for adaptation or modification to the environment.

A technical problem is, therefore, a problem that appears in one or more technological areas, as a technical solution to the relevant problem a solution framed by the relevant areas. The technical considerations are the arguments, in the midst of the technical areas in question tending to show the relevance of the invention which presents a technical solution to a technical problem. In this context, we use the expression technical contribution to qualify an invention that presents a technical solution to a technical problem that goes beyond the general knowledge for the technical area in question.

Examples of technical characteristics in a CII are the processor, permanent physical support for data and programs (hard disc, CD), volatile memory (RAM), BUS and motherboard.

What is considered “non-technical”?

A few of the many examples of non-technical areas are: discoveries, scientific theories, mathematical methods, methods of negotiation, methods relating to a game, linguistic methods, computer presentations and aesthetic creations, as long as they are considered or exhibited as such.

Can technical and non-technical characteristics coexist in an invention?

Yes, though non-technical characteristics limit the protective environment afforded an invention, as with claimed. Beyond this, only the explicit technical characteristics in the claimed inventions are taken into account in order to verify the applications for patentability (novelty, inventive activity and industrial application).

Domains where CII appear

Typically, the CII appear in the following domains:

- a) mathematical methods;
- b) methods of negotiation;
- c) games;
- d) presentations/information management;
- e) word processing;
- f) linguistic methods;
- g) management of human resources;
- h) administrative efficiency;
- i) accounting and financial methods;
- j) machine control;
- k) control of computing operations.

How can we distinguish a patentable CII from a non-patentable one?

For each of the domains listed above, the following examples merit illustration:

a) mathematical methods

non-patentable

a simplified algorithm to calculate the division isn't, as such, patentable, as it is a mathematical method as such, that does not present any technical contribution and is limited to being a purely abstract or intellectual activity;

patentable

A calculator constructed so that it can be used in accordance with the method referred to above, could be patentable, if there is a technical solution (e.g. the machine itself) to a technical problem (e.g. a reduced mental load on the user) and it involves technical considerations regarding hardware and software. i.e. the aforementioned mathematical method becomes eligible for patentability, merely as an integral part of an invention with technical character (e.g. the calculator);

b) methods of negotiation

non-patentable

a method to gain clients by offering discounts is not patentable because it is a method of negotiation and, as such, does not present any technical contribution and is limited to being an intellectual activity in the domain of economic activities;

patentable

a computer that has a client database with an installed application that will recognise a previous client and apply a discount on a specific purchase could be patentable, if it has been claimed as a technical solution (e.g. a computer) to a technical problem (e.g. the automatic reply of the current updated database), therefore what will eventually confer patentability on a method of negotiation is the technical contribution that might be in your implementation (hardware, software) and may ultimately be independent of the framework that provided the motivation;

c) games

non-patentable

a program that consists of a virtual roulette table and includes a representation of the table that revolves and throws the roulette ball and has the novelty of including an option to make a type of bet of a different value to that in the usual game of roulette, is not patentable because the method of playing is non-technical and the new option of betting is only a rule of the game;

patentable

a game implemented in a hardware system, where it claims the means of playing (processor, RAM, BUS), but is never the game itself;

d) presentations/information management

non-patentable

a process or method of presenting information about free spaces in a car park, which only involves conventional hardware and software is not patentable, because it does not present any technical contribution and is limited to being the information within or a presentation of information as such;

patentable

a process for exhibiting information (e.g. a monitor) relating to a specific event, which occurs on a particular programmable device (e.g. a memory full alert), could be patentable, if there is a technical solution to a technical problem relating to the internal functioning of the same appliance.

e) word processing

non-patentable

a routine that, when executed, formats part or all of the text of a document with a determined font and font size is not patentable, as it is not a technical solution and only produces a graphic or aesthetic effect;

patentable

a word processing program that presents advantages in terms of better interaction with the user and the functions presented could be patentable, if it clearly contributes to reducing the mental strain on the user;

f) linguistic methods

non-patentable

a program for translating a text from one language to another using new linguistic knowledge, but involving only technical computing aspects of general knowledge in the field of automatic translation, is not patentable, as although it involves technical considerations in terms of function, it does not present any technical contribution and is limited to being an exercise in the domain of linguistics, which is a non-technical domain;

patentable

an intercom in an office with keys and monitors at the terminal on the door and on the interior terminals and which allows people with oral and/or aural disabilities to communicate with others, who are not, by instantly converting the keyed-in words into both audible sounds very similar to the human voice and simultaneously in legible text on the monitor, could be patentable as it is a technical solution (e.g. the intercom equipment) to a technical problem (e.g. an instant and efficient transmission of identification data that can be presented in different forms) and involves technical considerations in terms of hardware and software;

g) management of human resources

non-patentable

a method to control the entry and exit of workers from an organisation that limits itself to manually inserting data in an application in use, is not patentable as it does not present any technical contribution and is limited to implementing management rules and mathematical formulas through existing methods;

patentable

a method to control the entry and exit of workers from an organisation that relies on an automatic gathering of data for entries and exits by reading and processing information activated by clock-in cards, could be patentable as it is a technical solution (e.g. the management of the inserted data) to a technical problem (e.g. the inclusion of a card-reading terminal at clock-in) and involves new technical questions, relating equally, to both hardware and software;

h) administrative efficiency

non-patentable

a method that automatically opens a new window on the monitor with a specific set of instructions at a given phase of any administrative process and furthermore does not imply that the considerations of the administrative point of view, and a simple programming exercise for a computing expert, do not provide any technical contribution, and therefore is not patentable;

patentable

a program or routine that permits the opening of a word processor that presents a specific set of instructions, included in an application in use, for the execution of a certain administrative process, can be patentable in the measure that it is a technical solution (e.g. a coordination action of the aforementioned program or routine about the application of the information in question – that which is used to make the administrative process and the word processor) to a technical problem (e.g. the reduced mental load for the user in command of a computing tool that permits the integrated update of a database) and that involves non-immediate technical considerations for an expert on the articulation between elements of software of a different nature;

i) accounting or financial methods

non-patentable

the use of a current calculation sheet with the aim of controlling the accounts of a specific organisation is not patentable as it is nothing more than a permitted use for the aforementioned calculation sheet that only implements certain mathematical formulas that translate an accounting method followed by the aforementioned organisation, with no technical contribution;

patentable

a system that contains one or more servers linked to the internet and capable of receiving fiscal data of any registered user, storing and processing all the data inserted by the users within a specific date can be patentable, if the technical solution presented (e.g. the type of server and the type of communication with the terminals of the users) resolves a technical problem (e.g. the dependency of the computer processing of all the fiscal information in the means and the form of the introduction of data), and this technical solution is over and above what is generally acknowledged in computer networks by an expert;

j) machine control

non-patentable

a program applied to an industrial robot that illuminates a red light when the robot moves an articulated arm to the left and a green light when it moves to the right is not admissible for being patented, given that it does not present any technical contribution to resolve a technical problem and it is merely an exercise in programming;

patentable

a program that regulates the function of a flight control system for a specific model of aircraft can be patentable as it constitutes a technical solution to the technical problem of aerodynamic instability; in addition to this, it involves the interaction between all the software

and the mechanical surfaces of the aircraft, which implicates the inclusion of technical considerations in the process of development of the same software;

k) control of computing operations

non-patentable

a configurable operation that when installed in a computer, allows for example, the colour of the monitor to be changed depending on which application is being used at that moment, does not solve any technical problem but simply presents an aesthetic effect;

patentable

a process or a method of coordinating and controlling programs and data files that involves various interlinked processors independent of the nature of the data and the operation of programs about them can be patentable, if it technically resolves a technical problem, which is a basic function of a group of processors in a network.

Can a computer program be patented?

A computer program can be claimed and patented, as long as it is not claimed as such and it presents technical character.

By this we mean that a computer program is as such the mere presentation of a programming code, in a specific programming language. However, the written form of a claim can include the presentation of a computer program written in natural language or algorithm, which is essential to the functioning of the invention in question.

Once again, the technical character is fundamental. By this we mean that a computer program has technical character if, when the computer is running, it produces or could produce an additional technical effect that goes beyond the mere physical effects (e.g. electrical currents in the computer) inherent in its execution. Additional technical effects are, for example, the control of a machine or an industrial process, as well as the management of the resources of a computing system or the regulation of the transfer rate of data in a communication network.

A computer program could be part of a claim sent to an entity (e.g. a machine where the program is essential to its functioning) or an activity (e.g. a process, where the program is essential to its development) or even the same program, since it meets the aforementioned requirements;

Here are two examples of computer programs:

a) non-patentable

an executable program that only produces the expression of an idea, for example a mathematical theory;

b) patentable

a program to coordinate two memories, one small but fast and the other large but slow, so that if a process needs more space for addressing than the fast memory, it can be executed with the same speed as if the processed data were loaded entirely in the fast memory; in virtually increasing the used memory, the effect of the program is the necessary additional technical effect.

QATAR: Article 4 (2) (a) of the Decree Law No. 30 of 2006 To Issue Patents Law

Article 4

Subject to the law hereby, patentability shall not include:

a) Scientific theories, mathematical methods, computer programs, exercise of pure intellectual activities, or practice of a specific game;

REPUBLIC OF KOREA: Patent Act promulgated on 28/11/1949 by Military Act No. 950, as last amended by Act No. 11117 of 02/12/2012
No explicit provision of law

Patent Examination Guidelines: Part III, Chapter 1, Rule 4.1.8

4.1.8 Computer programming language or computer program

A Computer program is a mere list of orders to have a computer operated.

