Federal Court  Cour fédérale

Date: 20220623

Docket: T-921-17

Citation: 2022 FC 874

Ottawa, Ontario, June 23, 2022

PRESENT: The Honourable Mr. Justice Lafrenière

BETWEEN:

ROVI GUIDES, INC.

Plaintiff/
Defendant by Counterclaim

and

VIDEOTRON LTD.

Defendant/
Plaintiff by Counterclaim

PUBLIC JUDGMENT AND REASONS

I. Introduction

[1] On June 23, 2017, Rovi Guides, Inc. [Rovi], and TiVo Solutions Inc. [TiVo], brought the present action against the Defendant, Videotron Ltd. [Videotron], alleging infringement of four patents owned by Rovi, described in paragraph 2 below, and two patents owned by TiVo -

Canadian Patent Nos. 2,333,460 and 2,323,539 [TiVo Patents]. TiVo discontinued its action against Videotron with respect to the TiVo Patents on January 21, 2020.

[2] Rovi seeks relief in respect of alleged infringement of the following patents that relate generally to "interactive television program guide" [IPG] technology:

1) Canadian Letters Patent No. 2,337,061 [061 Patent];
2) Canadian Letters Patent No. 2,339,629 [629 Patent];
3) Canadian Letters Patent No. 2,730,344 [344 Patent]; and
4) Canadian Letters Patent No. 2,336,870 [870 Patent].

[Collectively, the "Patents".]

[3] At the heart of the Patents is the concept of an IPG. At a high level, an IPG consists of software that generates for display television program listings and recorded content in electronic form that a user can navigate by electronic means. In IPGs, information on available programming content is downloaded or sent to a user's television equipment, typically a set-top box [STB], and the information is then stored in memory. A STB is so-called because it originally sat on top of the television set. It is also colloquially known as a cable box.

[4] The Patents cover many aspects of the design and engineering of an IPG that can be accessed through a television set or another platform, such as a mobile phone or website. The Patents originated from filings made in the late 1990s. They were all expired by the time the trial commenced.

[5] Although over a hundred claims of the Patents were in issue when the action was commenced, they were whittled down to fourteen (14) by the time the trial started. Rovi is pursuing only four (4) sets of claims. These will be referred to in these reasons collectively as the "Asserted Claims."

[6] Videotron denies the allegations of infringement and has counterclaimed that the claims of the Patents are invalid on various grounds, including anticipation, obviousness, insufficiency, and ambiguity. It submits that the Asserted Claims of the Patents are directed to straightforward and routine design choices for user interfaces and system access methods for STBs and IPGs, that no technological problem has been identified for which the claimed subject matter provides a solution, and there is nothing novel or inventive in the Patents. Videotron further argues that there are substantive differences between the Asserted Claims and Videotron's particular implementations of STB and IPG software and there has been no infringement of any rights owned by Rovi.

[7] For the reasons set out below, I conclude that all of the Asserted Claims are invalid because they are either anticipated and/or obvious having regard to the prior art and the common general knowledge [CGK] of the skilled person (as defined further below). It follows that Rovi's action is dismissed and Videotron's counterclaim is granted.

[8] I wish to point out from the outset that the parties both filed meticulous and well-reasoned written representations. I have borrowed liberally from their facta in reaching my conclusions.

II. Overview

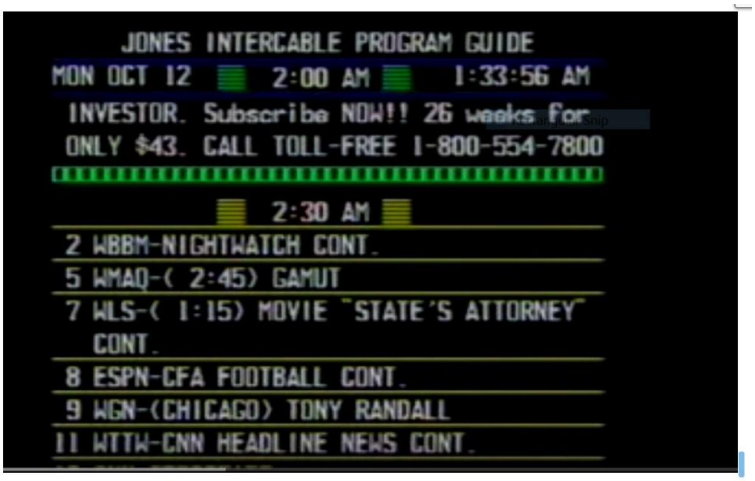
A. *Interactive Program Guide*

[9] A brief description of the development of IPGs over the years is useful at this stage to put the issues in these proceedings in context.

[10] Television viewers originally obtained information about upcoming programs and scheduling in paper form, such as an insert in the newspaper or as a stand-alone television guide that was available for purchase.

[11] In the late 1980s to early 1990s, television program guides moved from a printed version to an electronic program guide [EPG]. The early EPG was essentially a non-interactive, linear list of current and upcoming television programs on all available channels that scrolled automatically. The user would have to wait for the list to reach a time slot of interest in order to see what programming was available on the various channels in that particular period of time.

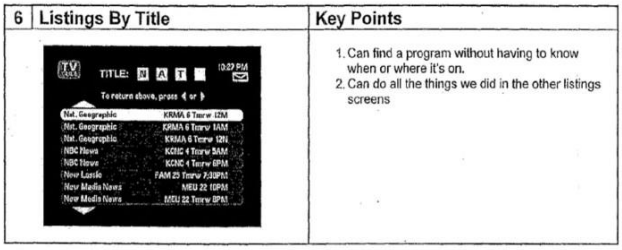
[12] An example of an early EPG is shown below.



[13] The manner in which program information was delivered to a consumer's television changed over time. As technology progressed, EPGs were enhanced to allow users to interact with the content being displayed.

[14] These new EPGs, more commonly referred to as IPGs, were typically full-screen grid guides that displayed television program listings by time and channel in a two-dimensional grid. Using a remote control, a user could interact with the guide to see what was on television at the present or later times on a different channels, instead of depending on the automated scrolling of the traditional on-screen guide of that time. With the rise of the IPG, the use of scrolling EPGs diminished.

[15] By the mid-1990s, more modern front-line presentation and navigation user interfaces were being introduced in the marketplace. Examples of such IPGs on the market in 1994 and 1996 respectively are shown below.



TV Guide on Screen Western Cable and Television Trade Show 1994 (Ex 44)

Prevue Interactive Reference Guide (Ex 48)

[16] Because the processing and storage capabilities of STBs was generally limited in the early and mid-1990s, the functionality of an IPG on such a platform was limited. However, additional interactive functionality, such as viewing programming by time or genre, obtaining more information about particular programs, and facilitating recording of programs, progressively became available as STB capacity and memory increased and the cable industry moved inexorably from analog to digital systems.

B. *The Parties*

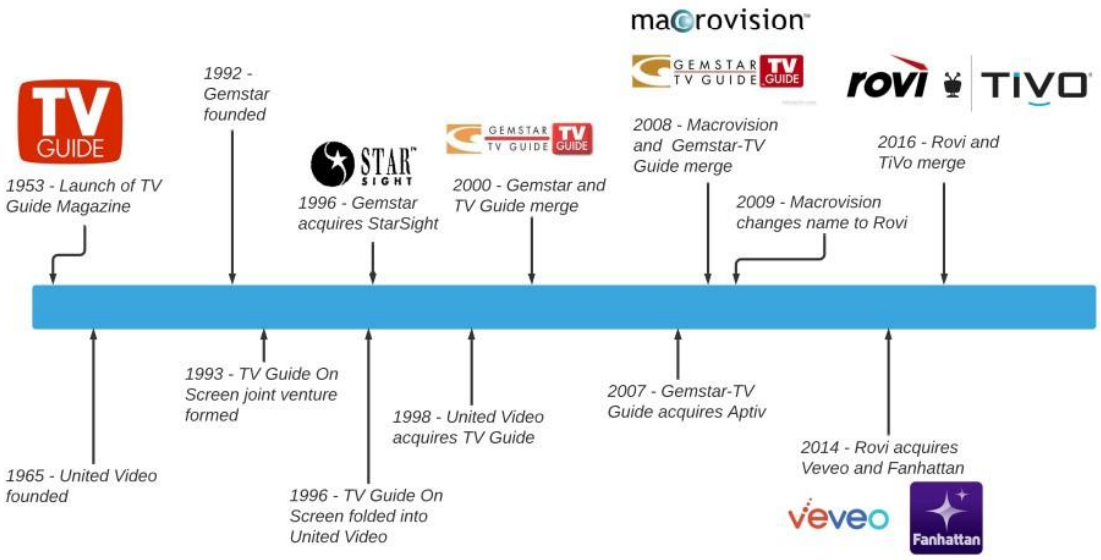
(1) Rovi

[17] Rovi and other members of its corporate family (collectively referred to hereinafter as Rovi) own a portfolio of thousands of patents in jurisdictions around the world. This includes hundreds of patents in Canada. Rovi supplies digital entertainment technology, including IPG technology, to consumers to help them find programming of interest.

[18] There was much evidence led at trial about how Rovi's predecessors were pioneers and at the forefront of program guide technology. Rovi's corporate lineage starts with the paper TV Guide Magazine launched in the United States of America in 1953 and continues to today's modern IPG technology.

[19] In the period from at least 1996 onward, Rovi entered into a series of transactions, such as acquisitions of competitors and mergers with other companies. Corporate predecessors include United Video, StarSight Telecast, Inc. [StarSight], TV Guide on Screen, Gemstar, Macrovision, and others.

[20] The corporate history of Rovi and its predecessors is neatly set out in the diagram below.



[21] Significant investments were made by Rovi in research and development over the years - in the order of magnitude of USD$1 billion - to develop new products and services for its core

business: licensing patented innovations to third-party companies who create or use their own digital entertainment solutions using Rovi's patented technology.

[22] Rovi's largest market for licensing has been subscription-based television broadcasting [Pay-TV]. Rovi has licensed its technologies and related patents to many of the leading Pay-TV providers around the world, including most of the largest Pay-TV providers in Canada and the United States of America [USA].

[23] Rovi's predecessors have been recognized by the industry for their long history of innovation and received awards and accolades for their contributions to the IPG technology. Moreover, Rovi has a long history of successfully licensing its technology, generating billions of dollars in revenue over the years.

[24] The focus of the dispute before this Court, however, is not on Rovi's past successes, nor on its business acumen in licensing its products. The role of this Court is to consider the merits of each individual patent claim asserted by Rovi and determine whether it is entitled to the relief it is seeking - an accounting of profits earned by Videotron as a result of the alleged patent infringement or a reasonable royalty.

(2) Videotron

[25] Videotron is a Canadian telecommunications company and Pay-TV provider. It has been providing cable television services, primarily in the Province of Quebec, since the 1960s. The business of Videotron includes supplying terminals and services to subscribers to permit access

to television and other content. It also supplies customers with Internet connectivity, mobile telephone, streaming and home phone services. The Videotron interactive service known as "Vidéoway" was launched in 1989. In 2001, Videotron launched the "illico" service [illico 1].

[26] Within Canada, leading content providers, such as Bell, Rogers and Shaw Cablesystems G.P., have taken licenses to the Rovi patent portfolio covering its IPG technologies, including the patents at issue in these proceedings. Videotron itself entered into an Interactive Program Guide Patent Licence Agreement [Licence Agreement] with Rovi, effective as of April 1, 2010.

[27] In 2012, Videotron launched "illico New Generation" [illico 2]. After Videotron refused to renew the licence arrangement at the end of 2016, Rovi selected four of its patents and, in this action, allege infringement of those patents by the illico 2 system.

[28] Over time, the equipment and detailed services supplied under the Videotron's services [illico 2 service] have varied. In particular, Videotron introduced a new television and audio-video content delivery service branded "Helix". The parties agree that the illico 2 service has not changed in any respect material to the issues in this litigation and before the expiry dates of the Patents. The parties further agree that the commencement of any potential infringement of the Patents by Videotron is no earlier than January 1, 2017.

III. The Trial

[29] The evidentiary portion of the fully electronic trial lasted 20 days. Seventeen lay and expert witnesses were heard and 164 exhibits running into the tens of thousands pages were

admitted into evidence. The first three witnesses testified in person in Toronto, while the balance of the witnesses participated remotely by videoconference following the COVID-19 outbreak in March 2020: see *Rovi Guides, Inc. v. Videotron Ltd.,* 2020 FC 596.

[30] Closing submissions were to be presented a few weeks after the conclusion of the evidentiary portion of the trial; however, the hearing had to be put over due to my sudden unavailability for medical reasons. I regret the attendant delay in considering the parties' written and oral submissions and in issuing these reasons and judgment.

[31] On consent of the parties, the trial of this action proceeded first, followed by the joint trial of patent infringement actions brought by Rovi against other Canadian telecommunication companies, collectively referred to respectively, as "Bell" and "Telus" in Court File Nos. T-113-18 and T-206-18. The actions against Bell and Telus relate to the alleged infringement of four patents owned by Rovi, including the 629 Patent and 870 Patent. I have been careful to keep the evidence in the present case distinct from the other two cases and was uninfluenced in deciding this case by the evidence and submissions in the other.

IV. The Witnesses

[32] Below are brief descriptions of the fact and expert witnesses in the order in which they appeared at trial.

(1) Rovi's Witnesses

[33] Rovi first called three lay witnesses: Samir Armaly, William (Bill) Thomas, and Clay Gaetje.

[34] Mr. Armaly is employed by TiVo, Rovi's parent company, as a strategic intellectual property advisor. In that role, he was responsible for all aspects of the company's intellectual property business. Mr. Armaly provided the corporate history of Rovi and TiVo and their corporate predecessors. He testified about Rovi's business, including the products and services it offered to its customers, its licensing practices, and the revenues generated over the years. He also described Rovi's IP strategy generally, its research and development history and investment. He worked behind the scenes in negotiations in late 2008 to January 2009 leading to the portfolio licence agreement with Videotron.

[35] Mr. Thomas has a Master of Science in electrical engineering and is a named inventor on all of the Asserted Patents other than the 629 Patent. Mr. Thomas was responsible for the engineering of the products that were built. He testified that in 1993, companies started working on IPGs, including TV Guide On Screen, StarSight, Jerrold and Scientific Atlanta. From 1996 to 2000, Mr. Thomas worked for TV Guide on Screen. He was on a team working in IPG product development at TiVo at the time. He spoke to the industry's evolution and the research and development processes in Rovi's early years. He provided the backgrounds of the inventors of the Patents and explained the process that led to the inventions claimed by the Patents.

[36] Between 2007 and 2014, Mr. Gaetje worked at Gemstar-TV Guide, which became Rovi in 2009, as Vice-President, Intellectual Property Licensing. During his tenure of employment with Rovi, Mr. Gaetje was responsible for all aspects of licensing for specific companies and markets and became responsible for active negotiations within the U.S. and Canada. He spoke about Rovi's licensing practices generally, and the particular licence agreements that Rovi has entered into, including in both Canada and the United States. He testified about Rovi's licence agreements with Videotron, including the negotiating history of those agreements.

[37] Rovi called one technical expert, Dr. Ravin Balakrishnan, who is a Professor of Computer Science at the University Toronto. He was qualified to provide expert evidence on areas of computer science including computer programing, interactive human computer interfaces, including on television, mobile and personal computer platforms, data visualization and interactive computer graphics.

[38] To close its case, Rovi called three expert witnesses who gave evidence relating to the appropriate remedy: Coleman Bazelon, Andrew Harington and Sean Iyer.

[39] Dr. Bazelon holds a PhD in economics. He was qualified to provide expert opinion evidence on economics, the valuation of intellectual property, market reconstruction, the calculation of reasonable royalties in patent infringement cases, and damages quantification.

[40] Mr. Harington is a Chartered Accountant, a Chartered Business Valuator, and a Chartered Financial Analyst. He was qualified to provide expert opinion evidence on investigative and

forensic accounting, business valuation, and quantification of financial remedies, including accounting for profits in patent infringement matters.

[41] Mr. Iyer holds an M.A. in Economics. He was qualified to provide expert opinion evidence on market research methods and conducting and designing surveys in the context of intellectual property disputes. He prepared and oversaw the administration of a survey to estimate the usage of the patented features by Videotron subscribers.

(2) Videotron's Witnesses

[42] For its part, Videotron called six lay witnesses: Caroline Paquet, Daniel Proulx, Mark Christiano, Francis Claprood, Martial Gourde, and Mario Lessard. Mr. Christiano testified in English, while the others testified primarily in French.

[43] Ms. Paquet is Videotron's Vice-President of Marketing and Content. Her responsibilities relate to marketing of Videotron's services and arranging for the content available through its video-on-demand [VOD] services and broadcast television offerings. She provided evidence relating to Videotron's marketing understanding, approaches and decisions relating to its television services and how those approaches and decisions are received in the market. She also provided evidence relating to such factors as pricing, system features and customer service. Ms. Paquet spoke specifically about the Videotron features alleged to be infringed. Her testimony was that the absence of such features would not impact the subscriber base for Videotron.

[44] Mr. Lessard, General Manager of Big Data Strategies and Business Intelligence, provided similar evidence as Ms. Paquet relating to the value of Videotron system features in the market and their impact on subscriber choice and loyalty.

[45] Mr. Proulx was the Senior VP Engineering with Videotron at the time Videotron was negotiating a licence agreement with Rovi. He later became its Chief Technology Officer [CTO] until his retirement in 2016. Mr. Proulx provided evidence relating to his role in Videotron, how Videotron entered into its first licence agreement with Rovi in 2011 and the negotiating objectives of Videotron. He spoke about the IP rights that Rovi was understood by Videotron to have had at the time and the benefits perceived to exist for Videotron in obtaining a licence from Rovi as it was about to launch its new illico 2 system.

[46] Mr. Christiano joined Videotron's procurement department as Senior Director Strategic Procurement and General Management and Chief Procurement Officer in September 2015. He was involved in negotiations with Rovi for renewal of the Licence Agreement. He provided evidence relating to the approach that Rovi took in the negotiations and the context for the negotiations at Videotron. He spoke about issues discussed, including the expiry of many of the patents in Rovi's portfolio and the question of which patents Rovi alleged were infringed by Videotron. He explained what led to Videotron's decision to not renew the Licence Agreement.

[47] Mr. Claprood is a Senior Director in the Finance group at Videotron. He provided evidence relating to the cost and revenue reporting structure at the different lines of business at Videotron, particularly how Videotron tracks and reports its costs and revenues.

[48] Mr. Gourde is a Senior Enterprise Architect at Videotron for its IT department. He has been with Videotron since 2008 in various technical roles, primarily Director of illico Systems and Application development. He provided evidence about Videotron's commercial launch of the illico 2 system in 2012 and generally described certain technical features including their implementation.

[49] Like Rovi, Videotron called only one technical expert: Frank Sandoval. Mr. Sandoval was qualified to provide expert opinion evidence on television STBs, including interactive television features and user interactivity.

[50] The trial concluded with testimony of three experts on the issue of remedy: Andrew Carter, Farley Cohen, and Itamar Simonson.

[51] Mr. Carter is a Chartered Professional Accountant [CPA] and Certified Licensing Professional. He was qualified as an expert in the areas of intellectual property valuation, licensing, and investment, including damages valuation in intellectual property disputes.

[52] Mr. Cohen is also a CPA. He was qualified as an expert in the areas of investigative and forensic accounting, the quantification of economic damages, accounting of profits, lost profits, business valuations and income determination.

[53] Dr. Simonson is a Professor of Marketing at the Graduate School of Business at Stanford University. He was qualified as an expert in consumer behaviour, the role of price, brand, and

product features/characteristics on consumer behaviour, and buying decisions, and as an expert on survey methodologies.

(3) General Observations

[54] I do not propose to repeat the evidence of the witnesses in these reasons and will instead set out the most salient aspects of the evidence and how the facts, as I find them below, factor into my decision.

[55] While the parties do not accept all of the evidence provided by the other party's lay witnesses, they do not question their credibility, with two exceptions. Rovi submits that Mr. Lessard and Ms. Paquet were not credible and their evidence should accordingly be given little or no weight. I will address Rovi's concerns regarding the evidence of these two witnesses later in these reasons when dealing with the issue of remedy. As for the remaining lay witnesses, I found them to be generally credible in the sense that they were forthright, attempting to respond honestly and accurately to the questions asked of them.

V. The Technical Experts

[56] Each party introduced one expert to opine on construction of the elements of the Asserted Claims, the credentials and characteristics of the skilled person, the state of the art and the CGK of the skilled person, and infringement and validity issues.

[57] It is trite to say that the role of expert witnesses is to assist the Court by providing insights and opinions on topics that may be outside the Court's experience. Dr. Balakrishnan and Mr. Sandoval were subjected to exhaustive cross-examination at trial and a considerable portion of the parties' closing submissions is devoted to either the criticism of the expert opposite or a defence of their own expert. As often happens in patent infringement cases, the trial became a battle of the technical experts. My task is to determine which, if any, of the divergent experts' evidence to accept.

[58] In *SNF Inc. v Ciba Specialty Chemicals Water Treatments Limited*, 2015 FC 997 at para 64, Mr. Justice Michael Phelan set out some of the factors to be considered in evaluating the credibility and weight of an expert's evidence, including whether the witness:

- was intransigent, particularly during cross-examination and evaded questions that could expose any frailties in his theory and was intent on reiterating his views, when he deemed it necessary, irrespective of whether those views were responsive to the questions at hand (including by providing answers that went much beyond the question put to the witness);
- emphasized those areas favourable to the expert's interpretation and reluctant to respond to other questions;
- frequently would not concede something which seemed to be obvious or logical and when the concession came, did so reluctantly and grudgingly;
- was forthright, fair, thoughtful and reasonable in answering all questions asked of him/her during both direct and cross-examination;
- in testifying as to the teachings of the Prior Art and the patent in issue, varied their interpretation in order to reach the desired result.

[59] Bearing these factors in mind, I have set out in the section below the main criticisms levelled against the two technical experts and my general observations as to their credibility and the reliability of their evidence.

(1) Dr. Balakrishnan

(a) *Relevant Experience*

[60] Videotron initially objected at trial to Dr. Balakrishnan's expertise to opine about television and mobile platforms. The objection was withdrawn after it was agreed that the concern raised went to weight of his evidence rather than to an actual qualification. Videotron raised a new objection regarding Dr. Balakrishnan's expertise in its closing submissions, this time arguing that Dr. Balakrishnan did not have "hands-on" experience with either STBs or IPGs at the relevant time. I reject this argument.

[61] Dr. Balakrishnan's academic background is quite impressive. He obtained a BSc in Computer Science in 1993, followed by a MSc in 1997 and a PhD in 2001. He has over 30 years of experience studying and teaching computer programming and human-computer interaction and has been in the field since 1993.

[62] While Dr. Balakrishnan may not have real-world experience with either STBs or IPGs other than at a high level, he worked for a software company during the relevant time period that provided software for various media applications, including the design of media software for STBs and guides.

[63] The fact that Dr. Balakrishnan could not recall what specific STBs or features he or his team may actually have had access to and tested in the 1990s has no bearing on his expertise in the subject areas of his evidence. His role was to opine about the Patents, the CGK and prior art from the perspective of the skilled person, and his own idiosyncratic knowledge is not material.

[64] I am satisfied that Dr. Balakrishnan's research work gave him a fundamental understanding of IPGs and STBs, as they existed in the relevant timeframe, what was available technologically, and their limitations.

(b) *Shortcomings in the Evidence*

[65] Videotron submits that Dr. Balakrishnan's evidence suffered from numerous shortcomings, including failing to read the prior art as a skilled person with a mind willing to understand, being unprepared to give reasonable concessions and resisting providing answers to direct questions posed to him.

[66] As explained below, I share the same concerns. I found Dr. Balakrishnan's evidence, and in particular his approach to the prior art, to be less persuasive, consistent, objective and balanced than one would reasonably expect of an independent expert.

[67] The legal principles applicable to claim construction are clear. Claims of a patent should be read with a mind willing to understand. The language of the claims must also be examined in an informed and purposive way: *Whirlpool Corp. v Camco Inc.*, 2000 SCC 67 at para 49 [*Whirlpool*]. These principles apply equally to reading prior art. As stated by the Supreme Court

of Canada in *Apotex Inc. v. Sanofi-Synthelabo Canada Inc.*, 2008 SCC 61, [2008] 3 SCR 265 [*Sanofi*], at para 25, the skilled person is "taken to be trying to understand what the author of the description [in the prior patent] meant." Anticipation and obviousness analyses must also proceed as part of a flexible, contextual, expansive and fact driven inquiry. Yet, Dr. Balakrishnan repeatedly failed to adhere to these principles. He instead examined the prior art looking for specific claim language and disregarded references if he found the language missing. At trial, he was also reluctant to agree to propositions put to him by Videotron's counsel that were self-evident or would favour Videotron's position. To illustrate this point, I provide here but one example.

[68] The asserted claims of the 061 Patent focus on a user using a remote device with a limited guide to schedule a recording on a device inside the user's home. There was initially a dispute between the experts whether there was disclosure of remote access to a STB on a home network in DAVIC.[1]

[69] DAVIC is a prior reference relied upon heavily by Videotron to make its invalidity attacks on the asserted claims of the 061 Patent, the 344 Patent and the 870 Patent. DAVIC is the culmination of the work of the Digital Audio-Visual Council [Council], an industry body based in Geneva. The Council was working from the mid to late 90's on standards for digital audio-visual applications based on submissions from equipment manufactures, service providers and government organizations and non-members. Published in 1998, DAVIC is a lengthy, detailed document that provides a full specification that defines "the minimum tools and dynamic

[1] DAVIC 1.3.1 Specification Part 1 [DAVIC]

behaviour needed by digital audio-visual systems for end-to-end interoperability across countries, applications and services." (My emphasis.)

[70] DAVIC describes at section 7.2, under the heading of "HOME NETWORK", the ability to exchange information, potentially in a direct and simple manner, between devices on a home network, accompanied by a simple illustration (which was the subject of much discussion at trial).

> As multiple digital services begin to penetrate the consumer market, the need will arise for an in-home digital network that will provide selectable access to these services from multiple in-home devices. Furthermore, the introduction of digital storage devices in the home will expand this need. Home networks for DAVIC must support the functions required to link digital consumer devices so that information may be exchanged among these devices in a simple and direct manner.

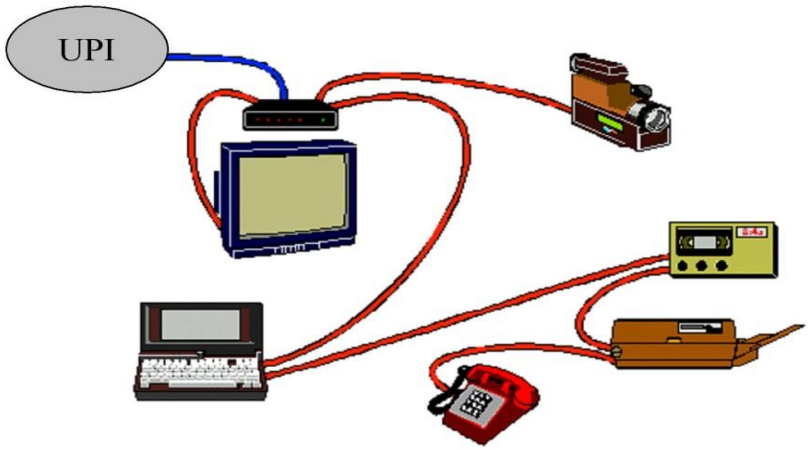


Figure 7.2: Home Network

[71] Section 7.3 of DAVIC also provides a Function Decomposition Table listing a number of functions anticipated for a fully defined DAVIC system, including function 15.17 that is depicted below, highlighted in a green box.

