

August 19, 2010

By Email: Barney.deSchneider@ic.gc.ca

Barney de Schneider
Assistant Commissioner of Patents
Canadian Intellectual Property Office
Patent Branch
50 Victoria Street
Gatineau, Quebec
K1A 0C9

Dear Mr. de Schneider:

Re: Proposed Amendments to MOPOP Chapter 16

FICPI Canada wishes to thank the Canadian Intellectual Property Office for the opportunity to comment on the proposed revisions to Chapter 16 of the Manual of Patent Office Practice which were released for public review on June 16, 2010.

As you know, FICPI (the Federation Internationale des Conseils en Propriété Industrielle), comprises more than 3500 intellectual property attorneys in private practice in over 80 countries. FICPI Canada is a self-governing national association of FICPI and represents the interests of Canadian patent and trade mark professionals. Our membership includes senior professionals at most major Canadian intellectual property firms. Our clients span all types and sizes of businesses, including multi-national corporations, small and medium size enterprises, and individuals.

We recognize that updating Chapter 16 of MOPOP represents an enormous effort and we commend the Patent Office for addressing this important project. It is crucial that MOPOP be kept up to date, and that it provide clear guidance to the examination staff in the Patent Office.

FICPI Canada's submissions are set out in the attached document, which includes a marked-up copy of the proposed draft of Chapter 16 containing recommended changes and notes.

FICPI Canada wishes to thank the Canadian Intellectual Property Office for the opportunity to provide comments. If CIPO has any comments about our submissions, or if you consider it would be helpful to have a meeting with representatives from FICPI Canada, please do not hesitate to contact the undersigned.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'R. Storey', with a long horizontal stroke extending to the right.

Robert B. Storey
President – FICPI Canada

cc Chris Evans (By email)

FICPI Canada Submission to CIPO

Re: Proposed Amendments to MOPOP Chapter 16

August 19, 2010

Submission

This submission is provided in response to a call for comments on a draft amended Chapter 16 of the Manual of Patent Office Practice ("MOPOP") entitled "Computer-Implemented Inventions".

FICPI Canada shares the view that examiners should be provided with guidance when examining patent applications. Guidance documents generally provide greater objectivity and consistency in the examination of patent applications. FICPI Canada supports CIPO's ongoing work in amending MOPOP and acknowledges the contribution of the individuals involved in this work.

Recommendations

Recommendation 1

FICPI Canada is of the view that since there have been no changes to the statute and there have been no new decisions of the courts regarding computer-implemented inventions since the previous revision of MOPOP Chapter 16 in February 2005, there is no compelling reason for any changes to be made at this time to Office practice relating to examination of patent applications relating to computer-implemented inventions.

FICPI Canada is of the view that if any revisions to MOPOP Chapter 16 are to be made, such changes should only be made in response to new law on the subject of computer-implemented inventions (e.g. after a final decision from the courts in the *Amazon* appeal).

Recommendation 2

FICPI Canada is of the view that the proposal in Chapter 16 to examine claims for statutory subject matter based on a "contribution" approach, as set forth in 16.01, 16.02.02, 16.02.03, 16.02.04, 16.03, 16.03.02, 16.03.03, 16.08.04, 16.09, 16.09.01, 16.09.03, 16.09.04, 16.09.05, has no basis in Canadian law.

Generally, it is understood that with the proposed "contribution" approach, instead of focusing upon the claim as a whole, the focus is only upon a subset of elements of the claim, the subset being identified through multiple levels of distillation or dissection of the claim.

At an initial level of distillation, the focus is on the "essential elements" of the claimed invention,¹ which the text defines as "the elements necessary to provide the useful result in a novel and inventive manner, and without which elements the solution would cease to be inventive".² The text asserts that, "[it] is also necessary that the description provide such instructions as are necessary for the person skilled in the art to understand, where applicable, the interrelationship of the essential elements necessary to provide the practical form of the invention".³

¹ Proposed Draft MOPOP Chapter 16.03

² Proposed Draft MOPOP Chapter 16.05.04

³ Proposed Draft MOPOP Chapter 16.05.04

As a further level of distillation, the text proposes to focus on only the "contribution" made by the inventors, meaning only those portions of a claimed invention that are both novel and non-obvious.⁴ In other words, under this proposed new approach, patent applicants will no longer be permitted to rely upon features of the claim that are known from the prior art in order to demonstrate that the claim constitutes statutory subject-matter; rather, patent applicants would be permitted to rely only upon the novel and non-obvious features of the claim to demonstrate statutory subject-matter.⁵

