Federal Court  Cour fédérale

Date: 20190402

Docket: T-975-16

Citation: 2019 FC 393

[UNREVISED CERTIFIED ENGLISH TRANSLATION]

Ottawa, Ontario, April 2, 2019

PRESENT: The Honourable Mr. Justice LeBlanc

BETWEEN:

LUC BESSETTE

Plaintiff

and

ATTORNEY GENERAL OF QUEBEC AND RÉGIE DE L'ASSURANCE MALADIE DU QUÉBEC

Defendants

PUBLIC JUDGMENT AND REASONS

Table of Contents

I. INTRODUCTION

[1] The dramatic evolution of communication and information technologies over the last 50 years has had a profound impact on our societies, often for the better, sometimes for the worse. Here as elsewhere in the world, this evolution has had repercussions in, among other fields, the world of health care services delivery. In particular, gone are the days when all medical and other information collected and recorded on a patient was kept only in paper format. Thanks to massive investment by our governments, such information is now in almost all cases digitized and stored in computer infrastructures that give health professionals easy and meaningful access to it. Everyone agrees that the computerization of patient records in our health systems is helping to deliver better health care at lower cost.

[2] This case involves intellectual property issues related to this technological breakthrough in the context of the Quebec government's implementation, in 2013, of the Dossier Santé Québec, or Québec Health Record [QHR], a computer tool allowing physicians and other professionals in Quebec's health network [TRANSLATION] "to have access to information deemed essential for intervening quickly and ensuring quality follow-up with their patients" (Joint Statement of Facts and Admissions at para 44 [Joint Statement of Facts]). More specifically, the question raised in this case is whether, in so doing, the Quebec government infringed two inventions claimed by the plaintiff. There is also the corollary question of the validity of the monopoly thus claimed by the plaintiff.

I. GENERAL BACKGROUND

[3] The plaintiff is a medical doctor. He also holds, under the *Patent Act*, RSC 1985, c P-4 [the Act], Canadian patents No. 2,233,794 [Patent 794] (Exhibit TX-1) and No. 2,329,598

[Patent 598] (Exhibit TX-2), titled, respectively, “Method and Apparatus for the Management of Medical Files” and “Method and Apparatus for the Management of Data Files”.

[4] According to the plaintiff, Patent 794 relates more specifically to a networked medical records system. The idea of designing such a system came to him, he alleges, from his experience as an emergency room physician at the Centre hospitalier de l’Université de Montréal [the CHUM] in the 1990s. He says that, as the essence of his job was to make quick diagnoses, the information needed to do so within medically safe time frames was difficult to access because it was disseminated in a not very organized manner across several institutions and drowned amongst often irrelevant information. This system, he continues, in the interest of efficiency and cost reduction, is designed to allow the attending medical staff to quickly access relevant medical information, by first providing a summary of existing health information about the patient and then, if need be, detailed relevant information, regardless of where in the network this information was initially collected and stored.

[5] As for Patent 598, the plaintiff argues that although it addresses the same problems as Patent 794, it innovates by focusing more specifically on a particular concept of the automatic updating of summary medical information envisioned by Patent 794. According to the plaintiff, Patent 598 also introduces a system that allows health and social services providers in the network to access the most recent medical data on a patient from their own smart phones, and users themselves to do likewise in relation to the most recent medical data concerning them.

[6] The plaintiff claims that the Quebec government, through the Ministère de la Santé et des Services sociaux (ministry of health and social services) [MSSS] and the Régie de l'assurance maladie du Québec [RAMQ], a Crown corporation mandated to administer the programs of the Quebec health insurance plan [collectively, the "defendants"], has infringed Patent 794 and Patent 598 by implementing the QHR.

[7] As relief, he asks the Court to confirm the validity of the patents in question, declare that the defendants have infringed the patents, in whole or in part, directly or indirectly, and recognize that he is entitled to be compensated as a consequence of this infringement. The plaintiff also claimed the right to punitive damages but abandoned the claim at trial.

[8] The MSSS, which, under Quebec law, in this case the *Act respecting the sharing of certain health information*, CQLR c P-9.0001 [ARSCHI], has a mandate to establish and maintain the QHR, and RAMQ, which has a mandate to establish and maintain certain components, both deny any infringement, direct or indirect, of any of the patents in question and plead, in counterclaim, that said patents are invalid on the grounds of anticipation, obviousness, insufficiency of disclosure, lack of utility and/or overbreadth.

[9] Following an order of the Court, dated August 8, 2016, obtained upon joint motion of the parties, the present proceeding was split, with the issues regarding the assessment of damages to be decided, if necessary, only after judgment is rendered on those relating to the infringement and the validity of the patents in question and to the plaintiff's right, if applicable, to reasonable compensation.

II. DESCRIPTION OF PATENTS AT ISSUE

[10] Patent 794 has nine (9) claims, three of which are independent claims (**claims 1, 6 and 9**). The application to the Commissioner of Patents [Commissioner] to have this patent granted was filed by the plaintiff on April 1, 1998, and published on August 24, 1999. Said patent was issued on February 6, 2001; it was valid until April 1, 2018.

[11] Patent 598 has (9) claims, three of which are independent claims (**claims 1, 19 and 31**). The plaintiff filed his application with the Commissioner on December 22, 2000, and it was published on June 13, 2002. Said patent was issued on February 24, 2015, and it is valid until December 22, 2020.

[12] The "priority" date for Patent 794 is February 24, 1998, and for Patent 598, December 13, 2000.

[13] All these dates were admitted (Joint Statement of Facts at paras 5-6).

A. Patent 794

(1) Description

[14] Under section 79 of the *Patent Rules*, SOR/96-423 [Rules], the abstract contained in a patent application, even though it cannot be taken into account in assessing the scope of the monopoly claimed, must be written in a way "that allows the clear understanding of the technical

problem, the gist of the solution of that problem through the invention, and the principal use or uses of the invention".

[15] The abstract of Patent 794 reads as follows:

> The present invention provides a network system for storage of medical records. The records are stored on a server in a database. Each record includes two parts, namely a collection of data elements containing information of medical nature for the certain individual, and a plurality of pointers providing addresses or remote locations where reside other medical data for that particular individual. Each record also includes a data element indicative of the basic type of the medical data found at the location pointed to by the pointer. This arrangement permits a client workstation to download the record along with the set of pointers toward the remotely stored files. The identification of the basic type of information that each pointer leads to allows the physician to select the ones of interest and thus avoid downloading massive amounts of data where only part of that data is needed at that time. In addition, this record structure allows statistical queries to be effected without the necessity of accessing the data behind the pointers. For instance, a query can be build based on keys one of which is the type of data that a pointer may lead to. The query can thus be performed solely on the basis of they [*sic*] pointers and the remaining information held in the record.

[16] The technical field to which the invention relates is described as follows in the specification for Patent 794 (Exhibit TX-1), which specification, in accordance with section 27 of the Act, consists primarily of a descriptive part—also called a "disclosure"—and claims:

> The present invention relates to the field of information distribution systems. More specifically, it pertains to a device and method for the electronic management of files within the medical and health education domains.

[17] Under the heading "Background of the Invention", the descriptive part of Patent 794 [Disclosure 794] defines certain technical terms deemed relevant to the understanding of the

patent, namely: “Client-Server”, Intranet, “Local Area Network” [LAN], “Wide Area Network” [WAN], “Open System”, “Pointer”, and “Standard Exchange Protocols”. Recent developments in the fields of information and technology and significant progress in the provision of information are noted. In particular, it shows how this evolution is bringing about profound changes in the relationship between the hospital and academic fields, particularly with regard to medical archives and databases and the ability to consult, in a transparent manner, stored information and share it in real time.

[18] Still under this heading, Disclosure 794 also deals with the limitations of prevailing practices regarding the storage of medical data in 1998, limitations linked to the fact that this storage is generally done locally and that the systems in place locally do not allow complete access to patient information from different sources, thus complicating the task of emergency room physicians. However, combining these independent local networks into a single integrated network is not the solution to this problem, for a number of reasons, particularly the storage capacity of this integrated network given the high volume of information which would be stored there, and the need for a common language allowing this single integrated network to communicate with local networks. This section of the disclosure concludes with the remark that there is a need to develop a method to access distributed medical records in a wider network and other external data in order to increase the number of sources of information available to physicians.

[19] The objectives and the summary of the invention are then described in these terms:

> An object of the present invention is to provide a system and method for electronic management of files that contain medical data.
>
> Another object of the invention is a computer readable storage medium containing a data structure that holds medical information.
>
> As embodied and broadly described herein, the invention provides a computer readable storage medium holding a data structure, said data structure comprising at least one record associated with a certain individual, said record including:
>
> A collection of data elements containing information of medical nature for the certain individual;
>
> At least one pointer, said pointer including a first component and a second component, said first component being indicative of an address of a location containing additional medical data for the individual, said second component being indicative of the basic nature of the medical data at the location pointed to by the first component, said address being in a form such that a machine can access the location and import the medical data from the location.
>
> [Emphasis added.]

[20] According to the preferred embodiment described at pages 6 and 7 of Disclosure 794 (Exhibit TX-1), the "computer readable storage medium" is a database containing a large volume of medical records related to different users of the health network. The data elements in these records are intended to be stored in such a way that they can be easily accessed, and relate to medical information that is unlikely to change over the course of the user's life. They can also contain identifiers to distinguish one record from another. Each record also contains "pointers" linked to remote sites where digitized information on an individual's information is stored, such as blood test or electrocardiogram results. Each pointer in turn has at least two components, namely "an address part that is machine readable to import the data residing [at] the target

location and also a second part that is data indicative of the basic nature of the information held remotely".

[21] In practical terms, this means the database can be queried remotely, from a network, in such a way as to extract the record relating to an individual. This operation is described as follows:

> . . . Typically, this operation can be performed over a network, where a client workstation requests the record from a server managing the database. The server will transfer over the network links [to] the record that will be displayed on the client workstation. The information displayed is the collection of data elements permitting to identify the person and also providing the medical data that is more or less of static nature. The operator at the workstation, that would typically be a physician, also sees then the existence of one or more pointers to files holding additional medical data. The second part of each pointer indicates to the physician the basic nature of the data pointed to. He can therefore select the pointers of interest in the global set of pointers for that record and import the data through any appropriate data transfer protocol.

[22] This arrangement therefore allows the establishment of a distributed electronic medical records system where the bulk of the data (if it resides in remote sites from the central database, i.e., in most cases, where the data is collected, such as in a hospital facility) remains easily accessible through the arrangement's pointer structure.

[23] Disclosure 794 then gives a brief description and a detailed description of the ten (10) figures contained in that patent. In particular, Figure 3 is intended to represent a network-shared medical record system incorporating the principles of the invention, an important

component of which is, the description says, the "Network Distributed Shared Medical Record (NDSMR) System" [NDSMR]:

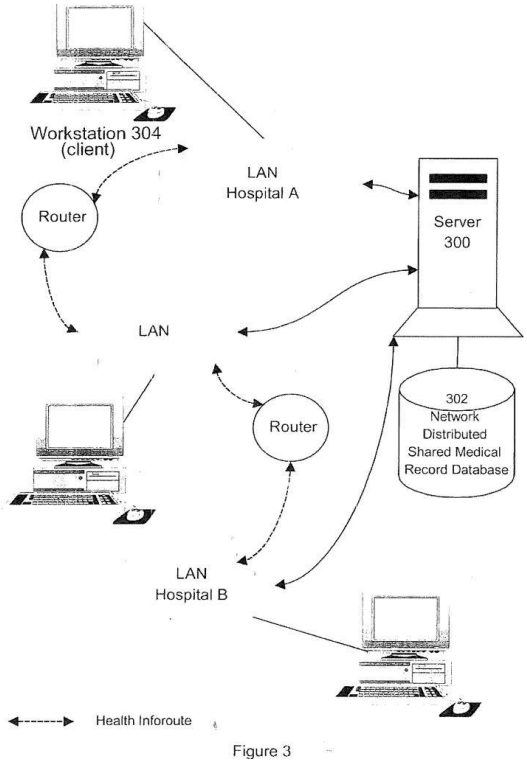


Figure 3

[24] Figure 5 provides a general representation of a client-server architecture implementing the NDSMR system; it shows, graphically, the interactions between the client, the server and the NDSMR database:

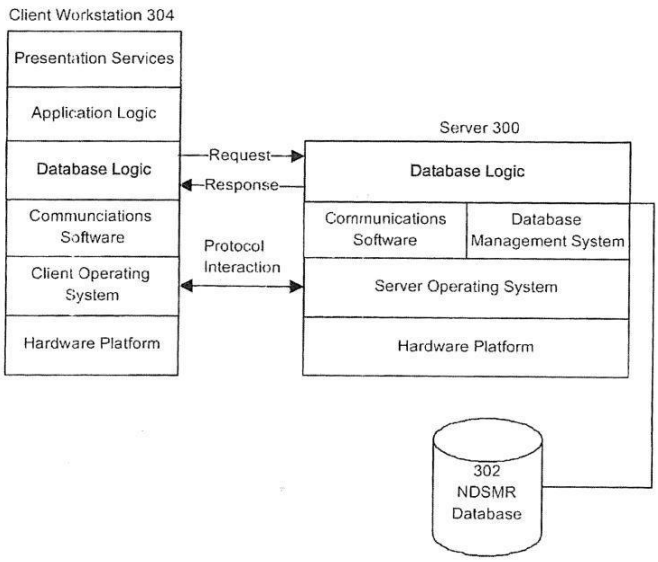


Figure 5

(2) Claims

[25] As I have already stated, there are nine (9) claims in Patent 794. Initially, the plaintiff alleged infringement of each and every one of these claims. However, he no longer claims infringement of **claim 9**. Of the remaining eight claims, two, I recall, are independent claims, **claims 1** and **6**.

[26] **Claim 1** repeats verbatim the excerpt from Disclosure 794 that I pointed out in paragraph 19 of these reasons.

[27] **Claim 2** specifies that the record contained in the "data structure" of the "computer readable storage medium", to which **claim 1** refers, includes a "plurality of pointers", one of which includes a first component which is indicative of an address of a first "location" and

another which also includes a first component which is indicative of an address of a second "remote" location from the first.

[28] **Claim 3**, meanwhile, specifies that the first and second locations, to which **claim 2** refers, correspond to separate "nodes" in a network. As for **claim 4**, it states that the "computer readable storage medium" referred to in **claim 3** comprises a multitude of "records". Finally, **claim 5** specifies that this "computer readable storage medium" will "reside" on a "server" within a network.

[29] **Claim 6** relates to the concept of a "network server" and specifies certain components, namely a "processor" and "memory". It also specifies that the memory includes, in turn, (i) a "plurality of records" containing medical information on more than one patient and at least one pointer comprising a first and a second component, as well as (ii) a program element capable, at the request of a health and social services provider connected to the server via a communication channel, of locating one record among the plurality of "records" stored by the memory, and to communicate this record to the client, via this same communication channel.

[30] **Claims 7** and **8,** which are dependent on **claim 6**, are similar to **claims 2** and **3** except that they are related to the concept of a "server" as defined in **claim 6**, rather than that of "computer readable storage medium", as defined in **claim 1**.

B. Patent 598

(1) Description

[31] The abstract of Patent 598 is for all practical purposes identical to that of Patent 794. The very few differences between them are minor and essentially semantic. As the plaintiff stated, Patent 598 addresses the same issues as Patent 794. The descriptive part of the specification of said patent [Disclosure 598] (Exhibit TX-2) also covers large parts of Disclosure 794. The figures are exactly the same.

[32] However, Disclosure 598 differs in some respects.

[33] First, it introduces the notions of "Unique Identifier", "Uniform Resource Locator" (URL) and "Data Field". The "Summary of the Invention" reads as follows:

> An object of the present invention is to provide a system and method for electronic management of data files.
>
> Another object of the invention is a computer readable storage medium containing a data structure that holds information.
>
> . . .
>
> As embodied and broadly described herein, the invention provides a computer readable storage medium holding a data structure, said data structure comprising at least one record associated with a certain individual, said record including:
>
> - At least one unique identifier associated strictly with the certain individual;
>
> - At least one pointer, said pointer using the URL addressing system to indicate the address of a location containing data for the certain individual, said address being in a form such that a machine can access the location and import the data from the location;
>
> - At least one data field, said data field associated with said pointer, said data field being indicative of the basic nature of the data at the location pointed to by the said pointer.
>
> [Emphasis added.]

[34] It also introduces a concept allowing doctors or even patients themselves to access data stored in the NDSMR database, by means of a “Personal Communication System”, such as a smartphone, or by means of a “Smart Card”.

[35] Finally, the description introduces a concept of automatic updating of medical information distributed within a network:

> As embodied and broadly described therein, the invention provides a method for updating medical information distributed across a network system, the network system storing a plurality of medical records associated with respective individuals, the network system including a plurality of nodes connected to each other by data communication paths, the plurality of nodes including at least a first node and a second node, the first node storing a summary component of a medical record associated with a first individual, the summary component including a plurality of information items of medical nature relating to the first individual, the plurality of information items conveying:
>
> a) identification of medical tests performed on the first individual;
>
> b) reference to remote medical data stored at one or more nodes of the network system that are remote from the first node, the remote medical data conveying results of one or more medical tests identified at (a);
>
> the method including:
>
> (a) performing at the second node a medical information update process, which includes:
>
> (i) receiving at the second node new medical data;
>
> (ii) processing the new medical data to identify new medical information associated with the first individual;
>
> (iii) initiating at the second node a data transmission to the first node, the data transmission conveying to the first node data to update the summary component of the medical record associated with the first individual based on the processed new medical data;

> (b) receiving at the first node the data to update the summary component of the medical record associated with the first individual;
>
> (c) creating a new information item in the summary component of the medical record based on the processed new medical data.

(2) Claims

[36] Patent 598, I recall, has forty-three (43) claims, three of which are independent claims (**claims 1, 19 and 31**). At the end of the trial, the plaintiff amended the list of claims that he alleged had been violated by the defendants following the introduction of the QHR. The claims that are the subject of the infringement allegations are now the following: **1, 2, 4, 9, 10, 13 to 16, 18 to 22, 28 to 31, 33 to 36 and 39 to 42**.

[37] **Claim 1** refers to a "method" for performing "automatic updates" of "summary medical information for a first patient" stored at a first "node" of a "data network storing medical information in a distributed fashion". This network also includes a second node where new medical information concerning this patient is recorded, the first node being configured to receive information from the second node over a communication path linking the two nodes.

[38] **Claim 1** goes on to state that the summary medical information to which it relates includes (i) "a plurality of information items identifying medical care services dispensed to the first patient" and (ii) "a plurality of pointers associated with respective information items of the plurality of information items", each pointer "identifying a location in the data network that is remote from the first node" and containing additional medical information for the medical care service identified by the information item associated with the pointer.

[39] Finally, **claim 1** specifies that the method to which it refers includes at least three actions:

a. the first, "pushing" an update of new medical information stored at the second node to the first node, "including processing the new medical information to derive update data" and "initiating at the second node a data transmission to the first node, the data transmission conveying to the first node the update data";

b. the second, "receiving at the first node the update data sent by the second node"; and

c. the third, "creating at the first node a new information item based on the update data".

[40] **Claims 2 to 18** are dependent on **claim 1**. **Claim 2** states that the "medical care services" to which **claim 1** refers include "a medical diagnostic test performed on the first patient". **Claim 4** specifies that this test can be an "imaging test".

[41] **Claim 9** states that for the purposes of the method described in **claims 1 to 7,** wherein "the second node" is implemented by a "server arrangement". Meanwhile, **claim 10** specifies that for the purposes of this same method, the "first node" includes "a microprocessor associated with a machine-readable storage", with "the summary medical information being stored in the machine-readable storage".

[42] **Claim 13** states that, for the purposes of the method described in **claims 1** to **12**, "the second node stores medical information about a plurality of patients".

[43] **Claims 14 to 16** deal with the "nominative information and non-nominative information" contained in a patient's medical record of and stored in the "data network". **Claim 15** specifies that those two types of information are "stored at separate locations of the data network". As for **claim 16**, it specifies that the "second node stores non-nominative information for the first patient without storing nominative information for the first patient".

[44] **Claim 18,** the last of the claims dependent on **claim 1**, states that the update contemplated by the method defined in any one of **claims 1 to 17** "conveys an identifier distinguishing the first patient from other patients".

[45] **Claim 19** is the second independent claim in Patent 598. It is about a system, not a method like **claim 1**. This system consists of "[a] server arrangement in a data network . . . storing a plurality of medical records for respective patients in a distributed fashion". The server arrangement is configured for performing automatic updates of summary medical information on a patient stored at a node of the data network that is remote from the server arrangement, when new medical information for the patient is recorded at the server arrangement.

[46] As is the case with the method proposed by **claim 1**, the node where the patient's summary medical information is stored does not contain all the information held in that patient's medical file, and this summary information also includes (i) a plurality of information items identifying the medical care services dispensed to the patient and (ii) a plurality of pointers associated with those information items. Again, each pointer is used to identify a location in the data network (i) that is remote from the node where the patient's summary medical information

is stored and (ii) that contains additional medical information for the medical care service identified by the information items to which each pointer among this plurality of pointers is associated.

[47] Still according **to claim 19**, the server arrangement is configured so that the new medical information stored in it is pushed to the node. This includes, as is the case with the method described in **claim 1**, "processing the new medical information to derive update data" and "initiating at the server arrangement a data transmission to the node, the data transmission conveying to the node the update data". This claim also states that this update data includes "an identifier distinguishing the first patient from other patients" and "information identifying the new medical care service dispensed to the first patient".

[48] As in **claims 2 to 4**, **claims 20 to 22** specify that the "medical care services" referred to in **claim 19** include "a medical diagnostic test performed on the first patient", and that this test may be an "imaging test" or a "laboratory test".

[49] **Claims 28 to 30**, like **claims 14 to 16**, deal with the "nominative information and non-nominative information" contained in the medical record of a patient and stored in "the data network". **Claim 29** specifies that those two types of information are "stored at separate locations of the data network". As for **claim 30**, it specifies that "the server arrangement stores [non-nominative] medical information . . . without storing nominative information".

[50] **Claim 31** is the third and final independent claim. As in **claim 1**, it describes a method. This time, this other method deals with the update of medical information distributed through a network system, with "the network system storing a plurality of medical records associated with respective individuals". This system includes "a plurality of nodes" connected to each other by "data communication paths".

[51] This plurality of nodes includes at least a first and a second node. The first node stores "a summary component of a medical record associated with the first individual", which includes "a plurality of information items of medical kind relating to the first individual", including (i) an "identification of the nature of medical tests performed on the first patient" and (ii) "references to remote medical data stored at one or more nodes of the network system that are remote from the first node, the remote medical data conveying results of one or more medical tests" contained in the summary of the patient's medical record.

[52] As for the second node, the method contemplated in **claim 31** provides that this is where the process of updating the new medical information gets under way ("the method including performing at a second node a medical information update process"), insofar as the second node is where the system is (i) "receiving . . . new medical data"; (ii) "processing the new medical data to identify new medical information associated with the first individual"; and (iii) initiating the transmission of an update of that information to the first node. This method also provides for the creation of a new information item in the summary of the patient's medical record, based on the new medical information, as processed. Contrary to **claims 1 and 19**, there is no mention to the effect that the update contemplated in this claim is automatic.

[53] **Claims 33 and 34** duplicate, for the purposes of **claim 31, claims 9 and 10**, which I have already discussed in paragraph 41 of these reasons. As for **claims 35 and 36**, they specify, in the same way as do **claims 3, 4, 21 and 22**, what the term "medical test" includes.

[54] Meanwhile, **claim 39** specifies that, for the purposes of the method described in **claims 31 to 38**, the second node "stores medical information about a plurality of individuals".

[55] Finally, **claims 40 to 42** deal with, in exactly the same way as do **claims 14 to 16**, the location of the nominative and non-nominative information about a patient stored in the data network.

III. OVERVIEW OF EVIDENCE LED AT TRIAL

[56] The parties called five witnesses in total.

A. *Plaintiff*

[57] The plaintiff was the only one on his side to testify to facts. He testified mainly about his work experience, his interest in computer science, the development of the inventions covered by the two patents in question, his attempts to commercialize the invention behind Patent 794, and his interactions with the Quebec government in doing so.

[58] This is what I take from his examination-in-chief.

[59] A graduate of the faculty of medicine at the University of Montréal at the turn of the 1980s, it was in 1989 that the plaintiff made his debut as an emergency room physician in one of three institutions—Hôpital St-Luc—which would be merged in the early 1990s to create the CHUM.

[60] His idea of a network-shared medical records system comes from the challenges faced by emergency room physicians, a discipline where the window of intervention is limited by time and where, to make the right diagnosis, quick access to relevant medical information on the patient is crucial. This access is problematic for a number of reasons. First, patients often do not know their medical history or, when they do, are unable to give details given their condition when they arrive in the emergency room. Second, patient medical information is often scattered over several points on the network. A CHUM patient, for example, can have up to nine files in his or her name if that patient has been seen in each of the three CHUM facilities and has undergone medical tests, such as laboratory tests or imaging tests.

[61] Moreover, the information concerning a patient does not exist in summary form. The trend at the time was to create one record per facility and record all patient information in it, from the attending physician's or nursing staff's notes to information of a clinical-administrative nature. This same tendency was observed when electronic medical files first made their appearance. In other words, the tendency was towards complete or, to borrow the plaintiff's expression, [TRANSLATION] "wall-to-wall" digitization of the information that an institution holds on a given patient; the information is [TRANSLATION] "stacked", says the plaintiff, without any particular structure and without a summary providing the emergency room physician, in

particular, with the [TRANSLATION] "longitudinal" (i.e., chronological) trajectory of the patient in terms of diagnoses and some of the most relevant pieces of information, such as laboratory and imaging tests.

[62] Added to this is the fact that even when it is digitized, it is often not possible to consult the information held by an institution that is not the same as the attending physician's, since each institution has its own system with its own computer language. In other words, when it comes to information technology, the institutions in many cases do not talk to each other.

[63] The idea behind Patent 794 also comes from the plaintiff's interest in computer science, a subject in which he took a few courses while studying biophysics before starting his studies in medicine. This interest led him, in the mid-1990s, to set up a company—Communications MedNet— to develop an Internet-based medical education product. Around the same time, he was involved in organizing a conference— Medicine 2001— which brought together, in particular, representatives of the governments of Quebec and Canada as well as representatives of foreign and international organizations such as NASA and the International Society for Telemedicine. During the three-day conference, new technologies and their application to the field of medicine were discussed.

[64] In his examination-in-chief, the plaintiff described the concept behind the Patent 794:

> [TRANSLATION]
>
> Mr. BESSETTE
>
> . . . what I quickly realized is that rather than going back and forth between all the files spread amongst the establishments, it would probably be better to have a kind of summary that tells us about the

patient in a longitudinal way, what his or her trajectory in terms of diagnoses and certain relevant information such as imagery.

. . .

LEBLANC J.: A sort of chronology?

MR. BESSETTE: Chronology. You're right.

So, organize the information chronologically and also in a summary way.

Very quickly, it also occurred to me that we could not necessarily have all the information on the summary sheet because there is too much information and sometimes there is no need to consult it.

For example, if I have the results of a CT scan, do I need to have all those pictures as an emergency room doctor, when I'm not the one who interprets them, where it's up to a radiologist to interpret them? I only need to have the report.

I could also have the extra images, but what I mean is that I was making a distinction between the fact that I wanted to know if such an exam existed and how to get information on that exam; or would I need to dig a little more? So, a kind of summary where I could dig deeper on demand by going to further layer, or at least find a little more specialized information.

And that's what we identified as a pointer, and the pointer had to have two distinct characters. Potentially, it had to point to a place where we could get the information and give information on the nature of the information I was going to look for, for example, if what I am looking for is an X-ray, is it an X-ray of the lungs? Is it an X-ray of the ankle? Is it an X-ray of the hip?

Because if someone comes to see me because he has a hip problem, I do not necessarily have to look at his lung X-ray. I can compare the hip with the hip.

. . .

So basically, the concept that was developed . . . that I developed in '98 saying to myself, if I had this in the emergency room, it would solve a lot of problems. It would allow me to have a kind of summary dashboard of the history of a patient and then be able to make a much faster decision. So, this is pretty much the genesis, I would say, of the invention's design.

(Transcripts, May 28, 2018, at pp 86-89)

[65] The plaintiff stated that, from a technical point of view, they had to find a method for extracting information that was encapsulated in a particular computer format, depending on the institution where it was digitized or kept, make a useful summary of that information and archive everything using an [TRANSLATION] "open" protocol, that is, one that ensures accessibility regardless of the institution where the doctor consults it (Transcripts, May 28, 2018, at pp 93-95).

[66] In the fall of 1998, the plaintiff took steps to obtain institutional, financial and technical support for his network-shared medical records system project. Those steps were first taken in connection with a pilot project in pediatric cardiology to make computerized patient records accessible through an open system so that the information in these records could be shared between the various pediatric cardiology departments in Quebec. This project was supported by pediatric cardiologist Alain Cloutier of the Centre hospitalier universitaire de Québec (Exhibit TX-121).

[67] With this support, the plaintiff contacted the company then mandated by the MSSS to manage the Quebec health network's shared information assets and to provide technical support for the network's institutions. He was looking for [TRANSLATION] "structuring support within the network" insofar as developing the pilot project required equipment belonging to the (public) health network. On April 15, 1999, this company, SOGIQUE, confirmed its interest in joining the pilot project. It saw its collaboration in the project as a way of ensuring that the project would complement [TRANSLATION] "the work of the various provincial committees currently under

development", particularly those related to [TRANSLATION] "the deployment of the Réseau de télécommunications sociosanitaires (RTSS), the generic query/result system and the shareable patient record" (Exhibit TX-122). SOGIQUE's support extended to seeking out the necessary financing to carry out the project. Marketing the pilot project outside Quebec was also part of the discussion and of SOGIQUE's interest in the project (Exhibit TX-122).

[68] In September 1999, Hewlett-Packard (Canada), a company specializing in the development of electronic equipment, joined the plaintiff's pilot project. Its association with the project took the form of a contribution, in money and services, totalling $750,000. Hewlett-Packard also committed to seeking input from strategic partners, including Microsoft (Exhibit TX-123).

[69] Meanwhile, the plaintiff, through his legal counsel at the time, requested a meeting with the then Deputy Premier of Quebec and Minister of Finance, the late Bernard Landry. He hoped that Mr. Landry could facilitate the implementation of his project and [TRANSLATION] "thereby foster the development of a strategic sector of the economy of tomorrow that would confirm Quebec's position in the pharmaceutical and biomedical sectors" (Exhibit TX-124). This meeting took place at the end of fall 1999. Representatives from Hewlett-Packard and Microsoft attended. The Deputy Prime Minister was receptive to the plaintiff's pilot project and suggested that he get in touch with the people at Investissement Québec, then the Société générale de financement.

[70] Also in the fall of 1999, the plaintiff, thinking that if his project was good for pediatric cardiology it could also be good for adult cardiology, gauged the interest of the Montréal Heart

Institute. On October 21, 1999, the Institute confirmed its interest in partnering with the plaintiff and his partners, Hewlett-Packard and Microsoft, [TRANSLATION] *"*to develop and test a network-shared multimedia medical records pilot project adapted to cardiology.*"* To this end, it mandated the plaintiff [TRANSLATION] "to make all the representations necessary for obtaining grants that may facilitate the implementation of this project, in particular with . . . Health Canada's health infostructure program". The Institute saw this as a project that [TRANSLATION] *"*should allow a better flow of medical information and, consequently, better management of provincial resources in cardiology*"* (Exhibit TX-125).

[71] Deciding that he needed technical support to better carry out his project, the plaintiff also contacted, around the same time, the people from Conseillers en gestion et informatique CGI Inc [CGI] to propose a partnership. On January 28, 2000, CGI signaled its interest in the [translation] "pilot project for the development of an integrated shared medical records and networked information retrieval system (DMMPR)". CGI said this project was [TRANSLATION] "an important milestone in the modernization strategy of the health and social services network of the MSSS" and would not present any "major or extremely costly problems" in terms of its implementation (Exhibit TX-127). On January 31, 2000, CGI confirmed the terms of the partnership in a letter countersigned by the plaintiff (Exhibit TX-128). Following this letter, CGI planned to participate in the meeting to be held [TRANSLATION] "soon" with Investissement Québec.

[72] At approximately the same time, the plaintiff received support from the Association des médecins d'urgence du Québec (Quebec association of emergency physicians) for the CGI pilot

project. For the Association, access to and sharing of relevant clinical information [TRANSLATION] "is without a shadow of a doubt, in [its] view, a fundamental problem in our health care network", making [TRANSLATION] "the continuity of care very difficult" while entailing [TRANSLATION] "significant costs". According to the Association, this is a particularly significant problem in the emergency room, [TRANSLATION] "where treatment largely depends on the ability to access the patient's medical history" (Exhibit TX-126).

