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Commissioner's Decision 1590 – Inputs, Outputs and Everything in Between

By Steve Hundal, B.Eng.

The Commissioner of Patents of the Canadian Intellectual Property Office ("**CIPO**") recently released its decision in *Bio-Rad Laboratories, Inc. (Re), 2021 CACP 37 (Commissioner's Decision 1590)* (the Decision). The Decision concerns Canadian patent application number 2,837,728 (the '728 application) owned by Bio-Rad Laboratories, Inc. (the Applicant), which "relates generally to methods and systems for determining an optimum quality control schedule for testing reference samples and patient samples subject to certain constraints." (Decision, para. [2])

Claim 1 of the '728 application was representative, and read, in part, "A method of operating a diagnostic device comprising an analyte measurement module, the method comprising: causing the analyte measurement module to measure analyte responses in at least one physical reference sample and in a plurality of physical patient samples in a ratio according to a quality control utilization rate of a candidate quality control rule, wherein the candidate quality control rule is selected from a set of candidate quality control rules according to a method comprising: …" (followed by a series of computer-implemented steps for selecting the candidate quality control rule).

Despite having deemed all elements of claim 1 essential, the Commissioner, relying on CIPO's Practice Notice PN2020-04, noted that "the mere fact that a computer is among the essential elements of the claimed invention does not necessarily mean that the claimed invention is patentable subject-matter. … A computer programmed to merely process the algorithm in a well-known manner without solving any problem in the functioning of the computer will not make it patentable subject-matter *because the computer and the algorithm do not form part of a single actual invention that solves a problem related to the manual or productive arts*" while "having physical existence or causing a discernible physical effect or change." (Decision, paras. [18] and 29], emphasis added)

Putting aside the issues inherent in limiting the analysis to an "actual invention" that is somehow different from the essential elements of the claims, or the overly narrow standard of a discernible *physical* effect or change (the case law requiring a discernable effect or change), or the use of a problem/solution analysis despite the Federal Court having recently discredited it (see *Choueifaty v. Canada (Attorney General), 2020 FC 837* at para. [37]), the Decision yields helpful tips for addressing subject-matter objections pertaining to certain types of computer-implemented inventions involving inputs to, or outputs from, an algorithm.

In particular, the Decision highlights the importance of tying a measurement device or input to an algorithm, or the algorithm to an output used for downstream testing, so as to form a single actual invention that solves a problem related to the manual or productive arts, and which comprises a physical existence or causes a discernible physical effect or change. For example, with respect to claim 1, the Commissioner stated that "claim 1 recites the elements "an analyte measurement module" and "causing the analyte measurement module to measure...", [which] are physical and cause a discernible physical effect (measurements are physically made by a physical device)." (Decision, para. [30]) The Commissioner's view was that "the skilled person would see the actual invention as the analyte measurement module cooperating with the computer to take measurements, [and] provide the measured results to the computer to calculate an optimum quality control interval size according to an algorithm." (Decision, para. [30]) The Commissioner thus considered the actual invention of claim 1 to have physicality and to therefore comprise statutory subject-matter.

With respect to claim 55, the Commissioner stated that "Dependent claim 55 *positively* recites using the output information *to physically carry out testing of samples*. This element cooperates with the algorithm and computer to provide a discernible effect and the testing driven by the algorithmic output is part of the

actual invention of this claim." (Decision, para. [30], emphasis added) For reference, dependent claim 55 had recited "*testing the number of reference samples* specified by the quality control strategy between testing samples as specified by the quality control interval size of the quality control strategy." (Emphasis added)

The Decision also highlights the pitfalls of passively reciting physical claim elements. In particular, the Commissioner expressed that "Independent claims 27, 37, 38, 45, 54 and 63 are different in that they do not recite an analyte measurement module or making measurements. … The understanding that the input data *came from* measurements using an analyte measurement module or that the output data is *to be* used to guide measurements is of intellectual significance only. *To have physicality, actual testing or an analyte testing module* would have to be *positively recited* in the claims." (Decision, para. [30], emphasis added) According to the Commissioner, it would not be enough to actively recite the computer, for executing the algorithm, as the only physical element, as this would be indistinguishable from *Schlumberger Canada Ltd. v. Commissioner of Patents*, [1982] 1 FC 845 (a case well-known for the proposition that the mere reciting of a computer in patent claims does not, by that fact alone, transform an unpatentable algorithm into patentable subject-matter). For reference, claim 27 had recited "A method for optimizing a quality control strategy comprising: generating, with a processor, a set of candidate quality control rules; for each candidate rule: …" (followed by a series of computer-implemented steps for selecting a candidate quality control rule). The Commissioner was of the view that the actual invention of these claims comprised only the algorithm, and so these claims were deemed not to comprise statutory subject-matter.

Illustrative of how to remedy such issues, for example, the Commissioner remarked that the Applicant's amendments to claim 27, in its second proposed claim set (submitted on June 18, 2021, in response to the preliminary review letter) (Second Claim Set), would render the objection moot. The Second Claim Set amended claim 27 to recite "A system for testing patient samples, the system comprising *a testing apparatus comprising an analyte measurement module* configured to measure analyte responses to patient samples and reference samples according to a quality control strategy determined by: generating, with a processor, a set of candidate quality control rules; for each candidate rule: …" (followed by a series of computer-implemented steps for selecting a candidate quality control rule). (Second Claim Set, claim 27, emphasis added) The inclusion of a physical testing apparatus comprising an analyte measurement module in claim 27 of the Second Claim Set was enough to address the objection.

The Commissioner, therefore, recommended that the Applicant be notified that replacement of the claims on file with the Second Claim Set would be required to secure an allowance.

Takeaways

The Decision is noteworthy for those seeking patent protection for computer-implemented inventions in Canada where an algorithm processes an input involving a physical measurement or measurement device, or where an output of an algorithm is used for downstream physical testing (such as of physical samples). In view of CIPO's current practice with respect to examination of computer-implemented inventions, it may be necessary to positively recite at least one of such elements that is physical and/or manifests a discernible physical effect or change so as to form a single actual invention, with the claimed algorithm, which solves a problem related to the manual or productive arts. Canadian examiners will, at times, attempt to read out of a claim such physical elements, reasoning that they do not form part of the actual invention and, instead, form only the environment in which the invention operates. The Decision may prove useful for practitioners facing such objections.

Author

Steve Hundal, B.Eng.
Patent Agent & Lawyer | Partner
T 647.426.2300
shundal@airdmcburney.com