As yet another level of distillation, even among the subset of novel and nonobvious features representing the "contribution", patent applicants will only be permitted to rely upon features that are deemed to be "statutory features" as opposed to "non-statutory features".⁶ In assessing whether an element of a claim is a "statutory feature", it appears that the Office intends to exclude any elements that are not viewed as providing "a technological solution to a problem in a field of technology", and also intends to exclude any features that the Office otherwise views as excluded subject-matter.⁷

To examine a claim, the text proposes to first conduct the distillation into "statutory" and "non-statutory" features.⁸ If a claim includes both statutory and non-statutory features, then it will be necessary to conduct a second distillation of the claim to identify the "contribution" made by the inventors, meaning the novel and non-obvious elements of the claim, by comparing the claim to the prior art. If the "contributed" (novel and non-obvious) features are non-statutory, then the claim is to be rejected as non-statutory, even if the claim contains other statutory features that are known from the prior art. In other words, the Office proposes that it will not be enough for a claim to contain some elements that are statutory and others that are new and non-obvious; rather, the claim will have to contain a "statutory contribution",⁹ meaning at least one feature that is statutory, novel and non-obvious.

Under the proposed MOPOP revisions, a claim directed to a device or machine, which until now would have inevitably been recognized as statutory subject matter in Canada, the United States, the European Patent Office and most if not all other countries in the world, can now be rejected as non-statutory if the novel and non-obvious features of the claim do not coincide with the features that the Office views as statutory features.

We must point out, however, that when considering questions of patentability, it is the patentability of the invention as claimed that must be assessed. Section 27(4) of the *Act* expressly confirms that the role of the claims is to define the "invention" for which a patent is sought:

⁴ Proposed Draft MOPOP Chapter 16.02.03

⁵ For example, see analysis of claim 2 on page 16-17 and analysis of claims 2 and 3 on page 16-8

⁶ Proposed Draft MOPOP Chapter 16.02.03, 16.03

⁷ Draft Chapter 16, ss. 16.02.01, 16.02.03, 16.03, 16.03.02, 16.08.04, 16.09.01, 16.09.04

⁸ For example, see analysis of claim 4 on page 16-11, claim 2 on page 16-25, and discussion of invention as a solution to a practical problem in 16.09.01

⁹ Proposed Draft MOPOP Chapter 16.03

s. 27(4) The specification must end with a claim or claims defining distinctly and in explicit terms the subject-matter of the invention for which an exclusive privilege or property is claimed. [Emphasis added]

Thus, in accordance with s.27(4), "the invention" means the subject-matter defined by a claim. It is this subject-matter defined by each claim that must be analyzed for compliance with the definition of "invention" in s. 2.

S. 27(4) does not authorize the "invention" to be defined by some subset of the claim or the disclosure that may be referred to as the "contribution" of the inventors. Rather, S. 27(4) provides that it is the claim that defines the subject-matter of the invention. Accordingly, for the Office to define the invention based on anything less than the entirety of the subject-matter defined by the claim, is a contravention of s.27(4) of the *Act*.

Thus, Ss. 28.2 and 28.3 merely require "the subject-matter defined by a claim" to be novel and non-obvious. This statutory wording clearly requires novelty and obviousness to be assessed on the basis of the full subject-matter defined by a claim, i.e., the claim as a whole. It is a well-established principle in Canadian law that novelty and obviousness must be assessed on the basis of the entire claim; it is not permissible to dissect or distill the claim into its constituent elements then object that individual elements are not new or inventive.¹⁰

As stated by the Court in *McPhar*.¹¹

"Moreover, it is not a correct approach to the determination of whether a claim is invalid to pick out an individual feature of the invention defined by it and contend that because such feature is not new or useful and does not involve the exercise of inventive ingenuity the Claim is, therefore, invalid. It is well settled, as Lord Romer said in *Non-Drip Measure Co. Ltd. v. Stranger's Ltd.*, (1943), 60 R.P.C. 135 at p. 145 that this is not a legitimate method of approach and that the alleged invention must be regarded as a whole."

There is absolutely no requirement in s. 28.2 or s. 28.3 that anything less than the full subject-matter defined by a claim be novel or obvious; there is certainly no requirement in s.28.2 or s. 28.3 that the "statutory" as opposed to the "non-statutory" elements of a claim be novel or obvious.