[73] The plaintiff met with the people of Investissement Québec twice. The first meeting went well, but not the second, held in February 2000. In terms of support, nothing concrete emerged from those two meetings except that the plaintiff was warned that to go any further, his project had to first receive [TRANSLATION] "the endorsement of information technology in the field of health" (Transcripts, May 28, 2018, at pp 109-111).

[74] This is how the plaintiff got in touch with the director of information technology at the MSSS, Mr. Roch Beauchemin, to present the project to him and obtain his ministry's approval. Communication between the two men was done mostly by telephone and email. The plaintiff also believes that he met with Mr. Beauchemin once. However, he was unable to track down the plan or draft project sent to Mr. Beauchemin for the purpose of their discussions, although he believes that it was a preliminary version of a document that he went on to present a few months later to a member of the office of Deputy Prime Minister Landry in a final effort to, so to speak, save his project (Exhibit TX-135).

[75] On May 26, 2000, Mr. Beauchemin informed the plaintiff that his directorate [TRANSLATION] "cannot approve the project". According to Mr. Beauchemin, the plaintiff's project had the following shortcomings:

> [TRANSLATION]
>
> - No business plan;
>
> - No real technological architecture;
>
> - No feasibility study supporting the process;
>
> - Incomplete preliminary analysis;
>
> - No risk analysis;
>
> - Several complementary files needed to be set up beforehand in Quebec (DPP and consent (SOGIQUE), two Montréal CHUs project, Ste-Justine, Mauricie/Centre-du-Québec project);
>
> - Partnership with the Heart Institute needed to be demonstrated;
>
> - Several aspects were barely or not at all explored, such as all aspects of user consent to file sharing and significant weakness in the privacy/security/data access aspects;
>
> - A lack of knowledge of the RTSS file, leading to certain misinterpretations;
>
> - Many questions on the sustainability of the project. The idea of having archivists transcribe the summary sheets of the records to create the first bastion host of the shareable patient record seems highly debatable to me.
>
> (Exhibit TX-130).

[76] When he received this letter, the plaintiff thought it was obvious that the project had been rejected. It was [TRANSLATION] "dead in the water", he would say (Transcripts, May 28, 2018, p 118). In a last ditch attempt, he once again asked Deputy Premier Landry to intervene (Exhibit TX-131). Attached to his letter is Exhibit TX-135, to which I have already referred. This

exhibit, which is intended to be an [TRANSLATION] "executive summary of the project", deals for the most part with the economic and budgetary advantages of the [TRANSLATION] "implantation of a summary medical record in the form of text shared over the entire health network".

[77] Mr. Landy's office did not take any action in response to the plaintiff's letter. Although the interest in a computerized medical file, mainly in minimally shareable format, was still there, at least within the CHUM's department of emergency medicine, as evidenced by a letter to the plaintiff dated October 3, 2001, from the head of that department (Exhibit TX-133), the plaintiff's project would not materialize, either in the form of a pilot project in pediatric cardiology or in the more general form of a network-shared medical records system.

B. *Defendants*

[78] The defendants called two ordinary witnesses, Mr. Vincent Belzil and Ms. Émilie Brisson, both officials at RAMQ and the MSSS, respectively. Mr. Belzil discussed the development of the QHR, the functional and infrastructural choices that marked this development and its current operation. He covered all the components of the QHR with the exception of the [TRANSLATION] "imaging domain" component, which was dealt with, in a similar light, by Ms. Brisson.

[79] To a very large extent, the information provided by these two witnesses had already been admitted or summarizes in large part the excerpts of the earlier examinations in this case and in a related case initiated by the plaintiff in the Superior Court of Quebec (No. 500-17-074669-121). These are excerpts from the examination for discovery of Mr. Belzil, held in this case in

November 2017; the examination for discovery of Mr. Michel Vézina, also held in this case in November 2017; and the examinations for discovery of Messrs. Guy Laliberté and Michel Baron, held in this related file in December 2013. At the time of their respective examinations, Messrs. Vézina, Laliberté and Baron were, in that order, senior advisor at CGI, head of the information technology architecture and guidance directorate at the Direction générale des technologies d'information (information technology branch) of the MSSS, and strategic advisor to that branch. All these excerpts from the examinations for discovery in the Superior Court record have been incorporated by reference into this record and were produced by the plaintiff at trial. They were filed in a bundle as Exhibit P-1.

[80] The testimony of Mr. Belzil and Ms. Brisson is therefore, for all intents and purposes, undisputed, which explains, as counsel for the plaintiff pointed out in oral arguments, why they were only very briefly cross-examined. I will nevertheless return to the testimony of these two witnesses as well as to the admissions regarding the QHR found in the Joint Statement of Facts, all of which are considerable, when, as part of the analysis of the infringement allegation, the QHR is discussed in more detail.

[81] The defendants have also produced in this case excerpts from the plaintiff's examination for discovery, held on June 11, 2013, in the context of the related file in the Superior Court of Quebec which I just mentioned. They are designated as Exhibit D-2.

C. *Expert evidence*

[82] Two expert witnesses squared off against each other in this case, namely Mr. Cyrille Thilloy, for the plaintiff, and Mr. Alain April, for the defendants. These two experts produced a total of five reports. They first filed their respective main reports, both dated March 9, 2018. Mr. Thilloy's report dealt with the interpretation of the claims of each of the two patents at issue and the infringement (Exhibit P-2), while Mr. April's report addressed the interpretation of those same claims and the validity of said patents (Exhibit D-3). Each expert responded to the other on April 9, 2018, with Mr. Thilloy submitting a rebuttal opinion on Mr. April's report on the validity of the patents (Exhibit P-3) and Mr. April doing the same in regard to Mr. Thilloy's report on infringement (Exhibit D-8). Lastly, on April 30, 2018, Mr. Thilloy filed a report in reply to Mr. April's rebuttal opinion, mainly to give his opinion on documentary evidence on the functioning of the QHR to which he, unlike Mr. April, had no access when preparing his two previous reports (Exhibit P-4).

[83] Mr. Thilloy holds a bachelor's degree in mathematical computer science from Laval University and a master's degree in computer science from the same university. Those two degrees were obtained in 1989 and 1990, respectively. Since graduating from university, Mr. Thilloy has worked in the field of information technology with companies in Quebec, the rest of Canada and abroad. He has worked in a variety of fields over the course of his career, including banking, telecommunications, the media, entertainment, e-commerce, academia and health.

[84] In 1995, he helped found a company specializing in telecommunications via the Internet. He held the title of Vice-President, Research and Development. In 2000, the company was

acquired by an American company specializing in the development of software and hardware solutions for telephony and video over the Internet. Mr. Thilloy was the Head of Technology. In this role, he was responsible for developing the “end-to-end” architecture of the company’s product line and for securing patent protection for the company’s innovations.

[85] Starting in 2005, Mr. Thilloy became a consultant, on behalf of various Quebec and Canadian companies, as a solutions architect for specific technological projects. His practical experience covers the architecture of information systems, including the applications that make up those systems, as well as business and enterprise architecture. He is also involved in organizations that work to standardize the industry. In addition, he writes articles on behalf of a leading publication in the field of service-oriented architecture.

[86] For his part, in April 1983, Mr. April obtained a bachelor’s degree in computer science from the University of Quebec at Montréal. After obtaining his diploma, he was recruited by Desjardins Group as a junior programmer. As such, he worked to design and develop the cooperative’s first “distributed”, that is to say “client-server”, software for the decentralized management of loans. During this same period, he pursued a master’s degree with specialization in distributed information systems. In 1986, he was offered a job at Bell Canada, which was looking to set up a working group focused on new client-server technologies. In his first four years at Bell, he was responsible for a team that managed client-server projects involving both central and decentralized servers. Subsequently, he was named project manager for software development involving personal computers and client-server systems.

[87] In 2003, Mr. April accepted a professorship in software engineering at the University of Quebec at Montréal's higher school of technology, the École de technologie supérieure. In 2005, he obtained his PhD in software engineering. Concurrently with his teaching activities, he has been developing various computer applications, particularly in the health field.

[88] Prior to the trial, the parties agreed not to challenge the proposed qualifications of their respective experts. The proposed qualifications for Mr. Thilloy are those of expert [TRANSLATION] "in information technology and communications architecture solutions". The defendants, for their part, proposed that Mr. April be recognized as an expert [TRANSLATION] "in the field of application software development and database design".

[89] I recognized Messrs. Thilloy and April as qualified experts in accordance with the parameters proposed by the parties. Although each party is asking me to disregard the opinion of the other party's expert, it is not because they feel they are not qualified to give opinions on the issues in dispute. In one case, that of Mr. Thilloy, it is alleged that he has been an advocate for his client's cause and therefore does not have the arm's length distance necessary to objectively assist the Court. In the other case, that of Mr. April, it is argued that he did not approach these issues from the perspective required by the applicable legal framework and that his opinion is therefore of no use. I will come back to this later when I discuss the evidence offered by each of them, in the analysis of the issues.

D. *Documentary evidence*

[90] The parties produced documentary evidence, public and confidential, totalling 326 exhibits (filed as exhibits TX) divided into 26 volumes. With a few exceptions, mainly when the date of the document was problematic, the authenticity of said documents was admitted on both sides, so that those documents could be filed in evidence without further formalities. Given the materiality of this evidence, this greatly facilitated the trial. This is to the credit of counsel in this case.

[91] Among this documentary evidence is a video recording of a presentation on the general functioning of the QHR and the functioning of the [TRANSLATION] "pharmacological profile", [TRANSLATION] "laboratory" and [TRANSLATION] "medical imaging" components, organized by the defendants for the benefit of the plaintiff and his counsel. This presentation was made in 2015 by officials of the MSSS and RAMQ, in connection with the related file brought before the Superior Court of Quebec. The relevant excerpts from this presentation are found in exhibits TX-323 through 326.

[92] A confidentiality order, intended to protect the confidential information filed in the record, was made on October 5, 2016. It was renewed on May 22, 2018, a few days before the opening of the trial. A confidential draft decision was therefore sent to the parties on February 15, 2019, to enable them to propose to me, if necessary, any redaction required for the release of the public version of said decision. An initial proposal in which I was asked to redact, in their entirety, a total of 16 paragraphs from the confidential draft was made to me on

February 27, 2019, by the defendants. In response to reservations expressed by the plaintiff with respect to this proposal, I invited the parties to a teleconference, which was held on March 4, 2019. Following this teleconference, the parties were given an additional three weeks to submit a new redaction proposal to the Court. This new, more limited and more focused proposal, to which the plaintiff consents, was received on March 29, 2019. It seems reasonable to me and is therefore accepted. Two versions of these reasons, one public, the other confidential, will be issued simultaneously.

IV. ISSUES

[93] This case raises the following issues:

a. Have claims **1 to 8** of Patent 794 and **1, 2, 4, 9, 10, 13 to 16, 18 to 22, 28 to 31, 33 to 36 and 39 to 42** of Patent 598 been infringed directly or by inducement, because of the establishment of the QHR by the defendants?

b. If so, are said claims nevertheless invalid on the grounds of anticipation, obviousness, insufficiency of the disclosure, lack of utility and/or overbreadth?

c. If not, is the plaintiff entitled to damages or an accounting of profits for the infringement on patents 794 and 598 and, in addition, the payment of reasonable compensation to the plaintiff within the meaning of subsection 55(2) of the Act for the period before the grant of Patent 598?

[94] Since consideration of infringement and validity issues is, however, dependent on the construction of the patent claims in suit (*Whirlpool Corp. v Camco Inc*, 2000 SCC 67 at para 43

[*Camco*]), I will first interpret the contentious claims of each patent. To do so, I will need to profile the "person skilled in the art" [POSITA] and determine the level of common general knowledge in the field related to the two disputed inventions that he was supposed to possess on the "relevant date" that is, the date of publication of each patent application, since it is from the perspective of this fictitious, or notional, person, at that date, that the claims must be construed.

[95] I note that in their respective defences and counterclaims, the defendants argued the absence of a legal relationship, based on article 96 of Quebec's *Code of Civil Procedure*, CQLR c C-25.01, which provides as follows:

96. An application pertaining to the rights and obligations of the Government must be directed against the Attorney General of Québec. An application pertaining to the rights and obligations of a public body or of a public officer or office holder who is called on to make changes to an act or a register must be directed against the body or person concerned.	96. La demande qui porte sur les droits et obligations du gouvernement est dirigée contre le procureur général du Québec. Celle qui porte sur les droits et obligations d'un organisme public ou d'un officier public ou d'un titulaire d'une charge, auxquels il est demandé d'agir pour modifier un acte ou un registre, doit être dirigée directement contre eux.

[96] More specifically, the defendants argue that computerized or electronic medical records in Quebec are under the jurisdiction of the various health and social services institutions where they are held, and not under that of the MSSS or RAMQ, such that neither one nor the other can be liable for the acts complained of in this case.

[97] I understood at trial that this defence, raised in the context of the related proceedings instituted by the plaintiff in the Superior Court of Quebec, had somehow been abandoned in this Court.

[98] I recall in this regard that under section 2.1 of the Act, this Act is binding on Her Majesty in right of both Canada and a province. Moreover, neither of the parties has claimed, and for good reason, that this Court did not have jurisdiction to hear this dispute.

V. ANALYSIS

A. *Claims construction*

(1) Applicable legal principles

[99] Under section 2 of the Act, a "patent" is defined as "letters patent covering an invention", that is, covering "any new and useful art, process, machine, manufacture or composition of matter, or any new and any art, process, machine, manufacture or composition of matter" ("toute réalisation, tout procédé, toute machine, fabrication ou composition de matières, ainsi que tout perfectionnement de l'un d'eux, présentant le caractère de la nouveauté et de l'utilité").

[100] According to section 42 of the Act, the grant of a patent confers to the patentee "the exclusive right, privilege and liberty of making, constructing and using the invention and selling to the others to be used, subject to adjudication in respect thereof before any court of competent jurisdiction". Once granted, the patent, in the absence of any evidence to the contrary, is valid and avails its holder the holder's legal representatives for the term prescribed by the Act (subsection 43(2)). This term is 20 years from the filing date of the application where the application for the issued patent was filed on or after October 1, 1989, (section 44). That is the case here.

[101] As the Supreme Court of Canada noted in *Teva Canada Ltd v Pfizer Canada Inc*, 2012 SCC 60 [*Teva Canada*], the patent system in Canada "is based on a 'bargain', or *quid pro quo*: the inventor is granted exclusive rights in a new and useful invention for a limited period in exchange for disclosure of the invention so that society can benefit from this knowledge" (*Teva Canada* at para 32; see also: *Camco* at para 13). Disclosure is "is the *quid pro quo* for valuable proprietary rights to exclusivity" (*Teva Canada* at para 32).

[102] Under the Act, disclosure of the invention is provided by the "specification", the content of which is governed by subsections 27(3) and (4) of the Act. This "specification", as we have seen, has two parts: the disclosure and the claims. The specification must, among other things, "set out clearly the various steps in a process, or the method of constructing, making, compounding or using a machine, manufacture or composition of matter, in such full, clear, concise and exact terms as to enable any person skilled in the art or science to which it pertains, or with which it is most closely connected, to make, construct, compound or use it*"* (paragraph 27(3)(b)).

[103] For their part, the claims, which follow the disclosure in the specification, define "distinctly and in explicit terms the subject-matter of the invention for which an exclusive privilege or property is claimed" (subsection 27(4)). They serve, in this sense, notice to the public of what it can and cannot do without risk of violating the monopoly protected by the patent (*Camco* para 42).

[104] Essentially, the specification is "a unilateral statement by the patentee, in words of his own choosing, addressed to those likely to have a practical interest in the subject matter of his invention (i.e. 'skilled in the art'), by which he informs them what he claims to be the essential features of the new product or process for which the letters patent grant him a monopoly" (*Camco* para 44, citing *Catnic Components Ltd v Hill & Smith Ltd*, [1982] CPR 183 (UK HL) at pp 242-243).

[105] However, it is the claims in the specification that define and clarify the scope of the monopoly (*Camco* at paras 18, 48). In *Free World Trust v Électro Santé*, 2000 SCC 66 [*Électro-Santé*], the Supreme Court noted that claims have often been compared to "'fences' and 'boundaries', giving the 'fields' of the monopoly a comfortable pretense of bright line demarcation", the objective being always to inform the public in a clear and precise way not only where it must not trespass, so to speak, but also where it may safely go (*Électro Santé* para 14). Thus, what is not claimed, even if it is mentioned in the disclosure, is excluded from the monopoly conferred by the patent (*Camco* at para 42; *Monsanto Canada Inc v Schmeiser*, 2004 SCC 34 at paras 123-124), *per* Arbor J, dissenting in part [*Monsanto*]).

[106] In *Zero Spill Systems (Int'l) Inc v Heide*, 2015 FCA 115, leave to appeal to the SCC refused, 36542 (January 14, 2016) [*Zero Spill*], the Federal Court of Appeal recently summarized the principles applicable to the construction of claims in the following manner:

> [41] Before us, the parties broadly agreed on the operative principles for claims construction. The well-accepted canons of construction are as follows:
>
> - Claims construction is the first step in a patent suit.
>
> - The task of claims construction rests with the court.

- The court must read the claims through the eyes of the person skilled in the art to which the patent pertains.

- The skilled reader comes to the patent armed with all of the common general knowledge in the art.

- The skilled reader construes the claims as at the patent's publication date.

- The essential elements of the claims must be sorted from the non-essential elements.

- The claims are to be read purposively with the object of obtaining a fair result as between the patentee and the public.

- The words of the claims are to be considered with reference to the entire specification, but not with a view to enlarging or contracting the claims' language as written.

- Expert evidence is admissible to assist in placing the court in the position of the skilled reader.

[107] I would add this:

a. The claims' construction cannot vary according to whether it is the patent's infringement or its validity that is being considered, the same interpretation being used to examine both issues (*Camco* at para 49(b); *Bombardier Recreational Products Inc v Arctic Cat, Inc*, 2018 FCA 172 at para 29 [*Bombardier FCA*]);

b. Claims must not be construed according to the infringing object or mechanism—here the QHR—in respect to patent infringement, or according to prior art when determining a patent's validity (*Camco* at para 49(a); *Dableh v Ontario Hydro*, [1996] 3 FC 751 (FCA) at para 26 [*Dableh*]); and

c. For the purposes of its interpretation, a patent "must be read by a mind willing to understand", that is, a mind that "necessarily pays close attention to the purpose and intent of the author" (*Camco* at para 49(c)).

[108] In this case, the parties agree on the date of publication of the patents at issue, and therefore on the date from which the "skilled reader" interprets the claims. In the case of Patent 794, it is August 24, 1999; and in that of Patent 598, June 13, 2002. There is also consensus among the parties as to the essential character of all the elements of the claims in dispute, such that, in their view, there is no need to sort the essential elements of said claims from the non-essential ones in the circumstances.

[109] In light of this analysis, and as I have stated in setting out the issues to be decided, I must first (since in a way, I must put myself in their shoes) identify the POSITA and the state of the general knowledge of that person on the dates of publication of the two patents at issue. I must do so because the patent is addressed to this person, not to an ordinary member of the public (*Électro Santé* para 44) or to a grammarian or an etymologist (*Camco* para 53).

(2) POSITA

[110] A POSITA is a worker of ordinary skill in the field to which the patent relates; he or she is deemed to be uninventive. On the other hand, a POSITA is sufficiently versed in this art to be able, on a technical level, to understand the nature and the description of the invention. In this regard, a POSITA is held to be reasonably diligent in keeping up with advances made in the field

of the patent since it is assumed that general knowledge in this field can evolve and grow constantly (*Camco* para 53-74).

[111] Each expert in this case has proposed their definition of the POSITA, and this definition applies, in each case, to both patents in issue despite the three years between their respective publication dates.

[112] Mr. Thilloy, for the plaintiff, submits that for the purposes of the two patents in question, the POSITA is a person who necessarily has an academic background in computer science, at the master's level, and preferably in mathematical computer science or computer engineering. This person also has a number of years of hands-on experience in the 1990s and early 2000s in software development, web services, software architecture in the field of information technologies, solution architecture in this same field, and/or so-called "service-oriented" architecture. This experience, however, does not have to be related to the medical field.

[113] For Mr. April, the POSITA has a three-year college degree in data technologies or a bachelor's degree in administrative data processing. The POSITA also has three to five years of experience in application software programming, particularly in the health field, where this person is called upon to carry out this task on commercially available equipment, configured in a generic client/server architecture and including distributed databases.

[114] In response to the POSITA proposed by Mr. April, Mr. Thilloy opines that a POSITA with administrative data processing training, an academic discipline primarily focused on data,

might have a vision centred too much on “data”, while the nature of the patents in question goes beyond the mere frame of a data structure. Broader and more comprehensive academic training, provided by mathematical computer science or computer engineering, seems preferable to him because such training aims at acquiring knowledge, relevant to the present dispute, of the internal components of computers, communication protocols and data exchange models between systems.

[115] To the extent, moreover, that Mr. April’s POSITA would have had difficulty, according to Mr. April, understanding certain explanations contained in the description of the patents in question, this may be explained, according to Mr. Thilloy, by the fact that this person has only a simple college training of three years in administrative data processing. Conversely, the general knowledge of this person, as described by Mr. April, appears much broader to him than what a person with such training would have possessed at the relevant time.

[116] Finally, in terms of practical experience, Mr. Thilloy continues to claim that there is no need for programming experience in the field of health, stating that neither he nor Mr. April had any experience in this field at the relevant dates and that this would not have prevented them from reading and understanding the patents in question.

[117] It goes without saying, given the nature of the two patents in question, that the POSITA, as the experts suggest, must have an academic background in computer science and must have between three and five years of practical experience in this field in the 1990s and early 2000s. Given the complexity of the field covered by these patents and the rapid evolution of knowledge

and technological innovations in this field at the relevant time, a university degree in computer science, not necessarily at the master's level, seems in my view preferable to college-level training, even if it is three years. It also seems to me preferable, as Mr. Thilloy proposes, that this training allow the acquisition of knowledge not only of data structures, but also of the internal components of computers, communication protocols and data exchange models between systems.

[118] Moreover, much of the current general knowledge that Mr. April's POSITA has on the relevant dates relates to such topics since, in his opinion, this person would have been familiar not only with the notions of databases and data structures, but also, in particular, application software, client-servers, client items, source systems, database records, unique identifiers, pointers, and so-called "proprietary" or "open" data exchange protocols. These are concepts mentioned in the literature cited by Mr. April in his report dated March 9, 2018, to illustrate what would have been, at the relevant time, the set of common general knowledge of his POSITA (April Report, March 9, 2018, at paras 53-73).

[119] With regard to the practical experience of the POSITA, it seems to me desirable, as Mr. April suggests, that a portion of this experience be in the field of health, given the very clear relationship, upon reading the specification of each patent in question, between this field and the problems that the two inventions described therein sought to solve. This experience also seems to me to be desirable because, as Mr. Thilloy points out, the publication of the patents at issue took place at a [TRANSLATION] "pivotal time in information technology" (Thilloy Report, March 9, 2018, at para 37), at a time when, as he acknowledges, the idea of implementing electronic health

records [EHR] had been around for some time and had already taken shape (Thilloy Report, March 9, 2018, at paras 41-47).

[120] Having outlined the profile of the POSITA, I must now identify, before construing the claims at issue, what would have been, on the relevant dates, the common general knowledge of this "worker of ordinary skill in the field to which the patent relates" who is deemed to be "uninventive" but is willing to understand and not seek out difficulties.

(3) POSITA's general knowledge

[121] Common general knowledge is what the POSITA would have generally known at the relevant time (*Apotex Inc v Sanofi-Synthelabo Canada*, 2008 SCC 61 at para 37 [*Sanofi*]). To be characterized as such, it is not enough that there was mention of this body of knowledge in articles or journals of a scientific nature, even those with a large circulation; this knowledge must be "generally known and accepted without question by the bulk of those who are engaged in the particular art" (*Eli Lilly and Company v Apotex Inc*, 2009 FC 991 at para 97, citing *General Tire & Rubber Co Firestone Tire & Rubber Co Ltd*, [1972] RPC 457, [1971] FSR 417, (UKCA); aff'd on appeal, 2010 FCA 240).

[122] Here, the experts, while disagreeing on the exact scope of some of them, generally agree that their respective POSITAs would have been familiar with all the key technical concepts found in the claims of the patents in question and around which these claims are constructed, namely, in particular, the concepts of:

- Computer readable storage medium;

- Data structure;
- Record;
- Pointer;
- Address;
- Location;
- Nodes;
- Server;
- Network server;
- Processor;
- Memory;
- Program element;
- Data network;
- *The* act of pushing information; and
- Server arrangement.

[123] There is also consensus that each expert's POSITA would have been familiar with the concepts of application software, client-server architecture, relational databases, database records, keys allowing access to these records, and so-called "open" data exchange protocols, namely the commercial DICOM and HL7 protocols, which were, at the relevant date, already the preferred data exchange protocols in the health-care field, in Canada as elsewhere.

[124] The POSITA that I have defined, and whose profile is inspired, both in terms of academic training and practical experience, by each expert's POSITA, would have possessed this body of common general knowledge.

[125] Given their experience in the health field, the POSITA would have been as familiar, as the defendants suggest, with the electronic health records systems in place at the time and the specific medical data source systems, such as the medical imaging test results, then present in some health-care facilities.

(4) Inventions at issue, according to experts

[126] Each expert stated what he understood to be the inventions related to the patents at issue.

a) *Patent 794*

[127] For Mr. Thilloy, Patent 794 presents a distributed and potentially longitudinal EHR through a network, focused on effective access to a patient's medical information. This solution comprises a data structure facilitating the distribution of medical information between several information systems and a system for implementing this structure and making the distribution of medical information possible without centralizing the information.

[128] Specifically, this distributed EHR solution, again according to Mr. Thilloy, [TRANSLATION] "defines a technological architecture that includes a summary of certain relevant medical information and pointers or links to additional medical information that make it possible to determine the nature of this additional medical information", which additional information is stored on systems or servers that may be remote or separate from the summary. This separation, Mr. Thilloy says, can be logical, in the sense that the additional information can be conceptually

separated from the summary while being stored on the same server, or physical (Thilloy Report, March 9, 2018, at paras 50-52).

[129] Mr. April, for his part, submits that the POSITA, upon reading Patent 794, would have understood that the system described therein consists of:

> [TRANSLATION]
>
> . . . application software in the field of health specifically designed for doctors located in outpatient departments, which allows them to download, on request, medical information concerning a patient contained in the various source systems of delocalized institutions that the patient has visited, in a transparent manner (i.e. that hides the complexity of the source of this data), and which works on a generic client/server architecture using distributed databases.
>
> (April Report, March 9, 2018, at para 110)

[130] Mr. April goes on to write that this person would also have understood that this application software [TRANSLATION] "which should operate on the client station at each remote establishment would use a proprietary data format to exchange data that include a specific structure proposed by the inventor" (April Report, March 9, 2018, at para 111).

b) *Patent 598*

[131] In Mr. Thilloy's view, the invention described and claimed in Patent 598 relates to updating— most likely automatically—summary information of the distributed EHR contemplated in Patent 794, as new information becomes available on the network. Patent 598 also introduces the concept of "personal communication system" and "smart card", [TRANSLATION] "which allow EHR data to be distributed up to the user level". The aim of the

invention is thus to enable the providers (medical staff) and the users (patients) in the network to [TRANSLATION] "automatically and immediately" access the most recent user data from their summary information and from pointers pointing to new data available on the network (Thilloy Report, March 9, 2018, at paras 242, 244-245).

[132] As for Mr. April, the main difference between Patent 794 and Patent 598, in terms of their respective Disclosures, is related to the fact that Patent 598 concerns [TRANSLATION] "the use of cellular and other similar devices, used as a client station, to save the patient's summary medical file" (April Report, March 9, 2018, at para 193). In terms of claims, he notes that those of Patent 598 describe, at first glance,[TRANSLATION] "a method, automatic or not, of updating medical records, and a configuration of servers to make this update", with references to cell phones being limited to claims 9, 25 and 32 only (April Report, March 9, 2018, at para 202).

(5) Meaning and scope of claims of Patent 794

a) *Review of concept of "purposive" interpretation*

[133] I note, on the basis of the summary of applicable principles found in *Zero Spill*, that I must interpret the claims in dispute from, once again, the point of view of the POSITA and the common general knowledge that this person would have possessed at the date of publication of Patent 794, using a purposive approach, in order to reach a result that is fair to both the plaintiff, as the patentee, and the public. This means that I must examine the words used in the claims in the context of the specification as a whole. However, I must do so without attempting to rewrite the terms used in the claims either by enlarging or contracting their scope (see also: *Camco* at

para 52). I must do so while also avoiding the use of extrinsic evidence, such as the history of the processing of the patent application (*Camco* at para 49(f)).

[134] In other words, if the meaning of the words used in the claims is unambiguous, it is not appropriate to use the rest of the specification—or evidence extrinsic to the specification—to modify it; this meaning, according to the principle of the primacy of the claims language, must take precedence (*Électro Santé* at paras 40, 66; *Schmeiser v Monsanto Canada Inc*, 2002 FCA 309 at para 43, rev'd in part on other grounds, 2004 SCC 34; *Janssen Ortho Inc v Canada (Health)*, 2010 FC 42 at paras 115, 119 [*Janssen Ortho*]; *AstraZeneca Canada Inc v Apotex Inc*, 2014 FC 638 at paras 67-71, aff'd 2015 FCA 158, but rev'd on other grounds, 2017 SCC 36).

[135] The defendants have emphasized the importance of the descriptive part of the specifications at issue for the purposes of interpreting the disputed claims. This part of the specification is certainly important, but, as we have just seen, it cannot serve to give a different meaning to the wording of an otherwise clear and unambiguous claim. As the Court pointed out in *Janssen Ortho*, a person who interprets patent claims may have recourse to the descriptive part of the patent, but must do so "with caution" (*Janssen Ortho* at para 115; see also *Dableh* at paras 29-30). In particular, this person must refrain from interpreting a claim in light of the preferred embodiment described in the disclosure with a view to contracting—or enlarging—the scope if the meaning of the terms used in the claim does not suffer from ambiguity (*Dableh* paras 38-39).

[136] I agree with the defendants, however, that the scope of the claims "cannot be stretched to allow the patentee to monopolize anything that achieves the desirable result" (*Électro Santé* at para 32).

b) *Role of experts*

[137] To complete this review of the applicable principles, it should be noted that the role of the experts, at this stage of the analysis, is not to interpret the claims, but to "put the trial judge in the position of being able to do so in a knowledgeable way" (*Camco* at para 57).

[138] This brings me back, before undertaking the actual interpretation of Patent 794's claims, to the reservations expressed by each party with respect to their opponent's expert evidence.

c) *Reservations regarding admissibility of Mr. Thilloy's evidence*

[139] The defendants, as I have already stated, argue that Mr. Thilloy has been an advocate for his client's cause and thus engaged in a results-oriented analysis of the claims, with his sights set on the infringing system, the QHR, which he already knew in detail, having been involved in the related file in the Superior Court of Quebec. He was also criticized for being too legalistic. In sum, say the defendants, I should conclude that Mr. Thilloy has neither the arm's length distance nor the credibility necessary to usefully and objectively assist to the Court in this case.

[140] For those reasons, I cannot dismiss holus-bolus the evidence offered by Mr. Thilloy, as the defendants suggest. Expert witnesses have a duty to give fair, objective, and non-partisan

opinion evidence in the field for which they offers their opinion (*White Burgess Langille Inman v Abbott and Haliburton Co*, 2015 SCC 23 at para 10, *Apotex Inc v Shire LLC*, 2018 FC 637 at para 54; *Allard v Canada*, 2016 FC 236 at paras 102-107). Mr. Thilloy's qualifications to testify as an expert in this case have been recognized, as have Mr. April's qualifications. Moreover, his impartiality and objectivity cannot be called into question simply because he has been on the case, so to speak, since the related proceedings instituted in the Superior Court of Quebec. It would take much more, in my opinion, to show that his ability to objectively assist the Court has suffered.

[141] For my part, I saw a witness who was anxious to help the Court and respectful of the process. He proved to be a level-headed witness and in control. He defended his thesis, and it was quite normal for him to do so with conviction. Still, in doing so, he did not go beyond the bounds of the conduct normally expected of an honest and objective witness. He made the necessary concessions when circumstances dictated it. He even backed down on some of his findings after reading Mr. April's report in response to his first report, that of March 9, 2018.