	HOME NETWORK FUNCTIONS
15.15	The network should support the notion of users, privileges, and priorities.
15.16	The network should support a single wall clock time capability.
15.17	The network should support remote access (i.e. access from a device outside of the home).

[72] During his cross-examination, Dr. Balakrishnan testified he did not see "express disclosure" of remote access to a STB on a home network in DAVIC. He was cross-examined at length on this point and it is in that context the following exchange took place:

> Q. What I'm doing is I'm taking what someone skilled in the art understands by reading DAVIC and I'm mapping it on to the claims of the 061. So we have already identified what someone of skill in the art understands from reading DAVIC. What I'm suggesting to you is that DAVIC discloses a set-top box in the home and that's something that someone of skill in the art would understand when they are reading the section of DAVIC that we just went through.
>
> A. Well, are we talking about the section in DAVIC 15:17? It just says the network should support remote access. It doesn't say anything about a set-top box in the home in that section that you reference. So I just want to make sure. Which part of DAVIC are you talking about?
>
> Q. 15.17, is it not crystal clear to you, as somebody putting who's putting this in front of a person of skill in the art at the time, that we're talking about remote access to something like a set-top box, the set-top box being inside the home and the access being outside the home? And I'm looking now at page 11 of Exhibit 90, the bundle.
>
> A. I don't think that is necessarily what that sentence is saying. This could also be saying the network could be supporting remote access outside the home. It doesn't mean remote access necessarily to the local set-top box. It could be remote access to the network, to the headend as well.
>
> Q. We're talking about the home. You see that?
>
> A. I see that. This is saying access from a device outside of the home. This is saying the network should support remote access

> from a device outside the home. So I could be accessing the headend from outside the home, that is one reasonable interpretation of this. It doesn't say that the network should support remote access from outside the home to a local IPG in the home.
>
> Q. That's what you're saying would be the only thing that someone would take when they read this? Someone skilled in the art would only think, when they read that sentence, that it was relating to access to a central server of some kind as opposed to access to the set-top box in the home? The person of skill in the art would not think at all about access to the set-top box in the home?
>
> A. I think the first thing that would come to mind is that this is access to the network from outside the home, just as the local set-top box in the home is accessing the network. So I don't think the second interpretation, which accords one more step of accessing the network remotely and then accessing the home device, I don't see that expressly disclosed in DAVIC.
>
> Q. I'm not talking about express disclosure here. What I'm talking about is what someone skilled in the art, knowing that DAVIC is talking about set-top boxes and cable systems, when it says that you can get access outside the home, that it would be -- one of the immediate understandings that a person of skill in the art would have was that the network would allow you to have access remotely from outside the home to what is inside the home. Are you denying that someone of skill in the art would come to that conclusion reading that sentence?
>
> A. I don't think that's the immediate conclusion that one would come to reading that sentence as you phrased it.
>
> Q. Would it be the second thing that would happen within the minute or two that the reader has to take to read this one sentence?
>
> A. It might be something that comes in if other things are imported, but I don't think your minute or two characterization is appropriate.

[73] The experts had agreed that the skilled person would have familiarity with STBs. The disclosure of the 061 Patent itself states that IPGs are typically implemented on STBs located in the homes of users. The experts had also agreed that the skilled person would also be aware of

home networks. Knowledge of these basic concepts is especially true for skilled persons coming from the computer engineering world. I therefore find it perplexing that Dr. Balakrishnan would insist at trial that DAVIC doesn't say anything about a STB in the home. This is plainly obvious simply by looking at Figure 7.2. It was also peculiar that he would maintain that DAVIC does not disclose remote access to a home network, when this very function is described in DAVIC's Function Decomposition Table under the prominent heading of HOME NETWORK FUNCTIONS.

[74] Dr. Balakrishnan sought to marginalize the teaching of DAVIC on the grounds that it did not provide information about what technology was at the time implemented in the field and that it was more of a "wish list" of desired functions. He also described DAVIC as "arcane." I find, to the contrary, that DAVIC was a hot topic at the time. It provides a snapshot of what people in the industry understood to be the evolving set of features that would be available on television platforms. The individual features described in DAVIC were so known in the industry that feature standardization was becoming a requirement.

[75] DAVIC was a must-read for anyone interested in digital audio-visual applications, including IPGs. It also proved to be a useful, objective and probative resource for me.

[76] Dr. Balakrishnan adopted a similar dismissive and myopic approach to other prior art cited by Videotron, such as when he would refused to acknowledge that there was implicit

disclosure of a STB in Florin[2] or an IPG in Blake[3], when a fair reading of the prior art references as a whole would indicate that they did.

[77] I find that Dr. Balakrishnan did not approach the assessment of the prior art from a position of neutrality. At trial, he displayed a marked tendency to hold on to a view or position that could be perceived as assisting Videotron or damaging to Rovi.

[78] It is important to note that the teachings in the pieces of prior art were not minor peripheral matters. They went to the very heart of Videotron's infringement defence and validity attacks.

[79] In terms of demeanour, Dr. Balakrishnan was invariably respectful and courteous. However, he could be pedantic and exacting at times, to the point of evasiveness. He would split hairs over terms used by Videotron's counsel when being cross-examined.

[80] I was particularly struck by his response to a fairly benign question posed by counsel. When asked whether he agreed that Microsoft, Apple and Alias "as computer companies" were interested in the 1990s in television technology like STBs, Dr. Balakrishnan ignored the gist of the question and went off on a tangent.

> A. I would say I'm not sure I agree with your characterization that these are computer companies per se. These are very large conglomerates. They are technology companies that deal with

[2] US5,583,560 entitled "Method and Apparatus for Audio-Visual Interface for the Selective Display of Listing Information on a Display", published on December 10, 1996 [Florin]
[3] PCT/US97/15420 entitled "Schedule System with Enhanced Recording Capability" published on March 12, 1998 [Blake]

> computation in various forms. Certainly Apple and Microsoft and Alias were interested in all forms of computation at that time.

[81] There were other weaknesses in Dr. Balakrishnan's opinions and testimony that were brought out in cross-examination. Dr. Balakrishnan would respond to straightforward questions by expostulating in considerable and extraneous detail. He would preface many of his answers with the words "at a high level", in an apparent attempt to leave himself room to manoeuvre in case counsel tried to pin him down on a particular point. He was non-responsive to many questions put to him by Videotron's counsel that invited a simple yes or no answer, to the point that I had to admonish him to answer the question.

(c) *Credibility and Reliability*

[82] While I did find some aspects of Dr. Balakrishnan's evidence to be both helpful and reliable, I have approached his reports, opinions and conclusions with great caution and skepticism. His general approach towards the prior art was particularly troubling and only served to raise questions about the reliability of his evidence as a whole.

(2) Mr. Sandoval

[83] Rovi submits that Mr. Sandoval is not a credible or reliable witness, citing his lack of relevant experience, hindsight bias, failure to act independently with respect to the prior art, and shifting claims construction. As explained below, while there were some aspects of Mr. Sandoval's evidence that gave me pause, overall I found him to be a straightforward, credible and reliable witness.

(a) *Relevant Experience*

[84] Mr. Sandoval is a technology contractor with his own consulting company focussed on television related technology. He has degree in English with a minor in Computer Science obtained from the University of New Mexico. Mr. Sandoval worked as a software engineer from 1985 to 1999. In 2001, he was hired at CableLabs as Principal Software Architect. His work at CableLabs included developing the OCAP platform, a standard which Videotron later adopted.

[85] Mr. Sandoval candidly admitted during his cross-examination that prior to 2001, he had no cable television experience, no mobile device experience, no telecommunication industry experience and no experiences with STBs or IPGs. Rovi submits that Mr. Sandoval's evidence should be given little weight because he has no relevant experience in the field of the invention at the relevant dates of the Patents.

[86] While that may be the case, there is no requirement that an expert actually be in the field of the invention at the relevant time in order to comment on how a skilled person would construe a patent and what CGK the skilled person would possess. Nor, for that matter does expert evidence as to the state of the art at a particular point in time need to come from a person who has the requisite skills: *Halford v Seed Hawk Inc*, 2006 FCA 275, at para 17.

[87] Mr. Sandoval devoted the majority of his professional career to software engineering and development of applications for audio-video enabled embedded systems. Moreover, he was the only expert who had any hands-on experience developing user interfaces for embedded systems

during the relevant time. In the circumstances, I found Mr. Sandoval amply qualified to opine on television STBs, including interactive television features and user interactivity at issue in these proceedings.

(b) *Hindsight Bias*

[88] Rovi submits that Mr. Sandoval's job at CableLabs involved looking back at the technology to build on, which Rovi claims placed him at significant risk of perceiving the inventions of the Patents as being simpler and more predictable than they were before the technology was developed.

[89] Mr. Sandoval could not speak from personal knowledge acquired at the time as to the CGK at the dates relevant to the Patents (1998 and 1999). His view of the CGK, and other related issues in relation to this matter, had to be reconstructed from other information. There is therefore reason to be concerned about the reliability of this type of look-back evidence and the risk of hindsight bias. Hindsight bias is a danger that experts and the Court must be wary of in any patent litigation, as experts are inevitably asked to opine on technology that was developed in the past, often with a lengthy intervening period where technology has accelerated appreciably.

[90] My concerns about hindsight bias on the part of Mr. Sandoval were allayed somewhat by the fact that he was looking back at the technology commercially deployed in homes that had not changed very much over the previous few years. Moreover, Mr. Sandoval did not come out of nowhere to become CableLabs' chief software architect. Between 1985 and 1999, he worked at

several companies developing software for interactive applications, including interactive multimedia platform on laser discs, Compact Disc Interactive and in the gaming industry for 3DO and Electronic Arts. At the time, 3DO was also working with other companies to provide STB systems for on-demand video streaming. While Mr. Sandoval may not have been a member of the team working on the project, he was aware and interested in what the team was doing.

[91] I also note that Mr. Sandoval conducted his research to acquaint himself with matters that would have been relevant to and known to at least some of the skilled team back in 2001. He was required to understand the technology historically in his new position. He also based his opinions on objective information that preceded the priority dates of the Patents, as well on matters that arose directly out of his principal expertise.

[92] Mr. Sandoval is an expert at developing applications on embedded devices in general. From his perspective, whether presenting the content from a multi-media disk or from a television tuner, the challenges, the design principles, and the mechanisms to build applications on an embedded device, are the same. He was therefore in a good position, given his extensive experience, to give useful evidence about what the skilled person would have known and understood at the relevant time.

[93] I remain mindful that some degree of hindsight may be unavoidable. The issue then becomes a matter of weight to be given to the evidence, as was succinctly stated by Madam Justice Karen Sharlow in *Apotex Inc v Bayer AG*, 2007 FCA 243 at paragraph 25:

> [25] This does not mean that the trier of fact is required as a matter of law to reject an expert's hindsight analysis. After all, the

> evidence of a party alleging invalidity for obviousness is necessarily based to some degree on hindsight because it is addressed to a hypothetical question about a point of time in the past. However, as a factual matter, an allegation of obviousness may be weakened if the evidence does not explain, directly or by inference, why the claimed invention was not discovered by others.

(c) *Independence*

[94] Mr. Sandoval acknowledges that he relied on prior art provided by Videotron and did not conduct his own prior art search. According to Rovi, Mr. Sandoval simply took the prior art as relevant and, knowing that it was in Videotron's interests for him to find the Patents invalid, found every single piece of prior art to either anticipate or render obvious one or more of the Patents. This approach is said to cast significant doubt on Mr. Sandoval's independence. I disagree.

[95] Generally, experts are expected to conduct their own prior art searches, and not simply rely on documents provided by counsel: *Astrazeneca Canada Inc v Apotex Inc*, 2015 FC 322 at para 203. As Mr. Justice Robert Barnes explained at paragraph 231 of that judgment:

> [a]n expert who carries out an obviousness analysis largely or solely on the strength of prior art references selected by retaining counsel runs a real risk of offering a hindsight opinion.

[96] It remains that the choice of prior art is entirely in the hands of the party (*Ciba Specialty Chemicals Water Treatments Limited's v SNF Inc*, 2017 FCA 225 at para 60). There is nothing untoward about a party pointing the expert to relevant prior art, so long as the accompanying instructions are neutral, transparent and do not constrain the ability of the expert to prepare their opinion. In fact, in case management, this Court encourages parties to narrow the scope of the

prior art and focus only on those references that are relevant to the issues raised in the proceeding.

[97] In the present case, the parties agreed that all the prior art cited by Mr. Sandoval was available to the public at the relevant time. Mr. Sandoval confirmed that the prior art references were relevant to the claims he was asked to construe. Further, there is no indication that Mr. Sandoval failed to include in his reports everything he personally regarded as relevant to the expressed opinion.

[98] Rovi did not identify anything else in the prior art that could reasonably lead to a different conclusion and was not drawn to Mr. Sandoval's attention. In the circumstances, I am satisfied that the lack of independent research ultimately goes to weight to be given to his evidence, not its admissibility.

(d) *Shortcomings in the Evidence*

(i) Defining the Skilled Person

[99] Defining the skilled person is the first step for the Court and is foundational to construction and validity. The skilled person is a fictitious construct that represents an average worker competent in the field or fields relevant to the invention at the relevant timeframe. The person skilled in the art can represent an individual, or a team of individuals whose conjoint knowledge is relevant to the invention in suit (*Pfizer Canada Inc v Pharmascience Inc*, 2013 FC 120 at para 28 [*Pfizer* 2013 FC]).

[100] Mr. Sandoval received clear instructions from Videotron that are consistent with the above jurisprudence. However, when pressed during cross-examination whether he understood the notional skilled person to be a person or a team, he maintained that "it would have to be a person". He also asserted that a marketing person could be a skilled person with respect to the Patents. These misconceptions are said to have coloured Mr. Sandoval's whole approach to the CGK, the Patents and the prior art.

[101] Mr. Sandoval had great difficulty articulating his definition of the skilled person at trial. His evidence was at times inconsistent, even incoherent.

[102] Notwithstanding, I find that he was alert to the fact that the skilled person was a "notional" person. He explained that this person "would have had access to and be able to work with software engineers and developers either as part of the same company or through outside vendors." I am satisfied that he understood that the notional person would work with others as a team.

[103] Rovi tried to make hay out of Mr. Sandoval's assertion that a marketing person could be a skilled person. However, this answer was only provided in response to a hypothetical question posed to Mr. Sandoval in cross-examination. He immediately added that the person in question would need to have sufficient technical knowledge of the domain to be considered a skilled person. There was no suggestion that Mr. Sandoval ever contemplated a marketing person to be included in the team of skilled people.

(ii) Using the Wrong Lens

[104] When Mr. Sandoval was retained as an expert by Videotron, he was instructed that the skilled person is not inventive by nature. In defining the skilled person in his expert report on validity of the Patents, Mr. Sandoval stated that the person reading the Patents "would have been focused primarily on new technology for the cable industry rather than on simply maintaining existing infrastructure." Mr. Sandoval struggled during his cross-examination to explain what he meant by the concept of a skilled person "focussing on new technology", at one point suggesting that "one can innovate without being inventive."

[105] Rovi submits that Mr. Sandoval in effect defined an inventive skilled person, which would conflict with the description of the skilled person by Mr. Justice Rothstein, in Sanofi at para 52, as a "… technician skilled in the art but having no scintilla of inventiveness or imagination …" I disagree.

[106] I found that Mr. Sandoval was instead grappling, as I have had to do, with the question that has to be asked in an obviousness case. This involves a comparison between the state of the art and CGK of the skilled person, on the one hand, and the inventive concept of the patent's claims, on the other (*Sanofi* at para 67). If there is no difference between the two comparators, the claims are obvious. If there is a difference, the claims are obvious if the skilled person would not need to take any inventive steps to bridge the gap. In other words, a step may be taken that can be viewed as different, but would not necessarily be inventive.

[107] While the hypothetical skilled person is deemed to be uninventive as part of their fictional personality, they are thought to be reasonably diligent in keeping up with advances in the field to which the patent relates. As stated by Justice Binnie in *Whirlpool* at paragraph 74, the CGK of the skilled person undergoes "continuous evolution and growth." Mr. Sandoval clarified during his cross-examination that he appreciated that this was a nuanced topic. In my view, there was therefore nothing untoward with Mr. Sandoval defining the skilled person as keeping abreast of new technology.

(iii) Shifting Construction

[108] Rovi submits that Mr. Sandoval's evidence with respect to construction should be approached with grave caution because he exhibited a total misunderstanding of claims construction and shifted his construction as a result before and after seeing the illico system. Videotron maintains that Mr. Sandoval has been consistent in his approach to construction.

[109] The parties agree that claim construction is an objective question of law, concerned with what a reasonable skilled person would have understood the author (inventor) to mean. It is not a results-oriented approach, and should be undertaken without regard to either infringement or validity: *Whirlpool* at para 49(a).

[110] During his cross-examination, Mr. Sandoval was asked if he understood that he should not shift his construction with an eye to validity or infringement. He responded: "I'm not sure if I understand that explicitly." Mr. Sandoval's response is surprising, to say the least, given that he had received clear legal instructions on this point.

[111] Rovi offers the following example of what it views as "shifting" interpretation by Mr. Sandoval. In his validity report, Mr. Sandoval provided his construction of Claim 79 of the 629 Patent, including the element "Means for providing a user with an opportunity to select directory entry information." He stated:

> "…This is also part of the directory listing screen. While only the abstract idea of an 'opportunity' is stated in the claim, the skilled person would likely think of particular interactive parts of a user interface that allow a user to select a directory entry information. For example, this could be a selection that the user can manipulate using cursor keys, such as on a remote control…"

[112] Dr. Balakrishnan finalized his expert report on infringement the same day Mr. Sandoval signed his validity report. Dr. Balakrishnan set out the basis for his opinion that Videotron's illico service falls within the scope of the asserted claims of the 629 Patent based on testing he conducted. He argued that "the illico program guide displays the 'List of Recorded Programs' (directory entry information) via the directory listing screen in the form of a grid (means for indicating directory entry information), with each line item corresponding to a different recorded program." (My emphasis.) A screenshot of the grid, highlighted in red by Dr. Balakrishnan, is reproduced below.

[113] Mr. Sandoval responded as follows in his infringement report.

> Claim 79 also includes the following element: **"means for providing a user with an opportunity to select directory entry information"** - Dr. Balakrishnan does not identify any particular user interface that corresponds to this **"*means*"** or provide a meaning for this term, but says that a user can use the up/down buttons on the remote control to change the item that is currently highlight in the list. In my view, more is required than simply moving a highlight up and down to match this element of the claim since the claim requires a user to actually **"select"** an item, not merely cycle to it. For example, the 629 Patent states "[i]f user interface 46 is a remote control such as remote control 40 of FIG. 2, this can be done by positioning highlight region 95 over the desired entry using 'up' and 'down' keys, ***and then selecting*** the entry, or by selecting an on-screen 'info' option."10…(his emphasis)

[114] At trial, Mr. Sandoval was questioned about the apparent change to his original construction of the element in dispute.

> Q. In your -- when you were doing your construction, you stated that selection could be – the selection that the user can manipulate using cursor keys such as on a remote control. You did not add further constraints to your construction at that time?
>
> A. That's right. So that sort of was maybe not worded as crisply as it could have been. So probably the word "selection" could have

> been sort of, you know, indicating a target for selection. But you're right, the words say what they say.
>
> Q. And that was the construction you came to before you turned to your infringement analysis, correct?
>
> A. Well, sure, yeah, those were the words that were written down first.

[115] Rovi submits that Mr. Sandoval shifted construction in this case, as well as at various other points in his analysis of the Patents, to suit Videotron's purposes. I disagree. In this particular case, Mr. Sandoval explained why the construction in his validity report of the element in dispute required more elaboration.

> A. Well, you know, as we've seen over the last couple days, you know, once you peer into these seemingly innocuous words, then they start to become much more nuanced. You know, the human mind being what it was, if I had come back to 419 the next day, I may have said -- thought to myself, Frank, is selection really the right word there, is that really what's going on. So, you know, I may be guilty of having changed it in light of the new information or maybe just really appreciating the nuance that's behind that behaviour.

[116] It is was only upon reviewing Dr. Balakrishnan's infringement report that Mr. Sandoval twigged to the fact that his description of the concept of selection in his original construction may have been wanting and required further elaboration. While this may bring into question the reliability of his evidence on this point, I see no inconsistency in the way he construed the term.

[117] I should add, an expert cannot be criticized for revisiting their opinion in light of a contrary view expressed by another expert, or new or nuanced arguments that could not have

been anticipated, so long as it is done in a transparent manner. Otherwise, as Mr. Sandoval elegantly stated:

> …if there is no opportunity to come with greater understanding and more time to ponder, if that's not, you know, something that's allowable, then we'll have to constrain ourselves to what's been written down.

[118] The court would not be well served by an expert who is not prepared to acknowledge frailties in their evidence, or who doggedly sticks to their position and refuses to concede the possibility of a reasonably supported opposing view. I should add that revising one's opinion on construction does not necessarily render the evidence unreliable. In some rare cases, rather than weakening the evidence, it may very well strengthen it.

[119] I am satisfied that to the extent Mr. Sandoval may have varied any of his opinions, it was more the product of his willingness to assist the Court than an attempt to dissemble. The role of the technical expert is, after all, to assist the Court and bring out, in an objective, consistent and coherent manner, the technical aspects with which the Court has to wrestle.

(e) *Lack of Methodology*

[120] Rovi criticizes Mr. Sandoval for failing to undertake his anticipation analysis and obviousness inquiry on a claim-by-claim basis. Given the lack of rigour with which Mr. Sandoval's analysis was carried out, it was at times difficult to appreciate what he considered in reaching his conclusions. The brevity of his analyses certainly goes to the weight to be given to his evidence.

(f) *Credibility and Reliability*

[121] I found Mr. Sandoval to be a good witness. He was self-effacing in his acknowledgement that there were at times issues with some of his evidence. Where any errors or inconsistencies in his evidence were pointed out to him, he readily admitted to mistakes he may have made. He was a very transparent witness who gave his evidence in what I considered to be an objective and balanced manner. His plain and candid evidence was both helpful and appreciated.

[122] While Mr. Sandoval may not have been a perfect witness, perfection from a witness is neither required nor realistic. I found Mr. Sandoval to be a knowledgeable, objective and credible witness doing his best to assist the Court. While I do not accept all of Mr. Sandoval's evidence, I tended to prefer his opinions and conclusions over those of Dr. Balakrishnan when they conflicted.

[123] Mr. Justice George Locke, then of this Court, stated in *Shire Canada Inc. v. Apotex Inc.*, 2016 FC 382 at para 48 "…In the end, I remain of the view that I am mainly interested in the substance of each expert's opinion and the reasoning that led to that opinion." Despite the shortcomings in evidence of the two experts, I was able to reach my own conclusions regarding validity and infringement of the Patents.

VI. The Skilled Person

[124] The first step in a patent action is to construe the claims at issue. A patent must be construed "through the eyes and with the common knowledge of a worker of ordinary skill in the field to which the patent relates." *Whirlpool*, at para 53.

[125] The skilled person has been defined in *Free World Trust v Électro Santé Inc,* 2000 SCC 66 [*Free World Trust*], at para 44 as:

> …a hypothetical person possessing the ordinary skill and knowledge of the particular art to which the invention relates, and a mind willing to understand a specification that is addressed to him. This hypothetical person has sometimes been equated with the "reasonable man" used as a standard in negligence cases. He is assumed to be a man who is going to try to achieve success and not one who is looking for difficulties or seeking failure.

[126] As stated earlier, the skilled person is unimaginative and uninventive, but has an ordinary level of competence and knowledge incidental to the field to which a patent relates and is reasonably diligent in keeping up with advances.

[127] The skilled person brings background knowledge and experience to the workbench and can make deductions based on the information available. (*Valeant Canada LP/Valeant Canada S.E.C. v Generic Partners Canada Inc*, 2019 FC 253, at para 44)

[128] Because of the common subject area of the Patents, both Dr. Balakrishnan and Mr. Sandoval agree that the skilled person to whom the Patents are addressed is the same for all four patents. They also generally agree on the skilled person's technical qualifications:

> The Patents are addressed to electrical engineers and computer scientists working in the areas of electronic content delivery, electronic program guides, television video signal processing, graphical user interfaces, cable or satellite television systems and content distribution, set-top boxes, and multimedia systems. The Skilled Person would have at least a few years of industry experience.

[129] Where the experts part ways is on the requirement for a formal degree. Dr. Balakrishnan argues that the skilled person would have an undergraduate degree in computer science, electrical engineering, computer engineering or applied mathematics, as well as two or more years of experience in some or all of these areas. According to Dr. Balakrishnan, a technical degree provides a foundation for understanding the relevant technologies – knowledge that would not easily be obtained working in the industry. Mr. Sandoval does not agree that a formal degree is required, but rather would be expected, and that industry experience could suffice even without a formal degree.

[130] Any distinction between the details of the two proposed definitions is neither substantive nor determinative. However, given that I must choose between the two, I prefer Mr. Sandoval's definition to that of Dr. Balakrishnan for the following reasons.

[131] First, Dr. Balaskrishan argued that the skilled person would need to have a bachelor's degree in any one of four different fields. However, no explanation was provided as to what specific knowledge transcends those particular fields that would provide the relevant technical background required by the skilled person.

[132] Second, there was no issue identified where Dr. Balakrishnan found the formal credentials of the skilled person to be directly relevant other than a bald statement that "it is about understanding the context of each patent and understanding what's possible and not possible." Ironically, Dr. Balakrishnan relied on the skilled person not appreciating the applicability of computing software techniques to evolving STB hardware in his obviousness analysis.

> A. I'm suggesting that one of skill in the art for these patents as I've identified the level of skill would not necessarily be familiar with the level of advanced technology that someone like myself at that time would have been familiar with. And even if they were familiar with it they would not necessarily have borrowed from those technologies to apply it to the set-top boxes, as I've described in my report, because they would have understood that the set-top box had limitations that did not allow for such importation directly without significant modifications.

[133] Third, Dr. Balakrishnan testified that having a minor in one of the fields identified above would "typically" not provide sufficient fundamental technical background for the skilled person. This would imply that there could be other ways of obtaining such a background. In my view, the necessary general knowledge and skill to understand the technology at issue in this case could be acquired by practical experience, instead of study.

[134] Accordingly, I find that the skilled person consists of a team of electrical engineers and computer scientists familiar with the general technology landscape [Skilled Person]. The knowledge of the Skilled Person includes experience and information relating to digital systems, processors, computers, computer storage systems, computer networks and the Internet. The Skilled Person would have at few years of experience in the field in order to obtain the set of skills and knowledge described in paragraph 128 above. Although the Skilled Person would not

necessarily have had an undergraduate degree, an undergraduate degree in computer science, communications or electrical engineering would be expected.

[135] I also agree with Mr. Sandoval that the Skilled Person would also have been focused on new technology for the cable industry in the market. The Skilled Person is not a dullard, but rather a competent worker who keeps up to date with the relevant literature.

VII. The State of the Art and Common General Knowledge

[136] The second issue the Court must decide is how to define the CGK of the Skilled Person. As stated earlier, CGK means knowledge generally known by persons skilled in the relevant art at the relevant time. This knowledge undergoes continuous evolution and growth (*Sanofi,* at para 37, *Whirlpool* at para 74).