¹⁰ See e.g., *Procter & Gamble Pharmaceuticals Canada Inc. v. Canada (Minister of Health)*, (2004), 32 C.P.R. (4th) 224 at 252-253 (F.C.T.D.), *alald.* 37 C.P.R. (4th) 289 (F.C.A.), *Canamould Extrusions Ltd. v. Oriangle Inc.* (2003), 25 C.P.R. (4th) 343 at 367 (F.C.T.D.), *affd.* 30 C.P.R. (4th) 129 (F.C.A.); *Crila Plastic Industries Ltd. v. Ninety-Eight Plastic Trim Ltd.* (1987), 18 C.P.R. (3d) 1 at 14 (F.C.A.); *Beloit Canada Ltd. v. Valmet Oy* (1986), 8 C.P.R. (3d) 289 at 297 (F.C.A.); *Omark Industries (1960) Ltd. v. Gouger Chain Saw Co.* (1964), 45 C.P.R. 169 at 218-219 (Ex. Ct.); *Riddell v. Patrick Harrison & Co. Ltd.* (1957), 28 C.P.R. 85 at 105-106 (Ex. Ct.).

¹¹ *McPhar Engineering Co. of Canada Ltd. v. Sharpe Instruments Ltd.* (1960), 35 C.P.R. 105 at 148 (Ex. Ct.).

Accordingly, by requiring novelty and non-obviousness to be found in "statutory" elements and disregarding any novelty or non-obviousness that may be found in "non-statutory" elements, the "contribution" approach imports new novelty and non-obviousness requirements which are more onerous than those imposed by Parliament in ss.28.2 and 28.3 of the *Patent Act* and thus s. 40 of the *Patent Act* prohibits the Commissioner from adopting such an approach.

In our view, the contribution approach proposed in the draft revision of Chapter 16 contravenes the Supreme Court judgments on subject-matter in *Harvard College* and in *Schmeiser*. As discussed above, the proposed "contribution" approach requires an identification of a subset of so-called "essential elements" of the claim that are novel and unobvious over the prior art. Under the proposed approach, a claim will only be considered statutory if at least one of the elements viewed by CIPO as "statutory elements" is also one of the "contributed" (i.e., novel and non-obvious) elements. Novelty and obviousness are addressed in ss. 28.2 and 28.3 of the *Patent Act* and s. 28.2(1) requires that "The subject-matter defined by a claim" must not have been disclosed in any of the circumstances described in s.28.2(1)(a) to (d). Similarly, s. 28.3 requires that "The subject-matter defined by a claim" must not have been obvious on the claim date having regard to the information described in s.28.3(a) and (b).

The Supreme Court of Canada has held that whether a claimed invention qualifies as statutory subject-matter is a question of law. In this regard, in *Harvard College*, the Supreme Court stated:¹²

Perhaps more important in this case is the nature of the problem under review, i.e. whether it constitutes a question of law, fact or mixed law and fact. In my view, the question of whether a higher life form can be considered a "manufacture" or "composition of matter" approaches a pure determination of law. There is no disagreement in this case regarding the nature of the specific invention: if it is determined that higher life forms are "manufacturers" or "compositions" of matter", then the oncomouse is an invention ... [emphasis added]

In contrast, it is well-established in Canadian law that novelty and obviousness are questions of fact, not questions of law.¹³ Thus, the identification of the "contribution" made by the inventors, for the purpose of assessing statutory subject-matter, is necessarily a question of fact. However, by classifying statutory subject-matter as a "pure determination of law", the

¹² *Harvard College v. Canada (Commissioner of Patents)*, [2002] 4 S.C.R. 45 at 474-475