[142] As for the criticism that he took an overly legalistic approach, I note that it has long been recognized in cases involving highly technical fields, such as patents, that there is a significant degree of interdependence between the technical and legal aspects of these cases, which requires a high level of collaboration between the lawyer and the expert (*Moore v Getahun*, 2015 ONCA 55 at para 55 [*Moore*]; *Medimmune Ltd v Novartis Pharmaceuticals UK Ltd & Anor*, [2011] EWHC 1669 (Pat) at paras 109-110). Thus, experts must be able to count on the support of

lawyers in presenting their reports "in a way that is comprehensible and responsive to the pertinent legal issues in a case". *(Moore* at para 62).

[143] Like Mr. April, Mr. Thilloy has attempted to translate his understanding of the legal framework applicable to the issues he has been asked to address. That he questioned, in his report in response to Mr. April's, the other expert's understanding of some of the applicable legal principles may not have been the best idea. But in a field where law and science intersect so much, I will not hold it against him to the point of depriving myself of his assistance. I am ultimately the one who will judge the merits of Mr. April's approach.

[144] Finally, on the merits, Mr. Thilloy is criticized for having engaged in a results-based interpretation of the claims. I will be able to judge this in my review of the meaning and scope of each claim and the position of each expert in this regard. But this criticism ultimately relates to the probative weight of his testimony, not its admissibility.

d) *Reservations regarding admissibility of Mr. April's evidence*

[145] As for Mr. April, the plaintiff submits that he misdirected himself in law on most of the matters on which he spoke, and that his opinion is therefore of no use to me. On the question of the interpretation to be given to the claims, in particular, the plaintiff accuses Mr. April of dwelling on, in describing the body of general knowledge with which the POSITA would have been familiar at the relevant time:

a. terms which, with the exception of two—data structures and pointers—do not appear in the claims;

b. the history of the federal Canada Health Infoway initiative, launched in the 1990s, but whose initial architecture for a pan-Canadian EHR was proposed only in 2003, well after the date of publication of Patent 794; and

c. scientific documents which, with the exception of only one, he himself was not familiar with at the time, and which in many cases came after the date of publication of Patent 794 and even Patent 598.

[146] The plaintiff also criticizes him for having substantiated his general understanding of Patent 794 by referring to terms that are either completely absent from the claims or present in some claims only, thereby ignoring the principle of the sorting of claims. Finally, he faults him for interpreting the claims without methodically analyzing each of them individually and by limiting the meaning and scope of some of them on the basis of the descriptive part of the patents in question when there was no justification for such an approach.

[147] The defendants urge me to dismiss these complaints and to find that Mr. April, even though his understanding of the applicable legal framework was not perfect, did what an expert witness was supposed to do in the case, that is, to serve the Court as objectively as possible in order to help it understand the patents in question from the point of view of the POSITA.

[148] Let us now consider what this might mean.

e) *Claim 1*

[149] I reproduce once again the text of **claim 1** of Patent 794:

> A computer readable storage medium holding a data structure, said data structure comprising at least one record associated with a certain individual, said record including:
>
> - A collection of data elements containing information of medical nature for the certain individual;
>
> - At least one pointer, said pointer including a first component and a second component, said first component being indicative of an address of a location containing additional medical data for the individual, said second component being indicative of the basic nature of the medical data at the location pointed to by the first component, said address being in a form such that a machine can access the location and import the medical data from the location.

[150] I emphasize again, from the outset, that the POSITA would have been familiar with the technical terms used in **claim 1**.

[151] "Computer Readable Storage Medium": This is a storage medium, such as a USB flash drive, floppy disk, optical disk or magnetic tape, containing data stored in a computer readable format. Mr. Thilloy notes that **claim 1** does not specify the type of medium in question and suggests that a POSITA would have been familiar with different types of media, including those allowing for the volatile storage of data, which store data for only a few seconds or minutes.

[152] The defendants argue that the idea that the storage medium to which **claim 1** refers could be interpreted as a volatile data storage medium would deprive the system described in Patent 794, when the specification is considered as a whole, of any utility, since the system is designed to store useful medical information, according to a specific structure, and give medical caregivers timely access to that information no matter where it is on the network.

[153] I note, first, that Mr. April did not object to Mr. Thilloy's viewpoint in his commentary on the part of Mr. Thilloy's report where he expressed the view that the POSITA would have been familiar with different types of media, including those for volatile data storage. In that commentary, Mr. April merely notes that the storage medium referred to in **claim 1** was commercially available in 1998 (April Report, April 9, 2018, at para 35). Second, in his testimony in chief, Mr. April discussed the concepts of permanent memory and volatile memory (or "cache" memory) and associated the first concept with the data recorded in a [TRANSLATION] "database" and the second with data ordered by the customer (Transcript June 1, 2018, at pp 78-80).

[154] When **claim 1** is read as a whole, it seems to me that the POSITA would have understood that these two concepts can be applied to this claim. More specifically, I am thinking of where the additional medical information to which the first component of the pointer points and the information that is imported from that location. It is conceivable, in my opinion, that this location permanently retains the data that is there and that the information imported from this location is kept in cache memory.

[155] "Holding a data structure": This means that the storage medium houses a "data structure", a basic concept in computer science which would have been well understood by the POSITA on the relevant date and which refers to the way data is organized to facilitate and enable its identification, access and exchange.

[156] "Said data structure comprising at least one record associated with a certain individual": Here, it is specified that the data structure held by the storage medium contains at least one record associated with a given individual. Mr. April believes that the word "record", in light of the entire specification, could only refer to the notion of "medical record". He argues that in the context of Patent 794, this corresponds to the summary and electronic medical records that patients can have in the various establishments of the health network where they may have been treated. Mr. Thilloy, for his part, considers that the word "record" is ambiguous, to the extent that it can have the meaning given to it by Mr. April, but also that of a "record", in the computer sense of the term, that is, a specific data entry in a data structure. Although he does not think it is necessary to decide the question to understand the scope of **claim 1**, he submits that the second meaning seems more appropriate insofar as it is described in the claim with reference to the data structure.

[157] The defendants argue that this distinction is not crucial since a summary medical record could very well correspond to a record in a database. I agree, but as I must make a ruling, I think it is more appropriate, in the context of Patent 794, to ascribe to the word "record" the meaning of a specific data entry in a data structure, as suggested by Mr. Thilloy.

[158] **Claim 1** does not specify, however, how a "record" is associated with an individual, but I agree with Mr. Thilloy that the POSITA would have been familiar with the use of a unique identifier, such as the individual's health insurance number, to ensure this link, as suggested by Disclosure 794.

[159] "Said record including – a collection of data elements containing information of medical nature for the certain individual": It says here that this "record", held by the data structure, contains a set of data of a medical nature on this individual. The claim does not specify the exact nature of this data, but it is clear from Disclosure 794, when read as a whole, that it may be medico-administrative data, such as the name, date of birth, and family physician of the patient, and data of a purely medical nature, such as blood group, medical history of the patient and his or her family, allergies and medication.

[160] I agree with Mr. Thilloy that this information is not necessarily limited to static information, as Mr. April claims, that is, information that is not likely to change during the patient's life. If that were the case, it seems to me, the physician user of the system (or the client) proposed by Patent 794, the objective of which is to provide that physician with a longitudinal view, in time and space, of the patient's situation, would potentially be deprived of useful diagnostic information. Moreover, in his report of April 9, 2018, Mr. Thilloy stresses that Disclosure 794 provides some examples of medical information that may be in the "record" that is not necessarily static, such as the history of surgeries, allergies and medication (Thilloy Report, April 9, 2018, at para 90).

[161] "Said record including – at least one pointer": Here, it is stated that this "record", held in the data structure, also contains at least one "pointer". According to both experts, a pointer is a reference or data element that points to another data element or, in other words, specifies its location. Mr. Thilloy gives the example of an Internet page that points or directs the user and the

Internet browser to a specific page. It is not disputed, therefore, that the POSITA would have been familiar with this technical term.

[162] "Said record including - at least one pointer . . . , said pointer including a first component and a second component, said first component being indicative of an address of a location containing additional medical data for the individual, . . . said address being in a form such that a machine can access the location and import the medical data from the location"**:** Here, it is stated that the pointer held by the "record" has two components and that the first of those two components indicates the address of a "location" that provides "additional medical data" concerning a given individual. It is also stated that this address is presented in a format that allows a computer ("machine") to access this location in order to import the information in it.

[163] The two experts have differing opinions as to the meaning to be given to the term "location". Unlike Mr. April, for whom the term "location" necessarily refers, when Disclosure 794 is considered as a whole, to the source systems located in the various institutions of the health network where patient care is provided (hospitals, clinics, etc.) and where detailed medical data related to this care is being stored (April Report, April 9, 2018, at para 39), Mr. Thilloy believes that the location referred to in **claim 1** could well be another data structure in any computer readable storage medium. In other words, for Mr. Thilloy, the term "location" does not necessarily refer to the idea of geographical distance or physical address of an establishment; it may be understood, in the context of the patent at issue, in its logical or conceptual sense (Thilloy Report, March 9, 2018, at para 71). In short, it refers to the location of

the data, a location that is not necessarily related, contrary to what Mr. April suggests, to the source systems of the institutions that provided the care.

[164] Although in most cases it is reasonable to assume that the term “location” contemplated here is related to the source systems of the health-care facilities that generated additional medical information about a patient, the definition proposed by Mr. April seems to me to be too restrictive and related to the preferred embodiment described in Disclosure 794. The language of this portion of the claim does not limit its scope to those systems.

[165] Moreover, according to the evidence in the record, different types of location addresses are possible, such as IP addresses or URLs (“Uniform Resource Locator”), or an “index” referring to a data table that contains the address of the location. The defendants acknowledge this, but dispute that this address may be a unique identification number, as suggested by Mr. Thilloy. They believe that Mr. Thilloy was able to arrive at this interpretation of the term “address” only because of his prior knowledge of the functioning of the QHR and that this is therefore a result-oriented interpretation, which is not allowed by the rules of patent construction.

[166] Yet, in his first report, Mr. April stated, as part of his interpretation of the terms of the claim in Patent 794, and more specifically of the words “address in a form such that a machine can access the location”, that an address intended for the unambiguous identification of a location or equipment could take many forms, including [TRANSLATION] “the use of a unique universal identifier designed to be unique in the world to enable distributed systems to identify

unique information without significant central coordination" (April Report, March 9, 2018, at para 125). He confirmed all this on cross-examination (Transcripts, June 4, 2018, at pp 91-96).

[167] I was therefore not satisfied that an address of the type of a unique identification number was inconceivable to the POSITA at the relevant time and that there is good reason, as the defendants invite me to do, to exclude such addresses from the meaning to be given to the word "address" in **claim 1**. Given Mr. April's position on the issue, I cannot say that Mr. Thilloy's position is results-oriented.

[168] As the Court pointed out in *Halford v Seek Hawk Inc*, 2004 FC 88, rev'd in part on other grounds, 2006 FCA 275 [*Halford*], absent a specific limitation with respect to a concept specified in the claims, references to this concept cannot be used in the disclosure to read in such a limitation, although it is otherwise permissible, as noted above, to consider these references in determining the meaning to be given to specific words, expressions or concepts in the claims (*Halford* at para 35).

[169] Mr. April also criticizes Mr. Thilloy for a problematic interpretation of the term "import", deeming it [TRANSLATION] "fuzzy and broad" in that it might mean something other than selective downloading of certain data, as opposed to mere consultation of that data (April Report, April 9, 2018, at para 38). In his rebuttal to that report, Mr. Thilloy noted that he had stated that the term "import" meant [TRANSLATION] "to extract", which includes the notion of downloading. He said that he simply wanted to clarify that the additional medical information pointed to by the first component of the pointer was not permanently copied in the sense that it would disappear

from the location from which it was imported (Thilloy Report, April 30, 2018 at para 21(b)). I am satisfied that there is no controversy about what the POSITA would have understood by reading the term "import" in **claim 1**.

[170] "Said record including - at least one pointer . . . , said pointer including a first component and a second component, . . . said second component being indicative of the basic nature of the medical data at the location pointed to by the first component"**:** There is consensus between Messrs. April and Thilloy on the fact that this second component of the pointer makes it possible to indicate to users the nature of the additional medical data to which the pointer points, thus enabling them to appreciate the nature of this information and to choose which data they wish to obtain and consult.

[171] Mr. Thilloy is alone in proposing what, in his view, the POSITA's interpretation of **claim 1** as a whole would have been. He states that this person would have understood that it is aimed at [TRANSLATION] "a data structure stored on any storage medium" and that this structure [TRANSLATION] "contains at least one record associated with a given individual", which record contains in particular the following data:

> [TRANSLATION]
>
> a. A set of data items containing medical information for that individual that can be of different types; and
>
> b. At least one pointer having two components: an address or a reference allowing the computer to access and consult additional medical information, and an indication of the nature of this additional medical information enabling users to identify the additional medical information they wish to consult.

[172] I agree with this overview of said claim.

f) *Claims 2 to 5*

[173] I note that **claims 2 to 5** are dependent claims. They are as follows:

> 2. A computer readable storage medium as defined in claim 1, wherein said record includes a plurality of pointers, one of said plurality of pointers including a first component that is indicative of an address of a first location, another one of said pointers including a first component that is indicative of an address of a second location that is remote from the first location.
>
> 3. A computer readable storage medium as defined in claim 2, wherein the first and the second locations are different nodes in a network.
>
> 4. A computer readable storage medium as defined in claim 3, comprising a multitude of records.
>
> 5. A computer readable storage medium as defined in claim 4, wherein said computer readable storage medium resides on a server in a network.

[174] According to section 87 of the Rules, a dependent claim is used to add features to the inventive concept described in the claim(s) to which it refers, which must precede it in the order of presentation of the claims. Thus, this type of claim specifies the additional features claimed, while including all the features and limitations of the claim or claims to which it refers. Section 87 reads as follows:

87 (1) Subject to subsection (2), any claim that includes all the features of one or more other claims (in this section referred to as a "dependent claim") shall refer by number to the other claim or claims and shall state the additional features claimed.	87 (1) Sous réserve du paragraphe (2), la revendication qui inclut toutes les caractéristiques d'une ou de plusieurs autres revendications (appelée « revendication dépendante » au présent article) renvoie au numéro de ces autres revendications et précise les caractéristiques additionnelles

	revendiquées.
(2) A dependent claim may only refer to a preceding claim or claims.	(2) La revendication dépendante peut seulement renvoyer à une ou plusieurs revendications antérieures.
(3) Any dependent claim shall be understood as including all the limitations contained in the claim to which it refers or, if the dependent claim refers to more than one other claim, all the limitations contained in the particular claim or claims in relation to which it is considered.	(3) La revendication dépendante comporte toutes les restrictions contenues dans la revendication à laquelle elle renvoie ou, si elle renvoie à plusieurs revendications, toutes les restrictions figurant dans la revendications [*sic*] ou les revendications avec lesquelles elle est prise en considération.

[175] By thus adding features to those claimed in the claim on which it depends, the dependent claim not only clarifies but also, in a way, limits the scope of the monopoly covered by the independent claim. The independent claim cannot be given a construction which is inconsistent with the claims which are dependent upon it; it must, in the name of the internal consistency between independent and dependent claims, be consistent with the meaning and scope of the latter (*Halford* at paras 91, 95).

[176] **Claim 2** specifies that the "record" contained in the data structure of the computer readable storage medium referred to in **claim 1** includes a plurality of pointers, one of which includes a first component which is indicative of an address of a first "location" and another which also includes a first component which is indicative of an address of a second location "remote" from the first.

[177] It therefore requires that the "record" of **claim 1** hold a plurality of pointers, and not at least one pointer as specified by the **claim 1**, since the same patient may have more than one laboratory or imaging result or multiple laboratory and imaging results recorded in the network.

[178] It also introduces the notion of distance or separation (“remote”) from the two locations mentioned therein. Mr. Thilloy argues that the POSITA would have understood the term “remote” in the context of computing, where it has a specific connotation. The POSITA would have understood that this term means that the two locations where the additional medical information is located are separated from each other and that this separation or remoteness can just as well be physical as logical (Thilloy Report, March 9, 2018, at para 83). Again, Mr. April argues that this definition is [TRANSLATION] “fuzzy and broad” in that it introduces the notion of a logical remote location. According to him, the POSITA, upon reading Disclosure 794, would have understood that the concept of “remote locations” refers to the idea, more consistent with the object of the invention, of physical buildings far apart from one another, such as hospitals and clinics. In fact, he says, if the sites containing the additional medical information were in the same place, this information would be available locally, thus making the plaintiff’s invention pointless (April Report, April 9, 2018, at paras 42-43).

[179] As in the case of the term “location”, nothing in **claim 2** limits the scope of the notion of “remote locations” to physical locations. I recall that, absent a specific limitation on a concept specified in the claims, references to that concept in the disclosure cannot be used to read in a limitation, even though it is otherwise permissible to take references into account in considering the meaning to be given to specific terms or concepts in the claims (*Halford* at para 35). But here, Mr. April is not saying that the computer science concept of separation of two locations, in the sense proposed by Mr. Thilloy, would not have been known to the POSITA at the relevant time or that this concept was, in itself, at the time, vague and equivocal. It was essentially through the use of Disclosure 794 that he was able to draw his interpretation of that notion and

support his criticism of the definition proposed by Mr. Thilloy. Under the circumstances, in my view, this choice was misguided, given the applicable analytical framework.

[180] **Claim 3** provides that the first and second "locations" referred to in **claim 2** correspond to "different nodes in a network". This claim introduces, in turn, two new technical terms. The term "network" is not controversial and was well known to the POSITA: a network represents a set of computer equipment (computers, servers, printers, etc.) interconnected to one another so that they can communicate between them. The term "nodes", in the generic sense by which it is understood in computer science, is not controversial either. These are the devices or components of a given network (again: computer, printer, server, etc.). According to both experts, the POSITA would have been very familiar with this term at the relevant time.

[181] Mr. Thilloy, on the other hand, argues that the same equipment within a network, such as a server for example, which has several communication interfaces, could correspond to several [TRANSLATION] "logical" nodes within the same network (Thilloy Report, March 9, 2018, at para 86). Mr. April objected to this expansion of the definition of "node" on the grounds that the POSITA, at the relevant time, would have understood that "node" refers to physical equipment, but not to [TRANSLATION] "logical" equipment (April Report, April 9, 2018, at para 44).

[182] Unlike the term "location", which is related to the notion of "address", itself linked to that of pointers and records held in a data structure, all notions that refer to intangible objects, the term "nodes" refers, unequivocally, to notions of physical or tangible equipment or devices: the computer, the server, the printer, the router, etc. It is difficult for me to imagine, in this context,

that a node in a network can take a purely logical or virtual form. This may be the case today, but Mr. Thilloy has not made it clear that this intangible form of nodes would have been part of the current general knowledge of the POSITA at the relevant time. On this question, I prefer Mr. April's point of view.

[183] Thus **claims 2 and 3** specify that the additional medical data pointed to by the two pointers of **claim 2** are found at different remote locations connected via a network and that those locations correspond to nodes, and therefore to physical equipment or devices, interconnected via that network.

[184] **Claim 4** states that the storage medium to which **claim 3** refers contains a multitude of "records", and thus, that it contains more than one record, which is consistent with the object of the invention, which is to store and allow access to the largest number of relevant medical data of as many patients as possible.

[185] Finally, **claim 5** specifies that this "computer readable storage medium resides on a server" within a network. It introduces for the first time, in the wording of the claims of Patent 794, the notion of "server".

[186] Here again, the notions of "physical" and "logical" computing devices are contrasted. Although both experts agree that the POSITA would have been very familiar with the notion of server as a "physical" computing device, the same is not true of the extended notion of a "logical" computing device, which is part of the definition proposed by Mr. Thilloy. Mr. Thilloy

gives as an example the Google servers that receive queries sent by clients (browsers) via the Internet and return the results of those queries to clients. Mr. April notes that Google servers were not available at the relevant time. Moreover, the plaintiff, during his examination-in-chief, pointed out—to illustrate the fact that the concept developed in his invention was not, at least according to him, deeply entrenched in the field in 1998—that Google was only incorporated in September 1998 (Transcripts, May 28, 2018, at p 88).

[187] For the same reasons that led me to find that the term "nodes" has, in **claim 3,** the connotation of "physical" device or computer equipment—indeed, a server is a node in a network— I am of the opinion that the term "server", as it is used in **claim 5**, has a similar connotation.

g) *Claim 6*

[188] **Claim 6**, an independent claim as I recall, reads as follows:

> A network server, including:
>
> - A processor;
>
> - A memory including:
>
> a) A plurality of records associated with respective individuals, said record including:
>
> i. A collection of data elements containing information of medical nature for the certain individual;
>
> ii. At least one pointer, said pointer including a first component and a second component, said first component being indicative of an address of a location containing additional medical data for the certain individual, said second component being indicative of the basic nature of the medical data at the location pointed to by the first component, said address being in a form

> such that a machine can access the location and import the medical information from the location
>
> b) A program element including individual instructions, said program element implementing a functional block comprising means responsive to a request to transfer a particular record of said plurality of records toward a client connected to said server through a data communication pathway for locating the particular record and transferring the record toward the client over the data communication pathway.

[189] This claim incorporates several terms and concepts from **claim 1**, such as "record", data elements containing medical information, two-component pointers, address, location, additional medical information, "machine", and "import". On this point, I note that under the principle of uniformity or internal consistency of claims (*Halford* at para 95), there is a presumption according to which the same words must be given the same meaning throughout the claims and within any claim of a patent (*Nova Chemicals Corporation v Dow Chemical Company*, 2016 FCA 216 at para 80, leave to appeal to SCC refused, 37274 (April 20, 2017) [*Nova Chemicals*]).

[190] Here, rather than describing a "computer readable storage medium", **claim 6** is, this time, a "network server", comprising two devices, a "processor" and a "memory" with a "program element".

[191] I have already dealt with the meaning of the term "server". I note, here, Mr. Thilloy's remark that **claim 6** seems to refer to [TRANSLATION] "the notion of a hardware server rather than merely a software server" since it incorporates "hardware" components, such as a processor and a memory (Thilloy Report, March 9, 2018, at para 94). He was even more positive on

examination-in-chief that the server of **claim 6** was [TRANSLATION] "definitely a hardware component, not a purely software component" (Transcripts, May 29, 2018, at pp 74-76).

[192] Mr. Thilloy suggests, however, that the server involved in this claim may take the form of a single "machine", with one or more processors, or a "server cluster", a configuration that is useful, according to him, when the load is significant and it becomes necessary to distribute it to meet the demand. Mr. Thilloy argues that the concept of "server cluster" would have been well known to the POSITA at the relevant time, which Mr. April contested since this concept only became popular after the relevant date, when cloud computing—a computing model based on the use of remote servers interconnected by the Internet—was popularized. In addition, notes Mr. April, there is no trace of this concept in Disclosure 794. Mr. Thilloy argues back that he did his master's degree in 1991 using clustered equipment, and concludes that at the end of the 1990s, the POSITA would have been familiar with this type of arrangement.

[193] This does not change, in my view, the definition of the term "server" as a computer hardware or physical equipment or device. This is a "machine". However, I am willing to accept that a server, at the relevant time, could be configured in a "server cluster". This concept may not have been popularized yet, but in all likelihood, it would have been part of the current general knowledge of the POSITA since it was a concept known since at least the early 1990s, as highlighted by Mr. Thilloy.

[194] The experts also agreed on the meaning of the terms "processor" and "memory". A processor is an electronic component that performs the processing of instructions relating to the

command sent to the server. A server can contain more than one processor. As for memory, it is a component of the server which allows it to memorize information for a certain time.

[195] This memory, according to **claim 6**, includes a plurality of records associated with individuals, which records include the same pieces of medical information and the same two-component pointer with the same characteristics as those described in **claim 1.** Said memory further includes a "program element" whose definition is not a problem either: it is a set of processing instructions for the processor to perform certain tasks. The POSITA would have been familiar with this concept at the relevant time.

[196] The rest of the text of the claim specifies the function of the program element, which is to locate, upon request from a client connected to the server via a communication channel, a record among the plurality of records held in memory, and to communicate this record to that client via this same communication channel.

[197] Mr. April submits that it is important to understand that the POSITA, in light of the entire specification of Patent 794, would have associated this program element with a new "application" software in the field of health containing a so-called "proprietary" data structure, that is, designed according to the specific needs of the "owner" of the system, given that all the equipment described in this patent was commercially available at the relevant time.

[198] Mr. April also challenges the scope of the client/server relationship defined by Mr. Thilloy in relation to this claim. While Mr. Thilloy believes that the term "client" may refer,

based on the common general knowledge that the POSITA would have had at the end of the 1990s, to different components, such as the computer making the request, the program or software on that computer making the request, or the function inside that program or software making the request, Mr. April says that we must stick to the [TRANSLATION] "only three possible" classes of application described in Disclosure 794. However, in both cases, as we have seen, sticking to the disclosure of the specification is not, in itself, a valid reason to limit the scope of a claim. Here, I see no reason to restrict the scope of the term "client" as suggested by Mr. April or to restrict the data structure which **claim 6** refers to as a "proprietary" type structure since those limitations are essentially based on an appreciation of Disclosure 794.

[199] The POSITA, reading **claim 6** in light of Disclosure 794 as a whole, would have understood, in my view, that this time it is not a storage medium that is being described, but a server, in the sense of a device or physical or tangible equipment which (i) is attached to a network; (ii) is equipped with a processor; and (iii) has a memory containing at least two records of the same type as those discussed in the context of **claim 1** and a program (or software) making it possible, using the processor, to identify a particular record and transmit this record to a client who has requested it from the server.

h) *Claims 7 and 8*

[200] **Claims 7 and 8**, which are dependent on **claim 6**, add to this claim what **claims 2 and 3** add to **claim 1**, except that they are related to the notion of a server rather than to that of a computer readable storage medium. Thus, **claim 7** specifies that each record to which it refers holds a plurality of pointers, and not at least one as specified in **claim 6**, and introduces, in turn,

the notion of the remoteness or separation (“remote”) of the two “locations” related to the pointers mentioned.

[201] As for **claim 8**, it specifies that the first and second locations referred to in **claim 7** correspond to distinct “nodes” in a network.

[202] There is no need here to adopt an interpretation of the terms and concepts of those two claims that is different from the one I have accepted for **claims 2 and 3**.

(6) Meaning and scope of claims of Patent 598

[203] Patent 598, as we have seen, purports to be, in the plaintiff’s view, an extension of Patent 794 in that it describes and claims a concept of automatic updating of the summary information of the distributed EHR contemplated in Patent 794, as well as a concept allowing access to this information by the doctor or by patients themselves, by means of a personal communication system such as a smart phone, or by means of a smart card.

[204] A number of terms and concepts found in the claims of Patent 598 (“node”, “medical records”, “pointers”, “plurality of pointers”, “location”, “remote”) are also found in Patent 794’s claims. Both experts stated that they relied on the construction they gave in the examination of the claims of Patent 794.

a) *Claim 1*

[205] **Claim 1** is the first of the three independent claims of Patent 598. It reads as follows:

> 1. A method for performing automatic updates of summary medical information for a first patient, residing at a first node of a data network when new medical information for the first patient is recorded at a second node of the data network, the first node being configured for receiving data from the second node over a communication path linking the first and second nodes, the data network storing medical information in a distributed fashion, the medical information including a plurality of medical records associated with respective patients, the first node storing the summary medical information about the first patient without including an entire content of the medical record of the first patient available in the data network, the summary medical information including:
>
> (a) a plurality of information items identifying medical care services dispensed to the first patient;
>
> (b) a plurality of pointers associated with respective information items of the plurality of information items, each pointer identifying a location on the data network that is remote form the first node and which contains additional medical information for the medical care service identified by the information item associated with the pointer;
>
> the method including
>
> (i) pushing to the first node a medical a medical information update when new medical information about the first patient is recorded at the second node, including processing the new medical information to derive update data and initiating at the second node a data transmission to the first node, the data transmission conveying to the first node the update data;
>
> (ii) receiving at the first node the update data sent by the second node;
>
> (iii) creating at the first node a new information item based on the update data.

[206] This claim describes a "method" as opposed to a system. This method involves "automatic updates" of the "summary medical information for a first patient". According to this

method, the summary medical information is stored at a first "node" of a "data network . . . storing medical information in a distributed fashion", that is to say, containing information not stored in a central repository of data, but distributed at different locations within the data network. Mr. April concedes here that this information is not [TRANSLATION] "necessarily 'static" (April Report, March 9, 2018, at para 236).

[207] This summary medical information, stored at the first node, comprises (i) "a plurality of information items identifying medical care services dispensed to the first patient" and (ii) "a plurality of pointers" associated with this information ("associated with respective information items of the plurality of information items"). Each pointer serves, in turn, to identify "a location in the data network" that is "remote from the first node" and contains additional medical information regarding the health care identified in the pieces of information with which each pointer is associated.

[208] The method described in **claim 1** specifies that the additional medical information concerning this patient is recorded at a second node, the first node being configured to receive from the second node, when new medical information is recorded there, updates to the summary medical information stored at the first node. These updates are "pushed" to the first node from a communication channel connecting the two nodes within the network. The term "push", which is not found in the claims of Patent 794 and which reflects a way of transmitting data within a network whereby the transmission is initiated by a server without a request being sent to it, would have been well known to the POSITA (Thilloy Report, March 9, 2018, at para 265; April Report, March 9, 2018, at para 242).

[209] According to this same method, the new medical information stored at the second node is processed so as to extract updates and initiate their transmission to the first node. Once an update is received at the first node, this creates at the first node a new information item based on the update data.

[210] Again, the POSITA, according to the experts, would have been familiar with most of the terms and concepts described in **claim 1**, many of which, as we have seen, are common to both patents at issue. Although the pointers in **claim 1** are certainly not hybrids, like those in Patent 794, this is more consistent with, according to the two experts' evidence, the understanding that the POSITA could have of that technical term at the relevant date.

[211] The experts maintained their positions as to the meaning of the notions of "location", "remote" and "nodes", with Mr. April continuing to claim that these notions, in the context of the patents at issue, connote physical devices or hardware linked to distinct physical locations, such as hospitals or medical clinics, whereas for Mr. Thilloy those concepts may also be purely conceptual.

[212] I have already stated my understanding of the three concepts when reviewing the claims of Patent 794, and I see no reason to interpret them differently in the context of the claim at hand.

[213] In sum, the POSITA, in my opinion, would have understood, at the relevant time, in June 2002, that **claim 1** of Patent 598 refers to a method of automatically updating the summary

medical information of a patient, a method whereby the updates are transmitted, within a network that allows distributed data storage, from a location where new medical information about that patient is recorded. The POSITA would also have understood that the summary medical information, stored at the first node, includes information items identifying health care or services for which additional medical information exists at another location—the second node—as well as pointers identifying this location. Finally, the POSITA would have understood that the updates are "pushed" to the first node from a communication channel connecting the two nodes within the network, without it being necessary to send a call in this regard to the second node.

b) *Claims 2 to 18*

[214] These are, I note, dependent claims, and only **claims 2 to 4, 9, 10, 13 to 16 and 18** are in dispute.

[215] **Claims 2 to 4** simply state that the health care referred to in claim 1 includes diagnostic tests or examinations ("medical diagnostic test"), more specifically "laboratory test[s]" or "medical imaging test[s]".

[216] **Claim 9** states that the "second node" specified in **claim 1** is implemented by a "server arrangement", which implies that it could be implemented by more than one server. Mr. Thilloy argues that since the claim does not specify what type of arrangement or server it is, the POSITA would have been familiar [TRANSLATION] "with different possible implementations, such as multiple servers on a local network or multiple logical containers on the same physical server, or

even virtual machines, as available at the time" (Thilloy Report, March 9, 2018, at para 282). According to Mr. April, the term "server arrangement" is not a [TRANSLATION] "common" term in computing, and as it is not specified in the language of the claim, it is difficult to understand what it means. Nevertheless, the POSITA, according to him, would have understood that this meant several servers configured and connected according to certain arrangements (April Report, March 9, 2018, at para 248).

[217] I rejected the idea that at the relevant time, the POSITA would have been familiar with the concept of logical servers or a "virtual machine" in lieu of a server. The term "server arrangement" should therefore be understood as an arrangement of servers as physical devices or hardware forming part of the physical components of a network.

[218] **Claim 10** clarifies that the "first node" to which **claim 1** refers comprises a microprocessor associated with "machine-readable storage" and holding the summary medical information listed in that claim. The POSITA would have been familiar with the concept of a microprocessor, which is a processor, as defined for the purposes of **claim 6** of Patent 794 (i.e., an electronic component that processes instructions with respect to the command passed to the server), inserted inside a single chip. Mr. Thilloy states that the processors commonly found in computers in 2002 were microprocessors (Thilloy Report, March 9, 2018, at para 285). Mr. April did not say anything to the contrary.

