

Examination Practice Respecting Computer-Implemented Inventions

PN 2013-03

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To all examiners:

The examination of computer-implemented inventions¹ presents unique challenges and requires specific guidance in order to ensure efficient, predictable and reproducible examination of applications.

The present document is intended to build upon the guidance in Chapter 16 (*Computer-Implemented Inventions*) of the *Manual of Patent Office Practice* (MOPOP) and in PN 2013-02 (*Examination Practice Respecting Purposive Construction*).

Examiners should note that MOPOP 16.01 (Scope of this Chapter), 16.04 (Utility), 16.05 (Sufficiency), 16.06 (Novelty), 16.07 (Ingenuity), and 16.08 (Claims), including all subsections thereof, can be relied on for guidance as presently drafted.

Caution must be exercised when relying on the guidance in the remaining sections of Chapter 16. Where the guidance invokes the “contribution” of a claim or mandates a “technological solution to a technological problem” as part of a test to ensure that the invention is within a “field of technology”, it is describing these concepts in relation to practices that are no longer in use.

Practice Guidelines

A) Subject-matter

MOPOP 16.02 provides that 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). It also notes that 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]. The foregoing guidance remains in force.

¹ Throughout this document, the term “computer” should receive the broad interpretation set out in section [16.01](#) of the *Manual of Patent Office Practice*. For example, in certain contexts, “computer” may be used to encompass a general purpose computer, a device comprising a processor, devices such as network servers, etc.

In applying the guidance in the MOPOP, however, examiners must take into account the Patent Notice on *Practice Guidance Following the Amazon FCA Decision* [March 2013] to the effect that the evaluation of the subject-matter of a claim for compliance with section 2 of the *Patent Act* is to be made on the basis of the essential elements as determined through a purposive construction (see part B below).

Section 2 of the *Patent Act* provides the definition of *invention* and must be read in conjunction with subsection 27(8) of the *Patent Act*, which excludes mere scientific principles and abstract theorems.² The following are not included within the meaning of section 2:

- inventions that fall within a defined exclusion from patentability;
 - e.g. fine arts (*i.e.* things “that are inventive only in an artistic or aesthetic sense”);³ methods of medical treatment, etc.
- disembodied inventions (including those lacking a method of practical application);⁴
 - e.g. inventions that lack physicality (*i.e.* are not “something with physical existence, or something that manifests a discernible effect or change”);⁵
 - e.g. inventions where the claimed subject-matter is a mere idea, scheme, plan or set of rules.⁶

Note that where a computer is found to be an essential element of a construed claim, the claimed subject-matter will generally be statutory.⁷ A good indicator that a claim is directed to statutory subject-matter is that it provides a technical solution to a technical problem.⁸

Where, on the other hand, it is determined that the essential elements of a construed claim are limited to matter excluded from the definition of invention (as noted above),

² *Tennessee Eastman Co. v Canada (Commissioner of Patents)* (1972), 8 CPR (2d) 202 (SCC) at page 204

³ *Canada (Attorney General) v. Amazon.com Inc.*, 2011 FCA 328 [*Amazon FCA*] at paragraph 58

⁴ *Shell Oil Co. v Commissioner of Patents*, 1982, 2 S.C.R. 536, 67 C.P.R. (2d) 1 at page 554

⁵ *Amazon FCA* at paragraph 66

⁶ Where, on a purposive construction, the construed claim is only directed to such matter.

⁷ Unless the claimed matter falls within an exclusion, such as a method of medical treatment.

⁸ In view of Canada’s obligation under Article 27.1 of TRIPS, patents shall be available for such claimed matter.

the claim is not compliant with section 2 of the *Patent Act*, and consequently, not patentable.

B) Claim analysis

PN 2013-02 (*Examination Practice Respecting Purposive Construction*) mandates the use of purposive construction in place of other approaches to claim analysis. In particular, the “contribution approach” set out in MOPOP Chapter 13 is not to be used.

To perform a purposive construction, an examiner identifies the problem the inventors set out to solve and the solution disclosed. This exercise generally cannot be performed by a consideration of the claims alone. A purposive construction must be performed considering the specification as a whole recognizing that the description guides the identification of the problem and solution and provides the necessary context for understanding whether a claim is defining the whole of the invention, a preferred implementation, or a specific working embodiment.