¹³ To name but a few authorities, see e.g. *Consolboard Inc. v. MacMillan Bloedel (Saskatchewan) Ltd.* (1981), 56 C.P.R. (2d) 145 at 167 (S.C.C.); *SmithKline Beecham Pharma Inc. v. Apotex Inc.* (2002), 21 C.P.R. (4th) 129 at 136 (F.C.A.); *Rothmans, Benson & Hedges Inc. v. Imperial Tobacco Ltd.* (1993), 47 C.P.R. (3d) 188 at 202 and 204 (F.C.A.); *Mahurkar v. Vas-Cath of Canada Ltd.* (1990), 32 C.P.R. (3d) 409 at 410 (F.C.A.); *Diversified Products Corp. v. Tye-Sil Corp.* (1988), 23 C.P.R. (3d) 313 at 319 (F.C.T.D.); *Beloit Canada Ltd. v. Valmet Oy* (1986), 8 C.P.R. (3d) 289 at 296 (F.C.A.); *Johnson Controls Inc. v. Varta Batteries Ltd.* (1984), 80 C.P.R. (2d) 1 at 16 (F.C.A.); *Cutter (Canada) Ltd. v. Baxter Travenol Laboratories of Canada Ltd.* (1983), 68 C.P.R. (2d) 179 (F.C.A.), leave to appeal refused (1983), 72 C.P.R. (2d) 287 (S.C.C.); *Xerox of Canada Ltd. v. IBM Canada Ltd.* (1977), 33 C.P.R. (2d) 24 at 54 (F.C.T.D.); *Lovell Manufacturing Co. and Maxwell Ltd. v. Beatty Bros. Ltd.* (1962), 41 C.P.R. 18 at 63 (Ex. Ct.).

Supreme Court has clearly prohibited factual inquiries, such as the novelty and non-obviousness of the claimed invention or elements thereof, or the "contribution" of the inventors, from entering into the statutory subject-matter analysis.

The fact that all members of the Supreme Court agreed with the analytical approach taken in *Harvard College*,¹⁴ and subsequently reiterated their unanimous approval of this approach in the *Schmeiser* decision,¹⁵ has been viewed as "cementing" the "question of law" approach to statutory subject-matter in Canada.¹⁶ Accordingly, the Supreme Court has clearly prohibited the involvement of factual inquiries such as novelty or non-obviousness from entering into the statutory subject-matter analysis.

The contribution approach clearly contravenes the Supreme Court of Canada judgments in *Harvard College*¹⁷ and in *Schmeiser*,¹⁸ by impermissibly transforming the statutory subject-matter analysis from a "pure determination of law" into a factual inquiry of novelty and non-obviousness.

A more serious flaw in the "contribution" approach is that it requires a comparison of the subject-matter of a claim to the relevant prior art in order to identify what novel and non-obvious features have been "contributed" by the inventor. This identification of the "contribution" of the claim is clearly a step in claim construction, as the Office effectively proposes to apply the requirements of patentability, including statutory subject-matter, to this "contribution" consisting of the novel and non-obvious elements of the claim rather than to the claim as a whole. Effectively, therefore, the Office would be construing the claimed invention as this "contribution".

However, it is well established in Canadian law that the prior art may not be considered for the purpose of construing the claims. Rather, the claims must be construed before conducting any analysis of validity such as novelty or nonobviousness analysis. For example, in *Visx v. Nidek*, the Federal Court of Canada stated:¹⁹

"[T]he first duty of the Court ... is to "construe" the patent. Claim construction must be effected before dealing with the alleged infringement or the validity of the patent. The construction of a patent is a question of law to be decided by the Court. Consequently,

¹⁴ *Harvard College v. Canada (Commissioner of Patents)*, [2002] 4 S.C.R. 45 at 474-475

¹⁵ *Monsanto Canada Inc. v. Schmeiser* (2004), 31 C.P.R. (4th) 161 (S.C.C.) at 173-174 *per* McLachlin CJC and Fish J; and at 192-193 *per* Arbour J. (dissenting).

¹⁶ R. J. Atkinson, "Mixed Messages: Canada's Stance on Patentable Subject Matter in Biotechnology", (2005), 19 I.P.J. 1 at 11.

¹⁷ *Harvard College v. Canada (Commissioner of Patents)*, [2002] 4 S.C.R. 45 at 474-475

¹⁸ *Monsanto Canada Inc. v. Schmeiser* (2004), 31 C.P.R. (4th) 161 (S.C.C.) at 173-174 *per* McLachlin CJC and Fish J; and at 192-193 *per* Arbour J. (dissenting).

¹⁹ *Visx Inc. v. Nidek Co.* (1999), 3 C.P.R. (4th) 417 at 423 (F.C.T.D.), *affd.* 16 C.P.R. (4th) 251 (F.C.A.). See also *Emmanuel Simard & Fils (1983) Inc. v. Raydan Manufacturing Ltd.* (2005), 41 C.P.R. (4th) 385 at 396 (F.C.T.D.), *revd on costs only* at 53 C.P.R. (4th) 178 (F.C.A.): " ... [It] is essential as a first step to construe the claim: 'The first step in a patent suit is therefore to construe the claims. Claims construction is antecedent to consideration of both validity and infringement issues.' This must be done without reference to the allegedly infringing product or any relevant prior art (see *Whirlpool. supra*, at 1093)."

the claims must be construed without reference to prior art or to alleged infringing activities."