[219] As for storage, as in the case of the computer readable storage medium referred to in the claims of Patent 794, the POSITA would have known that this means media such as a USB key,

a floppy disk, an optical disk or a magnetic tape, containing data stored in a computer readable format, and that they may be media allowing for the volatile storage of data.

[220] **Claim 13** deals with the "second node" to which **claim 1** refers, stating that it holds medical information "about a plurality of patients", that is, the medical information concerning more than one patient. This claim is not controversial.

[221] **Claims 14 to 16** introduce the concept of "nominative information", which identifies a patient, and "non-nominative information", which does not. They specify that the medical information found in the data network concerning a patient includes information of each type (**claim 14**), state that each type of information is kept at different "locations" in the network (**claim 15),** and limit the data storage at the second node to non-nominative information only (**claim 16**). Here again, the interpretation of these claims is not controversial.

[222] Finally, **claim 18** introduces the notion of "identifier". It specifies that the update made according to the method described in **claim 1,** that is, pushed by the second node to the first node of the network, carries with it an identifier that makes it possible to distinguish one patient from another. According to both experts, the POSITA would have been familiar with the notion of identifier, and more particularly with the notion of unique identifier, as suggested by Disclosure 598 (health insurance number, social insurance number or a unique identifier assigned by the system), a common notion in computer science. Again, the claim's construction does not pose any problems.

c) *Claim 19*

[223] This is the second of the three independent claims of Patent 598. It reads as follows:

> 19. A server arrangement in a data network, the data network storing a plurality of medical records for respective patients in a distributed fashion, the server arrangement being configured for performing automatic updates of summary medical information for a first patient stored at a node of the data network that is remote from the server arrangement when new medical information for the first patient is recorded at the server arrangement, the node storing the summary medical information about the first patient without including an entire content of the medical record of the first patient available in the data network, the summary medical information including:
>
> (a) a plurality of information items identifying medical care services dispensed to the first patient;
>
> (b) a plurality of pointers associated with respective information items of the plurality of information items, each pointer identifying a location in the data network that is remote from the node and which contains additional medical information for the medical care service identified by the information item associated with the pointer;
>
> The server arrangement being configured for pushing to the node a medical information update when new medical information about a new medical care service dispensed to the first patient is recorded at the server arrangement, including processing the new medical information to derive update data and initiating at the server arrangement a data transmission to the node, the data transmission conveying to the node the update data, the update data including:
>
> (i) an identifier distinguishing the first patient from other patients;
>
> (ii) information identifying the new medical care service dispensed to the first patient.

[224] Both experts agree that this claim is similar in many respects to **claim 1**. What differentiates the two is this:

a) **Claim 1** describes a method of automatically updating the summary medical information of a patient, while **Claim 19** describes a concrete way of doing so by using a "server arrangement" configured to perform this task;

b) Rather than having a first node where the summary medical information resides and a second node where the new medical information resides, as is the case in **claim 1**, there is only one node where the summary medical information resides, the second node being replaced by the server arrangement, which houses the new medical information and which, again under the same "push-type" method, transmits the update of the summary medical information to the node when new medical information about a given patient is recorded in it;

c) Finally, **claim 19** specifies, which **claim 1** does not do, that the update information transmitted to the node includes both "an identifier distinguishing the first patient from other patients" and "information identifying the new medical care service dispensed to the first patient" stored on the server arrangement.

[225] I conclude that the POSITA, in June 2002, would have understood that **claim 19** of Patent 598 is for a server arrangement within a data network, configured to initiate an automatic update of the summary medical information held at another node within said network when new medical information about a patient is stored in it. The POSITA would also have understood that the update is "pushed" towards this other node by the server arrangement, that is, it is transmitted to this node without the user making a request in this regard, and that the information thus "pushed" includes an identifier to identify the patient who is the subject of the new information

and a piece of information to identify, this time, the care or service related to this information. Finally, the POSITA would have understood that the summary medical information held by this other network node includes a plurality of pointers identifying the location where the new medical information is stored within the network.

d) *Claims 20 to 22 and 28 to 30*

[226] I note that these are dependent claims. **Claims 20 to 22** are to the same effect as **claims 2 to 4**, that is, they specify that the care or health services mentioned in **claim 19** include "medical diagnostic tests", more specifically, laboratory tests or imaging tests.

[227] For their part, **claims 28 to 30** specify, as do **claims 14 to 16** with respect to **claim 1**, that the nominative and non-nominative types of patient information stored in the data network must be stored at separate locations in the network. They specify in this regard that the server arrangement is configured to hold only non-nominative information.

e) *Claim 31*

[228] This claim is the third, and final, independent claim of Patent 598. It is worded as follows:

> 31. A method for updating medical information distributed across a network system, the network system storing a plurality of medical records associated with respective individuals, the network system including a plurality of nodes connected to each other by data communication paths, the plurality of nodes including at least a first node and a second node, the first node storing a summary component of a medical record associated with a first individual, the summary component including a plurality of information items

> of medical nature relating to the first individual, the plurality of information items conveying:
>
> a) identification of medical tests performed on the first individual;
>
> b) reference to remote medical data stored at one or more nodes of the network system that are remote from the first node, the remote medical data conveying results of one or more medical tests identified at (a);
>
> the method including:
>
> a) performing at the second node a medical information update process, which includes:
>
> (i) receiving at the second node new medical data;
>
> (ii) processing the new medical data to identify new medical information associated with the first individual;
>
> (iii) initiating at the second node a data transmission to the first node, the data transmission conveying to the first node data to update the summary component of the medical record associated with the first individual based on the processed new medical data;
>
> (b) receiving at the first node the data to update the summary component of the medical record associated with the first individual;
>
> (c) creating a new information item in the summary component of the medical record based on the processed new medical data.

[229] Like **claim 1**, it too describes a method of updating medical information of a medical nature. This time, it is a method of updating medical information distributed across a "network system" where a plurality of medical records associated with several individuals are stored. **Claim 31,** however, does not specify that this update is automatic.

[230] This network system comprises a plurality of nodes connected to one another by a communication channel. This plurality of nodes includes, in turn, at least a first and a second

node. The first node holds summary medical information including a plurality of medical information items for identifying, on the one hand, the nature of the patient's medical tests or examinations, and pointing, on the other hand, to "references" to the results of those tests and examinations stored elsewhere in one or more nodes of the system.

[231] **Claim 31** then specifies the role of the second node of the network system. It is at this second node that the process of updating the information is done. In this process, the second node first receives the new medical information. This new information is then processed to identify any new medical information about the patient. Once this information has been identified, the third step of the process is to initiate the transmission of this update from the second node to the first node. Finally, as is the case with **claim 1**, this process creates a new information item in the summary of the medical information held at the first node identifying the update transmitted by the second node.

[232] Despite the use of the terms "individual", "network system" and "references", and despite the fact that there is no explicit reference to the "push" method in connection with the transmission of data from the second node to the first node, the evidence is that the POSITA could easily understand that they represent the "patient", a "data network" and "pointers" respectively, all terms used in the **claims 1 and 19**, and that it is the "push" method that the inventor had in mind in designing the data transmission process described in **claim 31**.

[233] From this, I take it that the POSITA would have understood **claim 31** as describing a method for updating medical information distributed across a data network, where a summary of

the medical data for an individual including information items is stored at a first node allowing to identify the medical tests undergone by that individual as well as references to the results of those tests stored at various nodes within the network. The POSITA would also have understood that the update is provided by a second node in the network, a node that receives new medical information, processes this information to identify new information concerning this individual and initiates the transmission of this information to the first node to update information about that individual stored at that first node.

f) *Claims 33 to 36 and 39 to 42*

[234] This is the last group of dependent claims whose infringement is alleged. **Claims 33 and 34** are identical to **claims 9 and 10** discussed above. They therefore specify that the second node specified in **claim 31** is implemented by a server arrangement (**claim 33**) while the first node includes a microprocessor associated with a storage medium that can be used by a machine and that holds the summary medical information mentioned in said claim (**claim 34**).

[235] I reiterate the construction I gave to the terms “server arrangement” and “storage” in paragraphs 216 to 219 of these reasons.

[236] For their part, **claims 35 and 36** duplicate, for the purposes of **claim 31**, **claims 3 and 4** associated with **claim 1**. They specify that the medical tests referred to in **claim 31** include laboratory tests (**claim 35**) or medical imaging tests (**claim 36**).

[237] **Claim 39** specifies, in the same way as **claim 13**, that the second node referred to in **claim 31** holds information of a medical nature concerning a plurality of patients.

[238] Finally, **claims 40 to 42** deal with, in the same way as **claims 14 to 16** and **28 to 30**, nominative and non-nominative information and places where each type of information must be stored in the data network.

[239] As is the case with **claims 35, 36 and 39**, the construction of **claims 40 to 42** is not controversial.

[240] Having proceeded to delimit the monopoly claimed by the plaintiff in the case, I will now turn to the question of whether this monopoly was violated by the establishment of the QHR.

B. Alleged infringement

(1) Applicable legal principles

[241] I note that the granting of a patent confers on its holder, according to section 42 of the Act, the "exclusive right, privilege and liberty of making, constructing and using the invention and selling it to the others to be used, subject to adjudication in respect thereof before any court of competent jurisdiction". Accordingly, any act not authorized by the patentee that interferes with the full enjoyment of the monopoly granted to the patentee entails a violation of that monopoly and, therefore, infringement of the patent (*Monsanto* at para 34).

[242] Infringement, a mixed question of fact and law, is assessed by comparing the infringing product with the elements that make up the essence of each patent claim at issue, as construed (*Camco* para 76, *Monsanto* para 30). However, infringement of the essential elements of just one claim will suffice to find infringement (*MIPS AB v Bauer Hockey Ltd*, 2018 FC 485 at para 179 [*Bauer Hockey*]; *Électro Santé* at para 28). In this case, it is therefore a question of comparing the QHR with the claims of patents 794 and 598, as I have construed them. There will be infringement of Patent 794 and/or Patent 598 if, at the end of this comparative exercise, the QHR is found to include all the essential elements of a single claim. It is not disputed here, I repeat, that all the elements of the contested claims are essential.

[243] The onus is on the patentee, and therefore the plaintiff here, to demonstrate this in accordance with the civil law standard of proof, namely the balance of probabilities (*Monsanto* at para 29, *Safe Gaming System v Atlantic Lottery Corporation*, 2018 FC 542 at para 186 [*Safe Gaming*]). This demonstration does not require proof of the intention of the defendants since, whether deliberate or not, it is not relevant to the analysis of the infringement (*Monsanto* at para 49; *Apotex Inc v AstraZeneca Canada Inc*, 2017 FCA 9 at para 77, leave to appeal to SCC refused, 37478 (June 1, 2017)).

[244] Moreover, as this Court pointed out in *Bauer Hockey*, according to section 32 of the Act, the fact that the alleged infringer has made an improvement over the invention in question and even holds patents on those improvements does not entitle the infringer to any right under said invention. In each case, the Court must consider the alleged infringing object as a whole,

including any changes or improvements made to it, and determine whether that object infringes the claims at issue (*Bauer Hockey* at para 182).

[245] It is also settled law that one who induces or procures another to infringe a patent is guilty of infringement of the patent. This will be the case when (i) the act of infringement has been completed by the direct infringer; (ii) the completion of the act was influenced by the alleged inducer to the point that, without the influence, direct infringement would not have taken place; and (iii) the influence was knowingly exercised by the inducer, that is, knowing that such influence would result in the completion of the act of infringement (*Corlac Inc v Weatherford Canada Ltd*, 2011 FCA 228 at para 162, leave to appeal to SCC refused, 34459 (March 29, 2012)). I note that the plaintiff alleges in this case that the defendants committed both acts of direct infringement and acts of infringement by inducement.

[246] Finally, as the defendants point out, a patent does not protect a desirable result, but rather one particular means to achieve it (*Électro Santé* at para 32).

(2) QHR

[247] As I must compare it with the claims at issue, as construed, for the purpose of determining whether one or both of the patents at issue were infringed, the QHR must be described in detail.

[248] I have already said, on the basis of the Joint Statement of Facts, that the QHR is intended to be a tool allowing physicians and other professionals in the Quebec health system

[TRANSLATION] “to have access to information deemed essential for intervening quickly and ensuring quality follow-up with their patients” (Joint Statement of Facts at para 44).

[249] The ARSCHI (see paragraph 8 of these reasons) provides the following definition:

> an information asset that makes it possible to release to authorized providers and bodies, in a timely fashion, health information concerning a person receiving health services or social services that is held in the health information banks in the clinical domains;

and defines the term “information asset” as follows:

> any database, information system, telecommunications system, technological infrastructure or combination of such, or any computer component of specialized or ultraspecialized medical equipment.

[250] During its deployment in the Montréal area, in February 2012, the Minister of Health and Social Services at the time, Dr. Yves Bolduc, presented it as [TRANSLATION] “a computer tool that modernizes the way of doing things by making access to certain health information deemed essential to front-line services and the continuum of quality health care and services faster and more efficient” and noted that [TRANSLATION] “stringent measures and an access mechanism have been provided to ensure that personal health information is protected and accessible only to authorized persons” and is used [TRANSLATION] “only for clinical purposes, in the provision of medical care or services by authorized health professionals” (Exhibit TX-47 at para 1).

[251] Before dealing with its main components and its operation, it is necessary, because the parties have dealt with it and have made a series of admissions on the subject, to first briefly report on the origins of the QHR and the milestones in its development.

a) *Origins of QHR and milestones in its development*

[252] At the time when the plaintiff was developing this idea of a network-shared medical records system, the federal government, in particular, was already thinking about how to apply information technology to the field of health. In 1997, for example, it set up a group of experts to advise it on the creation of a Canadian health infostructure. One of the goals of this initiative—called the Canada Health Infoway—was to create compatible, effective EHR across the country while keeping the information in them confidential.

[253] With the federal government providing leadership and financial backing, the provinces followed suit. Quebec was no exception, and at the beginning of the 2000s, based on the parameters and principles of the Canada Health Infoway initiative, it embarked on an initiative to design a QHR architecture and prepare calls for tender for its development and implementation.

[254] This was followed by a series of government decisions and legislative measures that dictated the pace of the QHR's implementation. This ranged from the establishment, between 2005 and 2009, of regional services for keeping certain health information, including the launch of the Plan d'informatisation du secteur de la santé et des services sociaux (health and social services sector computerization plan) and the creation of a registry of providers of health and social services.

[255] In 2008, the Quebec government authorized the implementation of an experimental project to set up the QHR in the territory of the Capitale-Nationale region's health and social

services agency. At the same time, the National Assembly introduced the principle of the implicit consent of any person receiving health care services in Quebec to have some of the information concerning him or her retained by an authorized health agency or health care institution. In 2009 and 2010, the experimental QHR project was extended to the regions of Estrie, Lanaudière and Montréal.

[256] In June 2012, an important step was taken in the development and implementation of the QHR when Quebec legislators enacted the ARSCHI. This act, in addition to providing a statutory definition of the QHR, provides for:

> [TRANSLATION]
>
> a. The establishment of six clinical domains consisting of one or more health information banks that can be securely accessed through the QHR;
>
> b. The establishment of an electronic prescription medication management system for the purpose of sharing such prescriptions in a secure environment;
>
> c. The establishment of three common registers (users, providers and bodies) allowing for the unique identification of those individuals and service delivery sites when using an information asset of the health sector; and
>
> d. The definition of the rules to ensure the protection of health information contained in health information banks and those relating to the communication, use and retention of such information.
>
> (Joint Statement of Facts at para 38)

[257] In the summer of 2013, the QHR was deployed throughout the province.

b) *Structure and operation of QHR*

[258] The QHR is mainly composed of domains, registers and systems allowing it to be fed information and consulted by authorized health care personnel:

a. **THE DOMAINS**: The ARSCHI provides for the establishment of six domains (medication, laboratory, medical imaging, hospitalization, immunization, and allergy and intolerance), but for the time being, only three are operational, namely the medication, laboratory and medical imaging domains, the other three being either in the process of being implemented (hospitalization) or coming soon (immunization, and allergy and intolerance);

b. **THE REGISTERS**: The ARSCHI provides for four: a first registering the names of the users (i.e., patients) not wishing to have their medical information stored at the QHR and having registered, as a result, a refusal (Register of Refusals), a second recording the names of all Quebec health network users who have not registered a refusal (Register of Users), a third recording the names of all the network's providers (i.e., physicians or other health professionals in the health network) authorized to access the QHR (Register of Providers), and a fourth containing the list of bodies and locations providing health and social services (Register of Bodies);

c. The **REGISTER OF USERS** includes the following information, when available: [redacted], the unique identification number [UIN], [redacted]. It is used in particular to match [redacted] with the other nominative information relating to a user and his or her UIN, which is the identifier for accessing user information kept in the various domains of the QHR, which domains, at least in the case of the laboratory and

medication domains, do not contain, for reasons of confidentiality and security, nominative data;

d. **SYSTEMS FOR ACCESSING QHR DATA:** There are three of them: the Visualiseur [the Visualizer], the one most commonly used by authorized providers; and the Dossier Clinique Informatisé [computerized clinical record, or CCI] and Dossier Médical Électronique [electronic medical record, or EMR], which are software developed by software suppliers to manage the computerized records of patients held locally by a physician (EMR) or an institution (CCI) and for whom access to the QHR has been granted by the MSSS and RAMQ. A fourth system is in the process of being rolled out, the Québec Health Booklet, which will eventually give all users of Quebec's health network direct access to certain medical data in the QHR concerning them.

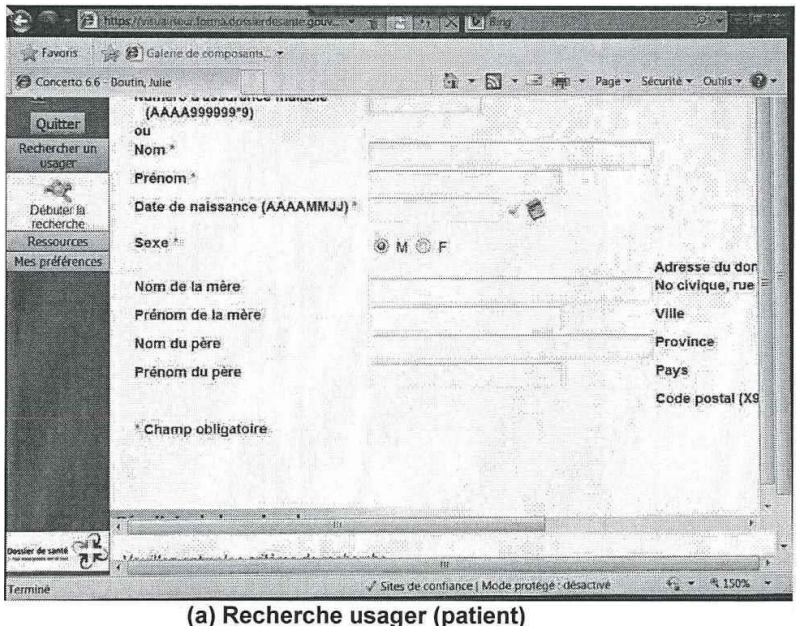
[259] The QHR's architecture also includes a Couche d'accès à l'Information sur la Santé [health information access layer, or HIAL], which allows the exchange of information between the different components of the QHR. This is the [TRANSLATION] "main point of entry to the QHR, both for consultations (all domains of the QHR) and feeding data (laboratory, medication and hospitalization domains)" (Joint Statement of Facts at para 65).

[260] The Joint Statement of Facts provides the following additional clarifications regarding the characteristics and operation of the different systems and components of the QHR:

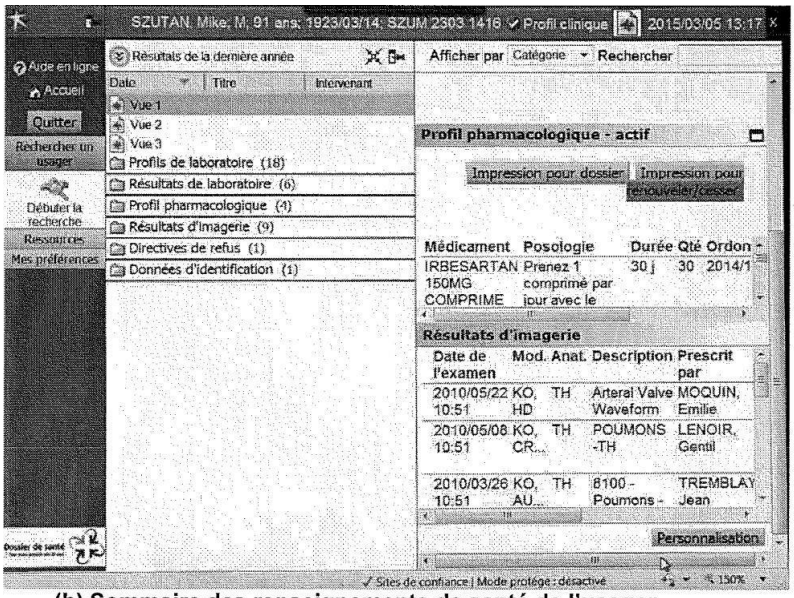
[TRANSLATION]

Visualizer

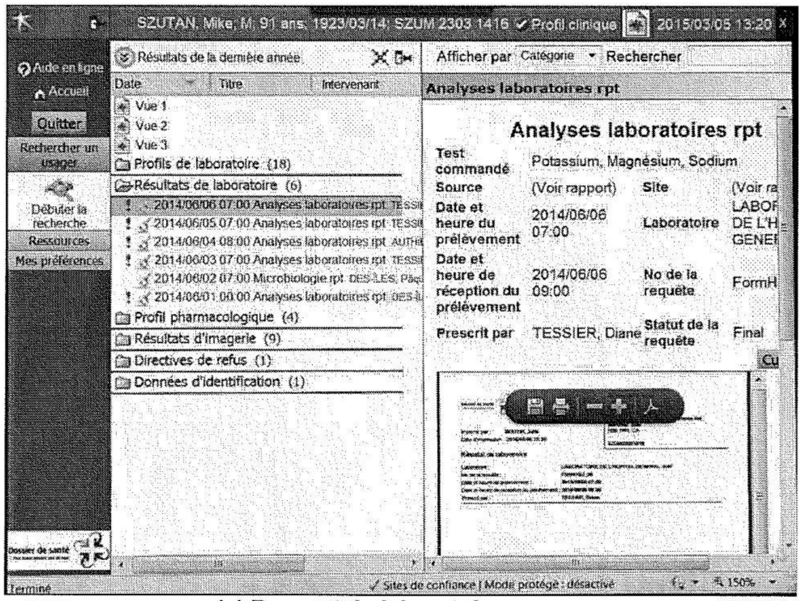
50. As appears from the screenshots shown below taken from the QHR presentation and demonstration video by the MSSS and RAMQ . . . , the web client of the Visualizer is a relatively simple tool which allows the authorized provider to (a) first search for the patient of interest; (b) see a summary of available health information for that patient; and (c) if desired, obtain more information about medication, a laboratory result or an imaging test.



(a) Recherche usager (patient)



(b) Sommaire des renseignements de santé de l'usager



(c) Rapport de laboratoire

51. The “Visualizer” allows the authorized provider to obtain the following information concerning a user (patient):

a. Family name and given name

b. Sex

c. Age

d. Date of birth

||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||

f. Refusal letter, if applicable

g. Mailing address

h. Active pharmacological profile

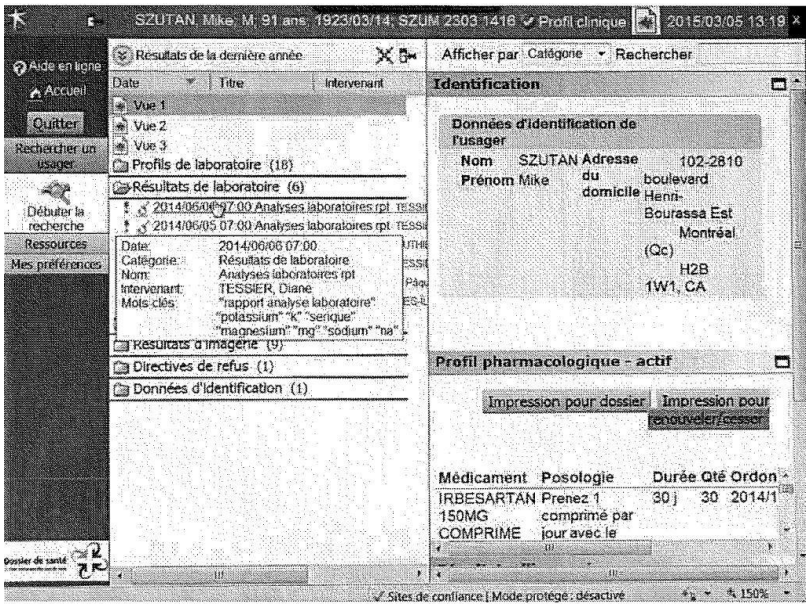
i. List of laboratory results (as well as laboratory reports)

j. List of imaging results (as well as imaging reports and images)

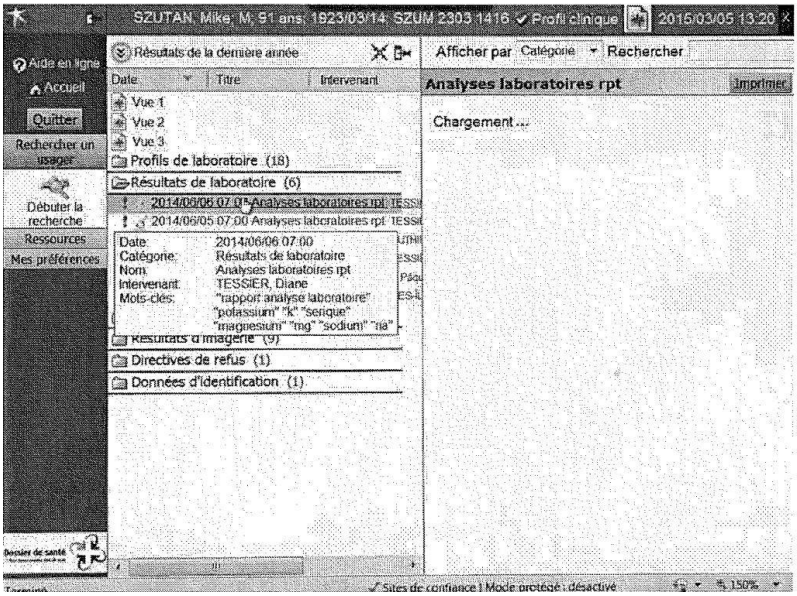
52. The consultation of laboratory results and imaging results is done in two steps:

a. When the provider accesses a user’s health information through the Visualizer, he or she first obtains the list of laboratory results and the list of imaging results. For each result, the provider

can obtain some additional information (date and time of the results, the first and last name of the provider, certain keywords describing the results as well as an indicator of abnormality for abnormal laboratory results) inside a tooltip that is displayed by hovering the mouse cursor over one of the elements of those lists without clicking on it. The web client of the Visualizer does not have to contact the server again to get the information displayed in this "tooltip".



b. When the provider chooses and clicks on a laboratory or imaging report that he or she wishes to obtain from those lists, the Visualizer servers retrieve the desired report by making a new query to the servers of the targeted domain.



. . .

54. The Visualizer is based primarily on the "Concerto" software solution (which has since changed its name to ||||||||||||||||||||||||||) developed by the supplier |||||||||||||||||||||||||||||||| and adapted and/or configured to support the QHR environment. The Visualizer is based on a set of web servers and applications at the QHR level.

Québec Health Booklet

55. The Québec Health Booklet is a system being rolled out by RAMQ that will allow users (patients) to access certain information from the QHR themselves without the presence of an authorized provider.

56. The Québec Health Booklet will allow users (patients) to view the following information from the QHR domains:

a. The list of medications provided by a pharmacy;

b. The details of a medication provided;

c. The list of laboratory reports;

d. The laboratory reports themselves;

e. The list of imaging reports;

f. The imaging reports themselves (but not images, unlike the Visualizer)

57. The Québec Health Booklet will also allow users (patients) to:

a. Consult the history of their medical appointments made using the Rendez-vous santé Québec service;

b. Register and change their registration at the Québec Family Doctor Finder; and

c. Access the demographic information of their children under 14 years of age.

58. The Québec Health Booklet is a system based on a web client-server model similar to that of the Visualizer, but developed by RAMQ rather than relying on the commercial solution "Concerto".

59. The Québec Health Booklet’s servers are composed of presentation servers (which format and transmit to the web client the requested web pages) and processing servers (which process the client’s queries and interact with the different registers and domains of the QHR via the HIAL to obtain the requested information).

. . .

Health Information Access Layer (HIAL)

66. For reasons of security and confidentiality, the QHR system is designed in such a way that the systems used by providers to access QHR data (Visualizer, EMR, CCI) cannot communicate directly with the registers and domains of the QHR which contain the private information of millions of users.

67. The HIAL thus serves as an intermediary between the Visualizer servers and the different registers and domains of the QHR (except when the Visualizer web client wishes to obtain the images of an imaging test).

68. QHR’s medication, laboratory, imaging and hospitalization domains are designed to offer, or respond to, at least two (2) types of web service queries within the HIAL:

a. “LIST”, which provides a summary of the medication, laboratory results, imaging results or hospitalization of a user; and

b. “GET”, which provides details of a medication prescription or hospitalization summary, a specific laboratory report, or a specific imaging report.

. . .

Laboratory domain

72. The laboratory domain includes the results of laboratory analyses in biochemistry, hematology, microbiology, pathology and genetics.

73. The two main components for the retention of data from the laboratory domain are:

a. The [redacted] provincial data repository of the laboratory domain; and

b. The QHR Directory or QHRD (formerly the EHR Directory or EHRD).

74. The [redacted] provincial data repository is a specialized data warehouse made by Oracle which contains in particular the following mandatory information supplied by all laboratories in Quebec:

a. The UIN of the user (<u>note</u>: the UIN is not necessarily supplied by the laboratory. The laboratory can provide demographic data on the user, and it is the domain that is responsible for obtaining the UIN)

b. Information (identification number, status, date and time of results, etc.) on the query, i.e. the request for analyzes or tests recorded in a laboratory information system (LIS) and concerning either all or a subset of the prescription medication

c. Identification of the provider who wrote the prescription (UIN, family name and first name) and the location where the services were provided

d. Date and time of collection and reception of the specimen

e. Laboratory identification (UIN and name)

f. Report information (report ID number, report type, report title, report language, date and time of issue of results)

g. The report itself

h. Granular results (in some cases).

75. The QHRD is a directory containing the summary of user laboratory results. Thus, the QHRD contains much of the same information as the [redacted] data repository (query information, provider, specimen, etc.), but does <u>not</u> include the reports or granular results as such. The QHRD instead contains some summary information about the results that are available in the [redacted] data repository, including the keywords associated with the analyses, an indicator of abnormal results, the status of the analyses, etc.

76. The laboratory results are first issued by the various laboratory information systems (or “LIS”) of the 126 Quebec laboratories that feed information into the QHR.

77. Once inside the QHR environment, laboratory results undergo a series of validations, conversions and corrections. Once those steps are accomplished, feeding the laboratory results to the laboratory domain involves the following steps:

a. The “Solal” component first transmits the laboratory results (the report) as well as various information (or metadata) concerning this report, the test undergone, the user’s UIN, etc. to the [redacted] data repository so it can be recorded;

b. If the [redacted] data repository accepts the laboratory results without returning an error message, the “Solal” component sends the same information (without the report or the results) to the QHRD so that it can index the new available laboratory requests from the [redacted] data repository.

78. The laboratory domain is fed automatically when new laboratory results are communicated by the LISs of the laboratories.

. . .

Medical imaging domain

80. The purpose of the medical imaging domain is to create a complete and shareable health record containing all imaging exams for all people receiving health care in Quebec.

81. The main components for data retention in the medical imaging domain are:

a. Three (3) supra-regional data repositories, namely [redacted] maintained by the [redacted] and [redacted].

b. The [redacted] Directory, a provincial register containing certain clinical-administrative information on medical imaging tests of users.

82. The [redacted] Directory contains, among other data, the following information about medical imaging exams:

a. UIN of the user

b. Some information on the exam performed (unique identification number of the [redacted] exam, exam code, description of the exam, status of the exam, completion date of the exam)

> c. Identification of the service delivery organization (name and type)
>
> d. Identification of the prescriber (last name, first name, licence number)
>
> e. Test procedure (procedure code and description of the procedure)
>
> f. Identification of the anatomical region
>
> g. Report information (status and date/time), but not the exam report itself or the images.
>
> . . .
>
> Medication domain
>
> 84. The Système Québécois d'Information sur les Médicaments (SQIM), Quebec's drug information system, includes two systems or related data repositories:
>
> a. The medication domain as such, which contains the active pharmacological profile of users as fed in by community pharmacies in Quebec
>
> b. The electronic prescription system, which groups prescriptions created electronically by authorized prescribers so they can be filled by pharmacists
>
> 85. Unlike the laboratory and imaging domains, the medication domain consists of only one provincial data repository with no separate directory or index of this data.