[137] The CGK distinguishes the body of information that is widely recognized from that which is simply publicly available. Individual disclosures may become CGK, but only when they are generally known and regarded as a good basis for further action: *Eli Lilly & Co v Apotex Inc,* 2009 FC 991 [*Eli Lilly 2009*] at para 97.

[138] The parties agree on the publication dates of the prior art cited by Videotron. Moreover, there was no suggestion that the prior art would be difficult to find or would not have formed the state of the art.

[139] There was also substantial agreement about the CGK. Since the Patents have priority dates in a short window of time, there was considerable overlap. To the extent there is any difference in the CGK or prior art between the priority dates and filing dates of any of the Patents, it will be highlighted at the appropriate time.

[140] Based on the evidence, I find that the CGK of the Skilled Person would encompass the following key concepts and skills from a number of technologies in the mid to late 1990s:

a) Television delivery technology - both analog and digital - to STBs in the home.

b) Computing technology such as personal computers, Windows 95 and the Internet.

c) STB technology at the time, including the software and applications that operated on STBs, such as interactive guides and other interactive features including Pay-Per-View, and VOD.

d) Designing and writing software for STBs either directly or using the services of contractors/vendors.

e) Computers and other electronic devices could be networked together and such networks were becoming much more prevalent.

[141] I further find that the following mainstream ideas would have been well known to the Skilled Person:

- IPGs,

- networking devices and remote access networks,
- digital recording of programs onto hard disks and STBs,
- converging technologies,
- home and general computer networking,
- Moore's law,
- head-end/distributions systems,
- television delivery systems,
- transition from analog to digital cable systems, and
- satellite systems.

[142] What follows is largely excerpted from Mr. Sandoval's validity report which fairly summarizes the start of the art and the CGK. I have also included my findings regarding certain areas where there was no meeting of the minds.

(1) State of the industry in the late 1990s

(a) *Television Delivery Technologies*

[143] In decades past, television programs were generally provided in the form of over-the-air [OTA] analog signals received by TV antennae in users' homes.

[144] Cable television was subsequently developed, and it provided a different way of delivering television programming to consumers.

[145] As of the late 1990s, there were also satellite television delivery systems available for subscribers in Canada and the U.S. Satellite delivery systems used digital delivery of television using satellites to relay signals from a single base station to digital equipment at the subscribers' home.

[146] The late 1990s were a time of transition in the cable television industry, including in North America. Most of the existing cable infrastructure at the time was based on analog technology, but most cable operators were in the process of testing or anticipating a move to digital distribution.

[147] Most of the existing cable infrastructure at the time was based on analog technology.

(b) *Analog Cable Systems*

[148] Analog TV cable distribution involved acquiring and then simultaneously sending out a number of analog TV channels on predefined frequencies over cables to subscribers' homes. These signals were sent over the cable systems from "head-end" equipment at the cable operators' facilities. The head-end is the equipment at the cable operator's facility that transmits content over the network to the STBs at the consumer homes. This equipment included systems for actually transmitting the content over the cable network in a format that could be received by the STBs.

[149] The analog signals that represented the TV channels would typically travel over co-axial cables into the subscriber's premises.

[150] Typically, the cable would terminate at a STB at the subscriber premises near a television set. STBs were consumer electronic devices, typically distributed by a cable company to their subscribers in the 1990s, and usually rented or included in the subscription. They were also used in satellite television systems at the end of the 1990s. The STBs were typically manufactured by one of several equipment manufacturers, and then distributed by the cable company to subscribers of that company.

[151] A main function of the STB was to “tune” to the channel that the subscriber wanted to watch. The cable provided all available channels to the subscriber’s STB and a control device (in the 1990s typically a wireless, handheld remote control) would allow the subscriber to input the desired channel to the STB circuitry. As a result, the STB system would then effectively select the right signals from the many that were available on the cable for presentation to the TV set. The STB could also provide other functionality, beyond merely selecting the desired signal from the cable input, such as decrypting premium or speciality channels that were available at a defined fee.

[152] In general, analog systems for the delivery of television signals were well known by the 1990s, having been in operation from dawn of television for broadcast systems and from the start of the cable system era. It was common usage among cable customers to connect a VCR input to a STB output and record broadcast programming for later playback.

(c) *Digital Cable Systems*

[153] With the enactment of the *Telecommunications Act of 1996* in the USA, there was a mandate for the television industry to move to digital distribution. Cable operators were considering how they would be able to move to digital systems and how they would be able to do more with a digital platform: more features for subscribers and more options for user equipment. Much activity was taking place in the industry at the time to meet the expected demand.

[154] The Skilled Person and others in the industry knew that with the Internet and graphical web browsers, streaming of audio-visual content online was going to be common as soon as the bandwidth and hardware could support it.

[155] In the 1990s, the cost of computing devices, such as microprocessors, and digital storage, was rapidly decreasing. This decrease was predicted by Moore's law, which implied that more powerful processors and more memory would be available as time went on and at the same cost but in a smaller package.

[156] It was understood by the industry that digital systems would replace analog distribution, and that there was a need for hardware advances.

[157] Activity in the area of television digital services lagged behind other industries. However, as storage capacity and processing speed increased in STBs and related costs went down, program guides were enhanced to allow users to interact with the content being displayed.

[158] The 1990s saw the upgrading of distribution networks to support more digital services. This included the introduction of the hybrid fiber coax [HFC] network, in which fiber optics were introduced to transmit data digitally from centralized locations to neighborhood facilities (head ends), at which the signal would transition to the traditional coaxial network, primarily analog. These new HFC networks introduced both digital signaling, and a return path from the household STB to the network, enabling services such as VOD.

[159] With the introduction of digital systems, program guide data could be included in the data packets that comprise an incoming cable TV digital data stream and extracted by program guide software for presentation to the viewer.

[160] The manner in which program information was delivered to a consumer's television changed quickly in the early and mid 1990s. As technology progressed, moving from analog to digital, EPGs were enhanced to allow users to interact with the content being displayed.

[161] In the mid 1990s, fully digital distribution was being used in some markets. Even where the technology was not in actual use, the industry understood that digital systems would be replacing analog distribution.

[162] The cable industry had developed standards for Internet over cable systems, namely CableLabs' data cable service interface specification, DOCSIS, published in 1997. These standards allowed the deployment of internet access services over the cable system.

(d) *Satellite Systems*

[163] Satellite based television distribution systems were also known and used at the time. In those systems, encoded and compressed digital content was transmitted from satellites to satellite dishes at the consumer's home. A STB at the subscriber premises was used to decode and decompress the content and convert the digital signals to a format for viewing on a TV.

[164] Both DVD and satellite television systems stored television “programs” in digital format. Because audio-video content is extremely data heavy, it was important to compress the data using a particular format. In the 1990s there were several possible formats. The MPEG format was used for DVDs and was also becoming popular in other systems, including for digital television services.

(e) *Home Computing*

[165] In the 1990s, personal computers for business and home use were becoming more affordable and much more common. There was exponential growth in the number of users of the Internet and the “information superhighway.”

[166] Early versions of Microsoft Windows such as Windows 95 were released in the mid-1990s which included the Microsoft Internet Explorer web browser. The costs of microprocessors, memory (e.g. RAM) and hard drives, all key components of computing were all decreasing at this time leading to more widespread use. The Skilled Person would have been using a computer for many years as part of their daily work routine.

[167] Along with the use of personal computers at home, schools and at work came familiarity with basic file management in the form of files and folders. Personal management of storing and retrieving data was becoming routine; in combination with VCRs, the Internet and VOD systems, the concept of storing and playback of media content on a variety of computing systems would have been recognized by the Skilled Person.

(2) Set-Top Boxes

[168] Cable operators typically relied heavily on their vendors to develop STBs compatible with their infrastructure. The vendor that supplied the content encryption infrastructure within the network, also typically supplied the corresponding decryption system in the STB.

[169] Because the STBs were distributed by the cable operators to all their subscribers, there was a large incentive to keep the cost of each box to a minimum. The benefit of any new feature, and particularly any new hardware, would have to be carefully balanced against the significant new cost this would impose on the operator and subscribers.

[170] In 1996, an Open Cable platform was developed for the industry to allow more interoperability between vendors for STBs. The objective of the platform was to allow for more retail availability, creating a more competitive market and hence more features on STBs without significantly increasing the cost. Under such a standard, head-end equipment could work with STBs from several vendors, without requiring as much customization and therefore reducing vendor-lock in and the costs associated with that.

[171] Concurrently, the DVB-MHP standard was being developed to offer a universal application programming interface [API] for STBs.

[172] Without such standards, a user could not use a STB from a first cable operator on another cable operator's system, or buy a STB at retail and expect it to work with their cable service Since a cable operator would typically have a monopoly on offering cable services within a given area, either by license or because it was the only company to install cable infrastructure, a subscriber unhappy with the operator's features or offering could not easily switch, other than by going to a company using a different distribution medium, such as satellite, or only in more recent years, phone lines.

(3) The User Interface

[173] Scrolling guides were replaced by IPGs in the mid-1990s when new features available on STBs were cost effective, particularly, the availability of additional memory and processing power.

[174] In an article published in 1994 entitled "Electronic Program Guide Application – The Basic of System Design," Mr. Thomas (a named inventor of three of the patents) explores the basics of an EPG. The article describes the state of IPG technology at the time. He notes that "the user interface is receiving much attention as the first systems are being developed."

[175] Program guide systems, including those that allow a user to record programs were well known in the art in 1998. By then, IPGs had become as ubiquitous as the remote control - the

tool of choice for consumers to manage the intersection of TV, the Internet, telephony and a host of other interactive services delivered over cable and satellite.

[176] Guide data could be transmitted or downloaded that included a list of the channels available and what programs would be broadcast at which time. This data would be stored by the STB on its internal memory and could be used to generate a user interface for the user to navigate. The STB displayed this content on the television upon request. The guide then permitted users to navigate by channel or time and tune directly to a selected channel.

[177] In some systems, this was only for live programming and in some instances, the user could identify content available from other sources, such as Pay-Per-View.

[178] In some cases, the systems allowed the user to select a future program and the STB would initiate a recording of that program at the appropriate time, such as by activating a VCR. The user would select a program available in the future from the guide and at the appropriate time, the STB would instruct the VCR to begin recording the appropriate channel.

[179] The limitations of using only an up/down/left/right to navigate content led to many options for navigating and entering content. Options such as navigating by genre or category were used. In some cases users could enter text by selecting letters from alphabets displayed on a screen or using up/down keys. Letters already selected would be displayed while the user selected the next character. Game console systems had used similar interfaces for entering text, such as character names since the 1980s.

(4) Head-end/Distribution System

[180] For pre-recorded content, the head-end equipment would have a repository of the audio-visual content that would then be transferred for transmission to the STBs. By the late 1990s, pre-recorded content was stored in digital format. Because head-end equipment served thousands or more subscribers, it was typically cost effective to have expensive digital systems at the head-end, even while STBs were still analog based. For live content, head-end equipment may receive a stream of content from a studio such as by satellite or OTA.

[181] As actually implemented, the cable distribution system would typically include several tiers of infrastructure with one or more central centers with regional hubs serving smaller groups of subscribers. Content distribution systems may be located at the central center and/or the regional hubs depending on the installation.

[182] Some other services that were available at the time were Pay-Per-View broadcasts that the subscriber would have to pay extra to watch. This type of system was used for broadcasts such as speciality sports games. Since only some users could watch this content, individual STBs were enabled or unlocked to access the content. Some systems required the user to phone a call-centre to arrange for payment but other systems allowed for ordering from the television using the STB. These systems therefore included some communications from the STB back to systems at the head-end to indicate a request for a Pay-Per-View content. In addition, the availability for Pay-Per-View content was often included in guide data provided to the STB so that viewers would know about it and be enticed to order it.

[183] VOD was another service offered that involved extra features at the head-end. As the name suggests, audio-visual content was available to subscribers on demand, or at the request of the user. A system that had a copy of the content being offered would transmit the content, as requested to the STB for display to the user. This also involved a communication from the STB to the server to provide a request for playback of the content.

[184] These systems used large media libraries to hold copies of the content typically at the head-end. Since the content was provided on demand, each subscriber could get content at a time of their choosing, as well as offered VCR-like controls to play/pause/rewind/fast-forward the content.

[185] Typically, VOD content was not acquired by recording broadcast content, but was obtained and licensed by the system operator directly from the content source. The content may be loaded into the VOD system such as from a back archive of recorded content. The content could then be accessed by users for viewing on their televisions.

[186] Legal issues would arise if broadcast programs were to be recorded by the operator, because making content available other than as part of a live broadcast or distribution required separate copyright licensing agreements. Because of often highly contested legal constraints, related to personal recording usage, such as a video cassette recorder [VCR], rights owners may require cable companies making centralized copies of content being broadcast to make a unique copy of broadcast programming for each user requesting a copy, even if multiple users were recording the same program.

[187] Some systems in the 1990s were referred to as Near Video On Demand [NVOD] where the content would be broadcast on several channels, say every 15 minutes. The user could select one of the channels that best suited their schedule. This type of system would be less intensive for the head-end since rather than transmitting a separate version of the content for each user that requests it, only a fixed number of versions would need to be transmitted. Software on the STB may automatically find the best scheduled version for the user and could switch versions if the user wanted to jump ahead, back or pause the program.

[188] The availability of VOD was not universally commercialized by the late 1990s, but the Skilled Person would have been familiar with such systems. The significant cost to host the content, the bandwidth required to deliver unique content to individual subscribers and low-latency two-way communications with STBs slowed the commercialization of these systems.

(5) Other Areas of the CGK

[189] There were two areas of the CGK that were the subject of differing views by the parties: convergence and countervailing factors. I will deal with these in turn.

(a) *Convergence*

[190] Convergence was the idea that traditional television could become combined with other digital technologies as television went digital. In a book entitled “OpenCable Architecture,” published by Cisco Press in 1999, the author Michael Adams explains that: “Convergence has may faces, but is really just the parallel application of evolving digital technologies across

different fields." In Florin, the inventor, Fabrice Florin, describes the state of the industry as "a marriage of video and television technology with computer interface technology."

[191] Rovi submits that convergence should be considered a minor factor in evaluating inventiveness. The evidence would suggest the exact opposite.

[192] The idea that traditional television would become combined with other digital technologies once television went digital was quite popular in the mid 1990s. The cost of computing devices, such as microprocessors and digital storage, was rapidly decreasing and digital systems, with their ability to carry more channels, were expected to replace older, analog systems.

[193] The anticipated digital systems were widely understood to allow for the convergence of content delivery. Rovi's own expert conceded that there would be convergence. Dr. Balakrishnan described it as a transference from the more advanced technology of the personal computer to the less advanced technology of the STB, albeit over time.

[194] Notable "converged" systems were known to the Skilled Person. One such system was the Full Service Network created by Time Warner in the early 1990s to test out concepts for a fully interactive digital converged cable system in Florida. Its existence was well known in the industry. It offered subscriber's digital connections to allow for interactive features, such as VOD and ordering of Pay-Per-View content, using a sophisticated STB.

[195] Another such system was offered around the same time by Worldgate. It provided email and web browsing through a television using a two-way communication link.

[196] Rovi argues that the introduction of IPGs "did not begin until the late 1990s and early 2000s." However, this is not consistent with the evidence.

[197] By the mid 1990s, cable operators were considering both how they would be able to move to digital systems and how they would be able to do more with a digital platform, such as providing more features for subscribers and more options for user equipment. IPGs were the wave of the future and the industry was keen to get into the action, as evidenced by the following examples.

[198] In a press release issued in August 1994, TV Guide on Screen announced that it had been selected by TeleCable, based on Norfolk, Viginia, as its vendor for passive and "interactive electronic program guides." In the same press release, TeleCable is quoted as being "particularly excited about (TV Guide on Screen's) work in support of the DigiCable platform, which we have previously announced as the foundation for our transition into digital television services." In a second press release issued on September 1994, TV Guide on Screen announced the launch of "the first fully digital on-screen guide," the On Screen Channel, in two non-affiliated cable systems. At the Western Cable and Television Trade Show held in Anaheim, California in late November 1994, TV Guide on Screen also touted the benefits of the digital television technology to its customers.

[199] Microsoft was also working on technology in this area, making a Windows Operating System powered STB that allowed internet access over cable along with television, as part of its Web TV system. Microsoft's activities in the space were well known by the Skilled Person, including Rovi, which was looking over its shoulder at its competitors.

[200] In an email dated July 7, 1997, Mr. Thomas provided a heads-up to other members of his team of Microsoft's plans as follows:

> The following message is a bit cryptic, but the bottom line is that with the next version of the Microsoft Operating system coded named Memphis (Windows '98?), there will be a built in EPG to complement TV video cards that you can plug into (or may be built in to) your computer.
>
> Listings will be provided "free" each week and will be customized to the local cable system level. This will directly compete with our Internet, Interactive and Prevue Products (including IE4.0) ... Note reference to reminders.
>
> **Shows Microsoft plans for convergence of TV and PC - the EPG / Navigator is a key element!**
>
> [Emphasis mine.]

[201] The evidence before me establishes that there was widespread borrowing of ideas and technologies in the digital audio-visual field in the mid 1990s. The Skilled Person would have known that it was simply a question of time for the technology around computers to transfer to television, and vice versa.

[202] Dr. Balakrishnan argued that the Skilled Person would not have necessarily borrowed from home computing technology and applied it to STB technology because of the known

limitations that did not allow for direct importation without significant work and modifications. I disagree.

[203] Dr. Balakrishnan acknowledged that it was common to emulate STB functionality on a personal computer in the 1990s. His own experience with STBs came from his team's efforts to move computer interfaces onto STB equipment. Dr. Balakrishnan conducted internal analyses of the capabilities of computational platforms. Specifically, he researched STBs, among other devices, as a platform for advanced user interfaces in the mid-to-late 1990s and examined capabilities such as the use of guides, storage, user interface elements such as menuing, sensing technology, and ways of presenting information. He could not point to any technical step or approach that needed to be taken to implement any advance claimed in the Patents that would have been outside the CGK of the Skilled Person.

[204] It also bears noting at this time that the sole inventor witness, Mr. Thomas, had only one recollection about work done to come up with any of the purported inventions in this proceeding. His memory was merely that he and his colleagues had contemplated recording in a home by access outside the home - something that was, in light of Blake, not new. In a telling exchange during his cross-examination, Mr. Thomas readily admitted that he could not recall any "eureka" moment with respect to any of the Patents or technology at issue in this proceeding. According to him, they "just seemed like a reasonable thing do."

[205] No evidence was presented at trial of any technical barrier that prevented taking more memory or a better processor available on a personal computer at the time and placing them in

an STB. Further, none of the Patents identifies a technical problem for which the claimed subject matter provides a solution.

(b) *Countervailing Factors*

[206] With respect to countervailing factors, Rovi submits that there was a lack of motivation to innovate in the space. However, the evidence before me would suggest the opposite.

[207] The parties agree that the fields of personal computing and television were not aligned in their development in the 1990s. In the television industry, equipment and software were less sophisticated, and developed at a lower rate than that in the home computing field. There was delay in installing infrastructure to support digital distribution. This time lag was seen as a frustration by some technologists. Moreover, interactive television was not coming together as soon as the industry expected or in the way it expected.

[208] Nonetheless, there was a lot of interest and knowledge around both adding television features to a personal computer and adding personal computing features to television systems well before the Patents were developed.

[209] The parties agree that there were other countervailing commercial forces that impacted the timeframe when new STB features could be presented to consumers. The debate centered on the cost incentives of cable service providers to replace hundreds of thousands of STBs in people’s homes.

[210] In the 1990s, the business incentive was to keep STB costs down. For the cable operators, getting more subscribers and monthly revenue was key. Keeping the customers happy by adding features to their STBs was of lesser importance to their financial success. STB equipment and software were less sophisticated and developed at a lower rate than that in the home computing field. As stated by Mr. Sandoval, for many years, legacy STBs "were sort of frozen in time."

[211] There were various factors pointing away from investing money in a more advanced STBs or the development of new features. However, these were essentially economic constraints.

[212] Mr. Thomas testified that his team was dependant upon the innovations of third parties. The rollout of third party innovations was subject to the pricing of such things as disk drives, memory, or processors. He testified that while there may have been technical issues to consider, it was primarily a cost barrier that prevented taking the processor and memory available on a personal computer at the time and placing it in an STB.

[213] In his 1994 article referred to above, Mr. Thomas mentioned cost constraints for commercial devices as the reason why sophisticated computer software was not readily available on STBs. The following is an excerpt from the overview in his paper:

> Electronic Program Guide (EPG) systems are currently under development for first deployment in cable, satellite and consumer electronics products.
>
> On the surface, these applications seem simple in comparison to much of the sophisticated computer software now available to consumers through personal computers. However, due to the cost constraints inherent in mass produced consumer products, such as the first advanced analog and digital compression based cable converters, there are challenges in designing, implementing and supporting these new EPG products.

[214] As the cost of computer memory and better processors fell as predicted by Moore's Law, and television progressively went digital, the industry made developments that, among other things, increased network capacity (through bi-directional communication), facilitated file transfers and allowed for high bandwidth upstream/downstream communication between cable providers and customers. This was in anticipation of an explosion of new installable applications for TV viewers, from weather, traffic, news, to ordering food and introducing enhanced interactive television features to consumers.

VIII. The Issues

[215] The issues to be determined were narrowed over the course of the proceeding to the following:

A. Claims Construction

(1) How would a skilled person construe the words and phrases in the Asserted Claims below and the claims on which they depend?

(a) Claims 2, 7 and 8 of the 061 Patent [061 Claims]

(b) Claims 79 and 80 of the 629 Patent [629 Claims]

(c) Claims 113, 116, 119, 120, and 123 of the 344 Patent [344 Claims]

(d) Claims 456, 459, 720, 721 of the 870 Patent [870 Claims]

B. What is the claim date for the 870 Patent (is the indicated priority filing date for the 870 Patent relevant to each of the 870 Claims)?

C. Infringement

(1) From January 2017 until expiry of the Asserted Claims (various times in 2019) were any of the Asserted Claims infringed by reason of Videotron having supplied subscribers with illico 2 terminals and functionality directly, or by reason of Videotron inducing its subscribers to infringe the Asserted Claims?

D. Validity

(1) Are each of the Asserted Claims valid?

a. Anticipation - Are any of the following claims anticipated by the prior art?

i. 061 Claims by Blake

ii. 629 Claims by Florin

b. Obviousness - Are any of the following claims obvious to the skilled person (having regard to the common general knowledge) in view of:

i. 061 Claims - Blake, DAVIC

ii. 629 Claims - Florin, Browne, Girard, the common general knowledge alone?

iii. 344 Claims – Fujita[4], DAVIC

[4] US5,598,523 entitled "Method and System for Displayed Menu Activation Using A Matching Distinctive Arrangement of Keypad Actuators" published on January 28, 1997 [Fujita]

iv. 870 Claims - DAVIC, Hair[5], Fujita,

c. Overbreadth/Insufficiency - Are the Asserted Claims broader than the invention purportedly made or disclosed or, in the alternative to obviousness, insufficiently supported by the specification?

d. Patentable subject matter - Are the Asserted Claims invalid for not being directed to patentable subject matter, contrary to section 2 of the *Patent Act,* RSC, 1985, c. P-4 [*Patent Act*],?

e. Ambiguity - Are any of the 344 Claims invalid for being ambiguous?

E. Remedies

a. Is Rovi entitled to an accounting of Videotron's profits?

b. If not, what is the appropriate reasonable royalty rate?

[216] Subsection 43(2) of the *Patent Act* provides that a patent is presumed to be valid in the absence of evidence to the contrary. Videotron therefore bears the onus to prove each of its invalidity attacks on a balance of probabilities: *Georgetown Rail Equipment Company v Rail Radar Inc*, 2018 FC 70 at para. 109 aff'd on this point in 2019 FCA 203, at para 57.

[5] US5,675,734 entitled "System for Transmitting Desired Digital Video or Audio Signals" published on October 7, 1997 [Hair]

[217] The onus rests on the patentee, Rovi in this case, to prove infringement on a balance of probabilities (*Monsanto Canada Inc. v Schmeiser*, 2004 SCC 34 at para 29) [*Schmeiser*]. In terms of remedies, Rovi must establish that the Court should exercise its discretion to award an accounting of profits and, if so, it bears the onus of establishing the portion of profits that were actually earned by Videotron that are causally attributable to the invention.

IX. Claims Construction

[218] The applicable principles of claim construction have been summarized by the Federal Court of Appeal in *Tearlab Corporation v. I-Med Pharma Inc*., 2019 FCA 179 at paragraphs 30 to 34 and need not be repeated here. Suffice it to say that claims must be construed purposively, once and for all purposes, before and independent of considerations of the issues of infringement or validity. The key to purposive construction is the identification of the particular words or phrases in the claims that describe what the inventor considered to be the "essential" elements of the invention. A patent is to be construed through the eyes and with the common knowledge of a worker of ordinary skill in the field to which the patent relates. Claims should be read with a mind willing to understand. Further, the language of the claims is to be examined in an informed and purposive way, not in an overly technical or literal way.

[219] There is a dispute between the parties about both infringement and validity of the Asserted Claims of the Patents. The primary evidence on the Skilled Person's understanding of the claim terms was introduced through Mr. Sandoval and Dr. Balakrishnan. While Mr. Sandoval provided his views as to what the Skilled Person would understand the claim language to mean

in the context of the Patents, Dr. Balakrishnan primarily responded to Mr. Sandoval through analysis in his second report.

[220] In the claim construction sections below, the focus has been on the claims where the proverbial “shoe pinches” (*Bayer Inc. v Apotex Inc.*, 2014 FC 436 at paras. 46-47). Other claim terms are less contentious and their specific construction is less relevant to the ultimate determination of validity and infringement.

[221] For the purpose of these reasons, once an element, term or concept of a claim has been construed, the same construction would apply to identical language used in other claims of the Patents unless a difference is noted later in these reasons.

[222] The parties agree that each element of the Asserted Claims of the Patents to be construed is essential. I therefore did not perform an essentiality analysis - an interpretative task that would normally be undertaken by the court in claims construction.

X. The 061 Patent – Remote Recording

[223] The invention of the 061 Patent relates to IPG video systems that provide access to program guide functionality outside the user’s home.

[224] The disclosure states the invention will address the following problem identified in the prior art.

> Interactive television program guides are typically implemented on set-top boxes located in the homes of users. A typical set-top box is connected to the user's television and videocassette recorder. The program guide system is therefore not portable. As a result, the user cannot use the program guide to adjust program reminder settings, to select programs for recording, to purchase pay-per-view programs, or to perform other program guide functions without that user being physically located in the same room in the home.

[225] The specification of the Remote Recording Patent indicates that an object of the invention is "to provide an interactive television program guide system in which the program guide may be remotely accessed by the user. Such a system may allow the user to access important features of the user's in-home program guide from a remote location and set program guide settings for those features."

[226] The Summary of the Invention states that:

> This and other objects of the present invention are accomplished in accordance with the principles of the present invention by providing an interactive television program guide system with remote access. A local interactive television program guide is implemented on interactive television program guide equipment. The interactive television program guide equipment is connected to one or more remote program guide access devices over a remote access link. A remote access interactive television program guide is implemented on the remote program guide access device. The remote program guide and remote program guide access devices provide users with the opportunity to remotely access features of the interactive television program guide on the interactive television program guide equipment and to remotely set program guide settings.