The Supreme Court of Canada has disapproved of extrinsic evidence for the purpose of claim construction in general, holding that claim construction should be properly limited to the four corners of the specification.²⁰ The Supreme Court has also cautioned against construing the claims "with an eye to the prior art".²¹

More generally, Canadian court decisions both before and after *Free World Trust* and *Whirlpool* have simply held that,²² "The claims are to be construed without reference to the prior art." Numerous other Canadian court decisions have reached the same conclusion.²³

The contribution approach also contravenes statutory provisions and Canadian court decisions on claim differentiation and claim redundancy. There is a presumption against redundancy of patent claims. In addition, as a result of Section 87 of the *Patent Rules*, Section 58 of the *Patent Act* and Sections 10 and 12 of the *Interpretation Act*, each claim must be given its own independent effect.

In contrast, the "contribution" approach will often attribute the same meaning to two or more different claims in an application: this will necessarily occur whenever two or more claims, despite defining different sets of elements, are viewed as having the same "contribution". Accordingly, the "contribution" approach can improperly render many claims redundant, thereby depriving them of any meaning or effect, and thus contravenes the above-cited Canadian court decisions on claim redundancy and the above-cited sections of the *Patent Act*, the *Patent Rules* and the *Interpretation Act*.

²⁰ *Whirlpool Corp. v. Camco Inc.*, [2000] 2 S.C.R. 1067 at 150

²¹ *Whirlpool Corp. v. Camco Inc.*, [2000] 2 S.C.R. 1067 at 149

²² *Glaxo Group Ltd. v. Canada (Minister of National Health and Welfare)* (2000), 6 C.P.R. (4th) 73 at 82 (F.C.T.D.), affd. 11 C.P.R. (4th) 417 (F.C.A.); *AB Hassle v. Apotex Inc.* (2001), 12 C.P.R. (4th) 289 at 313 (F.C.T.D.); *Novartis AG v. Apotex Inc.* (2001), 15 C.P.R. (4th) 417 at 447 (F.C.T.D.); *Pro-Vertic (1987) Inc. v. International Diffusion Consommateur S.A.* (1989), 26 C.P.R. (3d) 528 at 530 (F.C.T.D.).

²³ See e.g., *Lishman v. Erom Roche Inc.* (1996), 68 C.P.R. (3d) 72 at 86 (F.C.T.D.) per Rothstein J. as he then was: "The prior art has nothing to do with the construction of the claims in a patent ..."; *Dableh v. Ontario Hydro* (1996), 68 C.P.R. (3d) 129 at 142-143 (F.C.A.): "The appellant maintains that in construing claim 1 by reference to prior art and the concept of obviousness the Trial Judge has confused the task of determining a patent's validity with that of claim construction. We agree."; *Amfac Foods Inc. v. Irving Pulp & Paper, Ltd.* (1986), 12 C.P.R. (3d) 193 at 197 (F.C.A.): "... [I]n conformity with normal rules of claim construction, no reference to the prior art is either required or proper in this case."; *Beloit Canada Ltd. v. Valmet Oy* (1984), 78 C.P.R. (2d) 1 at 54, rev'd on other grounds 8 C.P.R. (3d) 289 (F.C.A.): "As Fox at p. 215 states claims are to be construed with reference to the entire specification, without reference to prior art, each claim should be given a distinct meaning if possible, and what is not claimed is disclaimed."; *Pfizer Canada Inc. v. Canada (Minister of Health)* (2005), 46 C.P.R. (4th) 244 at 260 (F.C.T.D.), affd. 54 C.P.R. (4th) 353 (F.C.A.): "The claims are construed by the Court at the outset of its decision before considering issues of validity or infringement. It is not to be a "results oriented" exercise, rather, it is to be carried out without an eye either to the alleged infringement or the prior art." (*Whirlpool* paragraphs 43 and 49(a))."