Therefore, a computer program is not considered as a statutory invention. However, in the case of an invention where data processing with a computer program is specifically executed using a hardware, a data processing unit (machine) operating in association with the computer program, its operating method, and a computer readable medium carrying the computer program, the invention is viewed as a statutory invention.

REPUBLIC OF MOLDOVA: Article 6 (2) (c) and (3) of the Law on the protection of Inventions No. 50-XVI of 07/03/2008

Article 6. Patentable inventions

2. The following shall not be regarded as inventions within the meaning of paragraph (1):

c) schemes, rules and methods for performing mental acts, playing games or doing business, and programs for computers.

3. The provision of paragraph (2) shall exclude the patentability of subject matter or activities referred to therein only to the extent of which a patent application or patent relates to such subject matter or activities as such.

ROMANIA (EU): Article 8 (1) (c) and (2) of the Patent Law no. 64 of 1991 as republished in the Official Gazette of Romania, Part I, No. 456/18.VI.2008

Art. 8

- The following in particular shall not be considered as inventions, within the meaning of Art. 7:

c) schemes, rules and methods for performing mental acts, playing games or doing business, as well as computer programs;

The provisions of paragraph 1 shall exclude the patentability of the subject-matters or activities referred to therein, only to the extent to which the patent application or patent relates to such subject-matter or activities as such.

RUSSIAN FEDERATION: Article 1350 (5) 5) of the Patent Act (Chapter 72)

Article 1350. Conditions of Patentability of an Invention

5. The following shall not be deemed inventions:

5) computer programs;

RWANDA: Article 18 (2) of the Law No. 31/2009 of 26/10/2009 on the Protection of Intellectual Property

Article 18: Matters excluded from patent protection

The provisions of paragraph one of this article shall not apply to the following inventions:

1° process inventions which, in whole or in part, consist of steps that are performed by a computer and are directed by a computer program; and

2° product inventions consisting of elements of a computer-implemented invention, including in particular:

a) machine-readable computer program code stored on a tangible medium such as a floppy disk, or any kind of disks or computer memory; and

b) a general purpose computer whose novelty over the prior art arises primarily due to its combination with a specific computer program.

The applicant who has filed patent applications for computer programs and computer-related inventions listed in paragraph (2) of this article has waived from his right of seeking copyright protection.

SAINT KITTS AND NEVIS: Patents Act (Cap. 18.25) of 31/12/2002

No explicit provision of Law

SAINT LUCIA: Section 9 (2) (a) (iii) of the Patents Act No. 16 of 27/08/2001

Patentable inventions. 9-

(2) The following, among other things, are not inventions for the purposes of this Act —

(a) anything which consists of-

(iii) a scheme, rule or method for performing a mental act, playing a game or doing business, or a program for a computer;

SAINT VINCENT AND THE GRENADINES: Patents Act (Act No. 39 of 2004)

No explicit provision of Law

SAMOA: Patents Act of 1972

No explicit provision of Law

SAN MARINO: Article 2 (2) (c) and (3) of the Law No. 79 of 25/05/2005 - Industrial Property Consolidation Act

Article 2 (Subject-matter of the patent and exclusions from patentability)

2. Under Article 1, the following, in particular, shall not be regarded as inventions:

c) schemes, rules and methods for performing mental acts, playing games or doing business, and programs for computers;

3. The provisions of paragraph 2 shall exclude patentability of the subject-matter or activities referred to therein only to the extent to which an application or a patent relates to such subject-matter or activities as such.

SAO TOME AND PRINCIPE: Law No. 4/2001 of 31/12/2001 on Industrial Property

No explicit provision of Law

SAUDI ARABIA: Law of Patents, Layout-Designs of Integrated Circuits, Plant Varieties, and Industrial Designs of 16/07/2004
No explicit provision of Law

SERBIA: Article 7, paragraph (5) 4) and (6), of the Law on Patents of 27/12/2011

The following, in particular, shall not be regarded as inventions, within the terms of this Law:
4) computer programs,

Subject matter or activities referred to in paragraph 5 of this Article shall exclude from patentability only to the extent to which the application for a patent relates to the subject matter or activity as such.

SEYCHELLES: Patents Act, Chapter 156 of 1901 (version of 1991)
No explicit provision of Law

SINGAPORE: Patents Act No. 21 of 25/11/1994 as of 09/10/2009
No explicit provision of Law

SLOVAKIA (EU): Article 5 (3) d) and (4) of the Act No. 435/2001 Coll. on Patents, Supplementary Protection Certificates as last amended by Act No. 202/ 2009 Coll.

Article 5. Patentability of inventions

(3) The following shall not be regarded as inventions pursuant to paragraph 1:

d) computer programmes,

(4) Subject-matters or activities stated in paragraph 3 shall be excluded from patentability only to the extent to which a patent application relates to these subject-matters or activities.

SLOVENIA (EU): Industrial Property Act of 23/05/2001 as last amended on 06/02/2006
No explicit provision of Law

SOUTH AFRICA: Section 25 (2) f) and (3) of the Patents Act No. 57 of 1978 as last amended by Act, No. 20 of 2005

(2) Anything which consists of—

(f) a program for a computer;

shall not be an invention for the purposes of this Act.

(3) The provisions of subsection (2) shall prevent, only to the extent to which a patent or an application for a patent relates to that thing as such, anything from being treated as an invention for the purposes of this Act.

SPAIN (EU): Article 4 4) (c) and 5) of the Law about Patents of Invention and Utility Models No. 11 of 20/03/1986 as last amended by Law No. 14/2011.

Artículo 4.

4. No se considerarán invenciones en el sentido de los apartados anteriores, en particular:

c) Los planes, reglas y métodos para el ejercicio de actividades intelectuales, para juegos o para actividades económico-comerciales, así como los programas de ordenadores.

5. Lo dispuesto en el apartado anterior excluye la patentabilidad de las invenciones mencionadas en el mismo solamente en la medida en que el objeto para el que la patente se solicita comprenda una de ellas.

DIRECTRICES DE EXAMEN DE SOLICITUDES DE PATENTE (2006)

6.2 EXCEPCIONES A LA PATENTABILIDAD

El primero de los requisitos básicos de la patentabilidad es que debe haber una invención. La LP no define qué debe entenderse por invención, no obstante se incluye una lista de objetos o actividades que no se consideran invenciones a los efectos de establecer la patentabilidad de la materia reivindicada, en particular:

a. Los descubrimientos, las teorías científicas y los métodos matemáticos.

b. Las obras literarias, artísticas o cualquier otra creación estética, así como las obras científicas.

c. Los planes, reglas y métodos para el ejercicio de actividades intelectuales, para juegos o para actividades económico-comerciales, así como los programas de ordenadores.

d. Las formas de presentar informaciones.

Los elementos que integran esta relación son de naturaleza abstracta como una teoría científica o un método matemático, o bien adolecen de falta de carácter técnico como una creación estética o las formas de presentar informaciones.

La expresión “en particular” indica que esta lista no es exhaustiva. Pueden existir otras materias que no constituyen una invención en el sentido de la Ley de Patentes y que no estén enunciadas en ella, o lo que es lo mismo, aunque un determinado elemento no esté expresamente referido en la relación de materias excluidas de los derechos conferidos por la LP, esto no significa que dicho elemento se considere automáticamente una invención en el sentido de la mencionada ley y, por tanto, susceptible de protección.

No obstante lo anterior, los componentes de la lista no están excluidos de la protección que otorga el Derecho de Patentes en todas las circunstancias. No se trata de una exclusión absoluta o total, sino que se excluye la patentabilidad de las materias que conforman la referida lista “solamente en la medida en que el objeto para el que la patente se solicita comprenda una de ellas”. Se trata, pues, de una exclusión de la patentabilidad restringida al cumplimiento de la condición expresada en este mismo apartado.

Una interpretación literal o estricta de este apartado 4 del artículo 4 implica expulsar del ámbito de las materias patentables a toda invención de la que forme parte, en mayor o menor medida, uno cualquiera de los elementos de dicha lista. Conforme a esto, siempre que uno cualquiera de los componentes incluidos en la lista forme parte del objeto de la solicitud de patente, la invención se considera ajena al Derecho de Patentes.

La situación opuesta, dentro de esta interpretación, sólo se produce cuando el objeto de la solicitud no contiene ninguno de los componentes de la antedicha lista de materias excluidas, en cuyo caso la invención correspondiente podría integrar el objeto de una solicitud de patente o de una patente. Esta interpretación restrictiva deja vacío de contenido al antedicho apartado, puesto que en todo caso se concluye la imposibilidad de patentar una solicitud cuyo objeto comprenda una de las materias de la lista.

Una interpretación más acorde con el presente desarrollo tecnológico es admitir que cuando la materia reivindicada, ya sea como aparato o como procedimiento, o en formulación más amplia como entidad física o como actividad, presenta carácter técnico y, por tanto, es susceptible de constituir una invención patentable, dicha materia no pierde ese carácter técnico por el hecho de que se añadan o superpongan a ella elementos que, en sí mismos o como tales, no se consideran invenciones. Una combinación de características técnicas y no técnicas pueden conformar la solución a un problema técnico y de esta manera integrar una invención contenida en el ámbito de las materias patentables. (...)

Programas de ordenadores

Los programas de ordenadores son una forma de invenciones implementadas en ordenador. Se entiende por invención implementada en ordenador: “aquella invención que para su puesta en práctica requiere la utilización de un ordenador, una red informática u otro aparato programable en los que la ejecución de, al menos, un programa informático produce un efecto técnico que forma parte de la solución al problema técnico planteado”.