[227] For ease of reference, the 061 Claims are reproduced in their entirety below:

> Claim 2
>
> The system defined in claim 1 wherein the local interactive television program guide is configured to record the television program selected by the user on the user television equipment (22).
>
> Claim 7
>
> A system for selecting programs over a remote access link (19) for recording, the system characterized by:
>
> means for providing the user with an opportunity to select a program for recording over a remote access link (19) by a local interactive television program guide implemented on interactive television program guide equipment (17) having user television equipment (22) located within a user's home with a remote access interactive television program guide implemented on a remote program guide access device (24) located outside of the user's home; and means for recording the program selected by the user with the local interactive television program guide on the interactive television program guide equipment (17).
>
> Claim 8
>
> The system defined in claim 7 wherein the means for recording the program selected by the user with the local interactive television program guide on the interactive television program guide equipment (17) comprises means for recording the program on the user television equipment (22).

[228] The construction of claim 1 is relevant as claim 2 depends on claim 1. It reads as follows:

> A system for selecting programs over a remote access link (19) for recording characterized by:
>
> interactive television program guide equipment (17) on which a local interactive television program guide is implemented, wherein the interactive television program guide equipment (17) includes user television equipment (22) located within a user's home; and
>
> a remote program guide access device (24) located outside of the user's home on which a remote access interactive television program guide is implemented, wherein the remote access interactive television program guide is configured to provide the

> user with an opportunity to remotely select a program for recording by the local interactive television program guide over a remote access link (19); and
>
> the local interactive television program guide is configured to record the television program selected by the user with the interactive television program guide equipment (17).

[229] At a high level, the 061 Claims focus on a user using a device located outside the home, such as a laptop or smartphone, with a limited IPG to schedule a recording on a device inside the user's home. An IPG running on the device inside the home is configured to conduct the recording.

A. *Construction of the 061 Patent*

[230] The 061 Patent is construed as of the publication date of January 27, 2000. Anticipation and obviousness are assessed as of the priority date of July 17, 1998. The parties have not identified any material differences in the CGK or prior art between the priority date and filing date of the 061 Patent.

[231] The dispute between the parties boils down to the construction of two elements of the 061 Claims. The two experts disagree on whether the Videotron's illico 2 system includes: (1) "remote program guide access device;" and (2) "recording by the local interactive television program guide." Videotron does not dispute that the illico 2 system includes all of the other elements of the 061 Claims.

[232] I have set out below my construction of those elements, terms or concepts in the 061 Patent that I consider germane to the matters in dispute.

(1) "remote program guide access device"

[233] There is no construction dispute over the element "remote program guide access device" ("Remote Device") which appears in claims 2 (as dependent on claim 1) and 7. Both experts agree that it would be understood by the Skilled Person to be almost any type of electronic device, such as a personal computer, laptop or mobile phone, located outside of the user's home, that can connect over a remote access link to other equipment, and on which a remote access interactive television program guide is implemented.

[234] The dispute centers on whether or not Videotron supplies the device or the means for remote recording by a device. This claim term is only relevant for assessing infringement.

(2) "remote access interactive television program guide"

[235] There was a minor dispute prior to trial on claim construction of the element "remote access interactive television program guide" ("Remote IPG") which appears in claims 2 (as dependent on claim 1) and 7. Mr. Sandoval initially suggested that in the description of the 061 Patent, the "Remote IPG" may not have a guide but simply provide to some guide functions. I agree with Rovi that the portion of the 061 Patent quoted by Mr. Sandoval does not support his position.

[236] The claim language is clear and there is no need to look to the disclosure to assist in understanding the term. Even if the user interface on a "Remote Device," as defined in the 061 Patent, may be basic and have limited functionality, a guide is still required. I accept Dr. Balakrishnan's construction of "Remote IPG" to mean an IPG implemented on a Remote Device that generates a user interface, which may be similar to a local interactive television program guide, as construed below, or which may be different depending on its implementation. I note that Dr. Balakrishnan agreed during his cross-examination that the "Remote IPG" may provide a user with program listings organized by type or theme, as illustrated below in Figure 8 of the 061 Patent.

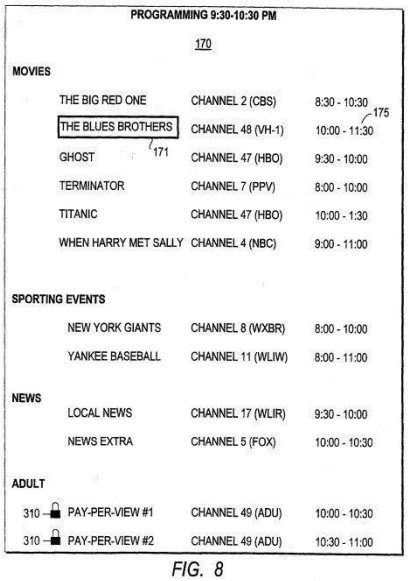


FIG. 8

(3) "recording by the local interactive television program guide" / "the local interactive television program guide is configured to record the television program"

[237] The parties disagree on whether a "local interactive television program guide" ("Local IPG") solely includes the software that allows a user to view program listings or also includes the software that enables broader and related functionalities. Two elements in claims 1 and 7 -

"recording by the local interactive television program guide" and "the local interactive television program guide is configured to record the television program" - are relevant for assessing both infringement and validity.

[238] Before construing the two elements, I consider it necessary to address a comment made by Rovi in its closing written submissions that "both experts" construed the Local IPG "as software and/or hardware." In fact, only Dr. Balakrishnan did so. While Mr. Sandoval agreed with Dr. Balakrishnan's that the Local IPG, "among other things, can generate for display, and display, listings of programs and recorded content in electronic form that a user can navigate by electronic means (e.g., by using a remote control)", he drew a clear distinction between hardware and software. From his perspective, both "IPG" and "Local IPG" would be understood by the Skilled Person to be a combination of software and hardware, but not hardware by itself. This is consistent with the weight of evidence.

[239] First, Mr. Thomas confirmed in cross-examination that an IPG is a software product. He testified that he and his team worked with software and they would receive third party hardware on which to write software.

> Q. Right. And you were effectively a software company?
>
> A. Well, I'll say what I said before. We were building IPGs, so the goal of the company was to build these products. We used software to do that.
>
> Q. So the IPG is a software product itself?
>
> A. Yes.
>
> Q. And you would get the benefit of the hardware designers were coming up with in terms of being able to put your software together with the hardware from another third party source?

> A. Yes, we put our software on other devices.
>
> Q. Yes. And when those devices got better and faster and more powerful, more memory, you would be able to take advantage of that with your software presumably?
>
> A. I think that's a reasonable statement.

[240] Second, the Patent refers to IPGs being "implemented" or "configured" on some type of hardware, such as a "Remote Device" or "user television equipment."

[241] Third, during cross-examination, Dr. Balakrishnan conceded, after some quibbling, that the Patents are directed to software implementations running on hardware.

> Q. … In terms of the interactive program guide, the IPG, you agree, I believe, that the IPG is implemented in software that runs on hardware?
>
> A. I would say the IPG? Which IPG are we talking about? In general or in the accused products?
>
> Q. Any of the IPGs that are referenced in the Rovi patents or in the accused devices.
>
> A. I would say it's mostly software running on hardware. Sometimes there are hardware components that come into play as well, such as networking components and so forth.
>
> Q. You're saying an IPG is a network component?
>
> A. No, I said an IPG may include networking components in its overall structure.
>
> Q. All right. So what can you point to as a feature in an IPG in the Rovi patents or accused device that is implemented in hardware?
>
> A. I didn't say they were necessarily implemented in hardware, I said they may be using particular hardware to handle the entirety of the IPG.

Q. And software is something that computer scientists such as yourself routinely speak of as being implemented on hardware, correct?

A. That is one terminology that computer scientists do use. But we also understand that software interacts with hardware in particular ways depending on the technology at issue. And that sometimes an interplay depending on the particular hardware, the software may behave very differently for example.

Q. Ultimately has to be somewhere for the hardware to execute on, correct?

A. From a browser point of view, yes. That's correct.

Q. That doesn't make the software into hardware, just means that's how it runs?

A. It doesn't make the software into hardware. I don't think I ever said that.

Q. So is there anything about an IPG that you can say is implemented in hardware as opposed to being implemented in software in terms of the Rovi patents or the accused devices?

A. I haven't looked at that level of analysis in the Rovi patents and the accused devices. My sense is that if the software, the IPG is running on a processor and uses a variety of hardware, not just the processor but also networking, access to databases and storage and support. So if we run a particular component, say for example a device driver or something may have a piece that's implemented in hardware, that level of detail I did not need to do that of analysis to ascertain infringement, for example.

Q. Right, because these patents and what you're concerned with are software implementations? Not things like device drivers?

A. The claims at issue that's generally true, but it doesn't necessarily exclude a device driver that might be coming into play in a particular implementation.

Q. I'm not asking hypothetically. I'm asking specifically for the opinion you gave in this case with respect to these patents and these accused devices. Can you point to any place where an IPG is anything other than software?

> A. I think if you're talking about just the software code, it's just the software but is it's running on particular hardware, as I've already said, and using different hardware components.

[242] I therefore find that the Skilled Person would understand the terms “interactive television program guide” and “local interactive television program guide,” as they are used in the 061 Patent, to be a reference to software running on hardware, and not to hardware by itself.

[243] In his validity report, Mr. Sandoval argued that the Skilled Person would understand “Local IPG” to be software “likely operating on the local user television equipment, such as a STB, but perhaps running on a combination of the user equipment and the head-end, namely the 'interactive television guide equipment’ … to provide information about available programs to the user.” [My emphasis.] Dr. Balakrishnan did not take issue with Mr. Sandoval’s description of the equipment on which the Local IPG runs. However, he saw no reason, either from the perspective of the Skilled Person or from the disclosure of the 061 Patent, to limit the functionality of “Local IPG” simply to the display of program listings. According to Dr. Balakrishan, the 061 Patent intended to include other features, including program recording.

[244] Dr. Balakrishnan’s construction is well supported by the CGK and the disclosure of the 061 Patent. Functionality related to the control of television programing is assumed to be part of the “Local IPG”, as explained by the patentee at page 4:

> “[a]ny suitable interactive television program guide function or setting may be accessed. The remote access program guide may, for example, provide the user with an opportunity to remotely schedule a reminder for a program, remotely view television program listings, remotely select programming for recording (storage)….”.

[245] On a purposive construction of claim 1, I find that the functionality of "Local IPG" is not limited to only providing program listings. This lack of limitation is logical since claim 1 itself tells us that the "Local IPG" is responsible for recordings programs.

[246] To the extent that Mr. Sandoval may have been advocating that the "Local IPG" was meant solely to encompass the software that allows a user to view program listings, I disagree. The 061 Patent specifies that there is a difference between program guide applications and non-program applications, such as a web browser application, a home shopping application, an e-mail application, and a banking application. The Skilled Person would understand "Local IPG" to include applications and/or programs on the STB that facilitate other user features, such as the ability to record.

[247] Another dispute over the meaning of "recording by the location interactive television program guide" and "the local interactive television program guide is configured to record the television program" did not crystallize until it was raised by Mr. Sandoval in his responding infringement report.

[248] Mr. Sandoval noted that claim 1 requires that the "Remote IPG" "is configured to provide the user with an opportunity to remotely select a program for recording ***by the local interactive television program guide*** over a remote access link (19)." [His emphasis.] He argued that simply because the STB in the illico 2 system has an EPG Application implemented in software that allows a user to see upcoming broadcast programs does not mean that the EPG Application is used to record programs. According to Mr. Sandoval, Claim 1 could have said that the recording

is performed by the “interactive television program guide equipment” or by “user television equipment,” but instead is specific that the recording is done by the “Local IPG” itself.

[249] Rovi submits that the 061 Patent does not restrict the way in which the software is architected, be it as a single monolithic piece of software, in modules, or in multiple applications. At trial, Dr. Balakrishnan testified that “the fact that the illico system is architected in a modular style … is basically what is done in modern software engineering for any software system of a reasonable amount of complexity.”

[250] The dispute between the experts arose in context of their infringement analysis. Both experts were looking at the architecture of the illico 2 system, which is described in technical documents by its component parts, referred to as applications. The software includes the PVR Application, the STB Daemon, the EPG Data Manager, the EPG application, and the Search Application. Different parts of the software are responsible for different functionalities of the system, as illustrated in the system context diagram below.

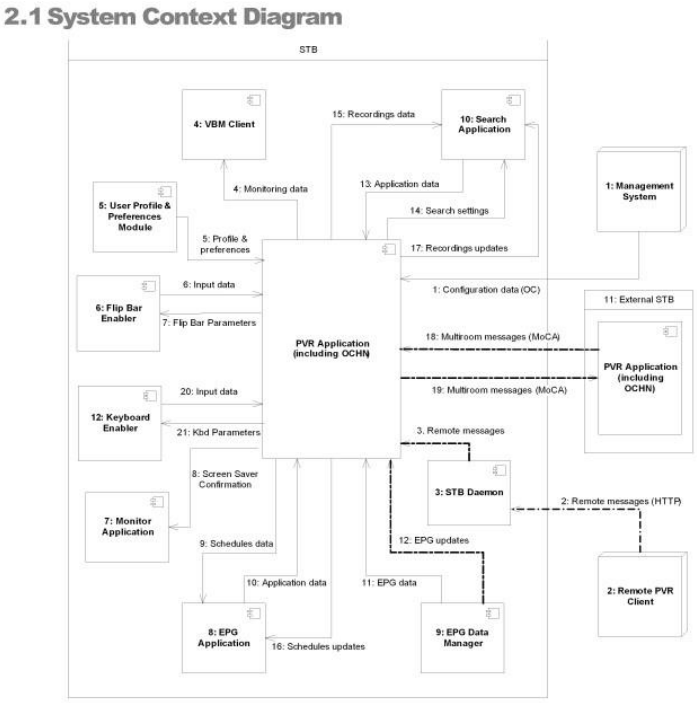


Figure 1: System Context Diagram

[251] While some applications may standalone (such as the PVR Application), many applications do not, such as the keyboard enabler, flip bar, monitor and STB Daemon, which only have utility when interacting with another application. The Main Menu application provides one place where the user can access various functionalities. To be clear, none of this is disputed by Videotron.

[252] Rovi suggests that Mr. Sandoval and Videotron drew an arbitrary line in the system context diagram to argue that the 061 Patent only covers one part of the software (specifically, the EPG Application) and not the illico STB software as a whole. It claims the line was drawn simply to suit Videotron's case. According to Rovi, the diagram does not accurately represent how the system works. The illico 2 system should instead be viewed as a whole.

[253] My focus in construing the disputed elements should be on what the 061 Patent says and not on how software may have been implemented on Videotron's system, given that a patent must be construed independent of considerations of infringement or validity: *Laboratoires Servier v Canada (Minister of Health),* 2015 FC 108, at para 90.

[254] I am not convinced that recourse to the disclosure is necessary to resolve any ambiguity in the meaning of the two elements as they appear in Claim 1. The words used are not terms of art. Nor did the expert suggest that they would be understood by the Skilled Person to have a special meaning.

[255] Words are primarily to be construed in their ordinary meaning or common or popular sense. Simple logic would suggest that the words "recorded by" imply that it is the "Local IPG" that is responsible for effecting the recording. The same can be said for the words "configured to."

[256] The Oxford English Dictionary (online) defines the verb "configure," in the context of the computing field, as "[t]o choose or design a configuration for; to combine (a program or device) with other elements to perform a certain task or provide a certain capability." Inherent in the ordinary, dictionary meaning of the past tense of the verb is the concept of something having been set up or arranged so that it can be used in a particular way.

[257] The meaning of the term "configured to" was canvassed in the recent decision of *Guest Tek Interactive Entertainment Ltd. v. Nomadix, Inc.*, 2021 FC 276. The case involved a claim for

patent infringement of some software, as well as a counterclaim for declarations of invalidity of two patents. One of the claims at issue claimed a network that comprises a gateway and a wireless access node. The disputes between the parties lay in the descriptions in the claim of how the wireless access node and the gateway were configured.

[258] Mr. Justice Nicholas McHaffie made the following observations at paragraph 126:

> … While a purposive construction must be given to the claims, the claims must nonetheless be construed as they are written [citing *Free World Trust* at para 31]. Claim 1 states that the *wireless access node* is *configured* to transmit packets to the gateway. It does not say the wireless access node simply *transmits* packets to the gateway. Nor does it say that the *network* is configured so that packets are transmitted from the wireless access node to the gateway. [His emphasis.]

[259] Justice McHaffie went on to conclude that the skilled person would understand the claim in question to mean that "the wireless access node must, itself, be configured so the packets it receives from wireless devices are transmitted to the gateway regardless of their destination address." I would apply the same reasoning in construing the disputed elements. I find the Skilled Person would understand the two disputed elements to mean that the "Local IPG" must itself be configured to effect the local recording of a program.

[260] I find that the 061 Patent intended to include other features including program recording, as argued Dr. Balakrishnan. That said, it was the choice of the patent drafter to say that the IPG includes this particular feature.

[261] In his 1994 article, Mr. Thomas listed a number of basic elements which must be present to have a complete EPG system: (a) a method for gathering TV listings, (b) extracting system specific information, (c) sending the data to the local controller, (d) coordinating with the system controller, (e) transmitting the data to the converter and (f) the guide application itself. Mr. Thomas wrote that the level of user functionality must be carefully considered and "will be implemented with different characteristics for advanced analog, first generational digital and future advanced digital platforms." He added that there are many features which "can" be offered in an EPG.

[262] It was understood that software engineers would be free to choose what features to include and implement in an EPG when the industry moved to digital. The benefits of design freedom were also recognized by Mr. Armaly during his cross-examination. He agreed that people who didn't take a patent license had the option to design around the patents.

[263] The 061 Patent does not purport to limit the freedom of others to make design and implementation choices of their own. I agree with Videotron that merely because a software function *could* be designed to be part of an IPG does not mean that it is *in fact* part of the IPG.

[264] Having set the stage with the above findings, I now turn to the validity issues of the 061 Patent.

B. *Validity*

[265] Videotron submits that the 061 Patent is invalid because it is either anticipated by Blake or it is rendered obvious on the basis of Blake or DAVIC in light of the Skilled Person's common general knowledge.

(1) Anticipation

[266] For a claim of a patent to be valid, it must disclose an invention that is novel; that is, it cannot have been anticipated.

[267] The test for anticipation is well established and set out in detail *Sanofi* at paras 24-30. It was succinctly explained in *Hospira Healthcare Corporation v Kennedy Trust for Rheumatology Research*, 2020 FCA 30 at para 66:

> It is useful to note that there are two requirements for establishing that a prior art anticipates:
>
> 1) the prior art must disclose the claimed invention such that, if performed, it would necessarily result in infringement; and
>
> 2) the prior art reference must be sufficiently detailed to enable a PSA to perform the claimed invention without the exercise of inventive ingenuity or undue experimentation.

[268] In short, to meet the disclosure requirement, one must be able to look at a single prior art reference and find in it all the information which, for practical purposes, is needed to produce the claimed invention without the exercise of any skill. To meet the enablement requirement, one

must also determine whether the person skilled in the art would have been able to perform the invention without the exercise of inventive skill.

[269] The test is also a difficult one to meet, as noted in *Free World Trust* at para 26:

> One must, in effect, be able to look at a prior, single publication and find in it all information which, for practical purposes, is needed to produce the claimed invention without the exercise of any inventive skill. The prior publication 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.

[270] If a published reference fails to either disclose or enable the essential elements of a claim, the patent claim is novel, or not anticipated (*Apotex Inc. v Shire LLC*, 2021 FCA 52, at para 36 [*Shire LLC*]).

[271] Mr. Sandoval's anticipation analysis for the 061 Patent is found in one paragraph of his report. While it does not contain an element-by-element analysis nor refer to his earlier claims construction, it was not conducted in a vacuum. Mr. Sandoval provided detailed constructions for each of the essential elements of the 061 Patent. I also note that claims 7 and 8 substantively parallel the scope of claims 1 and 2. While Mr. Sandoval's analysis may be brief, it is pithy and supported by technical evidence found elsewhere in his validity report. What remained was a legal analysis, which Mr. Sandoval was not required nor in a position to provide.

[272] Videotron submits that Blake discloses and enables the 061 Claims. Blake is a WIPO application published on March 12, 1998 on application by Starsight. The invention provides an interactive schedule system with enhanced recording capability.

[273] Videotron fairly summarizes what is contained in Blake in its written submissions as follows. Blake describes a peripheral device inside a user's home, which may be a STB or a PC/TV. Software in the peripheral device generates a local guide. A user may record a program from a remote location by selecting it with an input device. The input device may be any device capable of transmitting data from a remote location, including a laptop computer, cellular phone, or personal computer with access to the Internet. If the remote input device is a computer, for example, the user may select a program from a program list organized by theme. At the appropriate time, a recording device inside the user's home will be activated by the local guide to record the program. A record daemon application manages recording functions. The recording device may be a VCR, or it may be any device with audio/video recording capabilities, such as a hard disk.

[274] In terms of what Blake describes in general, Dr. Balakrishnan agreed to the following:

> Q. Let's talk about Blake specifically. There is no doubt, I don't think, that Blake discloses an ability to have recording happen in a home by access outside the home?
>
> A. I think that's fair, yes.
>
> Q. And it involves a set-top box?
>
> A. Yes.
>
> Q. And it also involves some kind of remote device?
>
> A. Yes.

[275] Rovi's position is that the invention of the 061 Patent is novel and not anticipated because two elements are not disclosed in Blake: (a) a "Remote IPG", and (b) a "Local IPG" configured to record the television program selected by the user.

(a) *Does Blake disclose a Remote IPG?*

[276] Dr. Balakrishnan's initial view was that while the Remote IPG taught by the 061 Patent can include reminders, a program listing with which the user can interact with cursor keys, ability to remotely adjust parental controls, and ability to set favourite channels or programs, Blake only describes the use of codes entered into some sort of interface that may be available through a telephone or computer. Dr. Balakrishnan maintained his position that Blake does not disclose a Remote IPG and actually points away from the use of a remote IPG.

[277] Dr. Balakrishnan's opinion is plainly incorrect, as he conceded in cross-examination. While Blake states that codes may be entered to designate which program to record, it also describes an embodiment where the user is presented with a list of programs on the remote interface and can select a program to be recorded locally using the remote interface. This is made quite clear at page 18 of Blake:

> …Examples of themes which the user may select from include sports, movies, science fiction, sit-corns and the like. Selecting by themes is particularly helpful when the user is not quite sure of the title of the program, or when the user desires to record a sports event. For example, if the user wishes to record the Chicago Bulls v. LA Lakers game, the user may first choose to select program by themes. The user may then select sports when presented with a list of theme selections, and further select basketball. The user may be presented with a list of basketball games which are currently, being played or are scheduled to be played, and the user may then choose the Bulls vs. Lakers game. Alternatively, the user may enter Bulls, and processing system 334 will present a list of Bulls games to the user, and the user may select one or more of the games to record. After the user has made his/her selection(s), processing system 334 preferably confirms the user's selection(s), and stores the information upon receipt of user confirmation. At the appropriate time(s), processing system 334 will activate recording device 336 at the user's home to record the game(s).

[278] Dr. Balakrishnan claims that there was no contemplation in Blake of a Remote IPG to allow for the remote scheduling of recordings. During his cross-examination, Dr. Balakrishnan attempted to distinguish between what he characterized as functionality "within an IPG" and functionality "outside an IPG" as in Blake.

> Q. Dr. Balakrishnan, back then to page 22 of the materials, this is page 18 of the Blake reference. And is it not a simple fact that Blake describes a functionality that is an IPG functionality as being implemented on the remote device?
>
> A. I cannot agree with the way you have phrased that sentence.
>
> Q. So you say no?
>
> A. I say I cannot agree with the way you phrased the sentence. I think the answer is not a yes or no. It's a nuanced answer.
>
> Q. So the choice of programing by way of themes is a set-top box enabled, in some cases, and in some cases not, but it's an IPG function. In other words, providing themes to a user and allowing a user to select programing from those themes is one aspect of an IPG, correct?
>
> A. It can be one aspect of an IPG. It is not a required aspect to an IPG. And you can also do it, do that outside an IPG.
>
> Q. How would you know whether it's inside or outside an IPG?
>
> A. I think if I'm reading a disclosure or a document and it's talking about IPGs, then the functionality is within that IPG. And it talked about -- for example, themes, this is discussing, the discussion of themes, then I would say it's part of the IPG. If the discussion of themes as an example is within the phraseology of a different embodiment, as done in Blake, and Blake is not discussing IPGs in the remote context in what I've read of Blake, then I would not read this as being part of an IPG. I would see that as a functionality, an embodiment that allows users to select some program to record according to themes, as Blake discloses.

[279] I found Dr. Balakrishnan's reasoning to be confusing and not persuasive. Mr. Sandoval agreed in cross-examination that Blake does not "explicitly discuss having something like a

program guide on the remote device." However, as Mr. Justice Roger Hughes clarified in *Abbott Laboratories v Canada (Health),* 2008 FC 1359 at para 75, aff'd 2009 FCA 94, the disclosure in the prior art does not have to be an "exact description" of the claimed invention. It must only be sufficient so that when read by a person skilled in the art willing to understand what is being said, it can be understood without trial and error.

[280] Blake describes a theme search function that includes a "user interface" to search for programs by themes. Dr. Balakrishnan agreed that providing themes to a user and allowing a user to select programing from those themes is "one aspect of an IPG." This is obviously the case since the remote device would necessarily have to provide some way to search for a theme, identify a program, and then select the program for recording.

[281] Rovi submits that Blake does not contain details of what the user interface might be, nor does Blake specify any method by which a user may move a cursor to navigate on the remote device. However, such details were not required as the Skilled Person would have a good understanding of program guides and how to implement them. Blake provides that "it will be obvious to those skilled in the art that various modifications and changes may be made." The disclosures and descriptions in Blake are said to be illustrative, but not limiting, of the scope of the invention. It was well known that a user could navigate a program guide by selecting channels or time slots, such as by using navigation keys on a remote control.

[282] Based on the evidence before me, I find that Blake does teach a remote IPG. The functionality and explanation in Blake about providing a list of programs organized by theme

exactly matches the explanation in the 061 Patent. As the old saying goes "If it looks like a duck, swims like a duck, and quacks like a duck, then it probably is a duck."

(b) *Does Blake disclose a "Local IPG" configured to record the television program selected by the user?*

[283] Mr. Sandoval stated in his validity report that, in Blake, an EPG exists on a user equipment such as a television or personal computer and that this equipment includes a guide that allows the user to see what programs are available and to schedule programs for recording, such as on a VCR or digital video disk. According to Mr. Sandoval, Blake anticipates the 061 Claims because it describes a home television or personal computer that has a local interactive guide. It also describes a remote input device that includes the ability to navigate available programs at least by theme and by title, which would be considered a "guide." On the remote input device, the user can select a program which is then recorded by the home user equipment at the home equipment. The connection between the remote input device and the home user equipment is described as using any available network with a central processor that communicates with the home user equipment.

[284] Dr. Balakrishnan argues that the 061 Patent is different than Blake in that the 061 Claims require the local IPG to be configured to record a television program while, in Blake, the command to record remotely is stored in the network and it is the network that controls the recording. In formulating his opinion, Dr. Balakrishnan was focused on the role of the central processing system in Blake, as shown below in Figure 13.

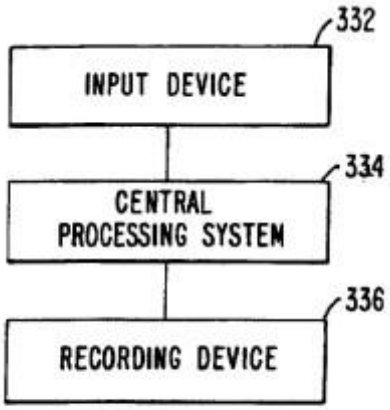


FIG. 13.