Recommendation 3

FICPI Canada is of the view that some portions of the draft extend into areas already covered and best dealt by other chapters of the MOPOP. Such extension into overlapping chapters is not necessary for the purposes of Chapter 16. It is consequently recommended to delete portions of draft Chapter 16 and instead provide cross-reference to other MOPOP Chapters. Hyperlinks could be a convenient way for cross-referencing an online document.

Cross-reference is preferable since:

- it avoids inconsistencies within MOPOP on a given subject;
- it avoids having to rewrite more than one chapter of MOPOP when the law changes on a given subject;
- it avoids blending concepts which could lead to poorer understanding of description requirements.

* * *

These and other recommendations from FICPI Canada are embodied in the attached marked-up version of draft Chapter 16. Notes and suggestions are also provided for improved reference to case law and concepts.

Respectfully submitted,

FICPI Canada

Per Robert Storey, Alain Leclerc, Stephen Perry and John Knox

Chapter 16

Computer-Implemented Inventions

16.01 Scope of this chapter

The purpose of this chapter is to highlight Office practice as it pertains in particular to computer-implemented inventions.

The term “computer” is used in this chapter to refer to an electronic device comprising a processor, such as a general-purpose central processing unit (CPU), a specific purpose processor or a microcontroller. A computer is capable of receiving data (an input), of performing a sequence of predetermined operations thereupon, and of producing thereby a result in the form of information or signals (an output).

Depending on context, the term “computer” will mean either a processor in particular or can refer more generally to a processor in association with an assemblage of interrelated elements contained within a single case or housing. The term may be applied, for example, to a network server, personal digital assistant (PDA), multi-function cell phone, or similar device. In certain contexts, the term may be applied more broadly so as to refer to a device interacting with certain ubiquitous peripherals, such as a keyboard, mouse or display, necessary for interacting with the computer itself. In this sense, the term “computer” may refer to a “general purpose computer” such as a desktop or laptop computer capable of receiving input, such as via a keyboard, and providing output, such as to a display means.

In reading this chapter, it should be borne in mind that its purpose is to clarify, through elaboration, the application of the more generic teachings of other chapters to the particular issues encountered with computer-implemented inventions.

Nothing in this chapter should be interpreted as providing exceptions to any practice of general applicability set out in any other chapter. ~~Throughout this chapter, reference is made to the nature of the contribution in a claimed invention. Additional guidance on the contribution approach used to assess whether a patentable contribution has been made can be found in Chapter 13 of this manual.~~

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.~~

Section 2 of the Patent Act defines what is meant by “an invention”.

Section 27(4) of the Patent Act states:

s. 27(4) The specification must end with a claim or claims defining distinctly and in explicit terms the subject-matter of the invention for which an exclusive privilege or property is claimed.

This statutory principle, that the subject matter of the invention is defined by the claims, has been emphasized on numerous occasions by the Supreme Court of Canada.¹ And more recently, the Federal Court of Appeal has also emphasized that in analyzing the patentability of “the invention”, “What is in issue is the patent claim as construed by the Court.”²

Thus, the claims define the invention claimed by the applicant and to determine whether they fall within the definition of invention under Section 2, it is necessary to consider whether each claim defines subject matter that meets the requirements of Section 2.

Section 2 reads as follows:

“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.

From the use of the word “or” in section 2, it is clear that a claim qualifying under any one of the statutory categories (“art, process, machine, manufacture or composition of matter, or ... improvement [there]in...”) is sufficient to define a statutory “invention” if it is new and useful.

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, data structures, and computer-generated signals.~~

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”.³

16.02.01 Art

The term “Art” is “a word of very wide connotation and is not confined to new processes or products or manufacturing techniques but extends as well to new and innovative methods of applying skill or knowledge provided they produce effects or results that are commercially useful to the public.

A claim is considered to fall within the category of "Art" if it recites subject matter that:

- (i) is not a disembodied idea but has a method of practical application;
- (ii) is a new and innovative method of applying skill or knowledge; and
- (iii) has a result or effect that is commercially useful.

Aspects (i) and (iii) are pure determinations of law whereas aspect (ii) is a determination of fact, i.e. novelty and obviousness. Assessment of the requirements for novelty and obviousness are described elsewhere in this manual.

In practice it is suggested that the Examiner assess aspects (i) and (iii) before considering novelty and obviousness of the claim and if the claim fails to satisfy aspects (i) and (iii) before a novelty an obviousness assessment has taken place, the claim may be considered not to fall under the category of art. It may however, fall under one of the other categories of patentable subject matter set forth in Section 2.