[261] From the testimony of Mr. Belzil and Ms. Brisson, the following should be added to this mutually agreed description of the QHR and its main systems and components:

a. The main components of the QHR—registers (users, institutions and providers), domains (laboratory, imaging, medication), Visualizer, HIAL—are all inspired by the EHR architecture blueprint proposed by Canada Health Infoway and set out in Exhibit TX-13

(Canada Health Infoway, EHRS Blueprint - An Interoperable EHR Framework - Version 2, March 2006);

b. Developing the QHR has cost the Quebec public treasury hundreds of millions of dollars;

c. The ARSCHI requires health system institutions' source systems to supply the QHR with laboratory, medical imaging and pharmacological data and to update that data, which also continue to be stored in those source systems;

d. The QHR ensures that it can be accessed only by those who are authorized to do so (providers, institutions) or who have consented to this (users) through the SecurSanté system operated via the HIAL;

e. The different systems and components of the QHR can communicate with each other thanks to the HL7 exchange protocol, an international standard; this protocol ensures the interoperability of the different systems and components of the QHR;

f. The Visualizer, the Québec Health Booklet, the EMR and the CCI are all "clients" of the QHR, that is, they submit queries to it via the HIAL, which in turn makes the required validations with the different Registers and then determines, if the validations are obtained, which of the QHR "domains" or data directories should be used for the purposes of the query;

g. The medical imaging domain presents a particular challenge because it includes images, which require special exchange protocols and storage devices;

h. Initially provided by black and white films, the imaging activities of health facilities had to be redesigned for the transition to digital; their digitization became necessary;

i. For this reason, in 2005, the Quebec government, along with the governments of Ontario and Saskatchewan, launched a call for tenders to equip the network's institutions with a picture archiving and image communication system [PACS], the goal being to replace film imaging with digital imaging. This was Phase I of the development project for the medical imaging domain of the future QHR;

j. According to the terms of the call for tenders, the PACS had to be tied in with [redacted] —the QHR has three—to avoid having only one way to remotely obtain another institution's medical imaging data, namely, by having to communicate with that institution's PACS;

k. While the PACS stores the images themselves, the Radiology Information Systems [RIS] stores clinical-administrative information in institutions, such as the name of the user, the name of doctor who requested the imaging test, the name of the person who performed the test procedure, and the doctor's report; unlike RISs, which also communicate in HL7 language with the other systems and components of the QHR, PACSs communicate in DICOM protocol, which is an internationally recognized exchange protocol for the electronic sharing of graphic documents, which cannot be exchanged in HL7;

l. In 2008, to complement the architecture of the medical imaging domain of the QHR, the of Quebec government, again relying on a call for tenders, procured an electronic index of medical imaging tests, the [redacted]; unlike the PACSs and RISs in each institution, and

[redacted], where there are three, there is only one directory [redacted] in the QHR;

m. Unlike other domains of the QHR, which interact with the other components of the QHR via the HIAL, there is no interaction between the HIAL and [redacted]; it is the [redacted] directory which links with the entire QHR ecosystem;

n. Each exam stored in the PACSs and RISs is tagged with a unique identifier—a [redacted] (“[redacted]”)—by the RIS, and thus in the institution; the same is true of any new test concerning the same patient;

o. The PACSs, the RISs, the [redacted] and the [redacted] were all supplied by the private sector; those are so-called commercial solutions tailored to the needs of the QHR.

[262] The following diagram (Exhibit D-1) reproduces the complete architecture of the QHR as it was on October 22, 2017:

[REDACTED]

(3) Patent 794

[263] The plaintiff claims, as I recall, that the QHR infringes **claims 1 to 8** of Patent 794. I also note that the infringement of the essential elements of only one of these claims suffices to conclude that the patent has been infringed.

a) *Claim 1*

[264] The plaintiff submits, on the basis of Mr. Thilloy's evidence, that upon examining what the authorized provider sees when consulting the patient data available on the QHR, we find that the data includes at least one record incorporating all the elements of **claim 1**. At least, he says, this is what the initial information displayed by the Visualizer shows, when this provider has successfully identified a given patient, which information contains:

a. [redacted];

b. his or her pharmacological profile; and

c. a list indicating, in particular, the number of results of laboratory and imaging tests associated with it.

[265] He considers that all this information:

a. forms a "record" associated with an individual as defined in **claim 1** ("at least one record associated with a certain individual"); and

b. consists of a set of data of a medical and medico-administrative nature concerning this individual ("said record including a collection of data elements containing information of medical nature for the certain individual").

[266] It also reveals, according to the plaintiff, that there is at least one pointer comprising a first and a second component ("including . . . at least one pointer, said pointer including a first component and a second component"). This pointer takes the form here of the list of laboratory or imaging results that is displayed when the provider clicks on one of the items in the list

initially displayed by the Visualizer, which, as I recall, indicates the number of laboratory or imaging results associated with a given patient.

[267] Although it is not visible on the provider’s screen because it is only used to obtain, if necessary and at the provider’s option, additional medical information, the first component of this pointer, which is intended to indicate the address of a “location” where there is “additional medical data for the certain individual”, is nevertheless present, asserts the plaintiff, when the QHR’s normal sequence of operation is analyzed—first the “List” for summaries of medical information (stored at [redacted], in the case of a laboratory domain, and at [redacted], in the case of the imaging domain) and then the “Get” for the details of this information (stored at [redacted], in the case of the laboratory domain, and in one of the [redacted], in the case of the imaging domain).

[268] Thus, continues the plaintiff, the “List” command allows, by simply placing, without clicking, the mouse cursor of the provider’s computer over one of the results displayed by the Visualizer after clicking on one of the items of the initial list, to get the pointers that are needed to perform a “Get” command, in this case the unique identification numbers that are obtained from the [redacted], in the case of the imaging domain (i.e., the [redacted]) and from the QHRD, in the case of the laboratory domain (i.e., the “[redacted]”). This “List” thus provides the required information—that is, an indication of the nature of the additional information that can be obtained by clicking on the pointer that appears on the screen —allowing the provider to choose the additional medical information that he or she deems useful to consult and access the content from the location where it is located in the QHR by making a “Get”

service call via the [redacted] or the “[redacted]”. According to the plaintiff, this confirms the presence, in the QHR, of the equivalent of the first component of the pointer described in **claim 1**.

[269] The second component of the pointer, which according to **claim 1** is intended to inform the provider of the nature of the additional medical data pointed to by the pointer, corresponds here, says the plaintiff, to the information displayed when placing the mouse cursor on one of the pointers displayed following the “List” command.

[270] The plaintiff claims that the QHR also includes a “computer readable storage medium” since the summary information initially displayed by the Visualizer is obtained, via the HIAL, by the Visualizer servers from different sources ([redacted], for nominative information, the medication domain for the pharmacological profile, [redacted], for the list of laboratory results [redacted] for the list of the imaging results) to be assembled and returned, in a single call, to the provider’s computer. This implies, according to the plaintiff, that the Visualizer must necessarily hold and store, for a certain time, all of this information on a computer readable storage medium.

[271] He therefore concludes that **claim 1** is directly infringed by the operation, by RAMQ, of the Visualizer’s servers, and indirectly, that is to say by inducement, by each provider who uses the Visualizer from his or her workstation since this use would not be possible without the intervention of the defendants, by either authorizing providers to access the QHR, or making the Visualizer available, or operating the Visualizer’s servers.

[272] The plaintiff argues that in the same way as does the Visualizer, the Québec Health Booklet infringes **claim 1** insofar as its processing servers use the same two-stage technique ("List" and "Get") to query the same sources of information inside the QHR, again doing so directly (server operation) and indirectly (users authorized to access the QHR).

[273] As for the EMR and CCI software, the defendants would, according to the plaintiff, be guilty of infringing said claim by inducement since the software cannot be tied in with the QHR unless it is certified by the MSSS, which requires that they respect a certain number of functional criteria, such as the compulsory integration of the medication, laboratory and imaging domains, and that they be designed, just like the Visualizer and the Québec Health Booklet, to be used to consult QHR information in two stages, that is, via the "List" first, to get the summary medical information, and then via the "Get", to obtain the reports themselves using the pointers displayed by the "List".

[274] Mr. April properly explained the analytical framework under which he had to approach the issue of infringement when he stated, in his second report, the one that responded to Mr. Thilloy's report on infringement, that he had been [TRANSLATION] "asked to compare each of the claims in question with the QHR system to determine whether each element of the claims was present or absent from the QHR" (April Report, April 9, 2018, at para 3).

[275] However, I agree with counsel for the plaintiff that this is not what Mr. April did. Instead, he focused on criticizing the approach followed by Mr. Thilloy, which he described as [TRANSLATION] "external", and on what he considered to be the three major [TRANSLATION]

"conceptual distinctions" between the QHR and the patents in question. For Mr. April, the so-called "external" approach is the one that dwells [TRANSLATION] "on the user interfaces, rather than on the different components of the systems (e.g., the structure of messages exchanged, physical and software architecture)", conceding on cross-examination that, from the external point of view, the two systems in question, the QHR and the one described in Patent 794, [TRANSLATION] "are the same thing" (April Report, April 9, 2018, at para 24; Transcripts, June 4, 2018, at p 150).

[276] According to Mr. April, only a [TRANSLATION] "comparison of internal software mechanisms and components makes it possible to understand and differentiate software for the same purpose", which requires a review of [TRANSLATION] "what is happening behind the scenes" (April Report, April 9, 2018, at paras 24, 90). This is the only way, in Mr. April's view, to verify whether the QHR infringes the patents in question (April Report, April 9, 2018, at para 96).

[277] This allows him to criticize the position of Mr. Thilloy that the QHR, like the system described in **claim 1**, operates in two stages ("List" and "Get") because the [TRANSLATION] "internal" approach allows us to notice that it takes, for example, seven steps/stages to obtain, via the QHR, the details of a laboratory result and nine steps/stages to obtain those of an imaging result (April Report, April 9, 2018, at para 98). On cross-examination, Mr. April acknowledged that, from an external perspective, consultation of laboratory results and imaging results was done in two stages (Transcript, June 4, 2018, at pp 75-76). The Joint Statement of Facts is to the same effect (Joint Statement of Facts at para 52).

[278] If it were simply a matter of applying the so-called “external” approach, I would normally find that **Claim 1** was infringed, since Mr. April recognized that the two systems, from this point of view and in this respect, are similar. However, is the so-called “internal” approach advocated by Mr. April a better means of determining whether there is infringement? The plaintiff argues that it is not, since this approach obscures the real test, which is to determine whether the elements of **Claim 1**, as construed, are found in the QHR, namely: a storage medium, a data structure holding at least one record containing medical information concerning an individual, and at least one two-component pointer pointing, on the one hand, to the address of an accessible and searchable location containing additional medical information relating to this individual and, on the other hand, to a summary of this additional information.

[279] I agree with the plaintiff. The owner of a patented system does not lose the right to full enjoyment of the monopoly conferred by the patent because the system is part of or composes a broader system, provided the patented system is significant or important to the other system (*Monsanto* at para 58). For example, adding features to a device that uses the patented invention does not avoid infringement (*Bauer Hockey* at para 182); it would also be the case, to borrow the analogy of the Lego blocks from *Monsanto*, in building an unpatented structure with patented material: this structure would be equally infringing (*Monsanto* at para 42).

[280] I note here that the fact that even if the alleged infringer made improvements over the invention in question and even holds patents in those improvements, it does not obtain any rights under said invention. In each case, the Court must examine the alleged infringing object, including any changes or improvements made to it, and determine whether the object infringes

the claims in issue, as they have been construed (*Bauer Hockey* at para 182, *Monsanto* at para 30).

[281] In this case, the QHR is unquestionably a larger and more complex system than the system described in **claim 1**, and in Patent 794 in general. In other words, Patent 794 would not have allowed the POSITA, in 1998, to create the QHR, particularly because, for example, it does not go as far as providing for, as does the QHR, a data security and access validation system for confidentiality purposes, which, in the context of the QHR, explains the presence of the HIAL and Registers within the various systems around which the QHR is structured and necessarily adds to the steps/stages required to process a command sent in the QHR. No one disputes this. However, this misses the point. The question, again, is whether the QHR contains the various elements of the contested claims, as construed. This is what Mr. April understood to be the exercise he had to perform, but, as we have just seen, he departed from it.

[282] I have already said that the dichotomy presented by Mr. April between the "internal" and "external" aspects of the QHR distorted the exercise that had to be done. The exercise Mr. April ultimately engaged in, which consisted of dissecting in detail the different components of the QHR, certainly showed the dissimilarities between the two systems, and there are some, but still, there are similarities that needed to be explored.

[283] In any event, the general conclusions that Mr. April drew from his analysis of the alleged infringement of **claim 1** are equally problematic to me. He concluded that we cannot see infringed elements in the QHR, because the information displayed in the Visualizer:

> 1) does not have structured records as proposed in claim 1; and
>
> 2) does not [TRANSLATION] “back up” the data structure (with two data elements) described in claim 1 in a “computer readable storage medium”; and because
>
> 3) this data is not in “the location”, meaning in several different facilities (for example, CLSCs, hospitals, clinics, laboratories, etc.).
>
> (April Report, Monday, April 9, 2018, at para 112)

[284] However, on cross-examination, Mr. April admitted, after stating that he himself had not found any before Mr. Thilloy identified them in his first report, that there were indeed pointers in the information displayed by the Visualizer, especially in the form of unique identifier numbers ([redacted] for the imaging domain and the “[redacted]” for the laboratory domain) (Transcripts, June 4, 2018, at pp 91-96). I would add, as counsel for the plaintiff pointed out, that the technical documentation of the QHR in evidence makes extensive reference to the presence of pointers allowing the summary and detailed data sought by the provider to be identified and located (Copy of call for tenders No. TCR 2005-05 from the Agence de développement de réseaux locaux de services de santé et de services sociaux de Montréal entitled, “Couche d’accès à l’information sur la santé – Dossier santé électronique interopérable du Québec”, dated December 22, 2005, at pp 41, 73, 125 (Exhibit TX-20); Copy of call for tenders No. TCR 2006-06 from the Agence de développement de réseaux locaux de services de santé et de services sociaux de Montréal entitled, “Dossier santé électronique et services régionaux de conservation – Dossier santé électronique interopérable du Québec”, dated June 29, 2006 at paras 158, 177 (Exhibit TX-21); Document entitled “RDSQ – Répertoire Dossier Santé du Québec – P200O et

P250S – Structure du Système d'Information et Fonctions, version 2.10", version 2.10, amended October 22, 2014, at pp 6, 28 (Exhibit TX-210).

[285] Mr. April also admitted on cross-examination that the information displayed on the Visualizer must be in memory somewhere (Transcripts, June 4, 2018, at pp 100-101), which means, according to the evidence on the record, that they must necessarily be on a "computer readable storage medium", as defined in **claim 1**.

[286] In addition, Mr. April's conclusion that there is no infringement because the data displayed by the Visualizer is not stored at "locations" within the meaning of **claim 1**, that is to say, [TRANSLATION] "in several different facilities (for example, CLSCs, hospitals, clinics, laboratories, etc.)", must be rejected because it rests, as I have already decided, on an unduly narrow interpretation of the term "location".

[287] Finally, Mr. April argues that when comparing the internal features of the data structure envisioned by **claim 1** to the data exchange format—the international HL7 standard—used by the various systems of the QHR, it must also be concluded that [TRANSLATION] "there is clearly no infringement of the data structure defined in claim 1 of Patent '794" (April Report, April 9, 2018, at para 113).

[288] Again, this view is problematic since Mr. April thus defined said data structure according to the preferred embodiment described by Disclosure 794, that is, as a so-called "proprietary" data structure, when this is not permitted unless the term "data structure" used in the claim is

ambiguous (*Dableh* at paras 38-39). However, the meaning of this technical term has not been the subject of any debate between the experts; they have the same understanding. Moreover, Mr. April admitted that in his first report, he did not mention anywhere that the terms used in Patent 794's claims were unclear (Transcripts, June 4, 2018, at pp 107-108). He also admitted that **Claim 1** nowhere specifies the format of the imported or exchanged data (Transcripts, June 4, 2018, at p 119).

[289] As counsel for the plaintiff noted—correctly, in my opinion—the system protected by Patent 794 provides for the presence of a data structure, and not the presence of a specific data structure. This comparison was therefore misguided since it relied on an unduly narrow conception of the data structure envisaged by **claim 1**, highlighted with a comparison—the format in which the data is exchanged—that is not defined in said claim.

[290] This puts into perspective the three [TRANSLATION] "fundamental differences" between the QHR and Patent 794 (and Patent 598) identified by Mr. April in support of his finding of non-infringement. According to Mr. April, those three major differences would be in (i) the location of the data, (ii) the software architecture, and (iii) the data structure. I just discussed the issue of the data structure.

[291] As for the location of the data, Mr. April argues that under the terms of Patent 794 (and Patent 598), medical data is located in each institution, where it is generated and maintained as well, while in the QHR, everything is centralized. He states that the QHR thus made it possible to achieve what the plaintiff thought impossible to achieve, namely to centralize the data and to

allow their consultation at a central point. Section 5.1 of his second report states that Mr. April relied mainly on Disclosure 794 to conclude as he did (April Report, April 9, 2018, at paras 76-79). On cross-examination, however, he admitted that the claims of Patent 794 nowhere mention that the medical data is located in the source systems of delocalized institutions and that his statement to that effect came essentially from his reading of the description of said Patent (Transcripts, June 4, 2018, at pp 110-111).

[292] I would add that nothing could be further from the truth, in that the QHR has all the characteristics of a centralized system allowing data to be consulted at a central point. One need only look at the QHR system diagram, Exhibit D-1, and consider the structure set up by the ARSCHI to realize that the data hosted by the QHR is distributed among one or several information banks, each associated with one of the clinical domains established by the Act (||||||||||||||||||||||||| for the laboratory domain, ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||—RID—for the imaging domain, medication and electronic prescriptions repositories, for the medication domain, and ||||||||||||||||||||||||||||||||||| for the hospitalization domain) and each with their own unique operating characteristics.

[293] Finally, with respect to the third [TRANSLATION] “fundamental difference”, that is, the choice of the software architecture of the two systems, Mr. April opines that the POSITA would have understood, particularly in view of Figure 5 of Disclosure 794 (see para 24 of these reasons) that the plaintiff opted for a client-server architecture while the QHR designers opted for a [TRANSLATION] “totally different” architecture, namely a Service-Oriented Architecture (SOA), due to imposed constraints which the plaintiff had not faced. Mr. April goes on to state

that this SOA architecture serves to [TRANSLATION] "decouple" the client and the server to ensure that the client, mainly for security reasons, is unaware of and does not communicate directly with the server. In the case of the QHR, it is the HIAL, he says, which assumes this decoupling role (April Report, April 9, 2018, at para 80-81).

[294] However, Mr. April admitted on cross-examination that the claims of Patent 794, with the exception of **claim 6**, did not include the concept of application software (Transcripts, June 4, 2018, at pp 109-110).). He therefore introduced a concept, that of the choice of application software, which was not relevant to the analysis of the infringement of **claim 1**, at least, not only because it is not mentioned in said claim, but also because it relies on the analysis of a preferred embodiment of Patent 794 and of a choice imputed to the plaintiff based on this embodiment.

[295] I reiterate that the fact that the QHR is a larger and more complex system than the system described in **claim 1**, and that it was designed to respond to constraints that are not addressed in that claim, does not protect it from an allegation of infringement if all the essential elements of that claim are found therein.

[296] I consider that the plaintiff has established that this was the case, being satisfied that:

a. the initial information displayed by the Visualizer, when access to a patient's data is authorized (nominative information, pharmacological profile, and a list indicating, in particular, the number of laboratory and imaging test results associated with the patient) forms, within the meaning of **claim 1**, a "record" associated with an individual, consisting of a set of medical and medical-administrative data concerning that individual;

b. this information reveals the presence of at least one pointer comprising a first and a second component, the first taking the form of the unique identification numbers obtained from ||||||||||||| and the |||||||||||||||||||||| giving access to the location where the additional information concerning this patient is available that the authorized provider may wish to consult, and the second giving access to the |||||||||||||||||||||||| and to the |||||||||||| to obtain a description of the nature of the additional medical data to which the pointer points;

c. access to this description of the additional medical information and to the information itself is done in two stages, first through "List" queries and then through "Get" queries;

d. the address of the location where the additional information about this patient, the unique identification number, is in a format that allows access to that location and to import the data sought; and

e. all the information that the Visualizer can display is stored on a computer readable storage medium or in memory, either on the Visualizer servers or those of the Québec Health Booklet or on the workstation of the provider using the Visualizer or on the personal computer of the user accessing the QHR.

[297] I therefore conclude that there is direct infringement of **claim 1** of Patent 794 in terms of the defendants' use of the Visualizer's servers and those of the Québec Health Booklet. I am also satisfied that there is infringement by inducement where the providers and the users use the Visualizer or the Québec Health Booklet from their work station (or personal computer in the case of the user) since this is only possible with the defendants' authorization. The same is true

where a provider or an institution accesses the QHR via the EMR or the CCI, this, again, being possible only upon validation by the defendants.

b) *Claims 2 to 5*

[298] **Claim 2** requires the presence of a plurality of pointers, at least two of which must point to "locations" distant or "remote" from each other. The plaintiff submits that this claim is infringed on the same basis, and to the same extent, as **Claim 1** as soon as the patient whose summary medical data is consulted has at least one laboratory result and one imaging result or two stored in the ||||||||| repository and in one of the ||||||||| or in two ||||||. This is so, he added, because in this case, there are necessarily at least two pointers pointing to remote or distant locations (||||||||||||||||||||||||||||||||||||||||||||||||), although, theoretically, these locations may not be located at separate physical addresses.

[299] Mr. April's position with respect to **claim 2** is essentially based on his position in **claim 1**, particularly with respect to his conception of the term "location" and his view that the QHR does not include, unlike the plaintiff's invention, data structures with pointers pointing to different servers in (physically) remote health care institutions (April Report, April 9, 2018, at paras 114-116).

[300] I have already rejected this point of view. I am therefore satisfied that as soon as a patient has at least one laboratory and imaging result, or two imaging results, the Visualizer displays—or allows access to—at least two pointers pointing to remote locations, the |||||||||| and one of the

three ||||||| or more than one of the three |||||||. The same is true for the Québec Health Notebook servers as well as the EMR and CCI software.

[301] **Claim 3** specifies that the two locations referred to in **claim 2** correspond to different nodes in a network. The plaintiff argues that the |||||||| repository and the three ||||||||, where the additional medical data are housed, are physically and logically separated and, therefore, necessarily, different nodes in a network.

[302] Mr. April's reply was again based on his interpretation of the terms "location" and "remote", which in his view must be understood in the sense of the source systems of the various health network institutions where the additional medical data is generated. Here, we still have this idea of physical places corresponding to the street addresses of the various institutions. This is not my interpretation of the terms "location" and "remote".

[303] On the other hand, Mr. April admitted on cross-examination that the ||||||||||, the ||||||||, the |||||||||||||| and the three |||||||| were separate servers located either in separate physical locations or in separate infrastructures, and that they were therefore remote from each other (Transcripts, June 4, 2018, at pp 104-105).

[304] I am therefore satisfied that the |||||||| repository and the three ||||||| are different nodes within a network and that there is therefore, in the same way as **claim 2** and to the same extent, infringement of **claim 3**.

[305] **Claim 4** states that the computer readable storage medium described in **claim 3** comprises a "multitude of records". The plaintiff alleges that this claim is infringed with respect to the Visualizer servers and the Québec Health Notebook since it is obvious that these servers, given the number of providers authorized to consult the QHR (49,000) and of users whose medical information is stored on them (approximately 8 million), must necessarily obtain and store, at the same time and for at least a certain period of time, more than one "record" associated with an individual. He notes in this regard that no less than |||| servers are required to respond to requests made by Visualizer clients.

[306] On the other hand, he concedes that this claim is not infringed when a provider accesses the QHR via the Visualizer, the EMR or the CCI, or when a patient accesses it via the Québec Health Notebook, since he or she can only consult one file at a time. It cannot be said, in such a case, that the QHR system makes it possible to display, and thus store on a storage medium, more than one "record" associated with a given individual.

[307] Mr. April argues that there can be no infringement of the QHR here since the records stored in the QHR are structured completely differently than those contemplated by Patent 794 (April Report, April 9, 2018, at para 120). This view repeats the first of three general conclusions he drew from his analysis of the alleged infringement of **claim 1**. I have already discussed those three conclusions, and I have rejected them all.

[308] I am therefore satisfied that the defendants' use of the Visualizer servers and those of the Québec Health Notebook infringes **claim 4** to the extent alleged by the plaintiff.

[309] **Claim 5** specifies that the computer readable storage medium described in **Claim 4** resides on a networked server. Stressing that it is undisputed that the servers of the Visualizer and those of the Québec Health Notebook are precisely that, servers, he pleads that this claim is infringed to the same extent as **claim 4**. Mr. April considers this claim to be [TRANSLATION] "trivial" since it is essential for servers to be equipped with some method of recording data. In any event, he reiterates the idea that there can be no infringement since at no time do the methods used for recording data on the QHR servers contain a data structure similar to the one defined in **claim 1**. This argument has already been rejected.

[310] I therefore conclude that **claims 2 to 5** have been infringed by the defendants to the extent alleged by the plaintiff.

c) *Claim 6*

[311] **Claim 6** describes, this time, I note, not a storage medium, but rather a server, in the sense of a physical or tangible device or piece of equipment which (i) is attached to a network; (ii) is equipped with a processor; and (iii) has a memory containing at least two records of the same type as those discussed in the context of **claim 1** and a program (or software) making it possible, using the processor, to identify a particular record and transmit this record to a client that has requested it from the server.

[312] The plaintiff alleges that this claim is infringed by the operation, by the defendants, of the servers of the Visualizer and the Québec Health Notebook to the same extent as in **claims 1 to 5**, since those servers are, without question, components of a network and are necessarily equipped

with at least one processor each and a memory capable of containing at any time, for the reasons given in the examination of **claims 4 and 5**, more than one "record" associated with a given individual, containing (i) information of the nature described in **claim 1**, which is medical information, and (ii) at least one pointer.

[313] This memory is also equipped with a program element making it possible to answer the queries of a provider or a user in order to identify a specific record and to communicate it to him or her. This function, he says, is performed, in the case of the Visualizer servers, by commercial software (||||||||||||||||||||||||||||||||||). In the case of the Québec Health Notebook servers, it is performed by an in-house solution, developed by RAMQ and designed to answer the same type of queries as the program element with which the Visualizer servers are equipped, and to do so in the same way, that is, by "List" and "Get" calls.

[314] For reasons similar to those relied on in **claim 1**, Mr. April finds no infringement of **claim 6**. This does not help me in view of the conclusions I have already drawn in connection with Mr. April's arguments relating to the issue of infringement of **claim 1**.

[315] I am therefore satisfied that the use by the defendants of the Visualizer and Québec Health Notebook servers infringes **claim 6** to the extent alleged by the plaintiff.

d) *Claims 7 and 8*

[316] **Claims 7 and 8** add to **claim 6** the same elements that **claims 2 and 3** add to **claim 1**. Mr. April relies on **claims 2 and 3** to defend his position with respect to **claims 7 and 8**, a position which I have rejected.

[317] I therefore generally conclude that there is:

a. direct infringement of **claims 1 to 8** of Patent 794 owing to the use, by the defendants, of the Visualizer and the Québec Health Notebook servers;

b. infringement by inducement of **claims 1 to 3** of Patent 794 when the authorized providers and the users use the Visualizer or the Quebec Health Notebook, as the case may be, from their work station or their personal computer, as the case may be, since this is only possible with the defendants' authorization; and

c. additional infringement by inducement of **claims 1 to 3** of Patent 794 when a provider or an institution accesses the QHR via the EMR or the CCI, this only being possible, again, upon validation by the defendants.

[318] The defendants frequently characterized Patent 794 as a [TRANSLATION] "small patent". However, and even supposing that such is the case, I note that even a very modest contribution or improvement over the prior art or to the advancement of science, as long as it is new and useful, is sufficient to attract the protection of the Act (Bauer Hockey Corp. v Easton Sports Canada Inc, 2010 FC 361 at para 292). As long as it is presumed valid, Patent 794 is entitled to this protection.

[319] We have seen that the QHR was intended as a computer tool for changing the way things are done in the world of health care delivery in Quebec by making certain health information considered essential to quality front-line health care and services more quickly and efficiently accessible. The raison d'être of the QHR essentially corresponds to what the plaintiff proposed to do by means of Patent 794, namely to allow the attending medical staff, for the sake of efficiency and cost reduction, to quickly access relevant medical information, first in the form of a summary of existing patient health information and subsequently, as needed, in the form of detailed, useful information, regardless of where on the network this information was first compiled and stored.

[320] In comparing the methods implemented by each system to achieve this common goal, it became clear to me that the process implemented in the QHR included the essential elements of **claims 1 to 8** of Patent 794. Given the current state of the law pertaining to the question, this is more than enough to conclude that these claims have been infringed.

(4) Patent 598

[321] I note that the defendants' operation of the QHR infringes, according to the plaintiff, **claims 1, 2, 4, 9, 10, 13 to 16, 18 to 22, 28 to 31, 33 to 36 and 39 to 42** of Patent 598. Unlike Patent 794, the plaintiff alleges only direct infringement of those claims and, overwhelmingly, only in relation to the operation of the imaging domain. In particular, he does not allege any form of infringement related to the use of the medication and hospitalization domains. As for the laboratory domain, the alleged infringement is limited to **claim 19** and to some of its dependent claims, namely **claims 20, 21, 28, 29 and 30**.

[322] I also note that Patent 598, at least according to the claims, describes and claims first and foremost a concept of automatic updating of the summary medical information described in Patent 794 and, to a lesser extent, a concept allowing access to this information by the doctor or the patient, himself or herself, by means of a personal communication system. Moreover, many of the technical terms and concepts are common to both patents, including the contentious notions of “location”, separation or remoteness (“remote”) and “nodes”.

[323] Accordingly, the debate surrounding the issue of the infringement of Patent 598 is first and foremost about the data feed for the systems in dispute and, to some extent, contrary to the debate surrounding the claims of Patent 794, about the consultation of the data which are kept there and exchanged.

a) *Claim 1*

[324] I have already stated that **claim 1** of Patent 598 concerned a method of automatically updating the summary medical information of a patient, whereby updates are transmitted, within a network that allows distributed data storage, from a location where new medical information about that patient is recorded. I noted that this summary medical information, stored at a first node, included information items to identify health care or services for which additional medical information exists at another location—the second node—as well as pointers to identify this location. I then finally stated that, using this method, the updates were pushed to the first node from a communication channel connecting the two nodes within the network, without it being necessary to make a call in this respect to the second node.

[325] The plaintiff, again primarily on the basis of the evidence of his expert, Mr. Thilloy, argues that this claim is infringed each time the QHR imaging domain is updated because:

a. First, the following are present:

   i. a data network—the QHR—permitting the distributed storage of medial information ("Data network storing medical information in a distributed fashion");

   ii. a first node—the ||||||||||||—where the summary medical information is held;

   iii. at least two elements in this summary—contained in ||||||||||||||||||||— that is, a plurality of items identifying the health care provided to a given patient and a plurality of pointers associated with those items and having the function of identifying a location within the network, which is separate from the first node, and which contains additional medical information about that patient;

   iv. a second node— the three |||||||||—which contains additional medical information relating to more than one patient and which is separated or remote from the first node, the ||||||||||||||||; and

   v. a "communication path" connecting the |||||||||||||||||||||||||||||| and the three |||||||||, as demonstrated by the QHR systems diagram, Exhibit D-1.

b. Second, the imaging domain is designed to perform each of the updating steps described in **claim 1**, namely:

   i. update information is pushed to the first node (the ||||||||||) by the second node (the ||||||||), and not vice versa;

ii. this process is done automatically as soon as new medical information is registered with a ||||||||||||||||;

iii. the ||||||||| concerned transmits to the |||||||||||||||||| information about this new medical information, information from which the |||||||||||||| creates a new data entry in its directory, allowing the authorized provider to see that a new imaging report is available in the network when he or she makes a “List” call concerning a given patient, or to obtain the report itself, if desired, by making a “Get” call.