[285] Dr. Balakrishnan testified that this direct control of the recording device at the time of recording shows that, even if the recording device receiving commands includes a local IPG, the local IPG is not "configured to record the television program selected by the user." He ultimately conceded that it was "configured to record" in cross-examination.

> Q. …And the very first sentence of the first paragraph on page 17 says: "The present invention enhances the recording capability of the schedule guide." Do you see that?
>
> A. Yes.
>
> Q. So it is teaching that the guide itself has recording capability, correct?
>
> A. I don't think I'm disputing that the guide, the local guide has recording capability.
>
> Q. Now let's look at the last sentence of the same paragraph. At line 19 it says: "Recording device 336 in one embodiment is a VCR, but may be any device with video and/or audio recording capabilities." Do you see that?
>
> A. Yes.
>
> Q. So if we're looking around as a person of skill in the art to see what has recording capabilities as defined in Blake, do we not just

have reference to the same paragraph where it says the schedule guide has recording capability?

A. Certainly this schedule guide, the local schedule guide has the recording capability to record on the recording device 336.

Q. The teaching is that the remote needs to direct something to record. You look at any device with recording capabilities and the patent also teaches you that the schedule guide has a recording capability. That's all what that paragraph says, correct?

A. This paragraph says the local schedule has recording capability to record to a device and has a central processing system that also records to the device.

Q. And you can record to any device with recording capabilities and the schedule guide has recording capabilities, so you just direct your request to the schedule guide that has the recording capabilities. It's right there in that paragraph. Is that not true?

A. That is not true. The request as is shown now in Figure 13 goes to a central processing system, not to the -- it has no disclosure that it goes to the local guide.

Q. What I'm saying is that the disclosure is you can use any device with a recording capability, and the disclosure is also that the schedule guide has a recording capability.

A. First of all, I don't think it's any device that has recording capability, it has to be recording device 336, in that embodiment that happens to be -- could be a VCR or any device, but that falls in that. And I agree with you that the local schedule guide has recording capability. Where I don't agree with you is that the remote is doing it through the local schedule guide.

Q. But the figures don't show that, but it's what the guide can do. It has the capability to record?

A. A local guide has the capability to record locally.

[286] Dr. Balakrishnan continued to maintain nonetheless that there is no disclosure in Blake that the request to record goes to the local guide. I disagree. Blake describes a remote device

connected to a central processing system that receives commands and those commands are passed on to a recording device. This is no different than what is described in the 061 Patent.

[287] As stated earlier, Dr. Balakrishnan did not dispute Mr. Sandoval's construction as it relates to equipment on which a Local IPG may run. Mr. Sandoval construed "interactive television program guide equipment" (IPG Equipment) as a combination of equipment both at the head-end and also equipment at the user's home. This is consistent with the language used in the 061 Patent and accompanying figures. As shown in Figure 2a below, "interactive television program guide equipment 17" is depicted as both the program guide distribution equipment located at the television distribution facility and the user television equipment located at home. The IPG equipment communicates with the remote program guide access device 24 via remote access link 19.

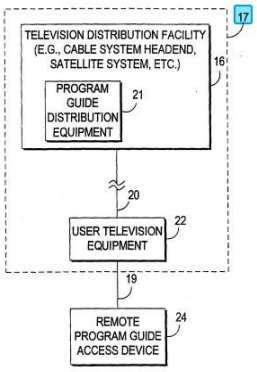


FIG. 2a

[288] The experts agreed that the element "interactive television program guide equipment" may include both local and head-end equipment. It follows that transmitting a recording command from the Remote Device via the head-end equipment falls within the claim language.

[289] If I am incorrect in the above finding, it remains that the path the recording commands takes from the Remote IPG to the Local IPG is irrelevant. The simple question is whether Blake discloses a local IPG configured to record a program. The answer is yes.

[290] Blake describes a “guide user interface [GUI]” that takes remote control commands as its primary input and a “record daemon” that is resident in the local device. The record daemon manages the recording functions of the local device, including by examining what is queued for recording. In cross-examination Dr. Balakrishnan agreed that in Blake local recording is facilitated by an interactive program guide:

> Q. A record daemon is then called from the realtime executive to examine the queue and manage the recording functions." You've got that?
>
> A. Yes.
>
> Q. And that GUI embodiment, that is a form of interactive program guide, correct?
>
> A. On the local device, yes.
>
> Q. You're using the interactive program guide on the local device to carry out a recording function according to Blake, right?
>
> A. In this example, yes. Now, it doesn't say where the recording happens. It certainly is carried out using the GUI on the local device.

[291] For the above reasons, I conclude that Blake does teach a local IPG configured to record within the meaning of the 061 Patent.

[292] Rovi submits that if the invention is found to be disclosed, Blake does not enable the invention of the 061 Patent; however, the argument was not pursued vigorously. Based on the

evidence before me, I find that there is sufficient information in Blake to allow the alleged invention of 061 Patent to be performed.

[293] It follows that all of the elements of the 061 Patent's asserted claims can be found in Blake, rendering the claims invalid for anticipation. It is unnecessary to further consider the obviousness of claims that have been found to be anticipated, since there are no differences, and therefore nothing to which inventive ingenuity could be attributed. However, if I am incorrect, and the 061 Claims are not anticipated, I would have found the said claims invalid for obviousness for the following reasons.

(2) Obviousness

[294] Videotron submits that the 061 Patent is rendered obvious on the basis of Blake or DAVIC in light of the Skilled Person's CGK.

[295] As stated by Mr. Justice Michael Manson in *Hoffmann-La Roche Limited v. Sandoz Canada Inc.*, 2021 FC 384, the test for obviousness is set out in section 28.3 of the Patent Act. This attack on inventiveness requires careful attention, particularly considering that hindsight is 20-20 (*Bridgeview Manufacturing Inc v 931409 Alberta Ltd (Central Alberta Hay Centre)*, 2010 FCA 188 at paras 50-51, leave to appeal to SCC refused 33885 (14 April 2011)).

[296] As with anticipation, obviousness is assessed on a claim-by-claim basis. Each claim is evaluated against the four-part *Sanofi* test (at para. 67):

(1) (a) Identify the notional "person skilled in the art";

> (b) Identify the relevant common general knowledge of that person;
>
> (2) Identify the inventive concept of the claim in question or if that cannot readily be done, construe it;
>
> (3) Identify 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;
>
> (4) Viewed without any knowledge of the alleged invention as claimed, do those differences constitute steps which would have been obvious to the person skilled in the art or do they require any degree of invention?

[297] Rovi submits that Mr. Sandoval's opinion on obviousness should be given little weight because his analysis is very brief and does not address each element of the 061 Claims in comparison to the prior art. While there is merit to the criticism, I find that Mr. Sandoval did employ, in substance, the required steps of the *Sanofi* analysis in his expert report on validity of the 061 Patent. (This applies to the other Patents as well.) Mr. Sandoval determined who the Skilled Person was and what their common knowledge would be. He then reviewed the prior art, identified "gaps," and indicated whether in his opinion it would have been obvious to the Skilled Person to traverse those gaps. Using this analysis, he concluded that the 061 Claims were obvious.

(a) *Stage 1: Identify the Skilled Person and the CGK*

[298] The Skilled Person and the CGK are identified and described earlier in these reasons. Focusing on key aspects of the CGK relevant to the 061 Patent, the experts agreed that the Skilled Person would have known in the 1990s that both local area and wide area networks could be created with computers and electronic equipment.

[299] Dr. Balakrishnan also agreed that networks could support remote access, a remote access device would have some input/output capability that allowed for identification of a program to be recorded, and one common way of proving user input/output was to identify data through a program listing. The Skilled Person would also have also been familiar with recording programs using an IPG on either a VCR or a hard disk.

(b) *Stage 2: The Inventive Concept*

[300] At stage 2, the Court is to "identify the inventive concept of the claim in question or if that cannot readily be done, construe it." On occasion, the inventive concept may be "readily apparent" where there is agreement on it. If not, the inventive concept needs to be construed (*Apotex Inc. v Shire LLC*, 2021 FCA 52, at para. 67). To do that, the Court is to first determine whether it can be identified from the previously completed claims construction exercise. Second, where it is not possible to grasp the nature of the inventive concept solely from those claims, the Court may have regard to the patent specification to determine if it provides any insight or clarification into the inventive concept of the claim(s) in issue (*Sanofi* at para 77).

[301] If this step is necessary, "it is not permissible to read the specification in order to construe the [inventive concept of the] claims more narrowly or widely than the text will allow" (*Sanofi* at para 77). While an inventive concept is an attribute of the claims, it differs from claims construction. As such, though the process for the identification of an inventive concept bears a striking resemblance to that of claims construction, it is nonetheless a distinct, separate exercise (*Shire LLC* at para. 68). It is the inventive concept(s) of the claim(s) in issue that must be the focus of an obviousness inquiry, not the inventive concept of the patent (*Shire LLC* at para 69).

[302] The experts agree that the Skilled Person would read Blake and DAVIC and understand that in order for remote access to work, there was a need for a remote access network and communication pathways, input/output capabilities, and would also appreciate that STBs could record and receive a command to record from a remote device. Rovi claims that these are not the invention of the 061 Claims and there are important differences between the prior art and the 061 Claims. Each of the following elements is alleged to be in the 061 Claims but is absent from the prior art:

> (1) A remote program guide access device upon which an IPG is implemented;
>
> (2) The presence and use of a remote access IPG (as opposed to a non-IPG interface) to issue the command to record; and
>
> (3) A local IPG that receives the communication from the remote access device and controls the recording of the program.

[303] There was no inventive concept for the 061 Claims expressly identified by either technical expert other than the claim language itself. In particular, there is no language in the 061 Claims that provides that the Local IPG *directly* receives the communication from the Remote Device, as is advocated by Rovi. The focus of the 061 Claims is on the combination of two ideas: (1) a user using a remote device upon which an IPG is implemented to issue a command to record a program on a device inside the user's home; and (2) an IPG running on the device inside the home that is configured to receive the command and control the recording of the program.

(c) *Stage 3: Difference between the Prior Art and the Inventive Concept*

[304] At step 3 of the obviousness analysis, the inventive concept of the claim in step 2 is compared to the state of the art to determine whether, or to what extent, an equivalent or similar

solution to the problem being addressed by the applicant was known at the claim date. The state of the art refers to the information available to the person skilled in the art and generally will be identified by reference to specific prior art documents that would have been discovered in a reasonable and diligent search.

[305] The parties agree that the prior art cited by Videotron was publicly available when they were published. Moreover, there is substantial agreement by the parties on the CGK of the Skilled Person on the priority date of the 061 Patent. As explained below, I see no difference between the inventive concept of the 061 Claims compared to the state of the art. The “problem” to be solved in this case - remote recording - was already recognized in Blake, which identified the need or advantage of a device for allowing a user to schedule recording of a television program from a remote location. The 061 Claims have the same objective - to allow the user to access the recording feature of the user's in-home program guide from a remote location.

[306] I start first with DAVIC. The prior art reference lists a series of functions for a “HOME NETWORK”, including function 15.17 that reads: “The network should support remote access (i.e. access from a device outside of the home)”. The function description does not by itself teach the Skilled Person a system as described in the 061 Claims. In fact, it does not even mention recording.

[307] However, DAVIC was purposely kept at a high level on the understanding that the industry was aware of the objectives and ultimate approaches to design for the systems described therein, leaving to them the freedom to make implementation choices. I agree with Mr. Sandoval

that function 15.17 would be understood by the Skilled Person to mean that a user would be able to access the features of their home network using a device outside their home. In the same section, DAVIC states: “Network nodes should be capable of transmitting and/or receiving applicable control commands to and/or from other network nodes.” Mention of this feature would reinforce to the Skilled Person that control commands, such as instructions to record, could be sent remotely to the network to control devices on the network. Any gap in the inventive concept was filled by Blake.

[308] As noted in my anticipation analysis, Rovi argued that Blake did not disclose two claim elements: (1) using a remote IPG and (2) having a local IPG configured to record. Videotron submits that these so-called gaps would have been obvious from Blake, if they are not held to be explicitly disclosed by Blake. I have already set out in my anticipation analysis my reasons for concluding that Blake teaches both a remote IPG and a local IPG configured to record and need not repeat them.

[309] In terms of a “Remote Guide” in claims 1 and 7, both experts agree that Blake describes a system that allows users to schedule recordings from a remote location using, for example, a computer. If I am incorrect in concluding that Blake fully describes a remote and limited program guide, I find that the addition of such a guide to Blake’s remote computer would have been obvious to the Skilled Person. Some type of user interface for navigation would necessarily have to be provided on the remote access computer to enable the user to interact with the list of programs. This is only common sense.

[310] As for the "Local IPG configured to record," as described in claims 1 and 7, the Skilled Person in the 1990s was very well familiar with IPGs and how IPGs could be implemented on various devices, including devices that could be used remotely. The Skilled Person would be familiar with the fact that an IPG could be configured to record a program. To the extent that Blake's use of a local daemon application is not explicitly use of the IPG, it would have been obvious for the Skilled Person to have the guide user interface in Blake conduct the local recording.

[311] Based on the evidence before me, I conclude that the elements purportedly missing from Blake would nevertheless be obvious to include in Blake.

(d) *Stage 4: Do the differences identified in stage 3 constitute steps which would have been obvious to the person skilled in the art or do they require any degree of invention?*

[312] Stage 4 of the obviousness inquiry asks whether the differences, in light of the prior art and viewed without any knowledge of the alleged invention as claimed, constitute steps which would have been obvious to the skilled person, or if they instead required any degree of invention (*Sanofi* at paras 67, 70). Obviousness is assessed objectively and purposively, having regard to the problem addressed by the patent.

[313] In *Janssen-Ortho Inc. v. Novopharm Ltd.,* 2006 FC 1234 at para 113, a list of factors were enumerated that a Court may take into consideration in a determination of obviousness, on a principled and objective basis, including:

> the climate in the relevant field at the time the alleged invention was made, including not only knowledge and information available but also attitudes, trends, prejudices and expectations that would define the person skilled in the art;
>
> any motivation in existence at the time of the alleged invention to solve a recognized problem in the field of the invention; and
>
> the time and effort involved in the invention

[314] Where the problem to be solved was already recognized in the art, it may be appropriate to inquire only into whether inventive ingenuity was required to conceive of the claimed solution and put it into practice. Where, however, the problem or its underlying cause was not previously recognized or understood, there may be an invention even where the proposed solution to the newly identified problem would have been immediately apparent to the person skilled in the art. Inventive ingenuity, however, does not exist if the alleged problem never existed and was simply an artificial obstacle or "straw man" developed to imply inventiveness in the proposed "solution" *(Sanofi-Aventis Canada Inc. v Ratiopharm Inc.* 2010 FC 230 at para 87).

[315] Given my conclusion that that there was no difference between the prior art and the inventive concept, I will be brief in performing my stage 4 analysis.

[316] First, the activity in the industry and the motivation to innovate have already been canvassed in the CGK section of these reasons. Suffice it to say that the 1990s was a period of great innovation in the field of interactive digital audio-visual applications and services. Blake, published just a few months before the priority date of the 061 Patent, is but one example.

[317] Second, there was little evidence presented at trial of the work done to come up with the 061 Patent or, for that matter, any of the purported inventions in this proceeding. In terms of research and development, Mr. Thomas explained that one of the key things that needed to be determined from the start by the team was what equipment their products were going to run on. For IPGs, there were what his team called "advanced analog set-tops and then the promise of digital cable set-tops." The next step was "what are the product features that we want." However, Mr. Thomas had no recollection of any actual steps taken to develop the remote recording functionality, or what any listed inventor may have contributed to it. In fact, he could not recall doing any work to make a practical system that would allow a user to set a program to be recorded remotely. Further, when asked about the idea of recording a specific program remotely, Mr. Thomas could only say: "sitting here today that seems like a reasonable scenario."

[318] The invention must, of course, add something of a substantial character to existing knowledge. In my view, the Skilled Person would consider that there is no inventiveness in the idea of using IPGs in the ways described in the 061 Claims in light of Blake and the CGK. The 061 Claims are therefore invalid for obviousness.

[319] If I am incorrect in my validity analysis and the 061 Claims are found to be valid, the issue then is whether they have been infringed.

C. *Infringement*

[320] Infringement is defined broadly as any activity that deprives the patentee, in whole or in part, directly or indirectly, of full enjoyment of the monopoly conferred on them by law

(*Schmeiser* at paras 34-35). This monopoly is the exclusive right, privilege, and liberty of making, constructing and using the invention, and selling it to others to be used (section 42 of the *Patent Act*).

[321] As noted earlier, the elements with respect to which the experts have an infringement dispute are "remote program guide access device" and "recording by the local interactive television program guide".

(a) *"remote program guide access device"*

[322] Claim 2 includes as an essential element "a remote program guide access device located outside of the user's home on which a remote access interactive television program guide is configured…" Mr. Sandoval argues that the devices used by Dr. Balakrishnan for testing were supplied by Dr. Balakrishnan and not Videotron, and that "laptops and mobile devices do not form part of the illico 'system' as provided by Videotron."

[323] Rovi submits that who supplies the device is irrelevant to the question of infringement. It claims that by having provided users with access to this functionality and assuming a user is going to have a remote access device, Videotron is depriving Rovi of the full enjoyment of its monopoly.

[324] There is no evidence of any direct infringement by Videotron of the element in Claim 2. However, Videotron's conclusion that supply of these devices by the subscriber themselves

avoids infringement is incorrect because one may be found guilty of infringement simply by inducing or procuring another to infringe a patent.

[325] Induced infringement requires that: (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).

[326] In my view, induced infringement of the above element of Claim 2 has been proven.

[327] Since at least January 1, 2017, Videotron has provided the illico system to users which allows them to set recordings remotely. It has provided users with the mobile and online software applications to achieve this functionality and provided instructions to users on how to download or access that software from their devices.

[328] The only way that a subscriber could obtain access to the benefit of the invention of the 061 Patent is by using the system provided by Videotron. By causing the system to set the recording and obtaining the benefit of the result, the subscriber used the system. This use was induced by Videotron in that without the influence of Videotron, direct infringement would not have taken place. Videotron exercised this influence knowing that it would result in the completion of the act of infringement. Further, Videotron provided subscribers with the remote

record mobile application (an illico application) and instructions on how to download and use it via Videotron's website and user guides. Likewise, clear instructions were provided on how to access the web browser application on Videotron's website and remotely record programs from there. Without the illico application or the Videotron website, the subscriber would be unable to use the system and make a remote recording. Further, Videotron prescribed the way that a user could make a remote recording.

[329] With respect to claims 7 and 8, Mr. Sandoval raised the same issue concerning the "remote program guide access device" being supplied by the user. In doing so, he ignored the specific language of claims 7 and 8 and conflated them with claims 1 and 2. Claim 7 requires that the "means for providing the user with an opportunity to select a program for recording over a remote access link" be supplied.

[330] Since Claims 7 and 8 do not require the supply of the device itself, but the means by which a remote recording may be executed, I agree with Rovi that they were directly infringed by Videotron. In the alternative, Videotron induced infringement of claims 7 and 8 in a similar manner as set out above for claim 2.

(b) *"recording by the local interactive television program guide".*

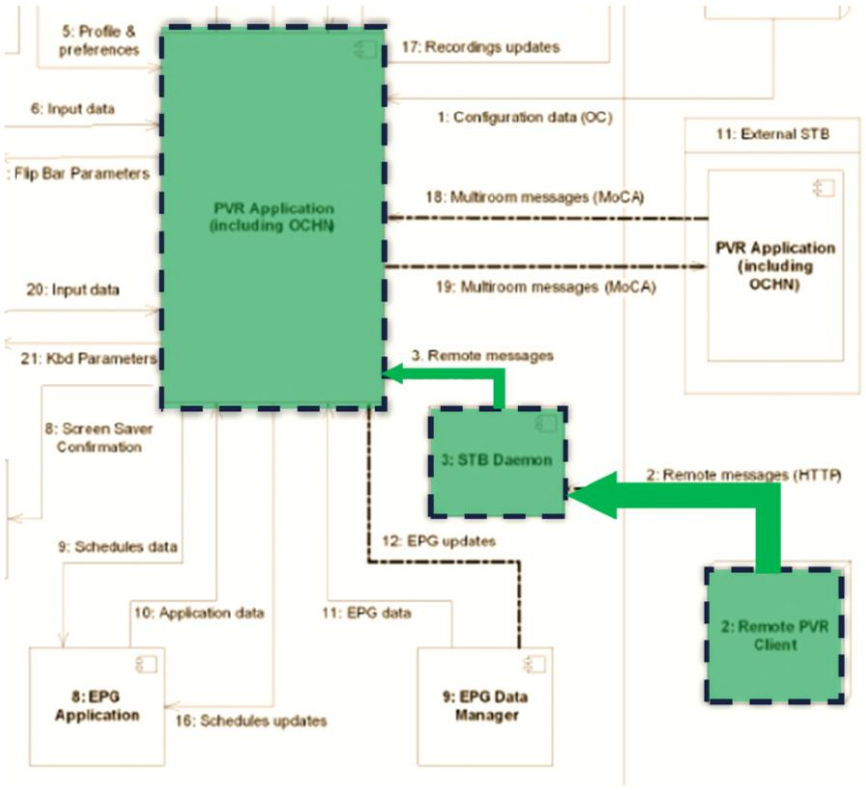
[331] Rovi submits that if Dr. Balakrishnan's construction of "recording by the local interactive television program guide" is accepted then this element is present in the illico 2 system. It is not that simple.

[332] As I have already explained, the 061 Claims state that the Local IPG is "configured to" record a program that is selected by the user of a Remote Device. The 061 Claims do not purport to restrict the way in which a local IPG may be architected. Nor do they describe "interactive television program guide" or "local interactive television program guide" as a single monolithic piece of software implemented exclusively on a device in the home.

[333] The experts agreed that the Skilled Person would understand "Local IPG" to be software likely operating on the local user television equipment, such as a STB, but perhaps running on a combination of the user equipment and the head-end, namely the interactive television guide equipment. While the illico 2 system does allow for a remote recording to be scheduled from a remote device, its EPG Application is not configured to carry out this function.

[334] A remote record request travels instead from a user supplied remote device to the "Remote Client PVR," which is resident in the Videotron head-end. The Remote Client PVR, a network element, receives the request and routes it to the correct STB. Similar to Blake, Videotron's STB also employs a "STB Daemon." The message routed from the Remote Client PVR is detected by the STB Daemon application, which forwards the request to the PVR Application. The PVR Application manages all recording for the system. The EPG Application is a separate piece of software.

[335] While the EPG application and the PVR application are part of the embedded device, they do not interact for the purposes of remote recordings as highlighted in green in the illico 2 system context diagram below.



[336] The boxes and lines in the system context diagram were not drawn after the litigation started. Rather, they were part of the architecture of the illico 2 system from the beginning. It is therefore inappropriate for Rovi to suggest that diagram was somehow manufactured to suit Videotron's case.

[337] Given that a Local IPG configured to record is an essential element of the 061 Claims, and that this is not how the illico 2 system functions, I conclude that Videotron does not infringe.

[338] As an aside, Dr. Balakrishnan claimed that Blake did not anticipate the 061 Patent in part because the local IPG in Blake was not configured to record the television program selected by the user. However, this argument is a double-edged sword. Assuming for the moment that this is

true, then it is clearly the same for Videotron's system: the local EPG Application is not configured to record a remotely selected program. Videotron's system employs a similar type of daemon application as Blake. Under this interpretation, to be consistent, either Blake's system anticipates because it uses a record daemon to manage remote recording, or Videotron's system does not infringe as the daemon receives messages from the network, not direct from a remote device, and does not route messages to the EPG Application; instead, it routes them to the PVR Application.

XI. The 870 Patent- Multiroom PVR

[339] At a high level, the 870 Patent relates to IPG systems, and more particularly, to IPG systems that allow users to record programs and program guide data on a media server.

[340] The filing date of the 870 Patent is July 13, 1999. The claimed priority date is July 14, 1998.

[341] There were originally dozens of claims of the 870 Patent alleged to be infringed, grouped into 3 different claim sets. The Group A and B claims were abandoned, presumably because they were rendered obvious by the Boyer patent, CA 2,274,560 published on June 18, 1998. Boyer, cited by Videotron as prior art, explains the use of WorldGate (see paragraph 195 above) to build an "Internet capable set-top box."

[342] Rovi has elected to move forward only with the Group C claims - Claims 456 (dependent on 454), 459 (dependent on 457), 720, and 72 [870C Claims]. All the 870C Claims are asserted to be infringed by Videotron. They read as follows.

> Claim 454
>
> A method of playing back programs stored on another user's user equipment, comprising:
>
> generating a request to playback a program with a first user equipment, wherein the program was recorded on a second user equipment in response to a record request generated at the second user equipment;
>
> in response to the request to playback, receiving with the first user equipment the program from the second user equipment;
>
> and generating for display the received program.
>
> Claim 456
>
> The method of claim 454, wherein the program is a broadcast program.
>
> Claim 457
>
> A first user equipment for playing back programs stored on a second user equipment, the first user equipment comprising:
>
> means for generating a request to play back a program with the first user equipment, wherein the program was recorded on the second user equipment in response to a record request generated at the second user equipment;
>
> means for receiving with the first user equipment the program from the second user equipment in response to the request to playback; and
>
> means for generating for display the received program.
>
> Claim 459
>
> The first user equipment of claim 457, wherein the program is a broadcast program.
>
> Claim 720

> A method for playing back programs, the method comprising:
>
> receiving a record request at a first user equipment to record a program on the first user equipment, wherein the first user equipment is coupled to a first display screen configured to generate for display video;
>
> in response to receiving the record request at the first user equipment, recording the program on the first user equipment;
>
> transmitting, from a second user equipment to the first user equipment, a request to play back the program, wherein the second user equipment is coupled to a second display screen configured to generate for display video;
>
> receiving, at the first user equipment from the second user equipment, the request to play back the program;
>
> in response to receiving, at the first user equipment from the second user equipment, the request to play back the program, transmitting the program to the second user equipment;
>
> receiving, at the second user equipment, the transmitted program from the first user equipment; and
>
> generating for display, at the second user equipment, the received program on the second display screen.
>
> Claim 721
>
> The method of claim 720, wherein the program is a broadcast program.

[343] In essence, the subject matter of the 870C Claims is the ability to request playback by a second user's equipment of a program recorded on a first user's equipment.

[344] Videotron takes issue with Rovi's portrayal of the 870 Patent as a "Multiroom PVR" patent. It submits that a fair reading of the disclosure of the 870 Patent makes it clear that the focus of the patent is on enabling users to record programs on a media server, and not on a whole home PVR system as advocated by Rovi. More will be said about this later.

[345] The elements that remain in dispute between the parties revolve around the meaning of "another user's user equipment" and the concepts of "receiving/transmitting the program from/to the second user equipment." Before turning to construction of the disputed elements and consideration of the obviousness issue, there are three matters raised by Videotron that need to be addressed: (1) priority support for the 870 Patent, (2) sufficiency of the disclosure of the 870 Patent; and (3) the implications of amendments made to the 870 Patent during its prosecution.

(a) *Priority Support*

[346] The 870 Patent claims a priority date of July 14, 1998. This priority claim is made to a one page document - US 60/092,807 [807 Provisional] - that relates generally to a media server that can record user selected programs.