Los programas de ordenadores están recogidos en la lista de exclusiones de la patentabilidad, pero, al igual que para el resto de elementos de dicha lista, el alcance de la exclusión está limitado, es decir, solamente se aplicará la exclusión de la invención en la medida en que el objeto para el que se solicita la protección comprenda una de dichas invenciones.

El Real Decreto Legislativo 1/1996, de 12 de abril, por el que se aprueba el Texto Refundido de la Ley de Propiedad Intelectual en su título sobre programas de ordenador establece que el objeto de la protección prevista en dicha Ley se aplicará a cualquier forma de expresión de un programa de ordenador y añade que:

“Cuando los programas de ordenador formen parte de una patente o un modelo de utilidad gozarán, sin perjuicio de lo dispuesto en la presente Ley, de la protección que pudiera corresponderles por aplicación del régimen jurídico de la propiedad industrial”.

La protección prevista en dicha Ley se aplica a cualquier forma de expresión de un programa de ordenador y quedan fuera de su ámbito de aplicación las ideas y principios en los que se basan cualquiera de los elementos de un programa de ordenador incluidos los que sirven de fundamento a sus interfaces.

El artículo 9.2 del Acuerdo sobre los ADPIC establece que la protección del derecho de autor abarcará las expresiones, pero no las ideas, procedimientos, métodos de operación o conceptos matemáticos en sí.

Así pues, el ordenamiento jurídico español admite de manera expresa la incorporación de programas de ordenador en las patentes y les atribuye, además de la protección otorgada por el derecho de la propiedad intelectual, la protección conferida por el régimen jurídico de la propiedad industrial.

En principio, cualquier operación de tratamiento de datos realizada mediante la ejecución de un programa de ordenador en el correspondiente aparato o sistema programable puede igualmente, en teoría, implementarse por medio de circuitos electrónicos especiales, en este mismo sentido, hay que señalar que la ejecución de un programa siempre implica la generación de, como mínimo, ciertos efectos físicos, por ejemplo las corrientes eléctricas. La aceptación de estos efectos físicos habituales, comunes, presentes en la ejecución de todos los programas, como prueba de su carácter técnico, llevaría a concluir que todos los programas de ordenador tienen carácter técnico y, por tanto, son susceptibles de conformar invenciones patentables.

Dado que la LP determina que hay programas de ordenador que no pueden ser el objeto de protección en una solicitud de patente o en una patente, no cabe otra posibilidad que convenir que estos efectos físicos normales no son en sí mismos suficientes para conferir a una invención implementada en ordenador el carácter técnico necesario para que esa invención pueda ser objeto de protección por el Derecho de Patentes. Por tanto, si un programa de ordenador es capaz de producir, cuando se ejecuta en el correspondiente aparato o sistema programable, un efecto técnico adicional que va más allá de aquellos efectos físicos normales, la invención implementada mediante la ejecución de dicho programa de ordenador no está excluida de la patentabilidad. Este efecto técnico adicional puede ser conocido en el estado de la técnica.

No es menos importante señalar que una invención considerada como patentable conforme a los criterios convencionales de patentabilidad no debe excluirse de la protección simplemente porque para su implementación se empleen medios técnicos modernos en la forma de un ordenador, una red de ordenadores u otro aparato programable.

Las consideraciones básicas a tener en cuenta en el examen de las invenciones implementadas en ordenador son, en principio, las mismas que para el resto de las materias relacionadas en la lista de exclusiones de patentabilidad. De esta manera, las invenciones implementadas en ordenador, cuya puesta en práctica, por definición, implica la ejecución

de uno o más programas de ordenador, no están a priori excluidas de la protección por patente de invención en virtud de los artículos 4.4 y 4.5 LP si la materia reivindicada, considerada en su conjunto, tiene carácter técnico.

El carácter técnico de una invención constituye una característica intrínseca de la invención y su existencia debe establecerse sin comparar la referida invención con el estado de la técnica. Si una determinada materia es considerada técnica, conserva, en principio, este carácter técnico con independencia de las materias que sucesivamente se incorporan al estado de la técnica con el paso del tiempo. Esta situación es contraria a la que concurre en la evaluación de la actividad inventiva, donde el contenido del estado de la técnica en el momento de la comparación determina si la invención implica o no actividad inventiva. Al igual que no existe una definición de invención, la LP tampoco incluye una definición de lo que debe entenderse por técnico. Por otra parte, el alcance de lo que se quiere significar con la palabra "técnica" está en cierta medida condicionado por el contenido global del estado de la técnica. Elementos o actividades que hace un tiempo no se consideraban materias técnicas, hoy día sí lo son, por ejemplo la traducción de idiomas era una actividad exclusivamente realizada por seres humanos, actualmente, esta tarea se puede llevar a cabo por máquinas lo que en algunos casos da lugar a que este procedimiento de traducción se convierta en una actividad técnica. Lo mismo puede aplicarse al reconocimiento automático de la voz o de la imagen de personas. Este traslado de elementos desde el terreno de las materias desprovistas de carácter técnico al ámbito de la técnica es consecuencia justamente de la divulgación de desarrollos tecnológicos que permiten arrancar una determinada actividad del entorno de lo exclusivamente humano e incorporar la al campo de la tecnología.

Una definición particular del concepto técnica podría provocar una barrera infranqueable para que algunos avances en determinados campos de la tecnología pudieran acceder a la protección otorgada por las patentes o exigir una constante revisión de dicha definición. Resulta más práctico acercarse al concepto de técnica a través de ejemplos de materias que se consideran incluidas o no en el significado de invención exigido por la Ley de Patentes. Las siguientes indicaciones de carácter general se refieren a materias en las que puede aparecer un efecto técnico adicional que justifique que el objeto cuya protección se pretende constituye una invención en el sentido de la ley, por ejemplo: el procesamiento de datos que representan magnitudes físicas, el control de un proceso industrial, el funcionamiento interno de un ordenador, una red de ordenadores u otro aparato programable, la necesidad ineludible de realizar consideraciones técnicas para la puesta en práctica de la invención reivindicada A continuación se citan, a modo de ejemplo, algunas invenciones implementadas en ordenador patentables y otras no patentables.

Ejemplos de materias patentables:

Un método para acceder de forma anónima, desde un teléfono móvil, a un servicio ofrecido en una dirección de Internet (URL) determinada, donde el usuario está identificado por un identificador fijo (MSISDN). El método se basa en la obtención de una dirección IP temporal (IP) para el usuario y un identificador temporal (ID) asociado al identificador fijo (MSISDN) y a la dirección de Internet determinada (URL). La conexión con la dirección de Internet (URL) determinada se establece sin transmitir el identificador fijo (MSISDN) a Internet, de manera que el usuario se identifica ante la dirección de Internet (URL) determinada con la dirección IP temporal (IP) y con su identificador temporal (ID).

Un dispositivo para la detección en tiempo real de objetos en movimiento basado en visión artificial mediante la captura de imágenes en escala de grises y su procesamiento en tiempo real para extraer características que permiten identificar objetos en movimiento.

Una máquina para la fabricación de tubos de conducción de gas que comprende una cámara que genera una señal de video indicativa de la imagen que incorpora un área luminosa y un pre-arco producido en el campo visual. Un procesador de imagen transforma la señal de video en un modelo de distribución de luminancia y mediante una unidad de inferencia es posible establecer una condición de soldadura defectuosa basada en dicho modelo de distribución.

Unidad de construcción de trazas destinada a capturar una secuencia dinámica de instrucciones que comprende un mecanismo de verificación para comprobar si las instrucciones que componen dicha secuencia dinámica de instrucciones son consecutivas o no, de manera que la secuencia dinámica de instrucciones puede ser obtenida directamente desde la cache de instrucciones.

Procesador a alta velocidad y su método de utilización que incluye: una CPU que tiene una memoria cache primaria; una memoria cache secundaria dispuesta a un nivel jerárquico inferior al de la CPU, esta memoria cache secundaria tiene una primera MPU; y una pluralidad de memorias principales conectadas a la memoria cache secundaria y dispuestas en paralelo entre sí. Cada una de las memorias principales tiene una memoria cache terciaria provista de una segunda MPU; la primera MPU y cada una de las segundas MPUs tiene una función lógica cache y una función procesadora, por lo que es posible el procesamiento simultáneo distribuido.

Ejemplos de materias no patentables

Un procedimiento para realizar transacciones de activos financieros a través de una red informática en un momento preciso para optimizar la rentabilidad económica de la operación teniendo en cuenta la situación de los mercados internacionales, la legislación impositiva del país de residencia del titular de los activos y el resultado de operaciones anteriores no constituye la solución a un problema técnico. No obstante, si la implementación del procedimiento exige la participación de características técnicas para asegurar aspectos tales como la integridad, el secreto, la inalterabilidad, el no repudio de los mensajes necesarios para la realización de la transacción el referido procedimiento puede conformar una invención patentable.

Comprobar y, en su caso, corregir la ortografía de un texto mediante la ejecución de un programa en un aparato programable no va más allá de la automatización de una actividad de carácter intelectual.

Un sistema informático integrado por medios físicos definidos por las respectivas funciones que ejecutan para ayudar en el cumplimiento de la declaración del impuesto sobre la renta de las personas físicas conforme a la norma que regula dicho tributo en el que los datos procesados son de carácter económico o personal no hace que el sistema informático así definido se considere una invención en el sentido de la LP.