[326] The plaintiff concedes that the laboratory domain is different because, in this particular case, although the medical information related to the laboratory domain is divided, as is the case with the imaging domain, between two nodes, as described in **claim 1**, namely, the |||||||||||||||||||||||||||||| directory, for summary information, and the ||||||||| repository for the laboratory reports themselves, the procedure for supplying the laboratory domain, when new data is available, is different. According to Mr. Thilloy, this procedure is different because it is not directly the second node, where the new information is recorded (||||||||||||||||||||||||), which pushes the updated information to the first node, where summary information resides (||||||||||||||||); this is done through the component ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||, which acts as an intermediary between the |||||||||| and the QHRD. Since this component does not reside on the same node (i.e., on the same server) as the repository |||||||||, Mr. Thilloy is of the opinion that the method for automatically updating the summary medical information described in **claim 1** is not exactly accomplished by updating the laboratory domain.

[327] The medication and hospitalization summary domains also escape infringement, according to Mr. Thilloy, because they consist of only one data repository, without a separate directory or index of the data, and therefore only one node, within the meaning of said claim.

[328] The defendants, on the basis of Mr. April's evidence, are of the view that the plaintiff has not met his burden of proof since an analysis, using an internal approach, of the function used to feed the imaging domain reveals, again, fundamental differences between the operation of the QHR and that of the update system described in **claim 1** (and in the other disputed claims) of Patent 598 in terms of the data location, the record formats used and the data elements exchanged (April Report, April 9, 2018, at para 130).

[329] More specifically, they consider that there is no infringement of **claim 1** because: (i) there are no pointers, within the meaning of **claim 1**, in the data exchanged as part of the process used to feed the imaging domain; (ii) the feed sequence for this domain has more steps than described in said claim, and those steps are more complex; and (iii) the nodes to which this claim refers are not, in the QHR, distinct physical locations, that is, health institutions such as hospitals or clinics providing radiology services.

[330] In particular, according to Mr. April, Patent 598 cannot [TRANSLATION] "cover what is currently done in the QHR's Imaging domain", as no comparison is possible between the two insofar as [TRANSLATION] "the lessons of Patent '598 are clearly insufficient to allow a person versed in the field, in 1998, to implement a system as complex as the one currently used in the

QHR to make the data updates between the |||||||||||| and the ||||||||||"(April Report, April 9, 2018, at paras 152-153).

[331] First of all, I would like to point out that no one disputes that the QHR is a larger and more complex system than the system described in the two patents at issue. It is also admitted that Patent 598 would not have allowed the POSITA, in 1998, to carry out the QHR. However, once again, that is not the issue. Rather, it is a matter of determining whether the QHR contains the various elements of the contested claims, as construed.

[332] Since, in preparing his first two reports, he had no access to the information from the defendants on which Mr. April relied to analyze the issue of the infringement of Patent 598, which information discusses in more detail the operation of the imaging domain update process, Mr. Thilloy was able to produce a rebuttal report (Thilloy Report, April 30, 2018) to the report of Mr. April in which he discussed this issue (April Report, April 9, 2018). He was particularly interested in clarifying the exact nature of the information—or metadata—transmitted by |||||||||||||||||||||||||||||| to the |||||||||||||||||||| when indexing new diagnostic imaging results, and the exact sequence in feeding the imaging domain.

[333] This rebuttal report, based on this new information, deals with each of Mr. April's objections to his finding that every time the imaging domain is updated, the claims in dispute in Patent 598 are infringed, including **claim 1**. In the report, Mr. Thilloy reiterates each and every one of his findings with respect to his analysis of the issue of infringement in his first report,

March 9, 2018, except for **claim 5**, where the new information analyzed by Mr. April convinced him that there was no infringement of this claim during the updating of the imaging domain.

[334] In my opinion, Mr. Thilloy's evidence is more persuasive because, in particular, Mr. April's approach attracts the same reservations as those I raised in the context of the analysis of the infringement of Patent 794, beginning with the one I just identified in relation to the fact that it is irrelevant whether the POSITA could have, based on Patent 598, made the QHR, a system that is obviously more complex for a number of reasons.

[335] The first objection raised by Mr. April relates to the absence of pointers, within the meaning of **claim 1**, in the data exchanged as part of the imaging domain feed process, in particular in the list of |||| metadata required to index an imaging examination report transmitted from a |||||||||||||||||||||||||||||||||| to the |||||||||||||||||||| directory.

[336] As Mr. Thilloy rightly noted, the question here is to determine, in light of the wording of said claim, not whether pointers are transmitted from the second node (|||| ||||||||) to the first node (||||||||||||||||), but whether the |||||||||| contains summary medical information that includes pointers of the type defined in the claim. On this point, he notes that one of the pieces of information kept at the |||||||||||||| is the unique identification number of the imaging examination (the ||||||||||||) used to access the report itself by means of a "Get" call after a "List" call.

[337] However, I have already stated that Mr. April conceded, in the context of Patent 794, that the |||||||||||||| was a pointer. Since both experts were of the opinion that there was no need to give

different interpretations to the terms common to the two patents in question, I find that this admission is equally valid for Patent 598. I note that Mr. April also stated, in his first report, that an address in the computer sense—or pointer—could very well take the form of a unique universal identification number (April Report, March 9, 2018, at para 125) and that he confirmed all this on cross-examination (Transcripts, June 4, 2018, at pp 91-96).

[338] Mr. Thilloy notes that this metadata list contains the abbreviation URL ("Uniform Resource Identifier"), which is a pointer as defined by both experts in their respective first reports (Thilloy Report, March 9, 2018, at para 67; April Report, March 9, 2018, at paras 38, 127). He further notes that this list also includes a unique identifier to identify the ||||||||| where the report that the provider is interested in is kept ("||||||||||||||||||||||||||||||||||||||||") and a unique identifier allowing, this time, to identify the report itself ("||||||||||||||||||"). These two unique identifiers, according to Mr. Thilloy, thus make it possible, by their combined action, to [TRANSLATION] "point" towards the report stored at the ||||||||||||||||||||||||| in question, making them, without a doubt, pointers within the meaning he and Mr. April gave to the term.

[339] Mr. April's second objection concerns the imaging domain feed sequence, which is more complex and has more steps than described in **claim 1**. This sequence is illustrated by the following diagram:

[REDACTED]

[340] It is not clear from Mr. April's second report whether this chart is from the documentary evidence in the record or the additional information Mr. April consulted, or whether it is a drawing made by the latter. In any case, this diagram shows that the imaging domain is being fed

in nine (9) steps. Mr. Thilloy states that his description of this sequence, based on the information available to him when he was preparing his first two reports, ended at Step 6 of this diagram, at the stage where the ||||||||| transmits to the ||||||||| directory the metadata needed to index the directory.

[341] According to steps 7 to 9 of this diagram, the |||||||||||||| would then attempt to identify the patient associated with the information and obtain his or her UIN before then asking the |||||||||||||| to provide some additional metadata to the provider about the reports and images associated with the imaging examination of interest to the provider, including the ||||||||||||.

[342] Mr. Thilloy is of the opinion that if this diagram does indeed reflect the imaging domain feed sequence, which he is unable to confirm, the fact that it has nine (9) steps does not change his conclusion of infringement since the update steps contemplated by **claim 1** are still accomplished by the imaging domain feed sequence, and it is irrelevant how the |||||||||||||||||||| is transmitted to the |||||||||||||||| since this is not described in the claim.

[343] I agree. Moreover, Mr. April recognized that the three steps described in **claim 1** are carried out in the imaging domain supply sequence, even though this sequence is more complex and has more steps than the sequence described in said claim (Transcripts, June 4, 2018, at pp 102-107). Here again, the fact that the QHR is a larger and more complex system than the system described in **claim 1,** and that it was designed to respond to constraints that are not addressed in that claim, does not protect it from an allegation of infringement if all the essential elements of that claim are found in it.

[344] Finally, Mr. April reiterates, as another fundamental difference between the update method described in **claim 1** and the imaging domain feed process, that the nodes around which this process is structured——||||||||||||||||||||||||||||||||||||, in particular—are not nodes within the meaning of said claim since they are not physically located in health facilities such as hospitals or clinics offering radiology services.

[345] I interpreted the term "node" in the claims of the two patents in question as necessarily referring to a device or a physical or tangible piece of equipment, but I do not think we can, as Mr. April did, and as he also wanted to do for the terms "location" and "remote", attribute to them a connotation of a physical location in the sense of a node necessarily within a source system of a network institution. Even if the specification contemplates it, this is not what must ultimately guide the analysis of the meaning and scope of the claims, if the terms used are otherwise clear. Mr. April acknowledged that the ||||||||| directory and all three |||||||| were nodes, as defined by him and Mr. Thilloy (Transcripts, June 4, 2018, at pp 102-103). I see no reason to limit its meaning as Mr. April did.

[346] I am therefore satisfied that:

a. all the elements of **claim 1** of Patent 598 are found in the imaging domain of the QHR, namely (i) a data network for the distributed storage of medical information (the QHR itself); (ii) a first node where the summary medical information is held (||||||||||||||||); (iii) at least two elements within this summary, namely a plurality of items identifying the health care provided to a given patient and a plurality of pointers associated with those items and having the function of identifying a

location within the network, which is separated from the first node, and which contains additional medical information about the patient (||||||||||||, ||||||||, "||||||||||||||||||||||||||||||||||||||||" and "||||||||||||||||||||"); (iv) a second node containing the additional medical information relating to more than one patient and which is separate or remote from the first node (the three ||||||||||||); and

b. all the steps described in the claim to push the updates of the summary information from the second node, which holds the new medical information, to the first, which holds summary medical information, are accomplished by the imaging domain feed procedure, namely (i) the update information is pushed to the first node (||||||||||||||||) by the second node (one of the three ||||||); (ii) this push is done automatically as soon as new information is recorded at the second node (at one of the three ||||||||||||; and (iii) the second node (||||||||||||||||||||||||||||||||||||||||||||||||) then transmits to the first node (the ||||||||||) a set of information (metadata) on the basis of which the ||||||||| creates a new entry—or index—of data in the directory it holds.

[347] I therefore conclude that there is infringement of this claim whenever the |||||||||||| is updated by a ||||||.

b) *Claims 2, 4, 9, 10, 13 to 16 and 18*

[348] **Claims 2 and 4** simply state, I note, that the health care referred to in **claim 1** includes diagnostic tests or examinations, more specifically medical imaging tests. The plaintiff claims

that these claims are infringed whenever the |||||||||||||||||| is updated by one of the ||||||||| since the imaging domain necessarily contains medical information on diagnostic imaging examinations.

[349] Mr. April agrees that the QHR does exchange medical imaging information, but states that it does not do so using the data structure proposed by Patent 598. I have already rejected this argument. I am therefore satisfied that there is infringement here of those two claims, as alleged by the plaintiff.

[350] **Claim 9** states that the second node specified in **claim 1** is implemented by a server arrangement. The plaintiff submits that the |||||||||| and the three |||||||| are nodes, and therefore servers, and that they are separate from or independent of each other. As a result, he says, there is an infringement of this claim whenever the |||||||||||||| is updated by one of ||||||||| since it can be said that there is implementation of the second node (||||||||||||||||||||||||) by an arrangement of servers. Mr. April replies that it would have been clear to the POSITA that the second node of **claim 9** does not refer to a register or a directory that is part of a centralized solution, as is the case with the QHR, but rather servers of the source systems of the various establishments where the new medical information is generated and kept.

[351] Again, this view is based on a misinterpretation of the term “node” in that it is connected to the physical location of the institutions where this information is generated and maintained.

[352] **Claim 10** specifies that the first node to which **claim 1** refers includes a microprocessor associated with a machine-readable storage (a computer) and housing the summary medical

information mentioned in said claim. The plaintiff argues that this claim is also violated whenever the |||||||||||||| is updated by one of the ||||||||| because the |||||||||||||||| is a server and is therefore necessarily equipped with at least one microprocessor and some type of machine-readable storage medium to keep the summary medical information and pointers that include the data in the |||||||||||||||||||||||||| directory.

[353] Mr. April did not offer a specific reply to this precise claim, but we understand that the ||||||||||||, in his mind, is neither a node nor a server within the meaning of Patent 598 because it is a directory that is part of a centralized solution, and not decentralized as is the case, according to him, in the method or system contemplated in said patent. I cannot accept this position, for the reasons I have already mentioned on a number of occasions. It is not disputed that the |||||||||||||| is a server, and that it is therefore equipped with a microprocessor and some type of machine-readable storage medium to keep the summary medical information and pointers making up the data of this directory.

[354] **Claim 13** specifies, for its part, that the second node referred to in **claim 1** houses information of a medical nature concerning a plurality of patients. Given the scope of the health care system in Quebec, the number of health care providers who work in it and the number of patients who seek treatment, it goes without saying that the ||||||||| have to house imaging results for a multitude of patients. Regarding the infringing nature of the QHR imaging domain update procedure, there is no reason to conclude otherwise than as I did for the disputed claims that precede this claim.

[355] **Claims 14 to 16**, I note, form the first of three groups of claims dependent on Patent 598 dealing with the processing and location of nominative and non-nominative information, the other two groups being **claims 28 to 30** and **40 to 42**.

[356] They all state that medical information in data network concerning a patient includes information of each type, that each type of information is kept in separate locations, and that the storage of data at the second node is limited to non-nominative information only.

[357] The plaintiff alleges that the QHR is specifically designed to separate nominative information from non-nominative information, for reasons of security and confidentiality. On this point, he submits that the personal information of patients is stored in the Register of Users, a component which is separate from the various domains of the QHR. According to him, only the UIN, which makes it possible to distinguish one patient from another without otherwise revealing nominative information (family name, first name, sex, address, etc.), is exchanged between the |||||||||| and the |||||||. The result, he says, is that those three groups of claims are duplicated by the imaging domain of the QHR.

[358] In his second report, Mr. April argues that the QHR does not separate those two types of information because the |||||||, not being connected to the HIAL, use, in their exchanges with the ||||||||||||||, internationally recognized data exchange formats that at minimum contain ||||||||| mandatory criteria for identifying the patient (||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||) (April Report, April 9, 2018, at paras 157, 175).

[359] This point of view is surprising in view of the defence filed by each defendant, which states that the QHR's architecture [TRANSLATION] "is designed to ensure that health information banks are never stored with users' nominative information banks (e.g., names, dates of birth, contact information), in accordance with the applicable legislation and a 1992 recommendation by the Commission à l'information" (Defence and Counterclaim of the Attorney General of Quebec, dated September 22, 2016, at para 33, Defence and Counterclaim of RAMQ, dated September 21, 2016, at para 29).

[360] In any event, as Mr. Thilloy states in his rebuttal report, the fact remains that the ||||||||||||||, which serves as the first node in this discussion, contains no nominative information, as contemplated by **claims 14 to 16** (Thilloy Report, April 30, 2018, at para 86). Mr. April did not claim the opposite at trial.

[361] Finally, **claim 18** specifies that the update made according to the method described in **claim 1** carries with it an identifier that makes it possible to distinguish one patient from another. Whether it is, as per Mr. Thilloy, the UIN of the patient contained both in the |||||||||||||||| and in the |||||||||||| or, as per Mr. April, ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||, which forms part of, according to the new information considered by the latter and commented on by Mr. Thilloy in his rebuttal report of April 30, 2018, the |||||||| necessary elements to obtain this UIN from the Register of Users via the ||||||||||||||||||, I am satisfied that the update information pushed from the ||||||||| to the |||||||||||||| contains an identifier for distinguishing one patient from another.

[362] I therefore conclude that there is an infringement in this case of claims **2, 4, 9, 10, 13, 14, 15, 16 and 18** to the extent alleged by the plaintiff.

c) *Claim 19*

[363] I note that the plaintiff states that this claim is infringed as much by the procedure used to feed the imaging domain as by the procedure for the laboratory domain. I also note that this claim is similar in many respects to **claim 1**, except that it describes a system, and not just a method, of automatically updating summary medical information and that it is an arrangement of servers that serves as the second node. As such, it is those servers that initiate the update by pushing the update information to the first node, which information contains both an identifier that distinguishes the patient from other patients and information identifying the nature of the care provided to that patient, as evidenced by [redacted] metadata transmitted from the [redacted] to the [redacted] making it possible to identify, in particular, the imaging test and its methods ([redacted]) and to distinguish the patient from other patients through the UIN ([redacted]).

[364] The plaintiff considers that, to the extent that the servers of the three [redacted] contain the imaging examination reports and the images themselves and are configured to automatically update the summary medical information stored in the [redacted] when new medical information is recorded with those servers, **claim 19**, for the same reasons as for **claim 1**, is infringed whenever the [redacted] is updated by a [redacted].

[365] I recall that the plaintiff conceded that, with the exception of **claim 19** and the dependent claims, the laboratory domain update procedure did not infringe Patent 598. He stated that although the medical information related to the laboratory domain is divided, as is the case with the imaging domain, between two nodes, as described in **claim 1**, the [redacted] directory, for summary information, and the [redacted] repository for the laboratory reports themselves, the supply procedure for the laboratory domain is different since it is not the second node ([redacted]) that pushes the update information directly to the first node ([redacted]), but the [redacted] component which acts as an intermediary between the [redacted] and the [redacted], which does not reside on the same node (i.e., on the same server) as the [redacted] repository.

[366] On the other hand, he submits, with respect to **claim 19**, that since the procedure for feeding the laboratory domain involves steps to convert and correct laboratory results using a set of components comprising not only [redacted], but also [redacted] and [redacted], this is actually an arrangement of servers, within the meaning of said claim, which helps to automatically push the new medical information to the [redacted], a separate node within the laboratory domain architecture.

[367] With respect to the laboratory domain, I find it difficult to reconcile this position with Mr. Thilloy's statement, in his first report, that the conversion or correction steps that involve those three components ([redacted], [redacted] and [redacted]) [TRANSLATION] "are not covered by the claims of Patent 598" (Thilloy Report, March 9, 2019, at para 350). It is hard to see how bringing them together under the heading of server arrangement

would suddenly make them [TRANSLATION] "covered by the claims of Patent 598". I therefore cannot see any infringement of **claim 19** there.

[368] As far as the imaging domain is concerned, I have no problem concluding that the three ||||||||| represent an arrangement of servers containing imaging reports and are configured, as contemplated by **claim 19**, to push updates to the |||||||||||||||||||||||||||||||||||||||||||| directory when new imaging results are recorded.

[369] For the same reasons that he raised for **claim 1**, in particular because the internal servers of the QHR are not nodes within the meaning of that claim since [TRANSLATION] "the core concept of Patent 598 is based on the principle of leaving the data where they were generated and sending the updates to the equipment that back up the summary medical records" (April Report, April 9, 2018, at para 180), Mr. April opines that there is no infringement of said claim.

[370] For the same reasons that I relied on in my analysis of the alleged infringement of **claim 1**, this opinion is not persuasive. I therefore conclude that there is infringement of **claim 19**, to the extent alleged by the plaintiff, each time the ||||||||| is updated by one of the ||||||||||.

d) *Claims 20 to 22 and 28 to 30*

[371] **Claims 20 to 22** are to **claim 19** as **claims 2 to 4** are to **claim 1**: they specify that the health care referred to in **claim 19** includes diagnostic tests or examinations, more specifically, laboratory or medical imaging examinations. My conclusions are the same as those I drew for **claims 2 and 4**. That is to say, there is, in my opinion, infringement of **claims 20 and 22** each

time the imaging domain is updated. With respect to **claim 21**, which relates to the laboratory domain, as I have concluded that **claim 19** was not infringed, there can be no infringement of that claim (*Illinois Tool Works Inc v Cobra Bindings Co Ltd*, 2002 FCT 829 at para 85 [*Illinois Tool Works Inc*], aff'd 2003 FCA 358).

[372] For their part, **claims 28 to 30** duplicate, for the purposes of **claim 19**, **claims 14 to 16**, which, I recall, deal with the location of nominative and non-nominative information in relation to **claim 1**. I have already concluded that **claims 14 to 16** were infringed by the imaging domain feed procedure; it cannot be otherwise for **claims 28 to 30**. However, as there is, in my view, no infringement of **claim 19**, with respect to the procedure for updating the laboratory domain, the same conclusion must be made with respect to **claims 28 to 30**.

e) *Claim 31*

[373] **Claim 31**, I recall, also concerns a method for updating medical information distributed across a network but does not, however, specify that this update is done automatically. According to this claim, a first node of the network stores a summary of medical information relating to a patient, which includes information items making it possible to identify the medical examinations carried out on that patient as well as references to the results of those examinations stored at one or more other nodes of the network. The updating method contemplated consists in receiving new medical data at a second node of the network, processing that data to identify new medical data associated with a given individual and initiating, from this second node, a transfer of data, to the first node, to update the medical information summary for that individual stored at this first node.

[374] The plaintiff considers that this claim has been infringed for the same reasons as in **claim 1,** in that there is, in the imaging domain:

a. the elements of **claim 31**, namely: (i) a network system that allows for the distributed storage of medical information (the QHR); (ii) several nodes, including, in particular, ||||||||||||||||||||||||||||||||||, which contains the summary of patient imaging examination results, information that allows the identification of those examinations and references to the results of those examinations stored in the |||||||||||||||| and which, as such, act as the first node, and the three ||||||||, which act as the second node; and

b. an update process that involves each of the steps of the update method described in said claim, namely: (i) receiving new medical data at a second node of the network (one of the three ||||||||||||||||||||||||||||||||||); (ii) processing that data to identify new medical data associated with a given individual; and (iii) initiating, from this second node, a transfer of data to the first node (the ||||||||||||||), for the purpose of updating the summary medical information of that individual hosted at that first node.

[375] For the same reasons he raised with respect to the alleged infringement of **claim 1**, Mr. April is of the opinion that there is no infringement of **claim 31**. In particular, he believes that the concept of “remote node” is not found in the centralized system of the QHR where, according to him, the data is centralized for purposes of national archiving (April Report, April 9, 2018, at paras 185-186). I have already commented on the value of this opinion, which is based on a narrow interpretation of the terms used in Patent 598 claims.

[376] I am therefore satisfied, to the extent alleged by the plaintiff, that **Claim 31** is infringed each time the imaging domain is updated.

f) *Claims 33 to 36 and 39 to 42*

[377] This group of claims duplicates claims on which I have already commented. More specifically, **claims 33 and 34** state, for **claim 31**, what **claims 9 and 10** state for **claim 1**. **Claims 35 and 36** duplicate **claims 3 and 4** and **21 and 22**. Finally, **claim 39** is similar to **claim 13** while **claims 40 to 42** are similar to **claims 14 to 16** and **28 to 30**.

[378] My conclusions are the same: **claims 33 to 36** and **39 to 42** are all infringed each time the imaging domain is updated.

[379] I conclude in general that all the contentious claims of Patent 598 are infringed each time the QHR imaging domain is updated.

[380] Having therefore determined that there is, in this case, infringement of the two patents in question, it must now be considered whether the infringed claims are otherwise valid, as the counterclaim made by the defendants demands that I do.

C. *Alleged invalidity*

[381] I note that the defendants argue, in counterclaim, that Patent 794 is invalid on grounds of anticipation, obviousness and insufficiency of the disclosure and that Patent 598 is just as invalid because of its obviousness, its overbreadth and the insufficiency of its disclosure.

[382] I also note that once issued, a patent is presumed valid and availed to the patentee or the legal representatives of the patentee (subsection 43(2) of the Act). It follows that the burden of proving invalidity is on the person asserting it. In this case, this burden rests on the defendants, and it must be satisfied in accordance with the standard of proof on a balance of probabilities (*Camco* at para 75, *Bombardier Recreational Products Inc v Arctic Cat Inc*, 2017 FC 207 at para 473 [*Bombardier FC*], rev'd in part on other grounds by 2018 FCA 172).

(1) Anticipation and obviousness: Applicable legal principle

a) *Anticipation*

[383] Paragraphs 28.2(1)(a) and (b) of the Act provide, in essence, that the subject-matter defined by a claim in an application for a patent must not have been disclosed in a communication that made it available to the public, in Canada or elsewhere, more than one year before the date of filing of the application, if the communication originated from the patentee, or on the priority date of the application, if the communication originated from a third party. This is so because it is recognized that the patentee cannot claim a monopoly on a technology that was

known in the prior art at the relevant date (*ABB Technology AG v Hyundai Heavy Industries Co., Ltd*, 2015 FCA 181 at para 61).

[384] As is the case with the allegation of infringement, the defence of anticipation requires a review of each of the claims at issue. To that end, the Court must determine: (i) if it is possible to look at a single piece of prior art and find in it all the information needed to produce the claimed invention, without a person skilled in the art having to exercise any inventive skill to produce it; and (ii) if a person skilled in the art would have been able to perform the invention (*Sanofi* at paras 20, 26, citing *Beloit Canada Ltd v Valmet OY* (1986), 8 CPR (3d) 289 (FCA) [*Beloit*]).

[385] At the first stage of this test, the Court must be satisfied that the piece of prior art discloses subject-matter which, if performed, would necessarily result in infringement of the patent at issue (*Sanofi* at para 25). To that end, the Court must be satisfied that the instructions must contain so clear a direction that a skilled person reading and following it would in every case and without possibility of error be led to the claimed invention (*Électro Santé* at para 26, citing *Beloit*). At this stage of the analysis, recourse to successive trial and error experimentation is excluded (*Sanofi* at paras 25, 27).

[386] In the second step of the anticipation test, successive trial and error experimentation is permitted because “the question is no longer what the skilled person would think the disclosure of the prior patent meant, but whether he or she would be able to work the invention” (*Sanofi* at para 27). The person skilled in the art, however, must “be able to perform or make the invention”

described in the prior disclosure "without undue burden" (*Sanofi* at para 33). A non-exhaustive list of factors should normally be considered:

> [37] Drawing from this jurisprudence, I am of the opinion that the following factors should normally be considered. The list is not exhaustive. The factors will apply in accordance with the evidence in each case.
>
> 1. Enablement is to be assessed having regard to the prior patent as a whole including the specification and the claims. There is no reason to limit what the skilled person may consider in the prior patent in order to discover how to perform or make the invention of the subsequent patent. The entire prior patent constitutes prior art.
>
> 2. The skilled person may use his or her common general knowledge to supplement information contained in the prior patent. Common general knowledge means knowledge generally known by persons skilled in the relevant art at the relevant time.
>
> 3. The prior patent must provide enough information to allow the subsequently claimed invention to be performed without undue burden. When considering whether there is undue burden, the nature of the invention must be taken into account. For example, if the invention takes place in a field of technology in which trials and experiments are generally carried out, the threshold for undue burden will tend to be higher than in circumstances in which less effort is normal. If inventive steps are required, the prior art will not be considered as enabling. However, routine trials are acceptable and would not be considered undue burden. But experiments or trials and errors are not to be prolonged even in fields of technology in which trials and experiments are generally carried out. No time limits on exercises of energy can be laid down; however, prolonged or arduous trial and error would not be considered routine.
>
> 4. Obvious errors or omissions in the prior patent will not prevent enablement if reasonable skill and knowledge in the art could readily correct the error or find what was omitted.
>
> (*Sanofi* at para 37)

[387] In contrast to cases of infringement, where dependent claims follow the fate of the claims on which they depend (in other words, if there is no infringement of an independent claim, there can be no infringement of the claims which are dependent on it (*Illinois Tool Works Inc* at para 85)), validity in terms of anticipation—and of obviousness—must be assessed claim by claim (*Zero Spill* at paras 83, 85, 88). Indeed, the nature of dependent cascading claims is to narrow the claims upon which they depend, such that a claim may be sufficiently narrow to escape these prior art-based attacks, even though the broader claims may be invalid (*Zero Spill* at para 94).

[388] It is well established, moreover, that the defence of anticipation is "difficult to establish because the courts recognize that it is all too easy after an invention has been disclosed to find its antecedents in bits and pieces of earlier learning" (*Électro Santé* at para 25). As the Supreme Court noted in *Électro Santé*: "It takes little ingenuity to assemble a dossier of prior art with the benefit of 20-20 hindsight" (*Électro Santé* at para 25).

b) *Obviousness*

[389] Section 28.3 of the Act provides that on the same dates contemplated by paragraphs 28.2(1)(a) and (b), the subject-matter of the patent claim must not have been obvious to a person skilled in the art or science to which it pertains.

[390] Although prior art may serve as a basis for invalidating a patent in terms of both anticipation and obviousness, fundamental distinctions remain. While anticipation deals with the lack of novelty, obviousness deals with the lack of invention (*Laboratoires Abbott v Canada*

(Minister of Health), 2008 FC 1359 at para 59, aff'd 2009 FCA 94). As we have just seen, anticipation requires that all the information necessary for the claimed invention be found in a single prior art publication while obviousness can be demonstrated through a "mosaic" of the relevant prior art and the common general knowledge (*Alcon Canada Inc v Apotex Inc*, 2014 FC 791 at para 208).

[391] The party pleading obviousness must thus demonstrate "not only that the prior art exists but how the person of ordinary skill in the art would have been led to combine the relevant components from the mosaic of prior art" (*Servier Laboratories v Apotex Inc*, 2008 FC 825 at para 254). To do this, that party must also meet the five-step test developed in *Windsurfing International Inc v Tabur Marine (Great Britain) Ltd*, [1985] RPC 59 (UK CA), restated in *Pozzoli SPA v BDMO SA*, [2007] EWCA Civ 588, and adopted by the Supreme Court of Canada in *Sanofi*.

[392] This test, which aims to "bring better structure to the obviousness inquiry and more objectivity and clarity to the analysis" consists of: (i) identifying the person skilled in the art; (ii) identifying the relevant common general knowledge of that person; (iii) identifying the inventive concept of the claim in question or, if that cannot readily be done, construing it; (iv) identifying what, if any, differences exist between the matter cited as forming part of the "state of the art" and the inventive concept of the claim or the claim as construed; and (v) asking whether those differences, when viewed without any knowledge of the alleged invention as claimed, constitute steps which would have been obvious to the person skilled in the art, or whether they require any degree of invention (*Sanofi* at para 67). At this last stage, it may be appropriate to rely on the

concept of "obvious to try", especially when the patent in question is an area of endeavour where advances are often won by experimentation (*Sanofi* at paras 67-68).

[393] The test of obviousness is made, moreover, not from the perspective of the competent inventor, but rather the technician skilled in the art "having no scintilla of inventiveness or imagination" (*Nova Chemicals* at para 41).

[394] Again, obviousness is a difficult test to meet (*Frac Shack Inc AFD Petroleum Ltd*, 2017 FC 104 at para 205, rev'd on other grounds, 2018 FCA 140). In addition, the Court must be careful not to resort to "hindsight" in its obviousness analysis (*Bridgeview Manufacturing Inc v Central Alberta Hay Center, 931409 Alberta Ltd*, 2010 FCA 188 at para 50, leave to appeal to SCC refused, 33885 (April 14, 2011), citing *Beloit*).

[395] As with anticipation, invalidity for obviousness must be assessed claim by claim, and the fate of an independent claim does not necessarily imply a claim that depends on it (*Zero Spill* at paras 83 and 94; *AFD Petroleum Ltd v Frac Shack Inc*, 2018 FCA 140 at para 47 [*AFD Petroleum*]; *Safe Gaming* at para 161).

(2) Patent 794

a) *Anticipation*

[396] The defendants submit that **claims 1 to 8** of Patent 794 are invalid for anticipation. According to their expert, Mr. April, the following pieces of prior art, all published before the

relevant priority date, in this case February 24, 1998 (Joint Statement of Facts at para 5), anticipate each and every one of these claims:

a. "Building National Electronic Medical Record Systems via the World Wide Web", *Journal of the American Informatics Association*, by Isaac S. Kohane et al. (April Report, March 9, 2018, Appendix AA-18 (Exhibit TX-164)) [Kohane AA-18];

b. "Using UL7 and the World Wide Web for Unifying Patients Data from Remote Databases", *American Medical Informatics Association*, by F.J. van Wingerde et al. (April Report, March 9, 2018, Appendix AA-20 (Exhibit TX-286)) [Kohane AA-20];

c. US Patent 6,664,109, "Method for Extracting Pre-Defined Data Items from Medical Service Records Generated by Health Care Providers" (April Report, March 9, 2018, Appendix AA-22 (Exhibit TX-156)) [Johnson Patent]; and

d. US Patent 5,659,741, "Computer System and Method for Storing Medical Histories Using a Carrying Size Card" (April Report, March 9, 2018, Appendix AA-23 (Exhibit TX-288)) [Eberhardt Patent].

[397] I note at the outset that Mr. April devoted a substantial portion of his analysis of the validity of Patent 794 to commenting on certain statements found in Disclosure 794. I must stress that this exercise is of little use to me since, as in the case of infringement, the analysis of anticipation must first and foremost be based on an examination of the claims and not of the disclosure of the patent in issue (*Zero Spill* at paras 83, 85, 88).