If aspects (i) and (iii) above are satisfied, then the Examiner should consider whether the claim satisfies the requirements for novelty and obviousness and if the claim fails to satisfy these requirements, even though aspects (i) and (iii) may be satisfied, the claim may be considered to not fall within the category of art. The claim may however, fall within one of the other categories of patentable subject matter set forth in Section 2.

Computer-implemented inventions falling within the category *art* are typically claimed include graphical user interfaces, data structures, database schemas, data communications protocols, communications signals and as methods for example.

Many methods involve the use of a computer or an apparatus or system including a computer. A method claim that, for example merely recites mathematical steps for solving a mathematical formula, would be considered non-statutory does not become statutory likely fail to meet aspect (i) and would probably not be saved simply by virtue of some part of the method being carried out on or by a computer. The method itself, as a whole, must be a solution to a practical problem and must lie within a field of technology

Claims to computer implemented methods for playing known games or creating works of art do not define inventions that belong to a field of technology and do not come within the definition of invention in section 2 of the Patent Act.

A method of controlling a computer's operations so as to achieve a technological result, in contrast, would come within the definition of invention in section 2 of the

~~Patent Act. In such a method, the electronic processes within the computer are considered to satisfy the requirement that the method include (either explicitly or implicitly) at least one act performed by a physical agent upon a physical object, producing in that object some change of condition.~~

Claims directed to what may be regarded as professional skills are generally considered to fail to satisfy the requirement the claim must have a result or effect that is commercially useful to be considered an "Art" under Section 2.

16.02.02 Process

As noted in section 12.02.02 of this manual, a process implies the application of a method to a material or materials. ~~To be statutory, a process must apply a statutory method.~~ A mathematical algorithm that is not patentable per se, could be part of a patentable process that applies that algorithm to solve a practical problem. For example, in the fields of speech recognition and wireless transmission and reception, mathematical algorithms are used to improve recognition accuracy or to improve reception, respectively. Both of these examples are representative of current innovation in these respective fields of technology that are implemented on computer technology.

~~When assessing the contribution of a computer-implemented process, it must be borne in mind that the necessary ingenuity novelty, non-obviousness and utility of the claim as a whole can arise from the method, from the application of the method in a field in which such a method has not previously been applied. material or materials, or from the recognition that applying the method to the material or materials leads to an unexpected useful result.~~

16.02.03 Machine

A device such as a computer, or an apparatus or system including or operated by a computer associated with other devices, is generally viewed as falling within the category machine. A device including a CPU or other processor is generally viewed as falling within the machine category.

~~Whether or not a claim to a device defines a patentable invention depends on the presence of a contribution in the claimed matter and the nature of this contribution [see section 13.05.03 of this manual]. As noted in section 13.05.03b, for a claim to be patentable it must define at least one statutory element that forms part of the contribution. For a claim to a device to be patentable, the device itself must therefore be a contributed practical form. That is, the device must provide a novel and unobvious technological solution to a technological problem.~~

~~Determining whether or not a device satisfies the requirements for patentability this is the case~~ can be performed by assessing the device itself, but in many cases can also be performed indirectly by reference to the method implemented by the device. Where a statutory method is implemented by a computer, apparatus or system, a device capable of implementing the entire method is ~~necessarily a solution to a practical problem~~ satisfies the requirements for patentability. Presuming the device has been specifically modified to implement the method, such that it is novel and unobvious, it will be eligible for patentability ~~a statutory contribution~~. The patentability of a device is not negated, however, from the mere fact that the device is intended to implement or to be used in a non-statutory method. The question to be addressed in such cases remains whether the device ~~is provides a novel and unobvious inventive technological solution to a technological problem.~~

Where a device ~~is directed to statutory subject matter~~ does provide such a solution, its patentability does not depend on whether it was adapted by providing new hardware or by controlling existing hardware in a particular manner by the addition of software or firmware (software programmed into a read-only memory).

~~Note that the “technological solution to a technological problem” whether or not a device is patentable~~ does not have to be in relation to the operation of the computer as a general purpose device (e.g. it is not necessary that a computer be made more efficient or reliable), but could be simply that the general purpose device has been technologically adapted to act as a special purpose device. Thus, presuming novelty and ~~ingenuity~~ inventiveness, any of the following provide ~~the basis for a patentable device technological solutions to technological problems and would be viewed as contributed devices~~: a computer programmed to allow its speakers to simulate “surround sound” (known hardware controlled by new software), a computer adapted to operate using two central processing units (new arrangement of known hardware, controlled by new software), a computer programmed to allocate memory to video processing in a manner that increases the efficiency of the device when running several applications (known hardware controlled by new software), and a computer whose motherboard has an inventive new video card slot with a faster data transfer rate (new hardware).