[347] Given its brevity, the 807 Provisional is reproduced below in its entirety.

> *Client/Server Based Interactive Television Program Guide with Remote Recording*
>
> Electronic program guides typically run locally to a user's television or computer device.
>
> However, since the processing and storage capabilities of a television settop (sic), receiver, or digital television are generally quite limited, the functionality of the guide on such a platform is significantly limited.
>
> Television platforms being developed today support a return path. This will allow a program guide to use a remote server to augment its local processing and storage capabilities.
>
> There are many possible methods for the settop/receiver (sic) to communicate with a remote server. This might include a connection over the cable return path, a telephone modem, or an in-home network to a local PC that has an Internet connection.

One improvement that can be made with a connection to a remote server is the use of the server to record television programs.

The viewer can select individual programs to be recorded. In addition, the viewer may set up complicated criteria to identity the programs of interest. For example, the viewer may wish to record any comedy with Garry Shandling, as long as it hasn't been recorded yet.

The server may record all programs that have been requested by any viewer. Or, the server may record programs based on the number of requests. If the latter approach is taken, the server may notify the local client side of the guide of any requested program that is not to be recorded on the server, so that it may be recorded locally. The server may also allocate a specified amount of memory for each household - either a fixed amount or a configurable amount.

The server may automatically delete any recorded program after a given period of time. Or, it may delete them after all interested viewers have watched them.

The programs that have been recorded on the server may be made available to the remote client guides, on a video-on-demand basis. The guide may present lists, possible (sic) organized by theme, date, or other criteria, for the viewer to select a program to watch. The guide may present a list of personal recordings, requested by members of the particular household. The programs available from the server may also be included on other guide screens, such as theme program lists.

When the viewer requests that a recorded program be played back from a remote server, the normal VCR functions, including PLAY, PAUSE, STOP, FAST FORWARD, and REWIND should be available. All of the guide's parental control functions would apply to and programs played back from the server.

Alternatively, the server may schedule the requested programs for one or more later dates and times, perhaps based on preferences indicated when the programs were originally requested. In this case, the programs would be replayed on predetermined channels. The server may delete any individual program after it has been replayed a specified number of times.

Another alternative is that the recorded program would be sent to the user on physical media such as DVD or VCR tape either immediately or after a period of time of not being deleted.

> The server may be located in the home, in which case requested programs would be stored locally. The server in the home may just be a settop (sic) box with additional memory - accessible locally across the household cable network. Alternatively it may be a PC or other device with extended memory.

[348] Mr. Sandoval noted in his validity report that the priority document does not mention any search features (Group A claims), how "trickplay" can be effected (Claim 658), how "pointers" to a remotely stored program are to be used (Group D claims), or how to effect a transfer of a program between user devices – which is the very subject matter of the 870C Claims.

[349] Videotron submits that given the lack of disclosure in the 807 Provisional, the 870 Patent should not be afforded its earliest priority claim; instead, the claim date should be June 11, 1999 (the date of the second priority document claimed in the patent). By this date, hard drive enabled systems from both TiVo and Replay Networks, Inc. [Replay TV] had entered the market and would have been very well-known to the Skilled Person.

[350] Rovi submits that it makes no difference what priority date is chosen. It claims that the fact that the 870 Patent mentions the TiVo and ReplayTV systems indicates that there are no important pieces of intervening art. Rovi further argues that there is no expert evidence on how or if the obviousness analysis would change based on these pieces of art.

[351] I agree with Videotron that June 11, 1999 is the proper priority date for the 870 Patent. As for Rovi's argument that it does not matter what priority date is used, I consider it best to deal with it in my obviousness analysis.

(b) *Sufficiency of the Disclosure*

[352] This brings me to the matter of sufficiency of the disclosure of the 870 Patent.

[353] Section 27(3) of the *Patent Act* provides that the specification must correctly and fully describe the invention and its operation or use as contemplated by the inventor.

[354] The disclosure must set out in clear and precise terms what the invention is (i.e. a correct and full description). It must also provide sufficient instructions to the person skilled in the art so that this person is enabled to reproduce and successfully operate the claimed invention. If the first condition is not fulfilled the claim will fail for ambiguity, in the latter case, for insufficiency (*Pioneer Hi-Bred Ltd.v. Canada (Commissioner of Patents)*, [1989] 1 S.C.R. 1623 at 1638).

[355] If the person skilled in the art is called on to solve problems in such a manner that undue burden or an inventive step are required, the description is insufficient (and the attendant claims are unsupported (*Sanofi* at paras 33-37). Moreover, a claim is overbroad if it claims more than the invention made or disclosed (*Pfizer Canada Inc. v Canada (Health)*, 2007 FCA 209 at para 115).

[356] Videotron submits that there is a complete disconnect between the written description of the 870 Patent and the 870C Claims now being pursued by Rovi. I disagree.

[357] The 870 Patent acknowledges in its background description that systems capable of storing programs on a hard disk had been developed, such as by TiVo and ReplayTV, but that certain shortcomings with such systems had been identified at that point.

> These systems are deficient in that they require additional hardware in the user's home that may significantly increase the cost of the user's home television equipment. Such systems also do not allow users to record multiple programs simultaneously without having multiple devices in the home.

[358] The 870 Patent further explains that typical VOD systems were known at the time, but that they too suffered from purported drawbacks because either all programs were stored at the head-end, or only those programs chosen by the head-end operator were stored.

[359] The problem that the 870 Patent purports to address is how to deal with the shortcomings of storing programs on a local hard drive. The 870 Patent sets out the solution to the issues it identifies with the prior art systems would be to "provide a program guide system that allows users to direct a server to record certain programs that later may be played back to the user on demand."

[360] Mr. Sandoval critiqued the disclosure of the 870 Patent by stating he did not see any section of the 870 Patent which describes a first user equipment communicating directly with a second user equipment particularly regarding programs stored on the user equipment. The 870 Patent also does not describe two user equipment communicating with or sharing a single local media. However, he did not say that this would prevent the Skilled Person from putting the invention of the 870C Claims into practice.

[361] In my view, the 870 Patent allows the Skilled Person to use the invention of the 870C Claims by relying on the information disclosed in the specification, and the common general knowledge. There are instructions in the 870 Patent about communication with and playback from both a remote or local media server.

[362] Both experts agree that the 870C Claims are generally directed to viewing content on one STB that was recorded on a second STB. The patent also defines the "local media server" as a device in the home of the user that is suitable for storing and playing back programs on demand. This is consistent what Mr. Thomas described as the substance of the invention of the 870 Patent.

> A. So it describes a client server environment where you have an IPG and then you have media servers. The media servers could be remote or they could be local within the household.
>
> Q. Again, was there a problem that you were trying to solve with respect to this patent?
>
> A. Well, once you introduce media servers, particularly if you have several different locations, the consumer is going to need convenient methods of finding content on those servers. So, for example, an integrated search function that would pull up the information you were looking for from all the devices.

[363] In the circumstances, I find that Videotron has failed to prove that the 870C Claims are insufficiently described.

(c) *Amendments to the 870 Patent during prosecution*

[364] Videotron produced the file history of the 870 Patent which shows that substantial amendments were made to the 870 Patent in or about 2014 by the addition of hundred of claims, including the 870C Claims. Videotron claims that the inventors were not consulted about the

amendments and that the 870C Claims are not described in the disclosure. According to Videotron, this raises an issue whether the claims are broader than the invention made or disclosed.

[365] The circumstances of this case are certainly unusual, if not unorthodox. The 870 Patent was not granted until almost two decades after its filing date, and only after Videotron refused to renew its licence arrangement with Rovi in 2016. By that time, the 870 Patent had morphed into a massive document that spans hundreds of pages of disclosure and 999 claims.

[366] During his cross-examination, Mr. Thomas was cross-examined at length about the invention disclosed in the 870 Provisional, what work he and his team performed to develop the system described in the 870 Patent, and what involvement he had in the patent amendment process. Mr. Thomas had difficulty remembering what was done by his team 20 years earlier. In fact, his memory of the events was quite poor.

[367] Mr. Thomas could not recall working on any feature or improvement described in the 807 Provisional and could only say that what was described in the priority document seemed "reasonable" for someone working in the field at the time.

[368] The amendments to the 870 Patent were handled by US and Canadian patent counsel. Rovi's general approach was to involve inventors in the initial stages of drafting the provisional and full utility applications. After that, the inventors were not as a matter of course involved.

This appears to be the case with the 870 Patent, as acknowledged by Mr. Thomas in cross-examination.

> Q. Maybe we could start by just telling me what you do actively remember, and then we can talk about the process in general.
>
> A. Well I don't actively remember what I might have done 20 years ago.
>
> Q. Fair enough. So you don't remember working with outside patent counsel on this specific project in any way?
>
> A. No, I don't.
>
> Q. I take it that includes any kind of decisions in terms of what scope the ultimate patent would get or how to deal with the Patent Office? You don't remember being involved in that for this?
>
> A. On a specific patent, no.

[369] Videotron submits that it is highly unlikely that any inventors had anything do with the patent application after it was filed. While that may be, a claim is not invalid simply because it was added without the involvement of the inventor after a patent application is filed. As stated in *Fox on the Canadian Law of Patents*, 5th Ed. § 9:61: "Subject to a prohibition against the addition of a new matter, the specification and any drawings furnished as a part of a patent application may be amended before the patent is issued."

[370] I am unable to conclude on the evidence before me that any new matter was added that would invalidate any of the 870C Claims. In *Dennison Manufacturing Co. of Canada Ltd. v. DYMO of Canada Ltd.*(1975), 23 CPR (2d) 155 (FCTD), Mr. Justice Mahoney stated that for the purpose of assessing whether new matter has been added, a comparison is to be made between

the application as filed and the patent as issued and the file history is irrelevant to this issues as is the reason for the amendment.

[371] In the case at hand, no expert evidence was presented to make such a comparison. Moreover, there was no expert evidence as to how the Skilled Person, reading the 870 Patent application as originally filed, would understand the material added to the specification and whether it would constitute improperly added matter. I find that Videotron has not proven that the claims at issue are broader than the invention made or disclosed.

(d) *Claim Construction*

[372] To find infringement, the Court must find that all essential elements of the 870C Claims are part of the illico 2 system. There are two elements in dispute in the context of infringement. The first element “another user’s user equipment” only pertains to Claims 456 and 459. The second dispute relates to the element “receiving/transmitting the program from or to the second user equipment” found in Claims 454, 457 and 720.

[373] There does not appear to be any dispute that the illico 2 system includes all the other elements of the asserted claims. Since at least January 1, 2017, the illico 2 system has provided the ability to schedule future recordings on STBs, and multiroom functionality.

(i) another user's user equipment

[374] The element "another user's user equipment" is of relevance for the infringement analysis of Claims 454 and 456 only.

[375] The experts disagreed as to whether "another user" refers to another person in the same household (Dr. Balakrishnan's view) or another subscriber in a different household (Mr. Sandoval's view).

[376] Mr. Sandoval argued that for the Skilled Person, the reference to "user" is akin to "subscriber", and to the industry, there is typically no distinction of equipment belonging to different individual people within a household/subscriber. Therefore, when the claims refers to "another user's user equipment", this would be referring to someone, and their equipment, outside the household of the "first user". From Mr. Sandoval's perspective, the Skilled Person would understand the use of the word "another user's" to refer to a situation where a user is playing back a program that was saved by someone else, such as a neighbour down the street or possibly describing a peer-to-peer network, such as "Napster" or a centralized file sharing system.

[377] Dr. Balakrishnan opined that the 870 Patent uses the term "user" in a generic way. It is not referring to a user with a separate account. Rather, it is speaking about another user within the same account or within the same home. Dr. Balakrishnan saw no logic to having one user access another user's account in another home because the Skilled Person would be cognizant of

privacy issues, ownership issues, and copyright issues that would make such a system undesirable.

[378] Due to the lack of disclosure in the 870 Patent, it is not entirely clear what "another user's user equipment" would mean. That said, the term is clearly not limited in the way Mr. Sandoval has suggested. While I agree with Dr. Balakrishnan that content stored on "user equipment" at home would generally only be shared between users sharing the same account, I find that the Skilled Person would not interpret "users" to be exclusively persons in the same household.

(ii) "receiving/transmitting the program from or to the second user equipment"

[379] The issue on construction of this element is whether transmitting or receiving in response to a playback request encompasses both streaming and file transfer. Once again, the language used in the asserted claims is not clear.

[380] Mr. Sandoval stated in this validity report that the Skilled Person would assume that the program was transmitted (or received) at the same time that it was being viewed "although it could also be that the second device stores the program temporarily, such as on its own hard drive, first, and then displays it for viewing." He noted in his infringement report that there is no description in the 870 Patent of any functionality for transmitting a program from one STB to another STB.

[381] In his infringement report, Dr. Balakrishnan did not construe the term “transmitting”. As for the term “receiving”, he simply stated that it would be understood to have its ordinary meaning. In his validity report, Dr. Balakrishnan argued that “the key concept is that the program is transmitted from the first STB to the second STB in response to a play back request by the user, i.e., the program is played back rather than stored at the second STB for future playback.”

[382] In his responding infringement report, Mr. Sandoval took issue with Dr. Balakrishnan’s statement that “receiving” should be given its ordinary meaning. Mr. Sandoval noted that Claim 720 includes the step of “... transmitting the program to the second user equipment,” followed by the step of “receiving, at the second user equipment, the transmitted program from the first user equipment” and concluding with the step of “generating for display, at the second user equipment, the received program on the second display screen.” Mr. Sandoval argued that should "receiving" be given its ordinary meaning, as proposed by Dr. Balakrishnan, “this ordinary meaning requires that the entire program be transferred to the second user equipment” and Videotron's systems do not operate in this way.

[383] Rovi submits that this is an example of Mr. Sandoval shifting his construction to suit his or Videotron’s purposes. According to Rovi, Mr. Sandoval was very clear in his validity report that the Skilled Person would assume that the program was transmitted or received at the same time as it was being viewed. While acknowledging that Mr. Sandoval also indicated that the program could be stored temporarily, Rovi says that the notion of copying or permanent file transfer was nowhere in his original construction and this narrowed construction should not be accepted by the Court. I disagree.

[384] I see no shifting or inconsistency in Mr. Sandoval's evidence. He made it clear from the start that streaming was contemplated, but that temporary storage of the program on the second device was also a possibility. Mr. Sandoval never suggested, as stated by Rovi, that the program would need to be "permanently" stored on the second device.

[385] It may seem illogical to set up a system intended to address problems with storage capabilities of devices that would include an option of storing a program on second device for playback; however, as noted by Mr. Sandoval, the 870 Patent contemplates this approach.

> "In a second suitable approach, programs and program guide data are distributed as one or more digital files or as a digital data stream, and are stored by user television equipment for playback."

[386] I agree with Mr. Sandoval that the term "received" in Claims 454, 457 and 720 would be understood by the Skilled Person as allowing for two options – streaming or file transfer. This is consistent with the particular language used in the claims, making a distinction between the active "receiving" and passive "received." Viewed logically, Claim 720 requires that the enumerated steps be performed in a particular sequence. The last step is "generating for display, at the second user equipment, the received program on the second display screen." (My emphasis). The claim could have said "the program being received" or some other language conveying the idea of streaming. In my view, the use of the past participle of the verb receive cannot be ignored.

[387] For the above reasons, I find that the Skilled Person would understand that transmitting and receiving could be accomplished either by streaming the program or file transfer.

(e) *Patent Validity*

(i) Obviousness

[388] Obviousness is assessed as of the priority date of June 11, 1999. Allegations of obviousness, unlike anticipation, do not focus on a single disclosure but on the mosaic of the relevant prior art and the common general knowledge.

[389] In step one of the *Sanofi* test, the Skilled Person and the CGK identified earlier in these reasons apply to the 870 Patent. As for step 2, Rovi claims that the following are the key features in the 870C Claims:

a) transmitting a recording from one STB to another;

b) a request to playback a program; and

c) "in response to the request to playback, receiving with the first user equipment the program from the second user equipment" or "in response to receiving, at the first user equipment from the second user equipment, the request to play back the program, transmitting the program to the second user equipment."

[390] The next step in the obviousness inquiry compares the state of the art, as viewed by the Skilled Person through the lens of their CGK, with the claims at issue. As stated earlier, if there is no difference between the two comparators, the claims are obvious. If there is a difference, the claims are obvious if the skilled person would not need to take any inventive steps to bridge the gap.

[391] Videotron submits that any potential gap between the subject matter of the 870C Claims and what is found in each of DAVIC, Fujita and Hair would have been obvious for the Skilled Person to bridge – having regard to the Skilled Person's CGK.

[392] Focusing on key aspects of the CGK relevant to the 870 Patent, the experts agreed that home networks would have been known to the Skilled Person. The Skilled Person would have also understood that once audio-visual content is available on a network, such as from a server, any other device on the network would be able to retrieve that content. Moreover, the concept of multi-room PVR was also known in the 1990s. Although not many people may have actually interconnected devices using Ethernet cables in their own homes, the concept was appreciated by those in the industry and would have been known to the Skilled Person. Both DAVIC and Fujita provide descriptions of the commonly known home network structure. Other systems (like the TiVo and ReplayTV systems) were known and such systems allowed for the recording of programs on digital storage devices, such as hard drives, including programs originally broadcast.

[393] The sections of DAVIC that Videotron relies on in support of their obviousness argument include functions 4.06 and 4.07, reproduced below.

4.04	Each application should be able to establish a communications session.
4.05	Each application should be able to establish two or more simultaneous communications sessions.
4.06	The application should be able to transfer a session to another STU in the same location (for example to transfer a program to a unit in a different room in a home).
4.07	The application should be able to transfer a session to another STU in a different location (for example to transfer a program to a unit in another home).

[394] DAVIC describes “set top units” (STUs). The Skilled Person would understand that STU is just another acronym for STB. The DAVIC reference identifies benefits of networking the STUs in the same location, such as home, or a different location, such as another home. One of the benefits of home networking is that two STUs on the network could synchronize their applications and could transfer content between each other.

[395] Both Dr. Balakrishnan and Mr. Sandoval agreed that DAVIC does disclose the ability for one STB to access a stored program on another STB. Similarly, there was no dispute that the STB that accessed the stored program would make the program available for viewing.

(2) “generating a request to playback a program recorded from broadcast on second user equipment from first user equipment (Claims 456/459)”

[396] DAVIC shows a home network with many interconnected devices. As explained by Mr. Sandoval, once a home network is established, the Skilled Person would know that every connected device could “talk” to every other connected device. This functionality was expressly described in section 7.2 of DAVIC: “an in-home digital network … will provide selectable access to … services from multiple in-home devices” (see paragraph 71). The clear identification in DAVIC of “selectable access”, coupled with the reference of such access being for “digital storage devices in the home” using “home networks for DAVIC”, is strong support for the opinion of Mr. Sandoval that it was known by the skilled person to use an STB to selectably access (i.e. request) a particular service - i.e. the playback of a program stored by another STB.

(3) “receiving the program from the second user equipment with the first user equipment (Claims 456/459) / transmitting (Claims 720/721)”

[397] I have already construed the 870C Claims as relating to both streaming and playback after receipt of some or all of the program.

[398] There was a dispute between the parties relating to the term “session” in the DAVIC disclosure. Mr. Sandoval testified that “session” is a technical term where there are two end points that start a session and end a session. He explained that “session” was temporal and that to “transfer a session”, as that term is used by DAVIC, would be understood as referring to streaming content from one STB to another STB. Mr. Sandoval added that the Skilled Person would have been familiar with personal recording of broadcast content using a VCR, would be familiar with the concept of client-server architectures, and would be familiar with the concept of session based content delivery as supported by emerging VOD systems. According to Mr. Sandoval, in this context, one would most readily read that as referring to streaming content from one STB to another.

[399] Dr. Balakrishnan disagreed that DAVIC described streaming. He argued that the Skilled Person would understand “transfer” to mean copying from one unit to another for subsequent viewing.

[400] I prefer Mr. Sandoval’s evidence on this point. His evidence relating to the meaning of “session” was not shaken on cross-examination. I also find Dr. Balakrishnan’s interpretation is inconsistent with the way he construed the terms “transmitting” and “receiving” in the 870C Claims. Nor is there any good factual basis for his opinion.

[401] The Skilled Person would know that they could transfer a program between STBs. From there, Mr. Sandoval explained: “The skilled person would understand that a user would initiate, request or arrange this transfer of the program so that it could be viewed at the receiving STB. This could be done as a playback ‘session’ being viewed on the second STB, or as a copy being ‘transferred’ to the second STB for viewing after it has been fully or partially transferred.” I find that his explanation is logical and completely consistent and supported by the CGK and by what is said in DAVIC.

[402] Videotron submits that implementation details, such as specifics of playback requests for recording a program at the first STB, and for requesting it to be played back from the second STB are merely obvious implementation details. I agree. In order for a first equipment to have a program, it must necessarily have been recorded or transferred there, most likely in response to some type of user interaction. Similarly, a user action, such as to request a program would initiate the transfer of the program to the second unit to watch it. These would be inherent to the functionality described in DAVIC.

[403] Rovi submits that the Skilled Person would not understand DAVIC to teach the immediate playback of a program based on a user request, as streamed from one STB to another. However, this argument was based on Dr. Balakrishnan’s incorrect construction that the 870 Patent requires that the program be played back rather than stored at the second STB for future playback, which was rejected, and is not otherwise supported by the evidence.

[404] During his cross-examination, Dr. Balakrishnan was asked to explain the difference between the details set out in DAVIC and those in the 870C Claims.

> Q. I would like you to focus again on the written description of the 870 patent. Not the claims, but the written description of the embodiments. And is it not true that this so-called wish list of DAVIC provides more detail about set-top box being networked to share recorded programs than the entire 870 patent description?
>
> A. I disagree with that.
>
> Q. And what parts of the 870 patent description would you like to take me to support your disagreement? Not the claims. Not the claims.
>
> A. We'll have to walk through it.
>
> Q. We're not going to walk through it. Is there anything today that you can point to in that description that you say makes it more detailed than DAVIC?
>
> A. I would have to walk through it. I don't have the 870, a very large patent, memorized chapter and verse.
>
> Q. Do you have any idea where it's described?
>
> A. I will have to walk through it. I think I have answered that question.
>
> Q. So as of today, sitting here today, you cannot point me to any part of …. the 870 that describes a connection between set-top boxes to allow a stored program to be transferred, can you?
>
> A. Beyond the claims I do not have the rest of it memorized so I will have to walk through it.

[405] One would have expected Dr. Balakrishnan to have this information at his fingertips at trial if it existed. I find that to the extent that the specific claim elements such as, for example, a "request to playback a program" or a "record request" are not expressly set out in DAVIC, such a gap between the prior art and the 870C Claims would be obvious to the Skilled Person.

[406] Rovi submits that DAVIC "covers everything but says almost nothing". However, nothing can be further than the truth. It is not, as claimed by Rovi's counsel, random and different ideas "like IKEA parts" or as Dr. Balakrishnan described it "a wish list".

[407] It should be recalled that DAVIC was the product of extensive consultations with the industry over a number of years. As explained in its introduction:

> DAVIC specifications define the minimum tools and dynamic behavior required by digital audio-visual systems for end-to-end interoperability across countries, applications and services. To achieve this interoperability, DAVIC specifications define the technologies and information flows to be used within and between the major components of generic digital audio-visual systems.

[408] DAVIC would be understood by the Skilled Person to read as a whole. It also reflects the technologies and information that would already have been known to the Skilled Person.

[409] Mr. Sandoval testified that DAVIC makes very clear to the Skilled Person that one of the benefits of networking within the home is that two STBs could transfer content between each other. According to Mr. Sandoval, that is the essence of the multi-room DVR feature. I agree.

[410] For the above reasons. I conclude that the 870C Claims are obvious in view of DAVIC and the CGK alone.

[411] Given that I find that any gap between DAVIC and the subject-matter of the 870C Claims would have been bridged by the Skilled Person and their CGK, I need not address the two other pieces of prior art cited by Videotron.

(a) *Infringement*

[412] Mr. Sandoval agreed that the illico 2 system "allows programs stored on a PVR to be streamed from that PVR to another STB within the home of the same user/subscriber." This element is present in the illico 2 system.

[413] In accordance with Mr. Sandoval's original construction of "receiving" and "transmitting", which I accepted, and Dr. Balakrishnan's infringement analysis set out in Appendix 5 of his infringement report, "transmitting" includes streaming. By Mr. Sandoval's admission, the illico 2 system streams recorded program from one device to another. These elements are therefore present in the illico system.

[414] Thus, if I am incorrect and the 870C Claims are found to be valid, the illico 2 system infringes the said claims.

XII. The 344 Patent: IPG Coordination

[415] The filing date of the 344 Patent is July 16, 1999. The claimed priority date is July 17, 1998.

[416] The 344 Patent relates to "interactive media guides" providing IPG functionality on multiple devices within a household. The 344 Claims, reproduced below, are the dependent on Claim 113 and claim a method for coordinating IPGs such that actions taken on one IPG are

displayed in the other IPGs and vice versa. All the 344 Claims are asserted by Rovi to be infringed by Videotron.

Claim 113

A method for coordinating a first interactive media guide and a second interactive media guide, the method comprising:

receiving, from the first interactive media guide, a first indication of a first activity performed on a first user equipment device implementing the first interactive media guide, wherein the first activity is associated with a first program;

receiving, from the second interactive media guide, a second indication of a second activity performed on a second user equipment device implementing the second interactive media guide, wherein the second activity is associated with a second program;

and generating content, for display on the first interactive media guide, based on the first indication from the first interactive media guide and the second indication from the second interactive media guide.

Claim 116

The method of claim 113 further comprising generating content, for display on the second interactive media guide, based on the first indication from the first interactive media guide and the second indication from the second interactive media guide.

Claim 119

The method of claim 113, wherein the first activity and the second activity comprise one or more of adjusting favorite channels, modifying parental control settings, scheduling a recording, adjusting recording settings, adjusting pay-per-view settings, adjusting message settings, adjusting reminders, and modifying user profiles.

Claim 120

The method of claim 113, wherein the first user equipment device and the second user equipment device are located in a household.

Claim 123

> The method of claim 113 further comprising:
>
> generating, based on the first indication from the first interactive media guide and the second indication from the second interactive media guide, an aggregated list of scheduled recordings.

[417] The background of the 344 Patent includes a description of the problem being addressed:

> Families often have multiple televisions and set-top boxes placed throughout the household. A family's household even may include multiple homes. Because there is no coordination between the program guides running on each of the various set-top boxes in the household, if a user adjusts the settings for a program guide on one set-top box, these settings are not communicated to the program guides on any of the other set-top boxes in the household. If a parent wants to restrict access to certain channels on all the televisions in the household, the parent must adjust the parental control settings on each set-top box individually. Reminders and favorite channel settings must similarly be set for each program guide separately if a user desires to have such settings be in effect throughout the household…
>
> Previously developed systems do not allow users at one location in a household to adjust the program guide settings of another device in the household over communications paths.

[418] The solution is captured in the following extract taken from the Summary of the Invention.

> Some embodiments of the present invention may provide a program guide system that allows a user to adjust to the user settings of a plurality of program guides at different locations within a household from a single location.
>
> This may be accomplished by providing an interactive television program guide system for a household in which multiple interactive television program guides within the household are coordinated.

[419] Videotron points out that the 344 Patent describes two steps for adjusting user settings across multiple devices. Figure 2 of the 344 Patent is a flow chart of the steps involved in adjusting user settings and applying those adjustments to desired locations in accordance with the invention.