Un procedimiento de gestión y promoción de ventas de un negocio al por menor en el que se asignan números únicos de identificación a cada producto y a cada cliente que quedan almacenados en sendas bases de datos, se fijan unos objetivos de venta para cada producto durante un periodo de tiempo determinado y se recompensa a los clientes que más unidades han adquirido aquellos productos cuyos objetivos de venta se han cumplido.

El hecho de que en una reivindicación de método o procedimiento se especifique la utilización de medios técnicos, por ejemplo un ordenador, para ejecutar algunas o todas las etapas de dicho método o procedimiento no es suficiente para concluir que el método considerado en sí mismo tiene carácter técnico, y puede, por tanto, constituir el objeto de la protección otorgada por el Derecho de Patentes. Si estos medios técnicos se utilizan para una finalidad puramente no técnica o para procesar información puramente no técnica, la invención no es una invención en el sentido del artículo 4.1 de la Ley de patentes. En este mismo sentido, la simple enunciación de los elementos que conforman un sistema informático definidos por la función implícita en la denominación de dichos elementos físicos no confiere necesariamente carácter técnico a la reivindicación en su conjunto.

SRI LANKA: Intellectual Property Act No. 36 of 2003
No explicit provision of Law

SUDAN: Patent Law No. 58 of 1971
No explicit provision of Law

SWAZILAND: Patents, Utility Models and Industrial Designs Act No. 6 of 1997
No explicit provision of Law

SWEDEN (EU): Article 1(2) 3) of the Patents Act 1967:837, as amended up to 01/07/2011

Article 1.

The following shall never be regarded as an invention: that which is merely
3. a scheme, rule or method for performing mental acts, for playing games or for doing
business or a computer program,

SWITZERLAND: Federal Patents Law of 25/06/1954 as on 01/01/2012
No explicit provision of Law

DIRECTRICES POUR L'EXAMEN

Inventions mises en œuvre par ordinateur (CII)

Généralités

Définition:

Une «invention mise en œuvre par ordinateur» (CII: computer implemented invention) est une invention dont l'exécution implique l'utilisation d'un ordinateur, d'un réseau informatique ou d'un autre appareil programmable et présentant une ou plusieurs caractéristiques qui sont réalisées totalement ou en partie par un programme d'ordinateur. Elle présente un caractère technique et est donc brevetable.

Une demande portant sur une CII est traitée comme toute autre demande.

Pour ce type d'invention, les conditions et critères suivants doivent être remplis:

En ce qui concerne la notion de caractère technique (appelé également technicité), les explications données plus haut sont applicables (cf. ch.2.1 p.16). Il convient en outre de tenir compte des précisions exposées ci-après.

Bien que l'exécution d'un programme d'ordinateur implique toujours des effets physiques, de pareils effets physiques considérés comme normaux ne sauraient suffire à eux seuls à conférer un caractère technique au programme d'ordinateur.

Lorsqu'on évalue si l'on est en présence d'une CII dans le sens ci-dessus, la technicité de l'objet dans son ensemble (principe de l'appréciation globale) est déterminante et non, en premier lieu, son appartenance à une catégorie de revendication; de plus, la technicité ne dépend pas de la catégorie.

Dans le cas de ces inventions, il faut plutôt s'attendre à des problèmes avec les revendications de procédé, bien qu'une revendication de procédé comportant des caractéristiques d'un programme d'ordinateur ne doive pas automatiquement perdre son caractère de base. Il faut toujours que l'homme de métier puisse directement en déduire la règle technique ou les règles ciblées pour une activité technique; elles doivent donc faire l'objet d'un exposé suffisant.

Le principe de l'appréciation globale appliqué à tous les objets d'invention dans la procédure d'examen exige que toute revendication soit considérée dans son ensemble afin d'en déterminer l'éventuel caractère technique. Ce caractère technique, qui remplit de fait la condition obligatoire de technicité, n'est en aucun cas détruit, dans le cadre d'une telle considération d'ensemble, par l'introduction de caractéristiques non techniques à côté de caractéristiques techniques.

Une particularité des CII réside dans les questions de délimitation complexes qu'elles soulèvent fréquemment et qui proviennent justement de la coexistence subtile entre caractéristiques techniques et caractéristiques non techniques. Il convient d'insister sur le fait que les caractéristiques des objets considérés ne doivent en aucun cas être toutes de nature purement technique pour satisfaire à la condition de technicité.

Le caractère technique d'une CII résulte:

- du problème qui est à la base de la CII revendiquée et qui est résolu grâce à cette invention;
- des moyens, en d'autres mots des caractéristiques techniques constituant la solution au problème posé;
- des effets produits grâce à la solution du problème;
- de la nécessité de se livrer à des réflexions techniques afin de saisir l'CII revendiquée.

Le critère de technicité peut aussi être satisfait lorsque les quatre points ne sont pas remplis simultanément.

Examen quant au fond d'une CII

Lors de l'examen concret d'une CII visant à déterminer si les conditions susmentionnées sont remplies, les points suivants («critères» 1 à 5) peuvent se révéler utiles:

Critère 1: revendications typiques de logiciels

Les programmes de calcul, les programmes d'ordinateur ou les logiciels en tant que tels ne sont pas brevetables à eux seuls, car la règle qu'ils impliquent et peut-être même les éventuelles instructions qu'ils contiennent demeurent en général du domaine de l'abstraction et ne comportent ni des mesures concrètes pour une activité technique, ni des réflexions techniques clairement compréhensibles pour l'homme de métier telles que décrites ci-dessus; ces instructions sont souvent définies comme des «instructions qui ne s'adressent qu'à l'esprit humain »).

Une revendication de procédé ne présentant aucune autre caractéristique en plus des caractères du programme d'ordinateur n'est pas acceptable car une telle revendication ne concerne que le programme d'ordinateur en tant que tel.

Il est fondamental de distinguer, d'une part, l'«algorithme abstrait» et, d'autre part, son utilisation en pratique. L'algorithme abstrait est ainsi une construction théorique considérée séparément de son environnement physique et ne peut y produire d'effets; de ce fait, l'algorithme abstrait doit être considéré, de par sa nature, comme non technique et donc comme non brevetable.

Exemples illustrant le critère 1

Ne sont pas brevetables:

- un procédé permettant de trier des données (seul l'algorithme est en substance revendiqué);
- une méthode d'analyse fonctionnelle, la méthode revendiquée étant mise en œuvre au moyen d'un ordinateur; ce qui suit est cependant décisif: la description comprend des exemples issus de domaines techniques aussi bien que non techniques, ce qui démontre que le problème que résout cette méthode mathématique est indépendant du domaine d'application et relève donc des mathématiques et non pas du domaine technique; il y a donc absence de technicité.

Invention brevetable:

- Un procédé permettant d'identifier des attaques dirigées contre des systèmes serveurs de prestataires et d'utilisateurs de réseaux et de s'en protéger.

Critère 2: combinaison de caractéristiques techniques et non techniques

Un procédé dont la définition inclut, en plus des caractéristiques du programme d'ordinateur, d'autres caractéristiques (de nature technique) intrinsèquement associées au programme d'ordinateur revendiqué et directement liées à la solution du problème technique à résoudre, peut remplir la condition de technicité applicable aux CII.

Un «procédé de mise en action d'un dispositif» comportant des caractéristiques de programme est précisément admissible, car la présence d'un dispositif implique l'existence de caractéristiques de nature technique dans la définition du procédé.

Exemples illustrant le critère 2

Ne sont pas brevetables:

- les programmes de conversion (p. ex. conversion d'un code binaire en code décimal);
- le modelage de processus et/ou systèmes non techniques;
- les simples programmes de traduction.

Inventions brevetables:

- un procédé de mise en action d'un ordinateur défini au moyen d'un «programme de système»;

- un procédé de mise en action d'un système de mémoire hiérarchique à plusieurs niveaux d'une installation de traitement des données qui gère simultanément plusieurs processus, ainsi qu'un circuit pour la mise en œuvre dudit procédé;
- un procédé permettant la gestion d'éléments de voie tels que des aiguillages ou des signaux dans un poste électronique d'aiguillage;
- un procédé de commande des dispositifs placés dans un réseau de communication.

Critère 3: applications et utilisations équivalant à des procédés

Les critères précédents s'appliquent par analogie aux revendications d'utilisation équivalant à des procédés (cf. ch.6.5.4 p.61) et aux revendications d'application (cf. ch.6.5.2 p.59).

Exemples illustrant le critère 3

Ne sont pas brevetables:

- les algorithmes mathématiques optimisés servant uniquement au dépouillement des données (dépourvus de tout caractère de saisie/mesure, sans traitement de signaux physiques);
- le domaine d'application étant dépourvu de caractère technique (et par conséquent détachés de la pratique!).

Inventions brevetables:

- un circuit à semi- conducteurs et son application dans une unité arithmétique logique, un transducteur de mesure et un système de traitement des signaux;
- un procédé permettant la saisie de données par le biais d'instruments de mesure et leur dépouillement.

Critère 4: dispositifs

Habituellement, un dispositif est admissible sans autre car le critère de technicité est rempli dans le cas d'une définition correctement formulée dans une revendication de dispositif.

Un dispositif peut être défini par des caractères fonctionnels, dans la mesure où ceux-ci désignent une structure particulière (cf. ch.6.5.3 p.58). Lorsque de tels caractéristiques apparaissent sous la forme d'un programme intégré au dispositif, elles sont aussi admissibles, pour autant que la revendication contienne d'autres caractéristiques constructives du dispositif avec lesquels le programme est en relation pour résoudre le problème technique posé par l'invention, permettant ainsi de conférer aussi bien un caractère technique à l'invention que de remplir la condition de technicité.