~~Where a computer or other device does not provide a solution to a technological problem, the computer or device as a whole is not a contributed practical form of an invention. Where such a device is further defined in terms of discrete non-statutory features, the claim would be objected to on the ground that it does not define a statutory “invention” within the meaning of section 2 of the Patent Act [see section 13.05.03b of this manual]. For example, a~~ A computer or other programmable device cannot be patentably distinguished from other computers on the basis of non-statutory data stored on it; storing non-statutory data on the computer does not make the computer a new and unobvious solution to a practical problem [see section 12.06.07 of this manual]. However, storing

statutory data such as a set of computer executable instructions that when performed by a computer, cause the computer to be directed to statutory subject matter, would define a statutory "invention" within the meaning of section 2 of the Patent Act.

16.02.04 Manufacture

~~The category manufacture encompasses both the processes of making technical articles or materials by the application of physical labour or mechanical power; for manufacturing and the products articles or materials made by such processes [see section 12.02.04 of this manual]. As noted in 16.02.03, a device including a CPU is generally viewed as falling within the category machine. The category manufacture therefore applies to computer-implemented inventions either where a computer is used to control a manufacturing process, or where a non-machine computer product article or material is claimed. The principles discussed in 16.02.02 apply equally to computer-controlled manufacturing processes.~~

~~The concept of a non-machine computer product article or material applies to a physical memory having computer-executable instructions stored thereon. A computer program per se is not statutory because it is disembodied. When stored on a physical medium, the resultant product having computer executable instructions, that when executed provide the computer program, may be considered a manufacture. The patentability of such products depends on the nature of the contribution, and is discussed in 16.08.04.~~

16.02.05 Composition of matter

The category of invention *composition of matter* relates to chemical compounds, compositions and substances and is not of great significance to computer-implemented inventions. A computer-controlled method or process for manufacturing compositions of matter could be evaluated under the category *art* or *process* as the case may be.

16.03 Examining computer claims

A patentable claim must ~~include a~~ be directed to statutory contribution subject matter. Where a claim is directed to a computer, it falls into the statutory class of machine, and therefore it must be determined whether the machine itself is part of the contribution satisfies the requirements for patentability - that is, whether the computer itself may be considered novel and inventive.

~~In evaluating whether the computer has been contributed, it is first necessary to identify the essential elements of the device; i.e., those that, as a set, provide a technological solution to a technological problem. For the computer to be patentable, this set of elements must be novel and inventive.~~

As noted in 16.02.03, where the machine has been specially adapted to implement the entirety of a patentable (statutory, useful, novel and inventive) method, the machine is

considered to be a technological solution and is patentable.

16.03.01 Adapting a computer to solve a problem

A computer can be adapted to solve a problem either by its hardware, software or a combination thereof. Where the adaptation is performed via hardware, this will typically permit a structural comparison of the computer to other computers and will facilitate the assessment of novelty and ingenuity.

More often, however, a computer will be adapted via software. In evaluating whether a computer adapted by software is the result of ingenuity, it is useful to draw a distinction between the design of a computer program and the expression of that program in a specific programming language.

Designing a computer program comprises steps such as developing a method to be implemented by the computer and creating flow charts, design diagrams or pseudocode to describe the method steps to be performed by the computer in order to solve a problem. Furthermore, specific operations and their necessary sequence to enable the computer to implement the method are determined, which may be susceptible to patent protection.

Once the design is completed, the computer program is expressed as lines of code. Expressing a computer program in a specific programming language, however, is considered to fall within the definition of a "literary work" and therefore may be protected via Copyright common general knowledge of an un inventive skilled programmer and is not considered to require inventive effort. This person skilled in the art is considered to be able to express the program in any number of programming languages without the exercise of judgement or reasoning, and therefore without the exercise of ingenuity. Consequently, the inventive ingenuity necessary to provide patentability to a computer is never found simply in writing computer code to express a developed program.

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 is defined in terms of a statutory method (i.e. a series of steps which provides a technological solution to a technological problem), the method may be patentable provided it is program will be considered to be technological in