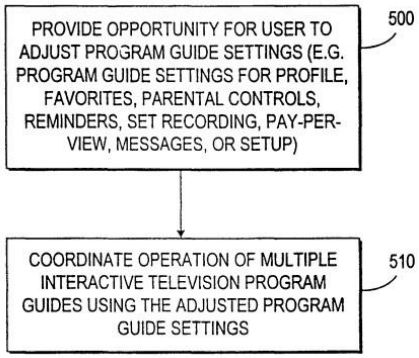


FIG. 2

[420] As can be seen in Figure 2, the two steps are: first, providing an opportunity for a user to *adjust program guide settings*; and second, *coordinating* operation of multiple IPGs using the adjusted program guide settings.

[421] The parties do not agree on the meaning of the two elements I have highlighted above. The term "coordinating" is used in Claim 113, while the language describing "adjusting program guide settings" can be found in Claim 119.

(1) "coordinating" (Claim 113)

[422] The term "coordinating" is relevant for assessing infringement and validity.

[423] The parties agree that the 344 Claims are generally directed to “coordinating” two IPGs when there are two within a home. It is important to note that neither Mr. Sandoval nor Dr. Balakrishnan originally construed the term.

[424] Mr. Sandoval only made passing reference to the term in his validity report. He observed that the background of the 344 Patent includes a description of the problem and remarked that the description was very general about how the problem is addressed. He then offered that the specification “suggests that the solution is simply that the guides are 'coordinated' or that the user interface allows settings on other guides to be modified.”

[425] A dispute over the meaning of “coordinating” only arose when Mr. Sandoval responded to Dr. Balakrishnan’s infringement report. In his responding infringement report, Mr. Sandoval referred to the laptop and mobile phone that Dr. Balakrishnan had used in testing the illico 2 system to set and modify recordings as “**accessing** devices (basically sophisticated remote controls) and not **peer** devices with television functionality and settings.” [Emphasis in original.]

[426] In sur-reply, Dr. Balakrishan disagreed with Mr. Sandoval’s characterisation of the laptop and mobile phone that were used for testing as accessing devices. He also disagreed that there was no “coordination” between the mobile/online application and the STB. He argued that there is “coordination” between the mobile/online application and the STB, based on the following reasoning:

> For example, when a recording is scheduled on the mobile application and web application, the scheduled recording is

> indicated on the STB. Further, when a recording is scheduled on the STB, the scheduled recording is indicated on the mobile application and web application. In rebuttal, Mr. Sandoval agreed that, using a remote device, a user of Videotron's system can change the recording schedule on a particular STB. He added however "this illustrates only that the remote device acts as a remote interface for the STB. This does not establish that 'coordination' or sharing of settings is taking place."

[427] Rovi submits that the issue on construction is whether the 344 Patent only contemplates coordination taking place between "peer devices" or contemplates coordination between media guides on a variety of devices. I see the issue differently.

[428] At trial, Mr. Sandoval testified that the Skilled Person would understand that "coordinating" would require sharing information so that settings are made to be identical across multiple program guides. I am fully cognizant that Mr. Sandoval's construction must be viewed with caution as he imported this limitation into the 344 Claims only after seeing the illico system. However, the same can be said about Dr. Balakrishnan, who not only failed to construe the term in his infringement report, but only came up with a construction in sur-reply.

[429] There is no description in the 344 Patent that limits "coordinating" to what Mr. Sandoval calls "peer devices" or to STBs. In fact, the 344 Claims do not stipulate coordination between devices, but rather between two "interactive media guide(s)" on those devices.

[430] Videotron's argument is more nuanced however. It submits that the Skilled Person would understand from reading the 344 Patent and looking at its drawings, and in particular Figure 4a, that the "first interactive media guide" and the "second interactive media guide" would possess

similar settings in order for them to be coordinated. It contends that the Skilled Person would understand that “coordinating” is more than just simply using a remote device like a cellphone to change the settings on a STB, as advocated by Dr. Balakrishnan. It says that in such a scenario, the cellphone is acting as a sophisticated remote control, but not as a peer device with its own matching settings. The operation of two IPGs is not coordinated and only the first step of the 344 Patent is actualized – providing an opportunity to change a setting. I agree. The functionality described by Dr. Balakrishnan actually appears to be the same as he describes for the 061 Patent, namely, for remotely selecting a program for recording by a local device in the home.

[431] Dr. Balakrishnan’s construction is flawed. First, Claim 113 includes “receiving ... a first indication of a first activity.” In Dr. Balakrishnan' s interpretation this would mean “receiving a display of a communication that a request has been carried out of a request from a user relating to program guide features.” There is not a piece of hardware or software part of the patent that can “receive a display;” there is only the human user’s eye. Second, Claim 113 concludes with the step of, “generating content, for display on the first interactive media guide, based on the first indication ... and the second indication.” In Dr. Balakrishnan’s interpretation this would mean, “generating content, for display on the first interactive media guide, based on a display that something has been carried out on the first media guide and a display that something has been carried out on the second media guide.” This does not make sense because neither the hardware nor the software systems described in the patent generate content based on what has been displayed on other equipment.

[432] Mr. Sandoval's construction is both logical and well supported by the language of the 344 Patent. In the circumstances, I conclude the purpose of the 344 Patent is to coordinate operation of guides with similar settings.

> (2) "the first activity and second activity comprise one or more of adjusting favorite channels, modifying parental control settings, scheduling a recording, adjusting recording settings, adjusting pay-per-view settings, adjusting message settings, adjusting reminders, and modifying user profiles." (Claim 119)

[433] The above terms are relevant for assessing validity. Videotron's written submissions in this regard are rather pithy and set out below.

> …The skilled person would understand claim 119 on its face to provide a list of example "activities". However, as Mr. Sandoval pointed out, the skilled person would have trouble reconciling the list in claim 119 with the requirements of claim 113. For example, claim 119 lists "modifying user profiles" as an "activity", but user profiles are not related to specific programs. The same issue arises with respect to "adjusting message settings" – how is this setting associated with a program?

[434] Rovi's response is brief as well. It says that Claim 119 does not require every activity listed to be present but merely requires "one or more of" the list of activities.

[435] It would appear that there is nothing here to construe. As conceded by Videotron, the Skilled Person would understand Claim 119 on its face to provide a list of example activities. The argument advanced by Videotron goes more to the issues of ambiguity and sufficiency of the 344 Patent raised separately in its submissions.

(a) *Patent Validity*

(i) Ambiguity

[436] Videotron argues that the 344 Patent fails to properly demarcate the boundaries of the monopoly claimed by the asserted claims. The words "activity" and "indication" are ambiguous and would leave the skilled person puzzled as to their meaning. Mr. Sandoval stated that it is not possible to definitively state what an “indication” is. Further, the claims are said to be inconsistent in their usage of “activity.” In Claim 113, “activity” must be associated with a program; however Claim 119 defines many “activities” that are not so associated. According to Videotron, the impossibility of coming to a concrete claim construction renders the claims ambiguous and invalid. I disagree.

[437] Mr. Sandoval provided no specific opinion on ambiguity. At best, he stated that the claims were “unclear” but was nonetheless able to provide an opinion as to the meaning of all the claim elements. On this basis alone, Videotron has failed to meet its onus of proving that the claims are ambiguous or otherwise do not meet the requirements of section 27(4) of the *Patent Act*.

[438] Despite Mr. Sandoval’s statements that the terms “indication” and “activity” are “unclear,” he provided a construction and applied it in his validity report and his infringement report. He and Dr. Balakrishnan came to different constructions of these terms, but those differences are simply that: difference of opinions between two experts about the meaning of

claim terms. Without more, such differences cannot form the basis for a conclusion that the 344 Claims are ambiguous.

[439] The allegation of invalidity of the 344 Claims for ambiguity fails.

(ii) Insufficiency of the 344 Patent

[440] Videotron submits that there is no technical implementation suggested by the 344 Patent that would allow someone to actually put into practice what is claimed. It says that apart from the actual claims, there is also no technical description in the 344 Patent that explains how coordination between different devices is to be done. Moreover, the 344 Patent does not teach one how to solve the issue of having to replicate settings manually across devices. According to Videotron, the disclosure of the 344 Patent is insufficient and it is therefore invalid. I disagree.

[441] Based on the evidence before me, the 344 Patent allows the Skilled Person to use the invention of the 344 Claims with the same success as the inventors by relying on the information disclosed in the specification, and the CGK.

[442] Videotron has not provided the Court with any evidence to meet its onus on sufficiency. While Mr. Sandoval criticized the 344 Patent disclosure in a number of ways, correctly I may add, none of those criticisms would render the 344 Claims insufficiently described or overbroad.

[443] Mr. Sandoval's primary complaint about the disclosure of the 344 Patent was that the 344 Patent lacked detail on "coordinating" two guides. Dr. Balakrishnan disagreed, citing various passages of the 344 Patent that assist in understanding the claimed method.

[444] The law is clear that to determine what the invention is, the skilled person must read the disclosure together with the claims, with due regard to the primacy of the claim language as that which defines and set the limits of the invention. The Claim 113 shows the steps required to do this coordination.

[445] Mr. Sandoval also made a number of comments in his construction about other claim terms not being specifically described in the disclosure but went on to provide his view that a skilled person would understand the terms in a particular way.

[446] I find that Videotron has failed to prove that the 344 Claims are insufficiently described or overbroad.

[447] The argument cuts both ways. When cross-examined, Dr. Balakrishnan discounted the absence of technical implementation details in the 344 Patent.

> Q. Setting aside the claims, can you point to any other place in the patent that defines how to do the coordination?
>
> A. I'll have to go through that here, if I may.
>
> Q. Luckily it's not the 870.
>
> A. I think the various figures do show examples of the interconnection but I think, if your I think to short-circuit this, if your question is, is there a technical example of doing the

> coordination beyond what's in the claims, there is not a technical description.

[448] Yet, Dr. Balakrishnan went on to argue that DAVIC is not enabling because it fails to provide enough detail to the Skilled Person. However, if this is the case, then to be consistent, the 344 Patent would also be insufficient. As counsel for Videotron put it, the question raised is: "What does the 344 Patent disclose that goes beyond DAVIC that would provide the skilled person with the tools necessary to implement coordination? Where is the "hard coinage" provided by the patent disclosure?"

[449] As explained in the obvious section below, the answer is nothing.

(iii) Obviousness

[450] Videotron argues that the 344 Patent is obvious in light of either Fujita or DAVIC and the Skilled Person's CGK.

(3) (i) The Skilled Person and their CGK

[451] The Skilled Person identified earlier in these reasons, as well as their CGK, would be equally applicable to the 344 Patent.

[452] In terms of the key aspects of the CGK relevant to the 344, both experts agreed that the Skilled Person would, by the late 1990s, be familiar with how to create a network of devices, both as a local area network (LAN) and wide area network (WAN). As I already found, the

Skilled Person would be familiar with digital systems, including personal computers and home networks. It was also known that, once devices were connected on a network, they could all "talk to each other". The Skilled Person would also be familiar with the fact that subscriber level settings could be shared between devices inside a user's home.

(4) (ii) The inventive concept / claims as construed

[453] No inventive concept for the 344 Claims was expressly identified by either expert, other than the claim language itself. The parties agree that all claim elements are essential.

[454] The key features of Claim 113, and all of its dependent claims, are: 1) coordinating settings for a first IPG and a second IPG; 2) receiving first/second indications associated with first/second programs; 3) displaying an interface with certain content related to the coordinated settings.

(5) (iii) "Gaps" from the prior art are inventive

[455] Rovi submits that there are important differences between the prior art and the 344 Claims. It says that each of the following elements is contained in the 344 Claims but is absent from the prior art: (a) the use of IPGs to carry out this coordination; and (b) a return communication path.

[456] Videotron submits that any potential gap between the subject matter of the asserted claims of the 344 Patent and what is found in each of DAVIC and Fujita would have been

obvious for the Skilled Person to bridge – having regard to their CGK. I need not consider Fujita since, as explained below, I conclude that the 344 Claims are rendered obvious by DAVIC and the CGK alone.

[457] It bears repeating that DAVIC was a must-read for anyone interested in digital audio-visual applications back in 1998. There was motivation in the industry to develop new systems compliant with the DAVIC specifications, particularly in light of the transition taking place from analog to digital. One particular function in DAVIC that is very relevant to the present debate is Function 8.14, under the heading of MEDIA SYNCHRONIZATION LINK FUNCTION, which is reproduced below.

8.14	An application running on one STU should be able to communicate with, and synchronize with, a related application running on a different STU.

(a) *"coordinating" (all claims)*

[458] Dr. Balakrishnan argued that the gap in DAVIC was that it fails to provide an indication of what is being synchronized or how this may occur and does not describe how to display synchronized content. However, as explained by Mr. Sandoval, the concept of coordinating settings across multiple STBs is identified by DAVIC. DAVIC describes the ability to exchange information, potentially in a direct and simple manner, between devices on a home network.

[459] DAVIC describes "synchronization" between applications running on STBs on the home network, which for all intents and purposes is coordination. While the term IPG is not used in

DAVIC, the Skilled Person would clearly understand one of the applications being synchronized could be an IPG running on the STB. The Skilled Person would necessarily have understood that synchronizing applications would be taken to mean synchronizing their operation.

[460] As noted by Mr. Sandoval, the Skilled Person would have been familiar with subscriber settings. The Skilled Person would recognize that one setting that could be synchronized between IPGs was a known subscriber setting – such as a Pay-Per-View setting.

(b) *"receiving first/second indications associated with first/second programs (all claims")*

[461] Given the disclosure in DAVIC that synchronization should be established between STBs on a network, and the CGK related to digital devices on a network, the Skilled Person would be able to put into practice a home network comprising multiple STBs, each STB with the ability to synchronize the operation of its application with an application running on another STB.

[462] I agree with Mr. Sandoval that, once synchronized, the settings would be available on both STBs. Necessarily some "indication" that user settings were adjusted would have to be exchanged by the STBs for the described synchronization to occur.

(c) *"generating content, for display" (all claims)*

[463] Generating a display of the synchronized settings would be obvious as the Skilled Person would be familiar with general IPG and user interface concepts. It would not be inventive to the Skilled Person to include a display of the synchronized applications described by DAVIC.

[464] Therefore, the gaps identified by Dr. Balakrishnan would have been easily traversed by the Skilled Person by looking to DAVIC and having regard to their CGK.

[465] This brings me to Fujita.

[466] Fujita describes how indications related to activities associated with programs may be exchanged on a home network. Dr. Balakrishnan took issue with Fujita because he was of the opinion that Fujita was not directed towards a television system, did not disclose IPGs, does not teach receiving indications, and does not teach generating content for display.

[467] I disagree with the first point raised by Dr. Balaskrishnan. Fujita sets out details that describe a home network comprising televisions, VCRs, STBs, and other devices. In particular, the specifics of the Fujita menu interface used with the standardized “CEBus” audio-visual home network for controlling televisions and VCRs are disclosed so as to provide specific teachings to the Skilled Person.

[468] Dr. Balakrishnan is correct that Fujita does not teach use of an IPG. More particularly, it does not disclose the “coordination” of a first interactive media guide and a second interactive media guide as I have construed the term. Fujita simply describes a menu interface that allows, among other things, a user to record a program, control playback, and determine that a VCR on the home network is in the process of recording. While Fujita’s VCR menu provides a series of options that may be accessed from different televisions, and potentially from different rooms,

Fujita does not disclose anything about changing settings from one STB to another; the control of recording settings from one STB to another; or sharing content between STBs.

[469] The mere existence of a home network does not teach a skilled person every innovation that might leverage that home network, and it does not teach the specific method of coordination of media guides of the 344 Claims.

[470] In the circumstances, I find that Videotron has failed to prove that the 344 Claims are rendered obvious by Fujita and the CGK.

[471] In conclusion, all of the essential features of the 344 Claims claims are found in DAVIC as considered by the Skilled Person in light of their CGK. The remaining elements in claims 116, 120, 121, 123 do not add any inventive features. Claim 116 merely adds generating content on the second device; Claim 120 merely adds the fact that the devices are in the same household; Claim 121 adds that the devices need not be in the same household; and Claim 123 merely adds the feature of displaying aggregated scheduled content. None of these claims would be viewed as adding anything inventive given the obviousness of Claim 113.

(d) *Infringement*

[472] If I am incorrect, and the 344 Patent is valid, then the issue is whether the illico 2 system infringes any of the 344 Claims.

[473] Dr. Balakrishnan admitted that he had not actually seen any evidence of coordination as between settings on STBs in Videotron's system. Notably, Dr. Balakrishnan also claimed he was not accusing Videotron's system of being capable of such coordination.

[474] The functionality that Dr. Balakrishnan did accuse Videotron's system of having was not settings coordination leading to a coordination of operation, but was actually remote control, similar to that which he claimed infringed the 061 Patent. In his infringement example, Dr. Balakrishnan used a remote device to access and view the state of a local STB. Using the remote device, Dr. Balakrishnan could change the recording schedule on the STB; the same as if they had used a standard remote control. I agree with Videotron that this is only step 1 of the steps noted by the 344 Patent.

[475] I have already concluded that the purpose of the 344 Patent is to coordinate the operation of like guides. Since Videotron's illico 2 system does not provide for coordination between the operation of IPGs as required by the 344 Patent, it does not infringe the 344 Patent.

XIII. The 629 Patent: Recording Directory

[476] The filing date of the 629 Patent is September 16, 1999. The claimed priority date is September 17, 1998.

[477] The 629 Patent generally relates to IPG systems which allow for digital storage of programs and program information. The problem the 629 Patent purports to address is described as follows in the Background of the Invention.

> Recently, interactive program guides have been developed that allow for storage of programs selected within the program guide on an independent storage device, typically a videocassette recorder. Usually, a control path involving an infrared transmitter coupled to an infrared receiver in the videocassette recorder is used to control the videocassette recorder. The use of independent analog storage devices like videocassette recorders, however, does not allow for the more advanced features that might be implemented if a digital storage device were associated with the program guide.

[478] The solution is set out in the first paragraph of the Summary of the Invention.

> Some embodiments of the present invention may provide an interactive program guide system with digital storage that allows the program guide to be used to provide more advanced features than previously offered by interactive program guide systems.

[479] Claims 79 and 80 of the 629 Patent are asserted by Rovi to be infringed by Videotron. The construction of claims 77 and 78 is also relevant as claims 79 and 80 depend on those claims. The 069 Claims read as follows.

> Claim 77
>
> A system in which programs and associated program data are displayed for users by an interactive television program guide implemented on user television equipment, comprising:
>
> a digital storage device in the user television equipment for digitally storing the programs and associated program data using the interactive television program guide in response to receiving a user request to digitally store the programs; and
>
> means for maintaining a directory of the digitally stored associated program data using the interactive television program guide.
>
> Claim 78
>
> 78. The system defined in claim 77 further comprising a means for displaying a directory listing screen on the user television equipment using the interactive television program guide.
>
> Claim 79

> The system defined in claim 78 wherein the directory listing screen comprises:
>
> means for indicating directory entry information;
>
> and means for providing a user with an opportunity to select directory entry information;
>
> wherein the display means further comprises means for displaying a full entry information screen in response to the selection by a user of directory information.
>
> Claim 80
>
> The system defined in claim 79 wherein the full entry information screen comprises a plurality of fields of directory entry information selected from the group consisting of: title, description, episode, channel, duration, viewed, cast members, category(ies), language, video format, start and end time, date, re-run indicator, stereo indicator, close-captioned indicator, and other information.

[480] In summary, the 629 Claims claim an IPG-based system that allows users to view a maintained list of programs they have recorded, as well as information about those programs.

(a) *Claim Construction*

[481] Dr. Balakrishnan and Mr. Sandoval disagree on whether the illico 2 system includes three of the essential elements of the 629 Claims: “interactive television program guide”, “means for providing a user with an opportunity to select directory entry information” and “full entry information screen”.

(2) “interactive television program guide” (Claim 77)

[482] This claim term is relevant for assessing both validity and the infringement. This particular term was construed earlier in the context of the 061 Patent.

[483] The parties disagree on whether an “interactive television program guide” solely includes the software that allows a user to view program listings or also includes the software that enables broader and related functionalities. While the parties have advanced essentially the same arguments as before, the evidence is slightly different.

[484] During cross-examination, Mr. Sandoval was asked whether he agreed that the 629 Patent describes the television program guide as having a number of features and not just being a listings application.

[485] Mr. Sandoval agreed that the inventors were saying that “the interactive program guide can include a number of features,” and that the intent of the inventors was to define “the entirety of the user facing features.” He further agreed that the 629 Patent did not use the term “application”; that the 629 Patent does not specify that the program guide is a single piece of software; and that the Skilled Person would know that software could be designed either as one application or multiple applications.

[486] In light of these concessions, which were appropriately made, I agree that the element as used in the 629 Patent would be understood by the Skilled Person to include other software on

the STB that facilitates other use features such as the ability to record and manage a directory of recordings. I would reiterate however that merely because a software function could be designed to be part of an IPG does not mean that it is in fact part of the IPG.

(3) "means for providing a user with an opportunity to select directory entry information" (Claim 79)

[487] This claim term is relevant for assessing both validity and infringement. Its construction is relevant to the infringement analysis because the experts disagree about whether "selection" includes manipulating cursor keys, or whether more is required. As explained earlier in these reasons starting at paragraph 110, Mr. Sandoval initially defined the "means" as "a selection that the user can manipulate using cursor keys such as on a remote control." Dr. Balakrishnan simply agreed with Mr. Sandoval's construction. However, in his infringement report, Mr. Sandoval added that "more is required than simply moving a highlight up and down."

[488] Rovi submits that the construction originally given by Mr. Sandoval should be the one accepted by this Court.

[489] I am fully aware that Mr. Sandoval added further constraints to his construction and that his opinion may have been tainted after viewing the illico 2 system. However, his is the only evidence before me on how to construe the term. Moreover, Dr. Balakrishnan has not shown that Mr. Sandoval's alleged narrowed construction is flawed.

[490] Videotron argues that the Skilled Person would understand that a “means” is provided that allows the user to navigate listings in a directory – for example, “scrolling” up and down with their remote – and then allows the user to “select” or choose a specific entry for which they want to see additional information. There is support for this position in the 629 Patent, which describes navigation of the directory and the selection of an entry as two distinct activities – positioning a highlight region and then selecting an entry.

> The program guide may allow the user to access a full view of all of the directory information stored for an entry. The user may access this feature while in directory listing screen 90 by indicating a desire to do so by, for example, entering appropriate commands with user interface 46. If user interface 46 is a remote control such as remote control 40 of FIG. 2, this can be done by positioning highlight region 95 over the desired entry using "up" and "down" keys, and then selecting the entry, or by selecting an on-screen "info" option. [Emphasis added.]

[491] The argument is sound and I accept it. I find that the Skilled Person would understand from reading the passage above and the word “then” that a user must actually take a second step, by press another button or take some further action (“entering an appropriate command”), to receive (“access”) the additional information as such information is provided by way of a “full entry information screen”, a term which will be described below.

(4) “full entry information screen” (Claim 79)

[492] The experts disagree on whether the “full entry information screen” needs to occupy the entire screen (Mr. Sandoval’s position) or can simply take up a portion of the screen (Dr. Balakrishnan’s position).

[493] Mr. Sandoval stated in his validity report that a full entry information screen is most likely to be understood by the Skilled Person to be another screen of information about a single entry from the directory. In his infringement report, Dr. Balakrishan concluded that "full entry information screen" would be understood to mean a display on a screen (e.g., a television monitor within the user television equipment) of available information for a directory entry of digitally stored associated program data. He identified the "full entry information screen" as the red highlighted portion in the photograph reproduced in paragraph 112 above.

[494] Mr. Sandoval responded that the photograph in question is not a "full entry information screen" since what Dr. Balakrishnan highlighted is only a portion of the user interface, rather than a new screen of information that replaces or overlays the existing interface. He argued that in his validity report, he had stated that the Skilled Person would understand this as "another screen" of information about a single entry from the directory and that he had specifically referenced Figure 10 from the 629 Patent in support of his argument.

[495] Rovi claims that Mr. Sandoval shifted and narrowed his construction when doing his infringement analysis. I disagree. There is no narrowing of his construction. There is no inconsistency. Mr. Sandoval is simply repeating and reinforcing his position in light of information he viewed as erroneous in Dr. Balakrishnan's infringement report.

[496] Rovi argues that the "full entry information screen" should be understood to mean "another screen of information about a single entry from the directory," or any iteration. However, there is no support anywhere in the 344 Claims or in the description for this position.

[497] I agree with Mr. Sandoval that the Skilled Person would understand a "full entry information screen" to be another screen, such as a completely separate full screen or overlaying screen, but in any case a screen that is distinct from the directory screen. The claim language makes it clear that the full entry information screen is provided only "in response" to the "selection by a user" and is not provided in response to a user simply navigating through the directory.

[498] This is the only logical conclusion since the description of the 629 Patent states that once the user has entered the "full entry information screen," they must "exit" the screen before they are returned to the "previous screen for display on monitor 45." A partial screen would not need to be "exited" in this manner and the previous screen would not need to be "generated" again.

[499] While the CGK indicates that there were other common iterations, for example an overlay or a partial screen display, the 344 Patent is clear. I conclude that "full entry information screen" means a screen that fully paints over the display.

B. *Validity*

[500] Videotron submits that the 629 Claims are either anticipated by Florin or are rendered obvious on the basis of Girard[6] and Florin or Browne[7] in light of the Skilled Person's CGK.

[6] US5,751,282 entitled "System and Method for Calling Video on Demand Using an Electronic Programming Guide" published on May 12, 1998 [Girard],
[7] PCT/US92/04573 entitled "Large Capacity, Random Access, Multi-Source Recorder Player" published on December 23, 1992 [Browne],

(a) *Anticipation*

[501] The test for anticipation is set out above at paragraph 266 to 269. One must be able to look at a prior, single publication and find in it all information which, for practical purposes, is needed to produce the claimed invention without the exercise of any inventive skill. If the published reference fails to either disclose or enable the essential elements of a claim, the patent claim is novel, or not anticipated.

[502] Videotron's submits that Florin both describes and enables the 629 Claims Patent.

[503] Florin is a patent published on December 10, 1996 on an application by Apple Computer Inc. The Field of the Invention is described as follows:

> The present invention relates to the field of audio-visual systems. More specifically, the present invention relates to a system for selectively viewing and interacting with programs and services from a number of program/service sources, a control device for controlling the system, and the methods and apparatus incorporated in the system for managing selection, viewing and interacting with the program/service offerings.

[504] Videotron has set out in its written representations detailed reasons why the 629 Claims are anticipated by Florin. They are well reasoned and supported by the evidence before me. I have therefore incorporated them into these reasons.

[505] It should be noted that when counsel for parties appeared before me to make oral submissions, the only substantial argument advanced by Rovi on novelty was that Florin does not disclose "a means for maintaining a directory if the digitally store associated program data

using the interactive program guide." The basis for this argument was that Mr. Sandoval's opinion that the use of the IPG to maintain a directory was implied was not sufficient evidence to meet the test of novelty. As explained below, I disagree.

[506] Florin describes a "list function" that provides a user with a "guide"; that is, a list of programs, organized by channel and time. Further, Florin provides the user with the ability to navigate through program listings – for example, the user may use their remote control to change the list of programs from those currently available, to those available at a different time. In his expert report, Dr. Balakrishnan construed "interactive television program guide" in the context of the Patent as: "software and/or hardware that, among other things, can generate for display, and display, listings of programs and recorded content in electronic form that a user can navigate by electronic means (e.g. by using a remote control)." This definition is met by the Florin description.