La contribution à l'état de la technique est le plus souvent l'obstacle majeur à la brevetabilité des dispositifs. Mais comme l'activité technique n'est pas appréciée au cours de l'examen (art. 59, al. 4, LBI), cette question, qui va au-delà du critère de technicité, n'est pas examinée.

Exemples illustrant le critère 4

Ne sont pas brevetables:

- les systèmes d'experts qui se définissent uniquement par des liens fonctionnels.

Invention brevetable:

- les ordinateurs de plongée, en particulier s'ils sont dotés de tables de plongée intégrées à un support électronique.

Critère 5: procédés informatisés intervenant dans la technique

Un procédé informatisé permettant de commander une étape intermédiaire dans le cadre de la fabrication d'objets techniques assistée par ordinateur par l'examen et la comparaison de données est susceptible de remplir le critère de technicité, à condition que cette solution soit caractérisée par un résultat basé sur une réflexion technique pour sa conception et pour sa mise en œuvre.

Remplit en général la condition de technicité un programme qui est intégré dans des processus techniques de sorte qu'il met par exemple à jour des résultats de mesure, qu'il commande les processus d'installations techniques ou qu'il accomplisse d'une façon générale des tâches de commande en fonction des signaux de mesure basés sur des données.

Dans ce cas, les données traitées en tant que signaux passent du niveau abstrait de l'information au niveau plus concret du monde physique de la technique des signaux qui sont en interaction avec les forces et énergies de la nature.

En général, le traitement des signaux présuppose un lien plus fort à la technique que la simple manipulation de données.

Exemples illustrant le critère 5

Ne peuvent faire l'objet d'un brevet:

- un terminal pour la gestion de droits numériques d'utilisation (gestion de billets électroniques);
- un système basé sur des données permettant l'arbitrage du marché et l'analyse des tendances.

Inventions brevetables:

- un système anti-blocage pour les freins de véhicule; l'objet revendiqué est caractérisé par une disposition spéciale des moyens de commande électroniques pour la mesure des valeurs de décélération des roues; en fonction de ces résultats de mesure, le système assisté par programme commande la pression dans le cylindre du frein;
- un procédé permettant le contrôle de la qualité des enregistrements numériques d'images en couleur;
- un procédé de contrôle du flux de l'eau dans le système de purge d'une installation pour la galvanotechnique et pour le traitement de surfaces;
- un ordinateur permettant le traitement des signaux de la tomographie par résonance magnétique nucléaire, ainsi que le tomographe par résonance magnétique nucléaire équipé dudit ordinateur.

Présentation des «inventions mises en œuvre par ordinateur»

Comme dans les autres domaines techniques, l'invention doit être exposée de sorte que l'homme de métier puisse l'exécuter et soit ensuite capable, par exemple, d'exécuter une CII ainsi que d'écrire le programme d'ordinateur nécessaire à cet effet. Il est dès lors opportun de présenter les CII et les programmes d'ordinateur inhérents sous une forme compréhensible pour l'homme de métier. L'utilisation de schémas fonctionnels, d'organigrammes ou de pseudocodes peut convenir; une simple liste d'instructions en langage de programmation

(« program listing») ne satisfait le plus souvent pas à cette condition et est donc en général d'aucune utilité.

Dans la description, il est toutefois admissible de donner à titre complémentaire le(s) programme(s) en langage de programmation. Si les pages de programme(s) répondent aux exigences réglementaires pour les dessins, elles sont traitées comme des feuilles de dessin.

TAJIKISTAN: Article 6 (6) of the Law on Inventions of 28/02/2004

The following shall not be regarded as inventions within the meaning of the provisions of this Law:

- algorithms and programs for computers

THAILAND: Section 9 (3) of the Patent Act B.E. 2522 of 11/03/1979 as amended by the Patent Act No.3 B.E. 2542 of 1999

9. The following inventions are not protected under this Act:
(3) computer programs;

THE FORMER YUGOSLAV REPUBLIC OF MACEDONIA: Article 25 (3) 3) of the Law on Industrial Property No. 07-1006/1 of 12/02/2009

Article 25 - Patentable Inventions

(3) An invention shall not be considered as invention within the meaning of paragraphs (1) and (2) of this Article if it is:

- 3) a plan, rule and a procedure for carrying out intellectual activities, for games, or for carrying out business activity, as well as computer program;

TONGA: Industrial Property Act No. 19 of 09/11/1994
No explicit provision of Law

TRINIDAD AND TOBAGO: Patents Act No. 21 of 1996 as last amended by the Act No. 18 of 2000
No explicit provision of Law

TUNISIA: Chapter I, Article 2 (2) (c) of the Patents Law No. 2000-84 of 24/08/2000
The following in particular shall not be considered inventions within the meaning of the first paragraph of this Article:
(c) schemes, rules and methods intended for use:
— in the performance of purely mental acts,
— in games,
— in the field of economic activity,
— in connection with software;

TURKEY: Article 6 (1) (c) of the Decree-Law on the Protection of Patent Rights No. 551 of 27/06/1995 (version of 2009 available only in Turkish)

Non-Patentable Subject Matter and Inventions
Article 6.

The following, not being inventions by nature, shall remain outside the scope of this Decree-Law:

(c) literary and artistic works, scientific works, creations having aesthetic characteristics, computer programs;

TURKMENISTAN: Patent Act No. 867-XII of 01/10/1993

UGANDA: Patents Act of 15/10/1993 as last amended in 2002
No explicit provision of Law

UKRAINE: Law on the Protection of Rights to Inventions and Utility Models No. 3687-XII of 15/12/1993 as last amended in 2003

UNITED ARAB EMIRATES: Federal Law No. 31 of 2006 Pertaining to the Industrial Regulation and Protection of Patents, Industrial Drawings, and Designs
No explicit provision of Law

UNITED KINGDOM (EU): Section 1 (2) (c) of the Patents Act of 1977(unofficial consolidation of 01/10/2011)

Patentable inventions 1.-

(2) It is hereby declared that the following (among other things) are not inventions for the purposes of this Act, that is to say, anything which consists of -

(c) a scheme, rule or method for performing a mental act, playing a game or doing business, or a program for a computer;
but the foregoing provision shall prevent anything from being treated as an invention for the purposes of this Act only to the extent that a patent or application for a patent relates to that thing as such.

MANUAL OF PATENT PRACTICE (as of 01/07/2013)

Computer Programs

1.28

In a case where claims to a method performed by running a suitably programmed computer or to a computer programmed to carry out the method are allowable then, in principle, a claim to the program itself should also be allowable. However, the program claim must be drawn to reflect the features of the invention which would ensure the patentability of the method which the program is intended to carry out when it is run. So Kitchin J. held in his judgment in *Astron Clinica and other's Applications* [2008] EWHC 85(Pat). In arriving at this conclusion he said in paragraph 49 of the judgment:

"Thus, in the case of a computer related invention which produces a substantive technical contribution, the application of step ii) [of the "four step approach" of *Aerotel/Macrossan*] will identify that contribution and the application of step iii) will lead to the answer that it does not fall wholly within excluded matter. Any computer related invention which passes step iii) but does not involve a substantive technical contribution will fail step iv). The answer to these questions will be the same irrespective of whether the invention is claimed in the form of a programmed computer, a method involving the use of that programmed computer or the program itself.

Aerotel/Macrossan requires the analysis to be carried out as a matter of substance not form, just as did *Genentech*, *Merrill Lynch*, *Gale* and *Fujitsu*. True it is that the first step requires the scope of the monopoly to be determined and, in the case of a program, that will necessarily be limited. However the contribution of that monopoly must still be assessed by reference to the process it will cause a computer to perform."

1.29

As a general rule, any invention which may be considered as computerising a system or process that might conventionally be performed manually is likely to be regarded as involving only an advance in an excluded field.

1.29.1

In *Aerotel/Macrossan*, *Macrossan's* application was found to fall within the computer program exclusion. The second step of the "four step approach" identified the contribution as being the provision of a computer program, probably in the form of an interactive website, which can be used to carry out the method of the invention. There was no contribution from hardware, with standard components being used. As the contribution lay solely in the provision of the computer program, the third step determined that the contribution fell within the computer programs exclusion. The fourth step was applied as a check, and found that the contribution was not technical.

1.29.2

In *Rockwell First Point Contact's Appn* (BL O/355/06), the contribution identified under step 2 of the "four step approach" lay in the features of a simulator wrapper that processed characteristics of an analysed signal. This contribution was wholly implemented by a computer and thus failed the third step. Next Page Inc's Application (BL O/030/07), *Kabushiki Kaisha Toshiba's Application* (BL O/031/07) and *Fisher-Rosemount Systems' Application* (BL O/026/07) each involved an automated process that the applicants argued went above and beyond a mere computer program. However, in each case the Hearing Officers held that the invention lay solely in the excluded category of computer programs, and the applications were refused.

1.29.3

In Symbian Ltd's Application [2008] EWCA Civ 1066, [2009] RPC 1 ("Symbian"), the Court of Appeal held that the contribution made by the invention was not a computer program "as such" because "it has the knock-on effect of the computer working better as a matter of practical reality". This judgment (especially paragraphs 54-56) provides an insight into what can be considered to constitute a "technical contribution" (a test which dates back to the EPO Board of Appeal decision in Vicom/Computer-related invention [1987] 1 OJEP 14 (T208/84)); in other words a contribution which is more than solely a computer program. An important factor is what the program does as a matter of practical reality.