[398] Mr. April did file a table as an appendix to his first report, the one dealing with the allegation of invalidity (April Report, March 9, 2018, Appendix AA-25 (Exhibit TX-307)), in which he records his findings of anticipation in respect of each element of the eight claims in issue. This table, which for the most part retranscribes, for each element, short extracts from each piece of prior art, is however an oversimplification. It is lacking in any analytical development. In sum, Mr. April merely stated, in his written testimony, that each of these four pieces of prior art made available to the public, at the relevant time, all of the claims of Patent 794, without however elaborating on his reasoning in any way (April Report, March 9, 2018, at paras 171-174). This will not make the Court's work any easier.

[399] I will comment on each of the pieces of prior art addressed by Mr. April in turn.

(i) Kohane AA-18

[400] Kohane AA-18 proposes an initial prototype of an electronic medical records system that leverages Internet-based client-server technology ("World Wide Web Electronic Medical Record System" or "W3-EMRS"). The proposed architecture consists of three components, namely (i) a "Common Medical Record", (ii) a set of rules for the visual presentation of the data from the common medical record ("Visual Presentation Layer"), and (iii) software configured to present data on a health care provider's computer interface ("Screen Management Layer"). The authors explain how this architecture could implement programs that provide consistent access to several disparate electronic medical records already created.

[401] In his report, Mr. April opines that Kohane AA-18 discloses all the information necessary to produce the invention claimed in Patent 794. Specifically, he characterizes the hyperlinks behind the icons of the W3-EMRS interface as “pointers”. He believes that these icons contain labels describing the nature of the information to be retrieved and that they point to additional medical information. However, he refers to another publication, Kohane AA-20, to demonstrate the use of a “remote location” pointer and the presence of different physical locations as separate nodes in a network.

[402] Mr. April acknowledged on examination-in-chief that Kohane AA-18 addressed only one location with additional medical information and confirmed on cross-examination that this prior art article contemplated only one data repository in a single health facility (Transcripts, June 4, 2018, at pp 31, 169). Moreover, still on cross-examination, he noted [TRANSLATION] “a lot of differences in design” between this article and Patent 794, including a [TRANSLATION] “fundamental difference”, namely that Kohane AA-18 did not require the presence of pointers in a data structure within the meaning of Patent 794, since the system proposed in it made it possible to search for patient information [TRANSLATION] “dynamically” (Transcripts, June 4, 2018, pages 38-39).

[403] Mr. Thilloy, on the other hand, is of the opinion that Kohane AA-18 is, in comparison to the claims of Patent 794, deficient in many respects. In his opinion, this piece of prior art describes only one centralized data repository within a single health care facility and, therefore, does not incorporate the notion of pointers pointing to remote locations where additional medical information is stored (Thilloy Report, April 9, 2018, at paras 108-109, 111). Moreover, he opines

that Kohane AA-18 does not contain any mention of pointers within the meaning of Patent 794, in particular because this article suggests that the centralized database is consulted by means of direct requests (Thilloy Report, April 9, 2018, at para 109). He also noted that there is no mention of a component that indicates the nature of the medical information to be obtained or of locations other than the central repository where additional medical information can be obtained (Thilloy Report, April 9, 2018, at para 112). Finally, since there is only one central data repository, Kohane AA-18 does not clearly refer to the presence of different nodes in a network (Thilloy Report, April 9, 2018, at para 116(c)).

[404] It is true that Mr. Thilloy conceded on cross-examination that Kohane AA-18 was seeking to address the same problem identified by the plaintiff, namely the difficulty of accessing medical data saved in various institutions and clinics (Transcripts, June 5, 2018, at pp 70-71). He also admitted that this publication contained a data structure, medical information, additional information, a "location" hosting additional information, and a means of accessing this information (Transcripts, June 5, 2018, at pp 71-82). However, I do not think that his belief that Kohane AA-18 describes neither pointers under Patent 794 nor different nodes in a network was shaken.

[405] I note that, unlike Mr. April, who did little to set out his demonstration of anticipation in his report, Mr. Thilloy made a thorough and rigorous analysis of this issue by explaining his reasoning in an exhaustive manner for each of the claims in question. He also dissected the table prepared by Mr. April (April Report, March 9, 2018, Appendix AA-25 (Exhibit TX-307)) with clarity and precision. His approach seems to me more persuasive than that taken by Mr. April,

particularly when I take into account Mr. April's admissions that Kohane AA-18 did not require the use of pointers within the meaning of Patent 794 and referred only to a single centralized repository of data.

[406] In view of the above, I am satisfied that Kohane AA-18 does not explain the use of multiple nodes in a network or pointers pointing to remote locations where additional medical information is stored and that, as a result, it does not anticipate each and every one of the claims of Patent 794.

[407] I note that the concept of a two-component pointer is an essential element of **independent claims 1 and 6**, and therefore **dependent claims 2 to 5 and 7 and 8** since they must be interpreted in such a way as to incorporate all the essential elements of the independent claim on which they depend (*Eli Lilly Canada Inc v Mylan Pharmaceuticals ULC*, 2015 FC 178 at para 105, aff'd 2015 FCA 286).

(ii) Kohane AA-20

[408] This piece of prior art is, in a way, the continuation of Kohane AA-18 insofar as it essentially addresses the implementation of the architecture proposed in Kohane AA-18 in the context of a feasibility study conducted in the emergency department of a hospital in the Boston area. The system described in Kohane AA-20, the W3-EMRS ("World Wide Web Electronic Medical Record System") is also the same system described in Kohane AA-18.

[409] However, April argues that in Kohane AA-20, the W3-EMRS system was tested in remote sites. However, he acknowledged that Kohane AA-20 was not [TRANSLATION] "much different" from Kohane AA-18 (Transcript, June 4, 2018, at pp 42-43). On cross-examination, he opined that this publication was intended to address issues that are not covered by Patent 794, such as whether the an HL7 protocol is compatible with and can be integrated into existing systems (Transcripts, June 4, 2018, at pp 180-186).

[410] For his part, Mr. Thilloy noted, with respect to Kohane AA-20, that [TRANSLATION] "one of the significant differences with the system described and claimed in Patent 794 is that, in this article, no mention is made of pointers or a data structure similar to what is described in Patent 794" (Thilloy Report, April 9, 2018, at para 70). On cross-examination, Mr. Thilloy said he understood that Kohane AA-20 addressed exactly the problem that Patent 794 was trying to resolve (Transcript, June 4, 2018, at p 215). On cross-examination, he further conceded that Kohane AA-20 was teaching the possibility of retrieving medical information from three systems, two of which were located in separate physical locations, and that this article contained the notions of remote location, additional information, and data structure (Transcripts, June 5, 2018, at pp 83-88). Mr. Thilloy maintained, however, that Kohane AA-20, like Kohane AA-18, contained no mention of a two-component pointer within the meaning of Patent 794.

[411] Mr. Thilloy did not have a chance to respond in writing to the table prepared by Mr. April (April Report, March 9, 2018, Appendix AA-25 (Exhibit TX-307)) with respect to Kohane AA-20, since this piece of prior art was added to said table during the trial. Although he also acknowledged on cross-examination that several elements of **claims 1 to 8** of Patent 794 were in

Kohane AA-20, he reiterated that the notion of a two-component pointer was still not present, just as in Kohane AA-18.

[412] Here again, Mr. Thilloy's evidence seems to me more persuasive. I am therefore satisfied that Kohane AA-20 does not clearly provide the POSITA with all the necessary instructions for the production of the invention claimed in Patent 794, more specifically given the absence of pointers within the meaning of said patent. I therefore cannot say, as argued by Mr. April, that each and every one of the Patent's claims had been anticipated by Kohane AA-20 on the priority date of Patent 794. Moreover, this was no longer what the defendants argued in the representations they submitted to the Court at the end of the trial. Their position now is that this piece of prior art, combined with Kohane AA-18, makes the invention claimed in Patent 794 obvious. I will come back to this later when dealing with obviousness in relation to said patent.

(iii) Johnson Patent

[413] The invention described in this U.S. patent is that of a centralized record keeping system designed to receive documents from a plurality of independent medical service providers. This system is configured to create links between a file and an individual by extracting demographic data from the file and comparing this data with those contained in a database. In this system, the files are stored in a directory, and a list of files is drawn up for each individual. The centralization of medical data allows a network of providers to reduce their operating costs, encourage the sharing of information between health care providers, avoid duplication of care and thus improve the quality of care.

[414] Mr. April is of the opinion that the Johnson Patent describes the use of pointers or links to other medical documents to link a document to a patient. According to him, those pointers include addresses that allow medical data to be imported. He also argues that the Johnson Patent describes several servers that are in different locations.

[415] On examination-in-chief, Mr. April opined that the Johnson Patent sought to accomplish the same thing as Patent 794, but in a [TRANSLATION] "different way" that is [TRANSLATION] "significantly more difficult" and [TRANSLATION] "full of challenges" (Transcripts, June 4, 2018, at pp 51-53). On cross-examination, he confirmed that one of the central aspects of this patent was to allow the automated extraction of information from unstructured documents (Transcripts, June 4, 2018, at p 176).

[416] Mr. Thilloy, too, noted that the core of this invention was to enable the automated retrieval of data from medical records in order to, in his view, integrate those records into a central data repository (Thilloy Report, April 9, 2018, at para 126). However, according to Mr. Thilloy, all the claims of the Johnson Patent concern a method of data extraction aimed at solving an entirely different difficulty from the one contemplated by Patent 794. Indeed, the Johnson Patent proposes, according to its interpretation, a central data repository system and does not concern a distributed data structure as such (Thilloy Report, April 9, 2018, at paras 127-131).

[417] He further argues that since the Johnson Patent describes a central data repository, there are no pointers providing the addresses of different remote locations (Thilloy Report, April 9,

2018, at para 147). In addition, he said, there is no clear indication that these pointers necessarily incorporate a second component to identify the nature of the medical information available (Thilloy Report, April 9, 2018, at para 147). Those pointers do not provide, according to Mr. Thilloy, and could not support the addresses of different remote locations (Thilloy Report, April 9, 2018, at para 140).

[418] Despite the description of a plurality of servers in the Johnson Patent, Mr. Thilloy claims that this plurality was not designed to distribute the storage of medical records among different systems, but rather to serve as a backup and to distribute the processing load among regional servers that ultimately hold the same data and documents (Thilloy Report, April 9, 2018, at paras 137, 143(c)). Mr. Thilloy admits, however, that there is a data structure in the Johnson Patent (Thilloy Report, April 9, 2018, at para 141).

[419] On cross-examination, Mr. Thilloy conceded that the Johnson Patent described additional information of a medical nature, an address within the meaning of Patent 794 and a location where additional information is stored (Transcripts, June 5, 2018, at pp 97-101). However, he reiterated that the Johnson Patent did not disclose the presence of pointers within the meaning of Patent 794.

[420] Given Mr. April's admission that the Johnson Patent addressed the problem covered by Patent 794, but did so in a [TRANSLATION] "different way", and in view of his failure to clearly elaborate on the presence, in said patent, of two-component pointers, a key element of each of the claims of Patent 794, I find that the defendants did not satisfy their burden of proof. I also

find that the defendants did not demonstrate that the Johnson Patent described the presence, as Patent 794's claims do, of remote locations where additional medical information is held or of different nodes in a particular network area.

[421] In short, the Johnson Patent did not anticipate, in my view, at the priority date of Patent 794, each and every one of the claims of said patent.

(iv) Eberhardt Patent

[422] In this case, this other U.S. patent concerns a system configured for (i) storing electronically a record of an individual's medical history; (ii) adding new medical data to this history; (iii) organizing the medical history data; and (iv) transmitting system data to a remote data infrastructure. The Eberhardt Patent teaches that this system makes it possible to read the medical data of an individual through a storage medium, such as card about the same size as a credit card. According to this patent, the invention claimed in it is necessary, in particular, to counter situations in which individuals come to the emergency room of a health facility and are unable to provide medical personnel with all the relevant medical information concerning them.

[423] In his chart on the anticipation of Patent 794 (April Report, March 9, 2018, Appendix AA-25 (Exhibit TX-307)), Mr. April opines that the Eberhardt Patent [TRANSLATION] "describes storage means that contain a medical history file" and provides that part of this medical history is stored elsewhere in the system. He acknowledged on cross-examination that the Eberhardt Patent was for a smart card on which a patient's record is kept and that only one location was specifically described in it (Transcript, June 4, 2018, at pp 177, 179).

[424] Mr. Thilloy conceded that the Eberhardt Patent was intended to address some of the same issues identified in Patent 794, including allowing health care providers to access information about a patient's condition by using a computer-readable storage medium (Thilloy Report, April 9, 2018, at para 158). However, he characterizes the proposed solution as being [TRANSLATION] "rather rudimentary" and adds that it is more about interactions between the different components of the system rather than the data structure or organization of medical data, including the use of pointers (Thilloy Report, April 9, 2018, at para 160).

[425] Mr. Thilloy explains that the Eberhardt Patent describes both a "Central Data Facility" and a "Remote Data Storage Facility" (Thilloy Report, April 9, 2018, at para 165). However, his reading of the patent leads him to say that the usefulness of the presence of pointers would not have been clear to the POSITA since the solution presented in said patent allowed the configuration of only one remote data repository, the "Remote Data Storage Facility", such that in this case, unlike in the system proposed by Patent 794, we do not have several remote nodes present (Thilloy Report, April 9, 2018, at para 170).

[426] Despite the fact that he admitted that the Eberhardt Patent mentioned in one place—the only instance in the entire document—the presence of a pointer, Mr. Thilloy pointed out that this was not the same type of pointer as those contemplated by Patent 794:

> [TRANSLATION]
>
> 171. Finally, columns 15 to 17 describe the operation of the software, which occurs in the central data repository. Above all, they describe accounting functionalities and searches regarding multiple users (for research purposes), which are less relevant to our purposes. I note, however, that the only mention of the word "pointer" throughout the document is in column 15:

> [ENGLISH]
>
> The Open History 104 request simply causes the server to locate a history in its memory, based on the history's ID code, and to keep a file pointer open to the data. If the request indicates that the record is a new one, the system verifies that the ID is not already in use.
>
> [TRANSLATION]
>
> 172. However, it is not the same type of pointer as in Patent 794. Instead, reference is made to the internal operations of the server. Once it has located the medical history of a patient in its memory, it keeps a direct link (file pointer more often called a "file handle") in memory leading to the file where this history is found to avoid having to reopen the file. It is simply a description of how to speed up access to the data in the files.
>
> [Emphasis in original.]
>
> (Thilloy Report, April 9, 2018)

[427] It is also true that Mr. Thilloy made several admissions, on cross-examination, with respect to the Eberhardt Patent. In particular, he admitted that it referred to the notions of medical information, additional medical information, address, location of additional medical information and data structure (Transcripts, June 5, 2018, at pp 106-111). Although he agreed with Mr. April's view that the Eberhardt Patent described a pointer, Mr. Thilloy, as we have just seen, distinguished this pointer from the two-component pointer in Patent 794. According to his understanding, the pointer in the Eberhardt Patent was intended to access the "Remote Data Storage Computer", a component of the central data repository, to retrieve additional information (Transcripts, June 5, 2018, at p 106). However, he never stated or conceded that this pointer consisted of two components, as provided in Patent 794, which in this case contain, first, the address of a location where there is additional medical information concerning a given patient

and, second, a summary of the additional medical information to which the first component of said pointer points.

[428] Mr. Thilloy also pointed out that there were other important differences between the systems described in these two patents, such as the presence in Patent 794, but not in the Eberhardt Patent, of (i) two locations, separate or remote one from the other, where additional medical information is held; (ii) different nodes in a network, since there is only one in the system proposed in the Eberhardt Patent, the "Remote Data Storage Facility"; and (iii) a plurality of records associated with certain individuals, since the memory card of a patient, which serves as a computer-readable storage medium on which the patient's medical history is kept so that he or she can always have this information at hand, obviously only contains the medical data concerning this patient (Thilloy Report, April 9, 2018, at para 173).

[429] These findings were not weakened by Mr. Thilloy's cross-examination.

[430] Again, Mr. Thilloy's analysis seems to me to be more systemic, consistent and rigorous, and I give it more weight than the analysis of Mr. April. I was therefore not persuaded that the Eberhardt patent anticipated, at the relevant date, each and every one of the claims of Patent 794.

[431] Since none of the pieces of prior art relied upon in this case disclose the essential elements of the contentious claims of Patent 794, I will not have to consider the second step of the anticipation test, which is to assess the enablement of the claimed invention. In this regard, however, I note that Mr. April acknowledged on examination-in-chief that although the concept

of Patent 794 was highly prone to scaling problems related to the inevitable increase in the volume of data to be managed, it remained adequate and feasible (Transcripts, June 1, 2018, pp 149-150).

[432] I therefore come to the conclusion that **claims 1 to 8** of Patent 794 are valid with respect to anticipation.

b) *Obviousness*

[433] The defendants allege that the prior art makes **claims 1 to 8** of Patent 794 obvious. In support of this argument, they use the same pieces of prior art as those relied on for the anticipation analysis.

[434] They argue that there is no difference between the inventive concept of each of the claims of Patent 794 identified by Mr. Thilloy, and the inventive concept of the pieces of prior art Kohane AA-18 or Kohane AA-20. According to them, if the Court is of the opinion, as they are, that the memory described in Patent 794 is not volatile and that the additional data to which it refers come from separate physical devices (not logical nodes on the same device), AA-18 Kohane discloses all the claims of Patent 794. On the other hand, they argue that while Kohane AA-20 is the only piece of prior art that teaches how to connect multiple remote systems, the combination of Kohane AA-18 and Kohane AA-20 gives the POSITA all the information needed to achieve the invention.

[435] As for the Johnson Patent, they submit that if it does not pass the anticipation test, its teachings, taken alone or with those of Kohane AA-18 or Kohane AA-20, all in connection with the general knowledge of POSITA, make all the claims of Patent 794 obvious.

[436] In addition, they argue that **claims 2 and 7** are obvious when the Eberhardt Patent is combined with the Johnson Patent, Kohane AA-18 and Kohane AA-20. With respect to **claims 3 and 8**, the defendants are of the view that the Johnson Patent, combined with the Eberhardt Patent, makes them obvious. Finally, they argue that the Eberhardt Patent, alone or in combination with the Johnson Patent and/or Kohane AA-18 and Kohane AA-20, makes all the claims of Patent 794 obvious.

[437] In his table on anticipation (April Report, March 9, 2018, Appendix AA-25 (Exhibit TX-307)), Mr. April pointed out [TRANSLATION] "that among the other references that [he] commented on, several could have been used to demonstrate obviousness" (April Report, March 9, 2018, at para 170). He did not specify, however, what those [TRANSLATION] "other references" were. In his report, he simply wrote that [TRANSLATION] "the Kohane document combined with the general knowledge of the person skilled in the field meets, in [his] view, the obviousness test" and that [TRANSLATION] "it would have been obvious to a person skilled in the field that the claimed invention could be achieved by combining AA-18 (Kohane) or AA-21 (Gropper), respectively, with AA-22 (Patent 109) or AA-23 (Patent 741)" (April Report, March 9, 2018, at paras 175-176). It should be noted that Appendix AA-21 in Mr. April's first report was replaced with Kohane AA-20 at trial.

[438] In rebuttal, Mr. Thilloy stated that, on the advice of counsel for the plaintiff, he had not conducted a detailed analysis of obviousness test for Patent 794 since Mr. April had not, himself, carried out such an analysis (Thilloy Report, April 9, 2018, at paras 187-188).

[439] This leaves the Court in an awkward position since it does not have an expert opinion on the application of the obviousness test—a relatively complex test—in light of the facts of the present case, which are also relatively complex. The Court has been, in a way, left to its own devices. The defendants have made a good attempt, in their written submissions at trial, to fill the void, so to speak, with detailed representations on the subject, but the fact remains that all this has been submitted to me without the benefit of experts to assist me. In particular, all this has been submitted to me without their valuable insight into two important stages of this test, namely identifying what, if any, differences exist between the matter cited as forming part of the "state of the art" and the inventive concept of the claim or the claim as construed; and assessing those differences, without any knowledge of the alleged invention as claimed, to determine whether they would have been obvious to the POSITA or would require any degree of inventiveness (*Sanofi* para 67).

[440] The Federal Court of Appeal noted in *Apotex Inc v Canada (Health)*, 2007 FCA 243 at para 19 [*Canada (Health)*], that the analysis of the evidence must be guided "by expert evidence about the relevant skills of the hypothetical person of ordinary skill in the art, and the state of the art at the relevant time". In the same vein, this Court, in *Janssen-Ortho Inc v Novopharm Ltd*, 2006 FC 1234 at para 113 (aff'd 2007 FCA 217, leave to appeal to SCC refused, 32200 (December 6, 2007)), recalled that, not being a "scientific body", it must "take the facts of the

case, the opinions of the experts and the circumstances as presented into consideration and come up with a weighed decision" on obviousness [emphasis added]. This highlights, in my opinion, the importance of expert evidence in this field.

[441] However, it is clear that, with respect to the alleged obviousness of Patent 794, the evidence is highly deficient. As the burden of proof lay with the defendants (*Camco* at para 75), I would be tempted to conclude, as the plaintiff urges me to do, that they failed to discharge their burden, for lack of expert evidence consistent with the analytical framework required by the applicable case law in such a case.

[442] In any event, the defendants have not persuaded me that the inventive concept of the claims of Patent 794 was obvious at the relevant date in light of the interplay of the various combinations of the relevant prior art that they raised in their written representations. More specifically, they did not satisfy me that the state of the art at that time included the concept of a two-component pointer as described in the 'Patent 794 or that of different remote nodes in a network. Moreover, in my view, they failed to identify the common general knowledge that would have allowed the POSITA to fill this gap in the state of the art in order to achieve the invention claimed by Patent 794.

[443] In short, the argument that the contentious claims of Patent 794 are invalid for obviousness, which is based on highly deficient evidence, cannot be accepted.

[444] Although this is not determinative, I cannot help but note, in concluding on this point, that the plaintiff, as revealed by the overview of the steps he has taken to obtain institutional, financial and technical support for his networked medical records project, at a time when his application for Patent 794 had already been filed, steps which I referenced in paragraphs 66 to 77 of those reasons, succeeded in attracting serious players from the public and private sectors to his project, players who, according to the evidence before me, saw it as an innovative and forward-thinking initiative. This supports me in my conclusions as to the validity of Patent 794.

[445] It was also said of the plaintiff that he was unable to appreciate the true scope of his invention given his limited computer knowledge, which would explain the preponderant role played by his patent agent in preparing the application relating to Patent 794 (and the one relating to Patent 598). As the counsel for the plaintiff have pointed out, anyone can be an inventor and need not understand all the scientific principles behind their invention (*Consolboard Inc. v MacMillan Bloedel (Sask.) Ltd*, [1981] 1 SCR 504 at 526 [*Consolboard Inc.*], citing *R v American Optical Company et al* (1950), 11 Fox Pat C 62 at 85 (Court of Exchequer); *Halford* at para 52). However, here, it is clear that the plaintiff had sufficient mastery to carry out all the steps I just mentioned and to do so with a modicum of success until the MSSS turned him down.

[446] As for the role played by his patent agent, I will simply recall the adage that "the inventor invents the product and the patent agent invents the invention" (*Valence Technology, Inc. Phostech Lithium Inc.*, 2011 FC 174 at para 209, citing William L. Hayhurst, QC, "The Art of Claiming and Reading a Claim" in Gordon F. Henderson, ed., *Patent Law of Canada*, Toronto,

Thomson, 1994 at 204, aff'd 2011 FCA 237 [*Valence Technology*]. Moreover, I note that a patent agent even has the obligation to "keep abreast of new publications and advances in the field throughout the pursuit of the patent application" (*Valence Technology* para 208).

[447] I was therefore not persuaded that I should draw, from the manner in which Patent 794 application was written and dealt with, any negative inference as to the validity of that patent.

(3) Patent 598

[448] I note that the defendants argue that **claims 1, 2, 4, 9, 10, 13 to 16, 18 to 22, 28 to 31, 33 to 36 and 39 to 42** are invalid because they are obvious, overbroad and insufficiently described in Disclosure 598.

a) *Obviousness*

[449] Having already defined the POSITA and the POSITA's common knowledge, I must now decide whether said claims are obvious by examining, based on the evidence, the other steps of the obviousness test, that is, by defining the inventive concept of each claim in question, identifying the differences, if any, between the matters cited as forming part of the state of the art and the inventive concept behind the claim, and determining whether those differences constitute steps that would have been obvious to the POSITA.

[450] The defendants' claims regarding the obviousness of Patent 598 are based on three pieces of prior art, namely (i) Patent Application 2,233,794 [Patent Application 794] (Exhibit TX-273);

(ii) Patent Application 2,239,015, also from the plaintiff [Patent Application 015], (Exhibit TX-290); and (iii) US Patent No. 5,924,074 entitled "Electronic Medical Records System" [Evans Patent] (Exhibit TX-291).

[451] Patent Application 015 is virtually identical to Patent Application 794 and essentially concerns the inventive concept developed in Patent 794. For its part, the Evans Patent describes a "[m]edical record system" that "creates and maintains all patient data electronically". The purpose of this system is to enable health care staff to access, analyze, update and annotate patient medical information simultaneously from a computer connected to a wireless network.

[452] It is not disputed that those three pieces of prior art were published before the dates specified in section 28.3 of the Act, either before the priority date of Patent 598, December 13, 2000, with respect to Evans Patent, or at least one year prior to the filing of the application for Patent 598, December 22, 1999, for the Patent Application 794 and the Patent Application 015 (Joint Statement of Facts at para 6).

[453] As he did for his analysis of the validity of Patent 794, Mr. April also recorded his findings regarding the obviousness of Patent 598 in a [TRANSLATION] "summary table" which he appended to his first report (April Report, March 9, 2018, Appendix AA-29 (Exhibit TX-308)).

(i) Claim 1

Definition of the inventive concept

[454] Messrs. April and Thilloy are in substantial agreement that **claim 1** proposes a method for updating the summary medical information of a patient through a "push-type" automatic update process, and that this is the inventive concept behind this claim. However, I believe that Mr. Thilloy brings a significant nuance in situating this method within a network that allows for distributed data storage and includes a very specific data structure (Thilloy Report, April 9, 2018, at para 235). I also understand that the update envisaged by the method proposed by this claim is made from a location where new medical information about the patient is saved and is transmitted from this location to a first node where summary medical information about this patient is stored. This is, in my view, the inventive concept of **claim 1**.

Identification of what, if any, differences exist between the matters cited as forming part of the state of the art and the inventive concept of the claim

[455] Mr. April submits that the difference between the state of the art and the inventive concept of claim 1 is the [TRANSLATION] "automated" part of the update, which includes the steps of pushing the update from the second node to the first node as soon as new information is entered at the second node (April Report, March 9, 2018, at para 267). In his obviousness analysis table (April Report, March 9, 2018, Appendix AA-29 (Exhibit TX-308)), he concedes that the prior art did not literally disclose such an updating method, even though Patent Application 015 alludes to the possibility of automatic updates.

[456] On examination-in-chief, Mr. April stated that the archivist was at the heart of the application for Patent 794 (Transcripts, June 1, 2018, at pp 20, 118-119), which he confirmed on cross-examination (Transcripts, June 4, 2018, at p 187). In addition, he agreed that the idea of making automatic updates using the system called for by the Patent Application 794 represented

a [TRANSLATION] “completely different project” (Transcripts, June 4, 2018, at pp 187-188). He also conceded, on cross-examination, that nowhere in Patent Application 794 and Patent Application 015 is the possibility of replacing the archivist with a push-type updating method contemplated (Transcripts, June 4, 2018, at p 188). Mr. April also admitted that the push-type update method proposed by claim 1 was different from a “pull”-type update method (Transcripts, June 4, 2018, at pp 190-191).

[457] Commenting on Patent Application 015, Mr. Thilloy stated that, in his view, it mainly dealt with a manual-type update made by an archivist, while raising the possibility of an update to the patient’s “Smart Card” (Thilloy Report, April 9, 2018, at para 246). He noted in the latter respect that said application devoted just one sentence to describing this type of update (Thilloy Report, April 9, 2018, at para 246). Mr. Thilloy reiterated, on cross-examination, that Patent Application 015 described not a push-type update method, whereby the update is pushed to the first node automatically, but a pull-type method, whereby the update is made on demand from the first node to the second node, which hosts the additional medical information from which the update information is generated (Transcripts, June 5, 2018, at pp 121-122).

[458] With respect to Patent Application 794, Mr. Thilloy stated that the only real updating mechanism contemplated by this application was a manual update by a provider, such as a medical archivist (Thilloy Report, April 9, 2018, at para 245). He noted that, here again, there is just one sentence in Patent Application 794 referring to the possibility of implementing an automatic update, without however describing how this would be done (Thilloy Report, April 9, 2018, at para 245).

[459] As for the Evans Patent, he opined that it described a method of automatic updating of the pull type, and not of the push type, as is the case with Patent 598 (Thilloy Report, April 9, 2018, at para 244). On the other hand, he stated on cross-examination that the Evans Patent proposed a hybrid system, that is, a push and pull type (Transcripts, June 5, 2018, at pp 133-134).

[460] To sum up, Mr. Thilloy was of the opinion that there was very little teaching at the relevant time about push-type automatic updating in the specific context of the health field (Thilloy Report, April 9, 2018, at para 248).

[461] I conclude from this evidence that the "push-type" update method was part of the state of the art at the relevant dates. The defendants, however, have not shown, in my view, that the state of the art included an automatic "push-type" update method. Nor have they cited any prior art excerpts that discuss a "push-type" update method within a network that allows distributed data storage. These are, in my opinion, two differences between the inventive concept of claim 1 and the state of the art.

Viewed without any knowledge of the alleged invention as claimed, do those differences constitute steps which would have been obvious to the POSITA, or do they require any degree of invention?

[462] I find it useful at this point to quote a passage from *Bristol-Myers Squibb Canada v Teva Canada Limited*, 2017 FCA 76, in which Justice Pelletier wrote:

> [65] It may be helpful to keep in mind that the obviousness analysis asks whether the distance between two points in the development of the art can be bridged by the Skilled Person using only the common general knowledge available to such a person. If

> so, it is obvious. The first of those points is the state of the prior art at the relevant date. References in the jurisprudence to "the inventive concept", "the solution taught by the patent", "what is claimed" or simply "the invention" are attempts to define the second point.
>
> [Emphasis added.]

[463] I note that the determination of an allegation that a claimed invention is obvious is essentially a factual exercise, informed by the policy of the Act, which is to reward an inventor with a monopoly on the right to exploit the invention, provided the claimed invention is properly disclosed and fulfils the statutory requirements of novelty, utility and ingenuity (*Canada (Health)* at paras 16, 18). Viewed in this light, the obviousness analysis must be guided by expert evidence, which must be carefully assessed by the trier of facts as to its credibility and reliability (*Canada (Health)* para 19).

[464] I notice that Mr. April did not testify at the hearing about the alleged obviousness of Patent 598. In his report, he did not identify the common general knowledge the POSITA needed to bridge the gap between the inventive concept of **claim 1** and the state of the art. I note in this regard that there is nothing in the evidence to show that, at the relevant date, the POSITA would have found the automation of a "push-type" update method, or its integration in the context of a network that allows distributed data storage, to be obvious.

[465] I therefore conclude that the inventive concept of **claim 1** was not obvious at the relevant date.

(ii) Claims 2, 4, 9, 10, 13 to 16 and 18

[466] Since I have come to the conclusion that c**laim 1** is valid in terms of obviousness, and that c**laims 2, 4, 9, 10, 13 to 16 and 18** are dependent on c**laim 1**, I am of the opinion that these dependent claims are also valid. Indeed, since the dependent claims contain all the features and limitations of the claim which they incorporate by reference and merely add additional features (section 87 of the Rules, *Alcon Canada Inc v Cobalt Pharmaceuticals Company*, 2014 FC 149 at para 39), I see no reason to conclude otherwise in this case.

(iii) Claim 19

Definition of the inventive concept

[467] Here again, the experts define the idea behind **claim 19** in much the same way. Mr. April is of the view that this claim is similar to **claim 1**, but instead of describing a method, he discusses a server arrangement serving the same purpose (April Report, March 9, 2018, at para 283).

[468] According to Mr. Thilloy, [TRANSLATION] "the main aspect of the inventive concept of the claim is the "push-type" update method", but he adds this nuance: [TRANSLATION] "the description of the arrangement of servers and the data structure within which this method operates [is] equally important" (Thilloy Report, April 9, 2018, at para 275).

[469] Moreover, the two experts agree that this claim gives more details on the "push-type" automatic update method than **claim 1** does, as it specifies, at least in part, the content of the update information transmitted, which is supposed to include a unique identifier and patient care

information (April Report, March 9, 2018, at paras 285-286; Thilloy Report, April 9, 2018, at paras 274, 276).