While an applicant is entitled to claim less than the entire invention if so desired, a proper identification of the actual invention, grounded in a purposive construction of the claims, is nevertheless necessary in order to assess whether the claim is patentable.

Identifying the problem

The identification of the problem faced by the inventors is guided by the examiner’s understanding of the common general knowledge in the art and by the teachings of the description.

The common general knowledge in the art provides the baseline of information to which the description is expected to add. The person skilled in the art will read the specification in the expectation that it sets out something beyond commonly known solutions to commonly known problems.

It must be borne in mind that the applicant is not required to explicitly state the problem and solution. Paragraph 80(1)(d) of the *Patent Rules* makes this clear, stating 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.

Consequently, the identification of the problem and its solution may be an integrated exercise, *i.e.* the manner in which the solution is described can help inform the problem, and vice versa. For example, a significant focus in the description on certain details of the solution may assist in the identification of the problem, while a relative absence of emphasis on certain aspects of the solution may likewise suggest the problem lay elsewhere. Where the applicant is explicit as to the nature of the problem, examination

should generally proceed accordingly unless doing so would be unreasonable on an informed reading of the application in light of the common general knowledge.

The examiner will give consideration to what the inventors state about the background of the invention, their objectives (“objects of the invention”), any specific problems, needs, limitations or disadvantages known in the art or discovered by the inventors, etc. in identifying the problem faced by the inventors.

In certain cases, a key point may be determining whether or not the problem faced by the inventor was a “computer problem” (*i.e.* a problem with the operation of a computer) as opposed to *not* being a “computer problem” (*i.e.* a problem whose solution may be implemented using a computer).

Factors that may indicate the existence of a “computer problem” include:

- the description details a specific problem with the operation of a computer;
- the solution to the problem involves controlling a chip, system component or technical architecture element such as through firmware (embedded software);
- the description emphasizes challenges or deficiencies in prior computers;
- a significant level of detail is devoted to describing technical details, such as the algorithm or logic performed by the computer.⁹

Factors that may suggest that the problem was not a “computer problem” include:

- explicit statements in the description suggesting a problem other than a “computer problem”;
- the absence of any explicit indication in the application that any practical problems relating to the operation of a computer were overcome;
- a relative absence of technical details, despite an indication in the description that the solution be implemented on a computer.

Identifying the solution

The solution is the element or set of elements that is essential to the successful resolution of the problem.

Depending on what was disclosed in the description and what was commonly known in the art, the solution can be characterized as either an entirely new approach or as an improvement to a known starting point.

Where a “computer problem” has been identified, the elements of the solution are those that overcome the problem relating to the operation of the computer, and may include (e.g.) both hardware and firmware (embedded software).

⁹ See section [16.05](#) of the *Manual of Patent Office Practice*.

Where the problem was not a “computer problem” *per se*, the examiner must carefully consider whether the computer is essential to the solution or if its use is simply a convenience or even an afterthought. For example, if an examiner concludes that the solution to a given problem is to perform certain calculations according to a specific equation, the use of a computer to perform the calculations may expedite the mathematical manipulations without having a material effect on the operation of the equation itself. The examiner could therefore conclude that the computer is not an essential element of the invention. Although it may be inconvenient to do so, the calculations would achieve the same result if done by pen and paper or mentally (i.e. the computer could be varied for another means of calculating without affecting the operation of the invention).

In some cases, the description may emphasize a solution that has been described in conceptual terms. Examiners must consider whether the claim defines a specific solution or simply the idea or concept of solving the problem. A lack of detail regarding implementation may point to a claim being merely the idea to use a computer to carry out certain operations where, in view of the specification as a whole, the claimed elements do not appear to define a specific manner of operating the solution.

Completing the construction of the claims

Having identified the problem and solution, the construction of the claims involves interpreting the meaning of the various terms used therein as well as determining whether elements in the claims are essential or non-essential.

Where it appears that the computer cannot be varied or substituted in a claim without making a difference in the way the invention works or that the computer is required to resolve a practical problem, the computer may be considered an essential element of the claim.

The purposive construction of the claims should be approached practically. As noted in PN 2013-02 (*Examination Practice Respecting Purposive Construction*), it may not be necessary in a given case to determine whether each and every element of a claim is essential or non-essential. Similarly, the meaning of some terms may be sufficiently evident as not to require particular attention.

Generally speaking, the greatest attention is to be given to those issues that can affect the conclusions as to patentability and particularly to those issues that are in dispute between the examiner and the applicant.