An invention which either solves a technical problem external to the computer or solves a technical problem within the computer does not fall under the computer program exclusion. Symbian shows that improving the operation of a computer by solving a problem arising from the way the computer was programmed (in that case a tendency to crash due to conflicting library program calls) can be regarded as solving a technical problem within the computer if it leads to a more reliable computer. Thus, a program that results in a computer running faster or more reliably may be considered to provide a technical contribution even if the invention solely addresses a problem in the programming.

The Court of Appeal considered that such a technical contribution rendered the claim patentable.

1.29.4

It remains the case that whilst an invention involving a computer is undoubtedly "technical", in law the mere presence of conventional computing hardware does not of itself mean an invention makes a technical contribution and so avoids the computer program exclusion. This is in contrast to the practice of the European Patent Office, which the Court of Appeal rejected in Symbian.

1.29.5

Further guidance as to what constitutes a "technical contribution" can be found in the decision of Lewison J in AT&T Knowledge Ventures' Application and CVON Innovations Ltd's Application [2009] FSR 19("AT&T"). In his decision the Judge considered the previous case law on the subject of computer programs and set out five signposts that he considered indicated that a program made a relevant technical contribution that would overcome an excluded matter objection.

Lewison LJ further considered the signposts in HTC Europe Co Ltd v Apple Inc [2013] EWCA Civ 451 and in doing so he revised the fourth signpost so that they now read:-

- i) whether the claimed technical effect has a technical effect on a process which is carried on outside the computer;
- ii) whether the claimed technical effect operates at the level of the architecture of the computer; that is to say whether the effect is produced irrespective of the data being processed or the applications being run;
- iii) whether the claimed technical effect results in the computer being made to operate in a new way;
- iv) whether the program made the computer a better computer in the sense of running more efficiently and effectively as a computer;
- v) whether the perceived problem is overcome by the claimed invention as opposed to merely being circumvented.

1.29.6

The five signposts have been considered and applied by the courts in a number of judgments.

In Really Virtual Co Ltd v UK Intellectual Property Office [2012] EWHC 1086 (Ch) John Baldwin QC (sitting as a Deputy Judge) noted that the AT&T signposts, although useful, are no more than signposts and that there will be some cases in which they are more helpful than in others.

In Protecting Kids the World Over (PKTWO) LTD's Patent application [2012] RPC 13 the invention was found to solve a technical problem lying outside the computer, namely how to improve the generation of an alarm in response to inappropriate communication, and therefore was not excluded from patentability.

In *HTC Europe Co Ltd v Apple Inc* [2013] EWCA Civ 451 a system using flags to indicate whether a view on a touchscreen computer could handle single or multi-touch events was found to be patentable. In emphasising that the analysis of a claim must be a matter of substance over form Kitchen LJ considered that the contribution was concerned with the basic operation of a computer and operated irrespective of particular application being used. In using flags to provide a solution to the technical problem of how to deal with multiple touches on the screen, Kitchen LJ held:

“It causes the device to operate in a new and improved way and it presents an improved interface to application software writers.”

Lewison LJ held:

“This invention operates at the level of the operating system of the device. It works with any application that is programmed to run on it irrespective of the data processed by the application. It will work just as well with a game as a currency converter.”

1.29.7

The President of the EPO referred four questions on the patentability of computer programs to the Enlarged Board of Appeal in October 2008 (G3/08). The Enlarged Board subsequently found the referral to be inadmissible and as a consequence declined to answer the questions. The comments of the Board are thus concerned only with their findings on the admissibility of the referral and cannot be read any wider. The Board in refusing the referral decided that the decisions of the Technical Boards were “a legitimate development of the law” in this area. They also noted that they saw a convergence of practice across a number of jurisdictions, including the UK, but accepted that this had not yet reached an authoritative conclusion or statement of fact as to what was and was not patentable in the area of computer programs.

1.29.8

In *Merrell Dow Pharmaceuticals v N H Norton* [1996] RPC 76 and more recently in *Actavis UK Ltd v Merck & Co Inc*. [2008] RPC 26 the courts set out a presumption that where the case-law of the EPO Boards of Appeal is settled then the UK courts should follow unless (in the words of Jacob LJ in *Actavis*) “we are convinced that the commodore is steering the convoy towards the rocks [in which case] we can steer our ship away”. In the absence of such settled EPO practice or case-law, and bearing in mind the views of the Court of Appeal expressed in both *Symbian* and *Aerotel*, the Office is not bound to follow the EPO practice. In any event, the Office remains bound by the precedents set by the UK Courts. Consequently, the assessment of whether an invention is no more than a computer program as such is set out in the Court of Appeal’s decisions in *Aerotel* and *Symbian*. This approach is illustrated by the decision of the hearing officer in *Dell Products LP’s* Application BL 0/321/10.

UNITED REPUBLIC OF TANZANIA: Patents Act No. 1 of 1987, Chapter 217, as last revised in 1994

No explicit provision of Law

UNITED STATES OF AMERICA: Title 35 of the USC of 19/07/1952 as last amended on 14/01/2013

No explicit provision of Law

EXAMINATION GUIDELINES FOR COMPUTER-RELATED INVENTIONS

1. Non-Statutory Subject Matter

Claims to computer-related inventions that are clearly non-statutory fall into the same general categories as non-statutory claims in other arts, namely natural phenomena such as magnetism, and abstract ideas or laws of nature which constitute “descriptive material.”

Descriptive material can be characterized as either “functional descriptive material” or “non-

functional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when encoded on a computer-readable medium. "Non-functional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data.

Both types of "descriptive material" are non-statutory when claimed as descriptive material per se. When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases.

When non-functional descriptive material is recorded on some computer-readable medium, it is not structurally and functionally interrelated to the medium but is merely carried by the medium.

Merely claiming non-functional descriptive material stored in a computer-readable medium does not make it statutory. Such a result would exalt form over substance.

Thus, non-statutory music does not become statutory by merely recording it on a compact disk. Protection for this type of work is provided under the copyright law.

Claims to processes that do nothing more than solve mathematical problems or manipulate abstract ideas or concepts are more complex to analyze and are addressed below. See sections IV.B.2(d) and IV.B.2(e).

(a) Functional Descriptive Material: "Data Structures" Representing Descriptive Material Per Se or Computer Programs Representing Computer Listings Per Se

Data structures not claimed as embodied in computer-readable media are descriptive material per se and are not statutory because they are neither physical "things" nor statutory processes.

Such claimed data structures do not define any structural and functional interrelationships between the data structure and other claimed aspects of the invention which permit the data structure's functionality to be realized.

In contrast, a claimed computer-readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the medium which permit the data structure's functionality to be realized, and is thus statutory.

Similarly, computer programs claimed as computer listings per se, i.e., the descriptions or expressions of the programs, are not physical "things," nor are they statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed aspects of the invention which permit the computer program's functionality to be realized. In contrast, a claimed computer-readable medium encoded with a computer program defines structural and functional interrelationships between the computer program and the medium which permit the computer program's functionality to be realized, and is thus statutory.

Accordingly, it is important to distinguish claims that define descriptive material per se from claims that define statutory inventions.

Computer programs are often recited as part of a claim.

Office personnel should determine whether the computer program is being claimed as part of an otherwise statutory manufacture or machine. In such a case, the claim remains statutory irrespective of the fact that a computer program is included in the claim. The same result occurs when a computer program is used in a computerized process where the computer executes the instructions set forth in the computer program. Only when the claimed invention taken as a whole is directed to a mere program listing, i.e., to only its description or expression, is it descriptive material per se and hence non-statutory.

Since a computer program is merely a set of instructions capable of being executed by a computer, the computer program itself is not a process and Office personnel should treat a claim for a computer program, without the computer-readable medium needed to realize the computer program's functionality, as non-statutory functional descriptive material. When a computer program is claimed in a process where the computer is executing the computer program's instructions, Office personnel should treat the claim as a process claim.

See Sections IV.B.2(b)-(e).

When a computer program is recited in conjunction with a physical structure, such as a computer memory, Office personnel should treat the claim as a product claim.

See Section IV.B.2(a).

(b) Non-Functional Descriptive Material

Descriptive material that cannot exhibit any functional interrelationship with the way in which computing processes are performed does not constitute a statutory process, machine, manufacture or composition of matter and should be rejected under § 101. Thus, Office personnel should consider the claimed invention as a whole to determine whether the necessary functional interrelationship is provided.

Where certain types of descriptive material, such as music, literature, art, photographs and mere arrangements or compilations of facts or data, are merely stored so as to be read or outputted by a computer without creating any functional interrelationship, either as part of the stored data or as part of the computing processes performed by the computer, then such descriptive material alone does not impart functionality either to the data as so structured, or to the computer. Such "descriptive material" is not a process, machine, manufacture or composition of matter.

The policy that precludes the patenting of non-functional descriptive material would be easily frustrated if the same descriptive material could be patented when claimed as an article of manufacture.

For example, music is commonly sold to consumers in the format of a compact disc. In such cases, the known compact disc acts as nothing more than a carrier for non-functional descriptive material. The purely non-functional descriptive material cannot alone provide the practical application for the manufacture.

Office personnel should be prudent in applying the foregoing guidance. Non-functional descriptive material may be claimed in combination with other functional descriptive material 11 on a computer-readable medium to provide the necessary functional and structural interrelationship to satisfy the requirements of § 101. The presence of the claimed non-functional descriptive material is not necessarily determinative of non-statutory subject matter. For example, a computer that recognizes a particular grouping of musical notes read from memory and upon recognizing that particular sequence, causes another defined series of notes to be played, defines a functional interrelationship among that data and the computing processes performed when utilizing that data, and as such is statutory because it implements a statutory process.