[470] I therefore conclude that the inventive concept of **claim 19** echoes the one in **claim 1**, but uses a server arrangement for the purposes of the update contemplated by **claim 1**. In accordance with my interpretation of **claim 19**, I understand that this server arrangement replaces the second node of **claim 1** and that the information "pushed" through the update is more detailed than in **claim 1**, to the extent that it includes an identifier for identifying the patient the new information concerns, as well as an item of information to identify the care or service related to this information.

Identification of what, if any, differences exist between the matters cited as forming part of the state of the art and the inventive concept of the claim

[471] Mr. April is of the view that the only difference between the state of the art and the inventive concept of **claim 19** is the "push-type" method of sending update data. According to him, the POSITA would have been familiar with this concept (April Report, March 9, 2018, at para 288).

[472] In his obviousness analysis chart for Patent 598 (April Report, March 9, 2018, Appendix AA-29 (Exhibit TX-308)), he admits that this update method was not disclosed in Patent Application 794 or in Patent Application 015, which is consistent with his first report (April Report, March 9, 2018, at para 288). With respect to the Evans Patent, he is of the view that it discloses many of the elements of **claim 19**, including the presence of medical records whose

information is distributed on local computers or servers and external systems, as well as the use of pointers pointing to external or remote medical data.

[473] Mr. Thilloy relies, for the most part, on his comments in relation to **claim 1** (Thilloy Report, April 9, 2018, at para 277). In this regard, I recall that Mr. Thilloy was of the opinion that the "push-type" update method, [TRANSLATION] "in a general sense", would have already been known to the POSITA (Thilloy Report, April 9, 2018, at para 235; Transcripts, June 5, 2018, at p 116), but not the possibility of implementing an automatic "push-type" update method (Thilloy Report, April 9, 2018, at paras 244-247).

[474] In light of this evidence, it seems to me that the "push-type" update method was part of the state of the art at the relevant dates. However, the defendants did not demonstrate that the state of the art included the automation of such an updating method or its integration into a server arrangement. These are, in my opinion, the differences between the state of the art and the inventive concept of **claim 19**.

Viewed without any knowledge of the alleged invention as claimed, do those differences constitute steps which would have been obvious to the POSITA, or do they require any degree of invention?

[475] Once again, Mr. April could not identify any common general knowledge that would have allowed the POSITA to automate, without displaying any inventive ingenuity, the "push-type" update method contemplated by **claim 19**. The same is true for the implementation of this method within a server arrangement. In my view, this indicates that the plaintiff was inventive with respect to these two central elements of **claim 19**.

[476] **Claim 19** is therefore, in my opinion, valid.

(iv) Claims 20 to 22 and 28 to 30

[477] **Claims 20 to 22** and **28 to 30** are dependent on **claim 19**. Based on my analysis of **claim 19**, I am of the view that they are also valid.

(v) Claim 31

Definition of the inventive concept

[478] The experts agree that **claim 31** is similar to **claims 1 and 19**, except that it concerns a "push-type" update method, but it is not specified that it is automatic (April Report, March 9, 2018, at para 292, Thilloy Report, April 9, 2018, at paras 279, 281).

Identification of what, if any, differences exist between the matters cited as forming part of the state of the art and the inventive concept of the claim

[479] Mr. April devotes only two brief paragraphs of his report to this aspect of the obviousness analysis. He simply explains that this update method appears to be already described in Patent Application 794 and Patent Application 015 (April Report, March 9, 2018, at paras 296-297). In his summary table (April Report, March 9, 2018, Appendix AA-29 (Exhibit TX-308)), he notes that the update method described in Patent Application 794 and Patent Application 015 is not necessarily automatic and can be done by an archivist. He also submits that the Evans Patent discloses many of the essential elements of this claim, including medical records whose information is distributed on local computers or servers and external systems.

[480] For his part, Mr. Thilloy refers to his comments made in relation to **claim 1** to demonstrate that **claim 31** is not obvious (Thilloy Report, April 9, 2018, at para 285). He claims that **claim 31** was not obvious at the relevant date because it describes in even more detail the "push-type" update method that is the core of the inventive concept of this claim (Thilloy Report, April 9, 2018, at para 285).

[481] Although this "push-type" update method is further detailed in **claim 31**, I note that Mr. Thilloy stated elsewhere in his report that the updating method contemplated by this claim was not [TRANSLATION] "necessarily automatic" (Thilloy Report, April 9, 2018, at paras 279, 281).

[482] Concerning prior art, I note that Patent Application 015 and Patent Application 794 both describe a method for updating the "Network Distributed Shared Medical Record" (NDSMR). According to the evidence in the record, the NDSMR is a medical record distributed over a network that includes a summary containing medical information about an individual. Patent Application 794 states in part as follows:

> The NDSMR is an evolving summary medical document for a particular individual, integrated in the form of a network accessible document. By "summary", this implies that the file does not necessarily contain all the information currently found in local network medical archives. Rather it is a compendium of critical medical information pertinent to a particular individual, potentially useful in the medical diagnosis of an individual's state of health and corresponding treatment.
>
> . . .
>
> In a preferred embodiment of this invention, the NDSMR includes a universal or network attributed identifier, distinguishing one file from another, and a dynamically updated list of biological data pertinent to the individual, accessible by pointers referring to the

> local network where the data is actually being stored. This biological data consists of significant medical documents in an electronic format such as laboratory tests, x-rays, surgical reports, electrographic data, etc. Alternatively, other embodiments of the NDSMR may also include a variety of other medical information pertinent to the individual.
>
> [Emphasis added.]
>
> (Patent Application 794 at pp 21-22 (Exhibit TX-273))

[483] One of the preferred embodiments described in said application specifies that this summary may contain, in particular, medico-administrative information as well as medical data (Patent Application 794 at p 22 (Exhibit TX-273)). It also specifies the presence of pointers pointing to medical documents stored in other local networks:

> The final category seen in Figure 6C consists of the dynamically updated links to other biological data. The eight pointers listed refer to other medical documents pertinent to John Doe which are maintained in different local networks, and which can be downloaded from another network site to the client workstation by invoking the downloading operation embedded in the pointer, thus specifying the address of the site (and if necessary of a particular file at that site).
>
> (Patent Application 794 at pp. 22-23 (Exhibit TX-273))

[484] The applications relating to Patent 794 and Patent 015 also contain exactly the same Figure 9 as the one in Patent 598. This figure summarizes a procedure to be followed by a medical archivist to update an NDSMR:

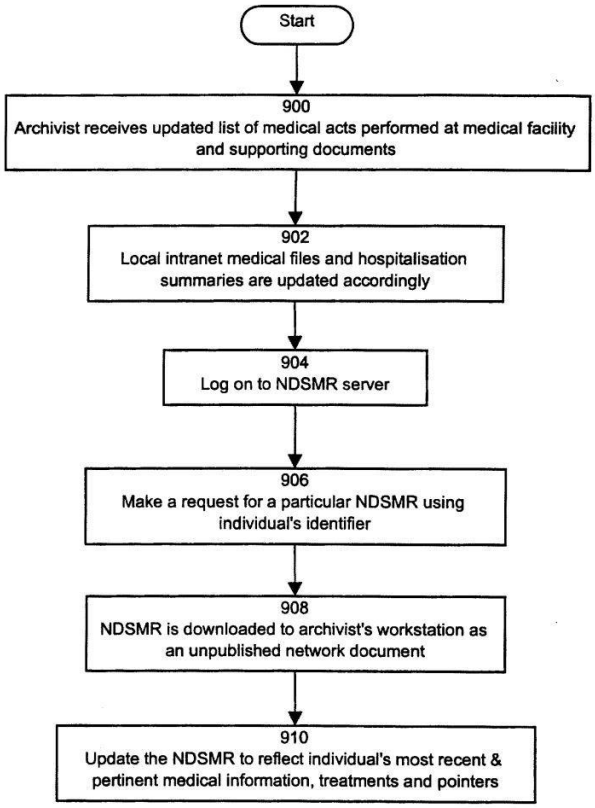


Figure 9

[485] I understand, in light of the wording of Patent Application 794, that the update is a two-step process: the archivist first logs on to the NDSMR server and makes a request to obtain the NDSMR for each patient needing an update; as a result of this request, the patient's NDSMR is downloaded to the archivist's workstation, allowing him or her to modify and update the information contained in the NDSMR of this patient (Patent Application 794 at p 26 (Exhibit TX-273)).

[486] Unlike **claims 1 and 19**, **claim 31** is the only independent claim that addresses a "push-type" update method that is not automatic. Mr. Thilloy agrees that this non-automatic "push-

type" update method would have been part of the common general knowledge of the POSITA at the relevant dates (Thilloy Report, April 9, 2018, at para 235).

[487] In light of this evidence, I am of the opinion that the state of the art, as disclosed by Patent Application 794, included a non-automatic "push-type" update method. I am also of the opinion that the integration of such an update method in the context of what is described in **claim 31**, that is to say, in a context where the update is initiated at a second node and "pushed" to the first node, which keeps a summary of the medical information of a patient, was also part of the state of the art, as further disclosed by Patent Application 794.

[488] I therefore consider that there is no difference between the inventive concept of **claim 31** and the state of the art since this claim contemplates what had already been contemplated in Patent Application 794. Therefore, I conclude that at the relevant dates, **claim 31** was obvious. It is therefore invalid.

(vi) Claims 33 to 36, 39 and 40

[489] I recall that since dependent claims are narrower in scope than independent claims, it is possible that the narrower dependent claim could escape the prior art and remain inventive, that is to say, non-obvious (*Zero Spill* at para 94, *Safe Gaming* at para 161).

[490] Mr. April relies on his comments made in connection with **claims 9 and 10** for **claims 33 and 34**, **claims 3 and 4** for **claims 35 and 36,** and **claims 13 and 14** for **claims 39 and 40** (April

Report, March 9, 2018, at paras 298-301). Mr. Thilloy did the same (Thilloy Report, April 9, 2018, at para 286).

[491] I recall that **claim 33** states that the second node specified in **claim 31** is implemented by a server arrangement. For its part, **claim 34** specifies that the first node includes a microprocessor associated with a storage medium that can be used by a machine and housing the summary medical information.

[492] **Claim 35** specifies that the medical tests referred to in **claim 31** include laboratory tests, whereas **claim 36** states that it may be medical imaging tests.

[493] **Claim 39** states that the second node referred to in **claim 31** houses information of a medical nature concerning a plurality of patients, that is, more than one patient. **Claim 40** specifies that the information in the network includes nominative and non-nominative information.

[494] With respect to **claim 9** (**claim 33**), Mr. April states that the fact that it mentions that the second node referred to in **claim 1** (**claim 31**) is implemented by a server arrangement is not inventive. The same is true, in his view, of the fact that, according to **claim 10** (**claim 34**), the first node referred to in **claim 1** (**claim 31**) includes a microprocessor linked to a memory (April Report, March 9, 2018, at paras 276-277).

[495] Mr. April is also of the view that **claims 3 and 4** (**claims 35 and 36**) do not include specifications related to the steps of the method described in **claim 1** (**claim 31**). He notes that these claims only give examples of services or medical care listed in the data structure referred to in **claim 1** (diagnostic tests, laboratory tests, imaging tests, prescriptions, etc.). Thus, he still does not see any originality related to the nature of the data covered by these claims (April Report, March 9, 2018, at para 271).

[496] With respect to **claims 13 and 14** (**claims 39 and 40**), he submits that the elements contained therein are clearly described in Patent Application 794 and Patent Application 015 (April Report, March 9, 2018, at paras 280-281).

[497] Mr. Thilloy generally agrees with Mr. April's brief comments in relation to **claims 9, 10 and 13** (**claims 33, 34 and 39**) (Thilloy Report, April 9, 2018, at para 267). Since he concludes that **claim 1 (claim 31)** is not obvious, he is of the opinion that **claims 9, 10 and 13 (claims 33, 34 and 39)** are not obvious for the same reasons (Thilloy Report, April 9, 2018, at para 267). He admits, however, that [TRANSLATION] "if the Court were to conclude that claim 1 was obvious, [he] does not believe that claims 9, 10, 13 and 18 add much more inventiveness so as to render them non-obvious" (Thilloy Report, April 9, 2018, at para 267).

[498] With respect to **claims 3 and 4 (claims 35 and 36),** Mr. Thilloy agrees with Mr. April that [TRANSLATION] "these dependent claims do not relate directly to the method of updating as such, but rather specify the nature of the medical care or services for which data is stored in the system" (Thilloy Report, April 9, 2018, at para 257). However, he makes the same concession as

he did in relation to **claims 9, 10 and 13**, should I conclude that **claim 1** is obvious (Thilloy Report, April 9, 2018, at para 258).

[499] Finally, Mr. Thilloy notes that **claim 14 (claim 40)** introduces the concept of nominative information and non-nominative information, and that the claim is inventive (Thilloy Report, April 9, 2018, at para 272).

[500] I would reiterate that one of the fundamental distinctions between the inventive concepts of **claims 1 and 31** lies in the automatic or non-automatic nature of the "push-type" update method described therein: the first is, the other is not.

[501] With respect to **claims 33 to 36 and 39**, I acknowledge Mr. Thilloy's admission that he does not believe, if I were to conclude that **claim 1** is obvious, that **claims 3, 4, 9, 10 and 13** add much more inventiveness so as to make them non-obvious. As I am of the view that **claim 31** is obvious, I conclude that **claims 33 to 36 and 39**, which for all intents and purposes duplicate **claims 3, 4, 9, 10 and 13**, are obvious to the same extent as **claim 31**.

[502] As I have construed it, **claim 40,** in turn, specifies that the medical information in the patient data network includes nominative and non-nominative information.

[503] As Mr. April pointed out in his first report (April Report, March 9, 2018, at para 281), this concept was already reflected in Patent Application 794 in the context of NDSMRs:

> Yet another feature of this invention is its use as a search/query engine. Not only can a user perform searches for or queries on

> NDSMRs within his/her own local Intranet, but also within external sources. NDSMR searches and queries may be performed on two different types of data, and therefore databases: nominative and non-nominative. Non-nominative medical data and databases are accessible to all authorized users, but do not require authorization from the patient whose personal data is being consulted. Nominative medical data and databases require search authorization from both the workstation client, typically a doctor or consultant, and the concerned patient, with the exception of situations where emergency medical care is required. The search requester will be prompted for this authorization through the workstation interface described above, the authorization comprising some form of password, biological signature or smart card. In the case where a search is performed by a user without nominative search authorization, the NDSMR Database Management System (DMS) will automatically mask any nominative data found in the database response before transmitting it to the client workstation. In summary, the NDSMR system permits the delay-free consultation of pertinent information found within different local files and, for authorized users, offers an integrated research motor which allows for non-nominative research, by object or by concept, on the whole of the accessible databases.
>
> [Emphasis added.]
>
> (Patent Application 794 at pp 27-28 (Exhibit TX-273))

[504] Therefore, with respect to **claim 40**, I find that there is no difference between the inventive concept of this claim and the state of the art, as disclosed by Patent Application 794. **Claim 40** is therefore, in my opinion, invalid for obviousness.

[505] To sum up, I find that **claims 33 to 36, 39 and 40** of Patent 598 are invalid for obviousness.

(vii) Claims 41 and 42

[506] Mr. April relies, for the most part, on his comments in relation to **claim 15 and 16** (April Report, March 9, 2018, at para 301). Mr. Thilloy did the same (Thilloy Report, April 9, 2018, at para 286).

[507] I recall that **claims 41 to 42** deal with nominative and non-nominative information and the location where each type of information must be stored in the data network.

[508] The two experts agree that **claims 15 and 16 (claims 41 and 42)** specify where the nominative and non-nominative information is stored and are therefore more specific than **claim 1** (**claim 31**), on which they are dependent. Mr. Thilloy concludes that, being more specific, they are even less obvious than **claim 1** (**claim 31**) (Thilloy Report, April 9, 2018, at para 272).

[509] Mr. April, on the other hand, does not see it as innovative (April Report, March 9, 2018, at para 281). In his summary table (April Report, March 9, 2018, Appendix AA-29 (Exhibit TX-308)), he concedes, however, that neither Patent Application 794 nor Patent Application 015 specified the segregation provided for in **claims 15 and 16** (**claims 41 and 42)** at the first and second nodes contemplated by **claim 1** (**claim 31**).

[510] In this context, and considering that Mr. April also does not identify the common general knowledge that would have been necessary for the POSITA to fill this gap in the prior art in order to devise the invention claimed in Patent 598, **claims 41 and 42** are valid.

[511] I therefore conclude that there is no reason to invalidate, for obviousness, **claims 1, 2, 4, 9, 10, 13 to 16, 18 to 22, 28 to 30, 41 and 42** of Patent 598. That is not the case, however, with **claims 31, 33 to 36, 39 and 40**, which in my opinion are all invalid for obviousness.

(4) Overbreadth

[512] The defendants rely on the defence of overbreadth against **claims 1, 19 and 31** of Patent 598. They argue that these claims, which were repeatedly changed in the course of processing Patent Application 598 over a period spanning more than a decade, give the plaintiff a much greater monopoly than had been envisaged at the time said application was filed.

[513] It is now settled law that a patent which claims more than what was invented or disclosed can be found invalid for being overly broad (*Pfizer Canada Inc v Canada (Health)*, 2007 FCA 209 at para 115, leave to appeal to SCC refused, 32132 (November 15, 2007)). In other words, "[t]he public is entitled to accurate and meaningful teaching in exchange for suffering the patent monopoly. The patent claims must be supported by the disclosure" (*Apotex Inc v Wellcome Foundation Ltd*, 2002 SCC 77 at para 83; *Nova Chemicals* at para 48). This is an integral part of the patentee's duty to "correctly and fully describe" the invention (paragraph 27(3)(a) of the Act).

[514] The notion of overbreadth may encompass a situation where the claims are broader in scope than the invention disclosed in the specification, or than the invention made (*AFD Petroleum Ltd* at para 49; see for example *Cobalt Pharmaceuticals Company v Bayer Inc*, 2015

FCA 116 at para 74). This is a question of law in the first case and a question of fact in the second (*AFD Petroleum Ltd* at para 49).

[515] In the case at hand, the defendants' expert, Mr. April, submits that the use of the word "node" in place of the term "PCS" (Personal Communication System) or cellular phone in **claim 1** of Patent 598 goes beyond what the plaintiff really invented because, in his view, the plaintiff had thought of an automatic update mode only for the purposes of the specific context of cell phones (April Report, March 9, 2018, at para 270).

[516] With respect to **claims 19 and 31**, the defendants argue that they are not related to the use of a "Personal Communication System", which they say is at the heart of Disclosure 598, and that they are therefore overbroad.

[517] Since the invention never materialized, Patent 598 can only be invalidated for overbreadth if the claims at issue have a broader scope than the invention described in the disclosure (*AFD Petroleum Ltd* at para 49).

[518] As for **claim 1**, a reading of Disclosure 598 shows that Patent 598 has a scope that is not limited to the use of cellular telephones or, more generally, a personal communication system. On the one hand, it is clear from the wording of Disclosure 598 that the use of a personal communication system, including a cellular telephone, which is just one example of a personal communication system, is just one means of implementing the invention ("[i]n a specific, non-limiting example of implementation, a personal communication system (PCS), such as a cellular

phone, can be used to access the NDSMR database") (Patent 598 at p 9 (Exhibit TX-2)). On the other hand, Disclosure 598 provides a non-exhaustive list of other types of personal communication systems that can access the NDSMR database ("[o]ther examples of such a PCS include a web phone, a cellular notepad, IP television screen or monitor, among others") (Patent 598 at p 9 (Exhibit TX-2)).

[519] In addition, Mr. April stated in his first report that the only references to cell phones in Patent 598 were limited to **claims 9, 25 and 32** alone (April Report, March 9, 2018, at para 202). This seems to contradict his claim that Patent 598 only covers an update method applicable to cell phones. As I have already stated, Patent 598 describes and claims first and foremost a concept for automatically updating the summary medical information described in Patent 794 and, to a lesser extent, a concept for allowing doctors or patient themselves to access this information by means of a personal communication system.

[520] Finally, the plaintiff testified on examination-in-chief and on cross-examination that he intended to refer to electronic devices other than cell phones, including "Personal Digital Assistants" (Transcripts, May 28, 2018, at p 122, Transcripts, May 29, 2018, at p 11).

[521] It is therefore clear that the plaintiff did not limit himself to inventing an automatic updating mode that is only applicable in the specific context of cell phones or even personal communication systems.

[522] It follows, in my opinion, that **claim 1** is not overbroad.

[523] With respect to **claims 19 and 31**, this Court has already held that the fact that a claim is not limited to a preferred embodiment described in the patent disclosure was not sufficient, in and of itself, to conclude that the patent in question was overly broad (*Fournier Pharma Inc v Canada (Health)*, 2012 FC 740 at paras 148-149). As we have just seen, the implementation of the invention by means of a personal communication system is only a preferential embodiment of Patent 598. Therefore, I am also of the view that **claims 19 and 31** are not overly broad.

(5) Insufficiency of disclosure

a) *Applicable legal principles*

> Subsection 27(3) of the Act requires that the specification of an invention must "correctly and fully describe the invention and its operation or use as contemplated by the inventor", and must, in the case of a process, "explain the necessary sequence, if any, of the various steps, so as to distinguish the invention in question from other inventions" (paragraphs 27(3)(a) and (d) of the Act).
>
> As I have already mentioned, the principle that the inventor obtains, for a specified period, a monopoly over a new and useful invention in exchange for the disclosure of the invention so as to benefit the society, is a basic policy rationale underlying the Act (*Teva Canada* at para 32).

[524] The test for determining whether a disclosure is sufficient can be summarized as follows:

> The applicant must disclose everything that is essential for the invention to function properly. To be complete, it must meet two conditions: it must describe the invention and define the way it is produced or built. . . . A failure to meet the first condition would invalidate the application for ambiguity, while a failure to meet the second would invalidate it for insufficiency. The description must be such as to enable a person skilled in the art or the field of the invention to produce it using only the instructions contained in the disclosure . . . and once the monopoly period is over, to use the invention as successfully as the inventor could at the time of his application.

> [Emphasis added; citations omitted.]
>
> (Pioneer Hi-Bred Ltd v Canada (Commissioner of Patents), [1989] 1 SCR 1623 at p 1638; Teva Canada at para 51)

[525] In determining whether the disclosure requirements have been met in this case, the first step is to define the nature of the invention at issue (*Teva Canada* at para 53). It is the specification and not just the claims that the Court must consider to determine whether the patent in question meets the meets the disclosure requirements (*Teva Canada* at para 69; subsection 27(3) of the Act). Again, bearing in mind the principle of the primacy of claims, the specification must, for the sake of sufficiency of disclosure, define the "precise and exact extent" of the privilege claimed so as to ensure that the public can, having only the specification, make the same use of the invention as the inventor (*Teva Canada* para 70). Whether or not a specification is sufficient depends on what a skilled person would consider to be sufficient (*Teva Canada* at para 79).

[526] Finally, the disclosure would be insufficient if the person skilled in the art would have to undertake a "major research project" to make the invention (*Bombardier FC* at para 568).

[527] The defendants allege insufficient disclosure in the two patents in issue.

b) *Patent 794*

[528] In their written representations, the defendants presented their arguments regarding the insufficiency of Disclosure 794 in the section entitled [TRANSLATION] "Lack of

utility/insufficient description of specification/overbreadth", but did not distinguish between each of the grounds of invalidity.

[529] If I understand their position correctly, the defendants argue that Disclosure 794 is insufficient because it gives no details as to how to access the systems or servers where the additional data is located, which are protected by "firewalls" and do not all speak the same computer language. It is therefore [TRANSLATION] "unlikely", in their view, that the POSITA could have made the invention described in Patent 794 and achieved the purpose described by the plaintiff in said patent.

[530] The defendants draw attention to Mr. Thilloy's admissions that the POSITA would have had difficulties related to incorporating the exchange protocols into the system described in Patent 794, addressing the security issues and setting up the architecture proposed by said patent. They also pointed out that Mr. Thilloy agreed that his POSITA would not have been able to create a system similar to the QHR, either in its entirety or even if limited to the data exchange portion of said system.

[531] In terms of the POSITA's ability to make the invention, as I have already pointed out, Mr. April himself acknowledged that, despite the possibility of experiencing scaling problems related to the increased data volume to be managed, the invention of Patent 794 was achievable (Transcripts, June 1, 2018, at pp 149-150).

[532] With respect to Mr. Thilloy's admissions, it is true that he conceded that Patent 794 did not refer to a data exchange protocol whereas he himself characterized this as an essential element of the patent (Transcripts, May 30, 2018, at pp 45-46; Transcripts, June 5, 2018, at p 35). Mr. Thilloy also admitted that security details were missing from Disclosure 794 (Transcript, June 5, 2018, at p 35).

[533] On the other hand, Mr. Thilloy made it clear that the absence of a reference to data protocols or security details would not have had the effect of preventing Patent 794 from being made, on the grounds that not mentioning or clarifying this allowed the POSITA to opt for any of the different exchange protocols then available on the market (Transcripts, June 5, 2018, at pp 33-34). As I indicated elsewhere, on the basis of the testimony of the two experts, the POSITA would have been very familiar with so-called "open" data exchange protocols, namely the DICOM and HL7 commercial protocols.

[534] Moreover, although Mr. Thilloy indicated in his cross-examination that [TRANSLATION] "this set up should be considered when expanding the scope of the system in terms of patients, therefore in terms of users" (Transcript, June 5, 2018, at p 67) he never conceded that this would prevent making the invention based on Disclosure 794.

[535] Finally, the defendants are correct in stating that Mr. Thilloy agreed with their argument that the POSITA could not have conceived the QHR from Disclosure 794 (Transcripts, June 5, 2018, at pp 38-39, 52). However, the insufficiency analysis aims to assess whether the POSITA,

having only the specification in mind, could have made, with the same success as the inventor, the invention, and not an alleged infringing item (*Teva Canada* at paras 50, 79).

[536] For these reasons, I am of the opinion that the defendants have failed to establish that Disclosure 794 was insufficient.

c) *Patent 598*

[537] The defendants allege that the only embodiment described in Patent 598 relates to automatic updating from one node to another, which embodiment is applicable only to cellular phones. They claim that Disclosure 598 is insufficient because there are no details on the applications to be included on the cellular phone, the types of protocols to be used between the telecommunications companies, and the devices, or on how security should be managed. Thus, they continue, the POSITA could not have implemented the automatic updating system contemplated by Patent 598 based on the disclosure it contains.

[538] More specifically, Mr. April submits that the steps of the update method contemplated by Patent 598, namely (i) the transmission of the update information from the second node to the first by the "push-type" method, (ii) the receipt of the update at the first node, and (iii) the creation of a new item in the summaries hosted at the first node, are not shown or explained in the "Detailed Description" section of Disclosure 598 (April Report, March 9, 2018, at para 270).

[539] In rebuttal, Mr. Thilloy submits that this finding is contradictory, since Mr. April clearly claims obviousness in **claim 1** and, in the alternative, argues that the same claim could not be

produced by the POSITA. He refers to pages 9-11e and 35-38 of Disclosure 598 to demonstrate that these steps are adequately described (Report Thilloy, April 9, 2018, at paras 250, 253).

[540] I find that the analytical lens through which the defendants present these grounds of invalidity is problematic. Indeed, they allege that since an embodiment of Patent 598 is applicable only to cell phones, Disclosure 598 is insufficient. However, the analysis of the insufficiency of the disclosure must relate to the invention and not to one of its preferred embodiments. Indeed, the POSITA must be able, "having only the specification, to make the same successful use of the invention as the inventor could at the time of his application" [emphasis added] (*Teva Canada* at para 50, citing *Consolboard Inc.*).

[541] Moreover, I note that the patentee does not have to describe all the preferred embodiments of the claimed invention in the section relating to the description thereof (*Bombardier FCA* at para 54).

[542] I also find no merit in the argument that the updating method is not be described in Disclosure 598 since it is described on pages 11a and 11b of said disclosure:

> As embodied and broadly described herein, the invention provides a method for performing automatic updates of summary medical information for a first patient, residing at a first node of a data network when new medical information for the first patient is recorded at a second node of the data network, the first node being configured for receiving data from the second node over a communication path linking the first and second nodes . . .
>
> the method including:
>
> (iii) pushing to the first node a medical information update when new medical information about the first patient is recorded at the second node, including processing the new medical information to

> derive update data and initiating at the second node a data transmission to the first node, the data transmission conveying to the first node the update data;
>
> (iv) receiving at the first node the update data sent by the second node;
>
> (v) creating at the first node a new information item based on the update data.

The fact that the description of the update method is not found in the "Detailed Description" section of Disclosure 598 has no impact, since the analysis of the disclosure's sufficiency must be made in the light of the entire specification (*Teva Canada* at para 69).

[543] In this case, the defendants have not persuaded me that Disclosure 598 was so inadequate as not to permit the POSITA to make the invention contemplated therein solely on the basis of the instructions contained in the disclosure.

[544] I therefore conclude that both Disclosure 794 and Disclosure 598 are sufficient.

D. *Right to compensation*

[545] As the patentee of Patents 794 and 598, only the plaintiff had the right, privilege and liberty of making, constructing and using his two inventions, and of selling them to others to be used.

[546] As I have come to the conclusion that the contested claims of these two patents have been infringed and that the vast majority of them are valid, the plaintiff asks me to declare that he is

entitled, as a result of this violation, to the award of damages or to an accounting of profits. He asks me to declare that he is also entitled to reasonable compensation within the meaning of subsection 55(2) of the Act in relation to the violation of Patent 598.

[547] Subsection 55(1) of the Act states that a person who infringes is liable for all damages sustained by the patentee after the grant of the patent, by reason of the infringement. It seems to me to be established, therefore, that the plaintiff is entitled to be compensated by the defendants for their infringement of the patents at issue.

[548] As for subsection 55(2) of the Act, it recognizes that a patentee has a right to reasonable compensation from a person for any damage sustained "by reason of any act on the part of that person, after the application for the patent became open to public inspection under section 10 and before the grant of the patent, that would have constituted an infringement of the patent if the patent had been granted on the day the application became open to public inspection under that section". In this case, I note that Patent 598 became open to the public on December 13, 2000, and was granted on February 24, 2015.

[549] At first glance, the plaintiff also appears to be entitled to payment of the reasonable compensation contemplated by subsection 55(2) of the Act. No representation to the contrary was submitted to me.

[550] In either case, the determination of the quantum of the sums that this represents will be made after a separate exercise, given the order dividing these proceedings into two parts, that of liability and that of damages.

[551] The plaintiff's action will therefore be allowed in part. In view of this result, the plaintiff claims costs. However, at the request of the parties, I will reserve judgment on this matter and give them 30 days after the delivery of these reasons and judgment to make written submissions to me on this matter.

[552] Although the plaintiff's pleadings were filed in English, the parties agreed at trial to have this judgment written, and first issued, in French. I note in this regard that the entire trial was conducted in that language, including the plaintiff's testimony and the interventions and representations made on his behalf by his counsel.

JUDGMENT in T-975-16

THE COURT:

1. **ALLOWS in part** the plaintiff's action;

2. **DECLARES** that the defendants have infringed claims 1 to 8 of Patent 2,233,794 to the extent described in paragraph 317 of these reasons;

3. **DECLARE**S claims 1 to 8 of Patent 2,233,794 to be valid;

4. **DECLARES** that the defendants have infringed claims 1, 2, 4, 9, 10, 13 to 16, 18 to 22, 28 to 31, 33 to 36 and 39 to 42 of Patent 2,329,598 to the extent described in paragraph 379 of these reasons;

5. **DECLARES** claims 1, 2, 4, 9, 10, 13 to 16, 18 to 22, 28 to 30, 41 and 42 of Patent 2,329,598 to be valid;

6. **DECLARES** that claims 31, 33 to 36, 39 and 40 of Patent 2,329,598 are invalid for obviousness and, consequently, immaterial to the infringement of said claims with regard to the rights and obligations of the defendants in this case;

7. **DECLARES** that the plaintiff is entitled to the award of damages or an accounting of profits as a consequence of the defendants' infringement of Patent 2,233,794 and Patent 2,329,598;

8. **DECLARES** that the plaintiff is entitled, pursuant to subsection 55(2) of the *Patent Act*, to reasonable compensation in connection with the infringement of Patent 2,329,598 for the period preceding the issue of said patent;

9. **RESERVES judgment** on costs, with the parties being required to make written submissions with respect to this matter within 30 days after the delivery of these reasons and judgment.

"René LeBlanc"

Judge

Certified true translation
This 2nd day of July, 2019.

Michael Palles, Translator

FEDERAL COURT

SOLICITORS OF RECORD

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DATED:	APRIL 2, 2019

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