(c) Natural Phenomena Such as Electricity and Magnetism

Claims that recite nothing but the physical characteristics of a form of energy, such as a frequency, voltage, or the strength of a magnetic field, define energy or magnetism, per se, and as such are non-statutory natural phenomena.

However, a claim directed to a practical application of a natural phenomenon such as energy or magnetism is statutory.

2. Statutory Subject Matter

(a) Statutory Product Claims

If a claim defines a useful machine or manufacture by identifying the physical structure of the machine or manufacture in terms of its hardware or hardware and software combination, it defines a statutory product.

A machine or manufacture claim may be one of two types: (1) a claim that encompasses any and every machine for performing the underlying process or any and every manufacture that can cause a computer to perform the underlying process, or (2) a claim that defines a specific machine or manufacture. When a claim is of the first type, Office personnel are to evaluate the underlying process the computer will perform in order to determine the patentability of the product.

(...)

(b) Statutory Process Claims

A claim that requires one or more acts to be performed defines a process. However, not all processes are statutory under § 101. To be statutory, a claimed computer-related process must either: (1) result in a physical transformation outside the computer for which a practical

application in the technological arts is either disclosed in the specification or would have been known to a skilled artisan (discussed in (i) below), or (2) be limited by the language in the claim to a practical application within the technological arts (discussed in (ii) below). The claimed practical application must be a further limitation upon the claimed subject matter if the process is confined to the internal operations of the computer. If a physical transformation occurs outside the computer, it is not necessary to claim the practical application. A disclosure that permits a skilled artisan to practice the claimed invention, i.e., to put it to a practical use, is sufficient. On the other hand, it is necessary to claim the practical application if there is no physical transformation or if the process merely manipulates concepts or converts one set of numbers into another.

A claimed process is clearly statutory if it results in a physical transformation outside the computer, i.e., falls into one or both of the following specific categories ("safe harbors").
(...)

(c) Non-Statutory Process Claims

If the "acts" of a claimed process manipulate only numbers, abstract concepts or ideas, or signals representing any of the foregoing, the acts are not being applied to appropriate subject matter. Thus, a process consisting solely of mathematical operations, i.e., converting one set of numbers into another set of numbers, does not manipulate appropriate subject matter and thus cannot constitute a statutory process.

In practical terms, claims define non-statutory processes if they:

- consist solely of mathematical operations without some claimed practical application (i.e., executing a "mathematical algorithm"); or
- simply manipulate abstract ideas, e.g., a bid or a bubble hierarchy, without some claimed practical application.

A claimed process that consists solely of mathematical operations is non-statutory whether or not it is performed on a computer. Courts have recognized a distinction between types of mathematical algorithms, namely, some define a "law of nature" in mathematical terms and others merely describe an "abstract idea."

Certain mathematical algorithms have been held to be non-statutory because they represent a mathematical definition of a law of nature or a natural phenomenon. For example, a mathematical algorithm representing the formula $E=mc^2$ is a "law of nature"--it defines a "fundamental scientific truth" (i.e., the relationship between energy and mass). To comprehend how the law of nature relates to any object, one invariably has to perform certain steps (e.g., multiplying a number representing the mass of an object by the square of a number representing the speed of light). In such a case, a claimed process which consists solely of the steps that one must follow to solve the mathematical representation of $E=mc^2$ is indistinguishable from the law of nature and would "preempt" the law of nature. A patent cannot be granted on such a process.

Other mathematical algorithms have been held to be non-statutory because they merely describe an abstract idea. An "abstract idea" may simply be any sequence of mathematical operations that are combined to solve a mathematical problem.

The concern addressed by holding such subject matter non-statutory is that the mathematical operations merely describe an idea and do not define a process that represents a practical application of the idea.

Accordingly, when a claim reciting a mathematical algorithm is found to define non-statutory subject matter the basis of the § 101 rejection must be that, when taken as a whole, the claim recites a law of nature, a natural phenomenon, or an abstract idea.

MANUAL OF PATENT EXAMINATION PROCEDURE, Chapter 2100, Section 2181
2181 Identifying a 35 U.S.C. 112, Sixth Paragraph Limitation [R-9]

II. DESCRIPTION NECESSARY TO SUPPORT A CLAIM LIMITATION WHICH INVOKES
35 U.S.C. 112, SIXTH PARAGRAPH

B. Computer-Implemented Means-Plus-Function Limitations

For a computer-implemented means-plus-function claim limitation invoking 35 U.S.C. 112, sixth paragraph, a general purpose computer is usually sufficient for the corresponding structure for performing a general computing function (e.g., “means for storing data”), but the corresponding structure for performing a specific function is required to be more than simply a general purpose computer or microprocessor. In *In re Katz Interactive Call Processing Patent Litigation*, 639 F.3d 1303, 1316 (Fed. Cir. 2011), the court stated:

Those cases involved specific functions that would need to be implemented by programming a general purpose computer to convert it into a special purpose computer capable of performing those specified functions. ... By contrast, in the seven claims identified above, Katz has not claimed a specific function performed by a special purpose computer, but has simply recited the claimed functions of ‘processing,’ ‘receiving,’ and ‘storing.’ Absent a possible narrower construction of the terms ‘processing,’ ‘receiving,’ and ‘storing,’ discussed below, those functions can be achieved by any general purpose computer without special programming. As such, it was not necessary to disclose more structure than the general purpose processor that performs those functions. Those seven claims do not run afoul of the rule against purely functional claiming, because the functions of ‘processing,’ ‘receiving,’ and ‘storing’ are coextensive with the structure disclosed, i.e., a general purpose processor.).

To claim a means for performing a specific computer-implemented function and then to disclose only a general purpose computer as the structure designed to perform that function amounts to pure functional claiming. *Aristocrat*, 521 F.3d 1328 at 1333. In this instance, the structure corresponding to a 35 U.S.C. 112, sixth paragraph claim limitation for a computer-implemented function must include the algorithm needed to transform the general purpose computer or microprocessor disclosed in the specification. *Aristocrat*, 521 F.3d at 1333; *Finisar Corp. v. DirecTV Group, Inc.*, 523 F.3d 1323, 1340 (Fed. Cir. 2008); *WMS Gaming, Inc. v. Int’l Game Tech.*, 184 F.3d 1339, 1349 (Fed. Cir. 1999). The corresponding structure is not simply a general purpose computer by itself but the special purpose computer as programmed to perform the disclosed algorithm. *Aristocrat*, 521 F.3d at 1333. Thus, the specification must sufficiently disclose an algorithm to transform a general purpose microprocessor to the special purpose computer. *Aristocrat*, 521 F.3d at 1338 (“*Aristocrat* was not required to produce a listing of source code or a highly detailed description of the algorithm to be used to achieve the claimed functions in order to satisfy 35 U.S.C. 112 P 6. It was required, however, to at least disclose the algorithm that transforms the general purpose microprocessor to a ‘special purpose computer programmed to perform the disclosed algorithm.’ *WMS Gaming*, 184 F.3d at 1349.”) An algorithm is defined, for example, as “a finite sequence of steps for solving a logical or mathematical problem or performing a task.” *Microsoft Computer Dictionary*, Microsoft Press, 5th edition, 2002. Applicant may express the algorithm in any understandable terms including as a mathematical formula, in prose, in a flow chart, or “in any other manner that provides sufficient structure.” *Finisar*, 523 F.3d at 1340; see also *Intel Corp. v. VIA Techs., Inc.*, 319 F.3d 1357, 1366 (Fed. Cir. 2003); *In re Dossel*, 115 F.3d 942, 946-47 (Fed. Cir.1997); *Typhoon Touch Inc. v. Dell Inc.*, 659 F.3d 1376, 1385 (Fed. Cir. 2011); *In re Aoyama*, 656 F.3d 1293, 1306 (Fed. Cir. 2011).

A rejection under 35 U.S.C. 112, second paragraph is appropriate if the specification discloses no corresponding algorithm associated with a computer or microprocessor. *Aristocrat*, 521 F.3d at 1337-38. For example, mere reference to a general purpose computer

with appropriate programming without providing an explanation of the appropriate programming, or simply reciting “software” without providing detail about the means to accomplish the software function, would not be an adequate disclosure of the corresponding structure to satisfy the requirements of 35 U.S.C. 112, second paragraph. *Aristocrat*, 521 F.3d at 1334; *Finisar*, 523 F.3d at 1340-41. In addition, merely referencing a specialized computer (e.g., a “bank computer”), some undefined component of a computer system (e.g., “access control manager”), “logic,” “code,” or elements that are essentially a black box designed to perform the recited function, will not be sufficient because there must be some explanation of how the computer or the computer component performs the claimed function. *Blackboard, Inc. v. Desire2Learn, Inc.*, 574 F.3d 1371, 1383-1385 (Fed. Cir. 2009); *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1366-67 (Fed. Cir. 2008); *Rodriguez*, 92 USPQ2d at 1405-06.

In several Federal Circuit cases, the patentees argued that the requirement for the disclosure of an algorithm can be avoided if one of ordinary skill in the art is capable of writing the software to convert a general purpose computer to a special purpose computer to perform the claimed function. See, e.g., *Blackboard*, 574 F.3d at 1385; *Biomedino*, 490 F.3d at 952; *Atmel Corp.*, 198 F.3d at 1380. Such argument was found to be unpersuasive because the understanding of one skilled in the art does not relieve the patentee of the duty to disclose sufficient structure to support means-plus-function claim terms. *Blackboard*, 574 F.3d at 1385 (“A patentee cannot avoid providing specificity as to structure simply because someone of ordinary skill in the art would be able to devise a means to perform the claimed function.”); *Atmel Corp.*, 198 F.3d at 1380 (“[C]onsideration of the understanding of one skilled in the art in no way relieves the patentee of adequately disclosing sufficient structure in the specification.”). The specification must explicitly disclose the algorithm for performing the claimed function, and simply reciting the claimed function in the specification will not be a sufficient disclosure for an algorithm which, by definition, must contain a sequence of steps. *Blackboard*, 574 F.3d at 1384 (stating that language that simply describes the function to be performed describes an outcome, not a means for achieving that outcome); *Microsoft Computer Dictionary*, Microsoft Press, 5th edition, 2002; see also *Encyclopaedia Britannica, Inc. v. Alpine Elecs., Inc.*, 355 Fed. Appx. 389, 394-95, 2009 U.S. App. Lexis. 26358, 10-16 (Fed. Cir. 2009) (holding that implicit or inherent disclosure of a class of algorithms for performing the claimed functions is not sufficient, and the purported “one-step” algorithm is not an algorithm at all) (unpublished).

If the specification explicitly discloses an algorithm, the sufficiency of the disclosure of the algorithm must be determined in light of the level of ordinary skill in the art. *Aristocrat*, 521 F.3d at 1337; *AllVoice Computing PLC v. Nuance Commc’ns, Inc.*, 504 F.3d 1236, 1245 (Fed. Cir. 2007); *Intel Corp.*, 319 F.3d at 1366-67 (knowledge of a person of ordinary skill in the art can be used to make clear how to implement a disclosed algorithm). The examiner should determine whether one skilled in the art would know how to program the computer to perform the necessary steps described in the specification (i.e., the invention is enabled), and that the inventor was in possession of the invention (i.e., the invention meets the written description requirement). Thus, the specification must sufficiently disclose an algorithm to transform a general purpose microprocessor to a special purpose computer so that a person of ordinary skill in the art can implement the disclosed algorithm to achieve the claimed function. *Aristocrat*, 521 F.3d at 1338.

Often the supporting disclosure for a computer-implemented invention discusses the implementation of the functionality of the invention through hardware, software, or a combination of both. In this situation, a question can arise as to which mode of implementation supports the means-plus-function limitation. The language of 35 U.S.C. 112, sixth paragraph requires that the recited “means” for performing the specified function shall be construed to cover the corresponding “structure or material” described in the specification and equivalents thereof. Therefore, by choosing to use a means-plus-function limitation and

invoke 35 U.S.C. 112, sixth paragraph, applicant limits that claim limitation to the disclosed structure, i.e., implementation by hardware or the combination of hardware and software, and equivalents thereof. Therefore, the examiner should not construe the limitation as covering pure software implementation.

However, if there is no corresponding structure disclosed in the specification (i.e., the limitation is only supported by software and does not correspond to an algorithm and the computer or microprocessor programmed with the algorithm), the limitation should be deemed indefinite as discussed above, and the claim should be rejected under 35 U.S.C. 112, second paragraph. It is important to remember that claims must be interpreted as a whole; so, a claim that includes a means-plus-function limitation that corresponds to software per se (and is thus indefinite for lacking structural support in the specification) is not necessarily directed as a whole to software per se unless the claim lacks other structural limitations.

URUGUAY: Article 13 (e) of the Law No. 17.164 of 02/09/1999 Regulating Rights and Obligations Relating to Patents, Utility Models and Industrial Designs

13.

The following shall not be considered inventions for the purposes of this Law:

(e) computer programs considered in isolation

UZBEKISTAN:

VANUATU: Section 3 (3) (f) of the Patents Act No. 2 of 2003

3.

(3) The following inventions are not patentable:

(f) a program for a computer.

VIET NAM: Article 59 2) of the Law on Intellectual Property No. 50/2005/QH11 of 29/11/2005 as last amended by Law No. 36/2009/QH12

Article 59.- Subject matters not protected as inventions

The following subject matters shall not be protected as inventions:

2. Schemes, plans, rules and methods for performing mental acts, training domestic animals, playing games, doing business; computer programs;

YEMEN: Law No. 2 of 2011 on Patents, Utility Models, Layout Designs of Integrated Circuits and Undisclosed Information

No explicit provision of Law

ZAMBIA: Patent Act of 1958 (Chapter 400) as last amended by Act No. 26 of 28/12/1987

No explicit provision of Law

ZIMBABWE: Patent Act (Chapter 26:03) of 01/02/1972 as last amended by Act No. 14/2002

No explicit provision of Law

ARIPO: Harare Protocol on Patents and Industrial Designs of 10/12/1982 as last amended on 14/11/2006
No explicit provision of Law

ANDEAN COMMUNITY: Article 15 (e) of the Decision No. 486 of 14/09/ 2000 of the Commission of the Andean Community - Common Industrial Property Regime (Cartagena Agreement)

15.

The following shall not be considered inventions:

(e) computer programs or software as such;

EUROPEAN PATENT ORGANIZATION: Article 52 (2) (c) and (3) of the European Patent Convention

Article 52

Patentable inventions

(2) The following in particular shall not be regarded as inventions within the meaning of paragraph 1:

(c) schemes, rules and methods for performing mental acts, playing games or doing business, and programs for computers;

(3) Paragraph 2 shall exclude the patentability of the subject-matter or activities referred to therein only to the extent to which a European patent application or European patent relates to such subject-matter or activities as such.

GUIDELINES FOR THE EXAMINATION OF THE EPO, Part G, Chapter II-5, Rule 3.6

3.6 Programs for computers

Programs for computers are a form of "computer-implemented invention", an expression intended to cover claims which involve computers, computer networks or other programmable apparatus whereby prima facie one or more of the features of the claimed invention are realised by means of a program or programs. Such claims may e.g. take the form of a method of operating said apparatus, the apparatus set up to execute the method, a readable medium carrying a program (see T 424/03) or, following T 1173/97, the program itself. The examiner should disregard the claim category and concentrate on its content in order to determine whether the claimed subject-matter, considered as a whole, has a technical character.

Moreover, insofar as the scheme for examination is concerned, no distinctions are made on the basis of the overall purpose of the invention, i.e. whether it is intended to fill a business niche, to provide some new entertainment, etc. Technical character should be assessed without regard to the prior art (see T 1173/97, confirmed by G 3/08).

Features of the computer program itself (see T 1173/97) as well as the presence of a device defined in the claim (see T 424/03 and T 258/03) may potentially lend technical character to the claimed subject-matter as explained below.

The basic patentability considerations in respect of claims for computer programs are in principle the same as for other subject-matter. While "programs for computers" are included among the items listed in Art. 52(2), if the claimed subject-matter has a technical character it is not excluded from patentability by the provisions of Art. 52 (2) and (3).

Moreover, a data processing operation controlled by a computer program can equally, in theory, be implemented by means of special circuits, and the execution of a program always involves physical effects, e.g. electrical currents. According to T 1173/97, such normal physical effects are not in themselves sufficient to lend a computer program technical

character (for the procedure at the search stage, see B-VIII, 2.2). However, if a computer program is capable of bringing about, when running on a computer, a further technical effect going beyond these normal physical effects, it is not excluded from patentability. This further technical effect may be known in the prior art.

A further technical effect which lends technical character to a computer program may be found e.g. in the control of an industrial process or in processing data which represent physical entities or in the internal functioning of the computer itself or its interfaces under the influence of the program and could, for example, affect the efficiency or security of a process, the management of computer resources required or the rate of data transfer in a communication link. As a consequence, a computer program may be considered as an invention within the meaning of Art. 52(1) if the program has the potential to bring about, when running on a computer, a further technical effect which goes beyond the normal physical interactions between the program and the computer. A patent may be granted on such a claim if all the requirements of the EPC are met; see in particular Art. 84, 83, 54 and 56, and G-III, 3 below. Such claims should not contain program listings (see F-II, 4.12), but should define all the features which assure patentability of the process which the program is intended to carry out when it is run (see F-IV, 4.5.2, last sentence).

Moreover, following T 769/92, the requirement for technical character may be satisfied if technical considerations are required to carry out the invention. Such technical considerations must be reflected in the claimed subject-matter.

Any claimed subject-matter defining or using technical means is an invention within the meaning of Art. 52(1) (see T 424/03 and T 258/03, and confirmed in G 3/08). Therefore the mere inclusion of a computer, a computer network, a readable medium carrying a program, etc. in a claim lends technical character to the claimed subject-matter.

If claimed subject-matter does not have a prima facie technical character, it should be rejected under Art. 52 (2) and (3). If the subject-matter passes this prima facie test for technicality, the examiner should then proceed to the questions of novelty and inventive step (see G-IV and VII).

GCC: Article 3 (1) 1) of the Patent Regulation of the Cooperation Council for the Arab States of the Gulf (as at 23/04/2002)

Article 3

3/1 for the purposes of this Regulation, the following shall not be regarded as inventions:
3/1/1 Discoveries, scientific theories, mathematical methods, and computer programs.

OAPI: Article 6 (g) of the Agreement Revising the Bangui Agreement of 02/03/1977, on the Creation of an African Intellectual Property Organization (Bangui Agreement) as last revised in 1999

Article 6

Non-Patentable Subject Matter

Patents shall not be granted for the following:

(g) computer programs;

[Annex II follows]