[507] Mr. Sandoval found Florin to describe an IPG as he had construed that term. In cross-examination, Dr. Balakrishnan seemed to think that the prior art needed to use the precise language of the patent claim: "I think that is a list function as it says. It doesn't use the word IPG, but it is an element of an IPG." He clearly failed to read the prior art as a skilled person with a mind willing to understand.

[508] The disclosure of an IPG, as defined by both experts in the claim construction, is met by Florin. The IPG runs on user television equipment, referred to as a "transceiver."

[509] As explained by Mr. Sandoval: “Florin describes a system that includes a hard drive for recording programs”. Florin describes recording programs to a hard disk: “a record button for making copies of programs onto connected A/V recording devices (such as VCRs, hard drives, etc.)”. Dr. Balakrishnan agreed that Florin describes digital storage – the storage of programs onto a hard disk – and that the digital storage could be incorporated into Florin’s transceiver. Accordingly, Florin discloses digital storage.

[510] As explained earlier in these reasons when dealing with the CGK, the technology to record programs on a hard disk was known at the relevant time. Because such digital recording techniques were part of the CGK, the disclosure of such recording in Florin provides sufficient direction for the Skilled Person to use the hard drive. The 629 Patent itself has no specific technical direction for the reader on this point. Both Florin and the 629 Patent rely on the CGK of the Skilled Person.

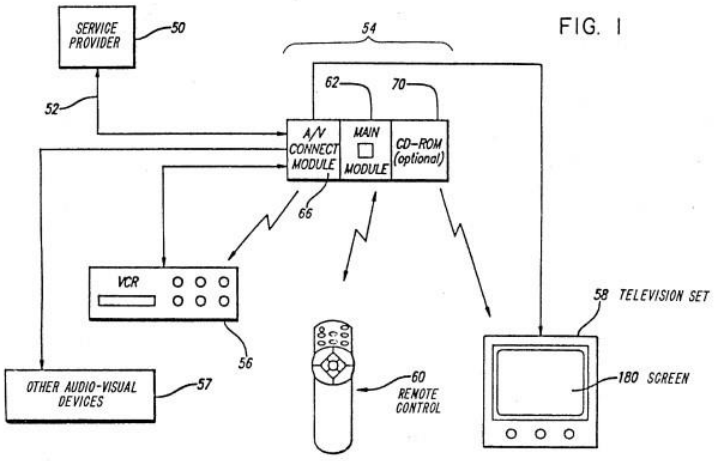
[511] Florin discloses a directory that is maintained. As Mr. Sandoval noted, Florin describes not just recording programs but also providing a user with a directory to those stored programs, and it was understood that the directory is updated when programs are recorded; that is, it is maintained. The directory could be stored in the rewritable memory of the transceiver, which would signal to the skilled person, who knew about digital directories, that the directory could be updated, or maintained, as needed.

[512] As Mr. Sandoval also pointed out: Florin describes an “information function,” which can be used to obtain fully entry information about a program. A user pushes the “information button

136” and is provided with a separate “graphic overlay panel 190” denoted by a little “i”, as illustrated in Figure 7.

[513] As noted by Florin, the information function retrieves additional program information, including program title, length, channel number and network logo. Florin also specifies that the information function can be used in conjunction with the list function. This conjoined functionality provides a user with access to a directory of programs stored on a hard disk and allows the user to select a program entry to obtain further information about that entry by way of a separate overlay screen – a full entry information screen.

[514] Florin’s transceiver is “user television equipment” under either expert’s construction of that term – both experts agreed that “user television equipment” could be a STB, but it could also be something other than an STB. It should be noted that Dr. Balakrishan took the position at trial that Florin did not disclose an STB. In cross-examination Videotron’s counsel suggested to Dr. Balakrishnan that transceiver 54 (identified by a bracket in Figure 1 of Florin, reproduced below) could be a STB.



[515] Dr. Balakrishnan responded: "I would just say it's a box between the service provider and the television with some A/V functionality. I don't think it uses the word 'set-top box' in Florin." I found Dr. Balakrishnan's response perplexing since the box in question would clearly be understood by the Skilled Person to be, in common parlance, a STB. There is no indication that it could be anything else.

[516] Florin discloses that a user uses a remote control to access the list function, which displays a directory listing screen comprising either broadcast or recorded programs. The directory is able to be maintained in the rewritable memory of the transceiver. The recorded programs are able to be recorded by the user on a digital storage device, such as a hard disk. The hard disk is described as being able to be incorporated into the transceiver. The user could also access an "information function" in conjunction with the list function. After navigating to a program, selecting the information function for a particular recorded program would retrieve additional program information for that program, such as program name, category, and length of program, and would display it for the user in an overlaid full entry information screen.

[517] Given the disclosure in Florin, Mr. Sandoval was of the opinion that the 629 Claims were both disclosed and enabled. Mr. Sandoval was not cross-examined on the enablement issue. I agree with Mr. Sandoval's opinion.

[518] Based on the evidence before me, I conclude that the 629 Claims are invalid for anticipation based on Florin.

(i) Obviousness

[519] If I am incorrect, Videotron alleges that the 629 Patent claims would have been obvious given the state of the art – Florin, Girard, Browne – and what was common general knowledge at the time.

[520] Girard is a patent published on May 12, 1998 on application by Microsoft Corporation. The Field of the Invention is described as follows:

> This invention relates to an interactive television system which permits a viewer to use an electronic programming guide to select current programs, video on demand of past programs, and previews of future programs. This invention also relates to methods for calling video on demand using an electronic programming guide and for operating such inter-active televisions systems.

[521] Browne is a WIPO application published December 23, 1992 on application by the inventors, Browne and Yurt. The invention relates generally to "a large capacity, random access, multi-source audio and video recorder player which is capable of receiving a plurality of

simultaneous input signals and which allows a user to view and/or to record selected ones of the plurality of input signals."

[522] As noted in the CGK section, the experts disagreed on how heavily technology for personal computing influenced IPG technology. As Dr. Balakrishnan described, there were significant differences between PC and IPG technology at the relevant time. For example, "the ability to save digital files on a personal computer was much more advanced than on a STB for a number of reasons, including that the processing power of a personal computer was (and is) significantly greater than that of an STB, and that the user interface for a personal computer was (and is) far more advanced." However, as is clear from that statement, a significant factor in the time lag or implementation issues was hardware limitations. Consequently, there was greater convergence between PC and STB technology once processing power on STBs increased.

[523] As such, it was obvious to incorporate PC-style directory listings into STB technology. Moreover, the 629 Patent acknowledges the CGK in its background that it was known by 1998 that: (a) IPGs were available and could be used to display television program information on a user's television; (b) an IPG could be used to select and record programs; and (c) certain features would necessarily be made available if a digital storage device were implemented in a digital storage device instead of analog.

[524] Rovi claims that the following elements required ingenuity and they are the inventive concepts of the claims in question (step 2 of the *Sanofi* test):

> the recording is initiated by an IPG;

> the IPG records the program and associated program data to a storage device in the user television equipment; and
>
> the IPG provides the user an opportunity to view directory entries, view full entry information screens on these entries, and maintain the directory.

(a) Florin

[525] Rovi argued that the differences between Florin and the 629 Patent as identified in the discussion on anticipation, constitute steps that would not have been obvious to the Skilled Person. As I said above, there are no gaps between Florin and the 629 Patent.

[526] If I am incorrect, and there are gaps, these are filled by the CGK. Using a directory was common for digital storage during that time. IPGs were also common at the time. Moreover, Dr. Balakrishnan said that "the user interface for a personal computer was (and is) far more advanced".

[527] Rovi argues if it was obvious to incorporate PC-style directory listings into STB technology as Mr. Sandoval suggests, that step would still not render obvious the invention of the 629 Claims. However, the experts agreed, there were no technical obstacles to implementing an IPG as a directory system and if there were, the 629 Patent does not teach the solution. Moreover, full entry information screens were part of the CGK and ubiquitous. Again, in the CGK, the method of storing associated data with files was well known and capable of being displayed.

[528] If I am incorrect and there were differences between the CGK, Florin and a combination of both, bridging that gap required no ingenuity. Applying all these ideas that were well known in the art, disclosed and enabled in Florin to recorded programs instead of broadcast programs was obvious. The 629 Patent does not solve the technical problem that may arise from doing so. As the experts explained, the issue in applying this technology was processing power, not ingenuity.

(b) Girard

[529] The primary difference between Girard and the 629 Patent is the location (local or remote) where programs and associated data are stored. Dr. Balakrishnan agreed that there is nothing in the 629 Patent that solves the supposed issue of moving centralized storage to local storage (if there was ever any such issue) and there was no technical limitation to the Skilled Person.

[530] Mr. Sandoval argued that the Skilled Person "would appreciate that there is no material difference as to where the programs are stored in Girard, other than factors such as cost of memory and bandwidth on the network and the number of copies of the programs needed." Rovi argues that the differences in technical environment between centralized and localized storage are significant enough that the designer of a centralized service provider infrastructure would not typically look to teaching relating to consumer electronics devices, and vice versa.

[531] Balakrishnan stated during cross-examination that he saw no clear motivation to move from centralized to local storage nor to combine Girard with Florin. This ignores the trend

described earlier in these reasons that traditional television would become combined with other digital technologies once television went digital. There were ample examples in the state of the art of local storage. The motivation was there as can plainly be seen in both Florin and Browne. Local storage and display of programs were part of the CGK. I accept that the teachings of Girard in combination the CGK of how to store programs locally render the 629 Patent obvious.

(c) Browne

[532] Browne does not teach the use of an IPG to make recordings or maintain a directory and does not disclose a full entry information screen. Browne only discloses a directory of recorded items, and the information in the directory is manually entered by the user and is not managed by the system or an IPG.

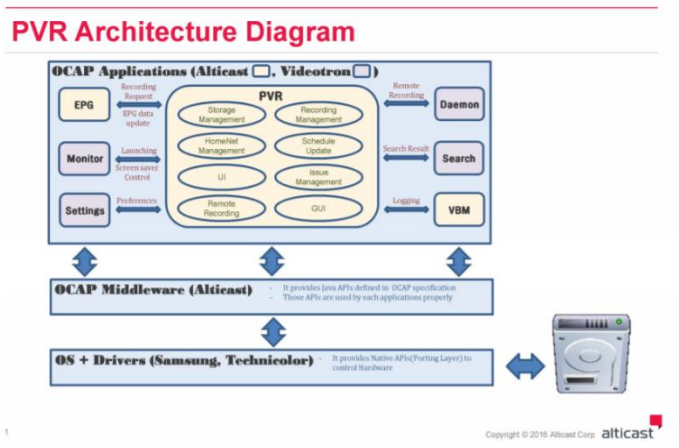
[533] Mr. Sandoval did not explain how the move from Browne to the 629 Patent would be obvious. When cross-examined on the large number of steps Browne contemplates for a user to manually enter information, Mr. Sandoval stated that “the skilled person would understand this is one way of doing it, but this is the way Browne describes doing it. The Skilled Person would know that, well, I can come up with another way to record a program. Maybe something with fewer steps, for instance.” I agree with Rovi that Mr. Sandoval’s conclusion that the “other way” is the way described in the 629 Patent requires hindsight. Mr. Sandoval provided no evidence as to why the Skilled Person would have moved from the system in Browne to that in the 629 Patent.

[534] For the above reasons, the 629 Claims are either anticipated by Florin or obvious in light of Florin and the CGK, the CGK and Girard or Florin and Girard, or a combination of all three.

(b) *Infringement*

[535] If I am incorrect, I find that Rovi has failed to prove that the illico 2 system infringes the 629 Claims.

[536] The evidence is clear that in the illico 2 system software, it is the PVR Application that handles "Storage Management" and "Recording Management"; it is also responsible for maintaining the directory of recorded programs. In contrast, the EPG Application has no responsibility over recording or storing programs, as shown in the illustration below.



[537] Moreover, in the PVR Application, a user cannot click on a program in the directory and be provided with a "full entry information screen", either as a full screen or as an overlay screen, where the user must then hit "exit" to leave that screen. Instead, as a user scrolls through the

directory of recorded programs using the arrows on their remote control program, information is automatically populated in a region of the screen.

XIV. Patentable Subject Matter

[538] Videotron submits as an additional ground of invalidity that the Asserted Claims fail for want of patentable subject matter as they are directed to the handling and display of data, namely broadcast and/or recorded television programs, and no technical problems are addressed. It argues that the generality of the systems can be seen from the Asserted Patents. According to Videotron, they do not delimit a practical application but merely identify using standard computer technology or manipulation of particular information or data, in other words the claims go to information manipulation, an abstract idea.

[539] Given my conclusion that the Asserted Claims are invalid for other reasons, I will be brief on this subject.

[540] This Court has summarily dispensed with unpatentable subject matter arguments where infringers sought to characterize systems and methods having several elements as "abstract mental steps" akin to the "mental operations" discussed in *Schlumberger Canada Ltd v Commissioner of Patents*, [1982] 1 FC 845 (CA). As Justice Manson held in *Uponor AB v Heatlink Group Inc*, 2016 FC 320, para 152: "the use of known equipment or apparatus in a novel and unobvious application […] is […] capable of being patentable subject matter, subject to the same requirements for patentability as for the process to carry out the invention

[sufficiency of description in the specification, utility, novelty and non-obviousness].” I would adopt the approach taken by my colleague.

[541] The claims at issue are not mere mathematical formulae, scientific principles, or theorems. Moreover, the system and method claims at issue do not monopolize a mathematical formula, nor do they computerize a primarily mathematical method. Here, the experts agree that each element of every asserted claim is essential. Further, each claim at issue includes multiple method steps or multiple system parts.

[542] While Videotron has raised compelling arguments that resonate with me, I am not satisfied that it has shown that the Asserted Claims are unpatentable subject matter.

XV. Remedies

[543] Although Rovi’s action is dismissed, for the sake of completeness, I will briefly address the issue of remedies.

[544] The *Patent Act* sets out two alternatives for remedies in an action where there has been a finding of patent infringement. First, section 55 provides that a patentee is eligible to damages in the form of a reasonable royalty or their lost profits. Damages comprise the loss of the inventor, and sometimes includes the profit losses from sales or lost royalty payments of the patent holder. Second, subsection 57(1)(b) of the *Patent Act* provides that on application of the plaintiff or defendant, this Court may make an order for an accounting of profits. The accounting of profits

is calculated based on the profits made by the infringer due to their infringement. (*Monsanto Canada Inc v Schmeiser*, 2004 SCC 34 [*Monsanto*], at para 100).

[545] Rovi seeks the remedy that will provide it with the greater quantum of monetary relief. It believes this will be an accounting of profits. As an alternative, Rovi seek damages in the form of reasonable royalty albeit only if it can generate a higher remedy.

[546] Let me say from the outset that the expert witnesses who opined on the issues of remedy were well qualified in their area of expertise and I do not doubt their impartiality. They were fair and balanced in their opinions - the epitome of what an expert witness should be. However, their opinions relating to the appropriate remedy were based on assumptions and dependent upon the accuracy of information provided to them by others. It is axiomatic that experts are frequently called upon to express an opinion on the basis of assumptions. Therefore, in assessing the expert evidence critically, I carefully considered the facts underlying each opinion, that is, whether they have been established in evidence.

[547] The first issue before me in terms of remedies is whether it is appropriate to award damages or profits on the facts of this case. Rovi must establish that the Court should exercise its discretion and allow Rovi to pursue this remedy.

[548] It is useful to set out some background facts before turning to the factors I have taken into account in determining whether to exercise my discretion in favour of Rovi.

A. *Background Facts*

(a) *Rovi's Licencing Business*

[549] The line of business of Rovi is two-fold. First, it includes the provision of products, such as the supply of IPG software and program data to cable or telecommunications companies located in the United States and Canada. Second, Rovi provides licensing services, allowing customers to license patents that they own. From 2003 to 2013, Rovi significantly grew its patent licensing business.

[550] Rovi's business model has been to licence all patents in its portfolio, not to licence only a subset of these patents. Under the portfolio licence model, the rate that the licensee pays is a fixed licence fee that does not vary based on the number of patents that Rovi has or the licensee practices.

[551] Once Rovi has identified a potential licensee, its practice is to

[redacted]

According to Rovi, there is no pay-TV provider "anywhere in the world" with an IPG who does not need a license from Rovi to operate.

[552] Rovi's practice is to [redacted]

[553] [redacted]

Rovi purposely does not disclose other patents of value to licensees, as admitted on discovery.

> Q. Just to make it clear, when you talk about holding something back, it's a patent right that you understand applies to a Canadian company and you're addressing patent licensing with them and you think that they're infringing that patent, but you are not disclosing to the potential licensee that information?
>
> A. That's right.

(b) *Videotron's Business*

[554] Videotron has provided cable television services in Quebec since the 1960s. Its subscriber base is largely francophone and almost entirely in the Province of Quebec, with a small set of subscribers located in Eastern Ontario.

[555] The business of Videotron includes supplying terminals and services to subscribers to permit access to television and other content. Videotron also supplies customers with Internet connectivity, mobile telephone, streaming and home phone services.

(c) *Licence Agreement*

[556] In late 2008 to January 2009, Rovi engaged Videotron about licensing Rovi's IPG patent portfolio. Mr. Proulx was involved with early meetings with Rovi. I found Mr. Proulx to be a forthright and credible witness, and I accept the entirety of his testimony.

[557] Mr. Proulx testified that Videotron was familiar at the time with Rovi's products, but not its patents. Videotron was aware that Rovi had reached agreements with U.S. cable providers. Videotron also knew that Rovi was in litigation at the time.

[558] Rovi had instituted legal proceedings in the United Kingdom against Virgin Media in 2009 regarding the validity of certain Rovi patents. The result of these cases was that the Rovi patents were found to be invalid, for reasons including patentability and prior art issues.

[559] [redacted]

[560] [redacted]

[redacted]

[561] Following the presentation, Rovi and Videotron moved on to discussing commercial matters and the licence structure. Negotiations over the licence terms took approximately two years.

[562] Mr. Proulx testified that while negotiations were taking place, Videotron was encountering technological problems with the illico 2 system. According to Mr. Proulx, Videotron's interest at that time was to play along and avoid any patent issues that could affect the launch of its new system.

[563] Mr. Proulx conceded that Videotron did not mention to Rovi that it was entering into a licence agreement in order to avoid litigation. Nor did Videotron suggest that it did not need a licence to Rovi's IPG patent portfolio, or raise the possibility of merely licensing one or a handful of patents in the portfolio.

[564] The Licence Agreement was executed by Rovi and Videotron on January 31, 2011, effective April 1, 2010.

[565] The Videotron Licence was drawn up as a portfolio licence. It acknowledges Rovi's ownership of, control of, and/or rights to the "Rovi IPG Patents", which are defined so as to include the claims of any patents and/or patent applications covering IPGs that were or became

owned by Rovi during the term of the Licence Agreement or under which Rovi had or obtained the right to grant licences to third parties during the same term.

[566] The Licence Agreement has a 5 year term and covers activities of Videotron that could otherwise have been alleged to infringe the Patents.

[redacted]

[567] Mr. Proulx's testified that when Videotron entered into the Licence Agreement, the company had placed a high value on risk reduction given its awareness of prior agreements, as well as litigation between Rovi and other U.S. cable companies. Videotron did not want patent issues, including the threat of an injunction, to distract the company from completing its important project.

[568] I find that freedom from suit was the primary motivating factor that led Videotron to accept to pay the royalty rates that were ultimately negotiated, and not the value of any particular patents in Rovi's portfolio, as evidenced by the fact that Videotron did not perform any analysis of the market value of different features covered by the patents in the Rovi portfolio before entering into the Licence Agreement.

[569] [redacted]

[redacted]

(d) *Licence Agreement Renewal Negotiations*

[570] In 2014, before the expiry of the Licence Agreement, Videotron and Rovi began to negotiate terms of renewal. Mr. Christiano provided evidence relating the licence renewal negotiations. He was a very credible witness and I found the answers he gave were articulate, fair, plausible and persuasive.

[571] [redacted]

Over the course of a number of meetings, Rovi

[redacted]

[572] Rovi sought royalty rates to licence its patent portfolio that were nearly double what had been originally agreed to in the first licence between the parties. Videotron was taken aback by the substantial increase of royalty fees being sought by Rovi and started questioning the benefit of renewing the licence. Videotron agreed to extend the licence for one further year in order to be able to do a deep dive and better understand the patents in play, better understand the applicability, and understand if, as Mr. Christiano put it, “whether there would be a license even required going forward.”

[573] Rovi argued in its closing submissions that the increase of royalty fees was reflective of the value of the patent portfolio. [redacted]

[574] [redacted]

[Image redacted.]

[575] Mr. Christiano testified that throughout the discussions, Videotron kept asking Rovi to identify those patents Rovi considered to have particular value to Videotron and that were specific to its platform. From Videotron's perspective, no appropriate details were ever provided by Rovi of the relevance or value of its patent portfolio.

[576] Videotron declined to enter into another long-term licence for what appeared to be aging patents taken from an increasingly obsolete IPG patent portfolio.

[577]

[578] Negotiations finally broke off in early 2017. Videotron ended up being licensed to Rovi's IPG patent portfolio until December 31, 2016.

B. *Accounting of Profits*

[579] A patentee can elect for an accounting of profits instead of damages, and this relief can be provided if at least one patent claim is found valid and infringed. A patentee does not have a right to an accounting for profits, thus it will only be provided if the Court exercises its discretion to award it. However, the Court should not decline to exercise its discretion to award an accounting of profits to a party in the absence of any compelling reasons of doing so (*Philip Morris Products SA v Marlboro Canada Limited*, 2016 FCA 55 at para 8.

[580] Essentially, the patentee bears the burden of proving their entitlement to an accounting of profits as well as the infringer's sales and revenues resulting from the infringement.

[581] In *Apotex Inc v Bayer Inc*, 2018 FCA 32 at para 15, the Federal Court of Appeal reiterates the various factors to consider in deciding whether to award an accounting of profits. These factors include: (i) whether there has been undue delay in commencing or prosecuting the litigation; (ii) the patentee's conduct; (iii) the infringer's conduct; (iv) whether the patentee practiced the invention of the patent in Canada; and (v) complexity of calculating an accounting of profits.

> (a) *whether there has been undue delay in commencing or prosecuting the litigation;*

[582] Where a patentee has delayed commencing their action toward the infringer, thereby deliberately allowing an infringer to accumulate profits in an inordinate manner, an accounting of profits may be denied.

[583] There has been no delay by Rovi in commencing the action. To the contrary, it acted immediately when it became clear that the licence arrangement with Videotron would not be renewed. Nor is there any indication that Rovi has delayed in moving the proceeding forward. This factor is neutral.

(b) *Rovi's conduct*

[584] The conduct of a patentee is a relevant factor in this Court's discretion to allow, or not, an accounting of profits.

[585] Rovi maintains that it has acted appropriately and that there has been no misconduct on its part. Rovi explains that it acted in good faith to renew the Videotron Licence, such as meeting with Videotron,

[redacted]

They only resorted to litigation to enforce their property rights as Videotron refused to renew their agreement.

[586] While that may be, the evidence before me establishes that Rovi has a reputation of using hard-ball legal tactics to pressure third parties to license its patent portfolio. Rovi was known for its business model of aggregating patent portfolios, seeking licences, and relying on its prior licences and aggressive use of litigation to drive risk-avoiding businesses into deals that are consistent with its schedule of royalty fees. It would spend in the tens of millions of dollars annually on patent litigation.

[587] According to Rovi, there was no pay-TV provider "in the world" with an IPG who did not need a licence from Rovi to operate.

[588] [redacted]

[589] While Rovi kept touting the value of its patent portfolio, it was never prepared to disclose what that portfolio actually comprises. During its licence negotiations with Videotron, Rovi would not reveal a complete list of its patents that it thought Videotron infringed, or even what it referred to as its "best patents".

[590] Added to this is Rovi's apparently deliberate strategy of delaying the prosecution of its patents. In the present case, the 344 Patent was accorded an international filing date of July 16, 1999, and was issued 15 years later on October 21, 2014. The 870 Patent was accorded an international filing date of July 13, 1999, and the patent issued over 17 years later on January 3, 2017. The 629 Patent was accorded an international filing date of September 16, 1999 – the patent issued 13 years later on November 26, 2013. Rovi's own expert witness confirmed that patent holdup was a problem because once a potential infringer has launched a product it reduces flexibility and an opportunistic patent holder can then try to extract a larger, unreasonable licencing fee.

[591] When it came time to negotiate terms of renewal of the licence, Videotron repeatedly sought specific information about the value of Rovi patents. Its attempts to substantiate and

validate the terms for which Rovi wanted a multi-year contract, at a rate that was double the amount originally agreed to in the first licence, were rebuffed.

[592] It is quite apparent to me that the reason why Rovi declined to reveal to Videotron a complete list of specific patent claims it considered infringed was to prevent Videotron from designing around them. Rovi took the position that even after all four patents in suit expire, Videotron would not be free to continue carrying on its current activities as there were always other patents that Rovi would be able to assert against Videotron.

[593] Finally, there is no indication that Rovi ever sent a cease and desist letter to Videotron to put it on notice of infringement of the Patents before it started the present action. Although such notice is not required by law, it appears to me that bringing legal proceedings against a party who declines to enter into a licence without first giving that party an opportunity to assess the claim and attempt to resolve the dispute smacks of retaliation.

[594] Rovi's questionable business practices cannot help but serve to colour my view of the value of the features that it claims in the Patents. This factor weighs heavily against Rovi.

(c) *Videotron's conduct*

[595] The willful infringement of the infringer, although not necessary for an accounting of profits to be awarded, can shore up the case for this remedy *(Laboratories Servier v Apotex Inc*, 2008 FC 825, at para 509). Given the foregoing, Rovi submits that Videotron's decision to take

the calculated risk of being unlicensed, knowing that they might infringe Rovi's patents, shows a willful intention to infringe and therefore calls for the accounting of profits remedy.

[596] Rovi points out that Videotron was previously licensed with Rovi for approximately six years. Videotron knew that Rovi had a significant IPG patent portfolio and that other telecommunication companies did as well. According to Rovi, Videotron never offered any technical response to any of the patents exemplified by Rovi to demonstrate how it either did not infringe Rovi's patents or how its patents were invalid.

[597] In Rovi submits that Videotron's conduct weighs heavily in favour of granting an election for the accounting of profits, and Videotron's behaviour is precisely the "catch me if you can" attitude that Mr. Justice Russel W. Zinn cautioned against in *Monsanto Canada Inc. v Rivett*, 2009 FC 317, at paragraph 23. Otherwise, there would be nothing to deter a past licensee from infringing if the result is simply having to pay the sum that the licensee would have paid to use the patent in any event.

[598] I disagree that Videotron's conduct was inappropriate, let alone that it wilfully infringed Rovi's patents. The evidence suggests that Videotron's motives to refuse to renew the licence agreement with Rovi were well-founded. Its decision was based on a reasonable assessment of the necessity of the patents.

[599] I am not convinced that this factor militates in favour on exercising my discretion in favour of Rovi. It is neutral.

(d) *Whether Rovi practiced the invention of the patents in Canada*

[600] The premise for an accounting of profits is that a defendant, due to its wrongful conduct, has improperly received profits which should accrue to the plaintiff. One factor to consider is whether the patentee practices its patents (*Seedlings Life Science Ventures, LLC v Pfizer Canada ULC*, 2020 FC 1 at para 252 [*Seedlings*]).

[601] Videotron argues where the patentee does not practice their patents and only licenses them, it is "almost a rule of law" to assess damages in terms of a reasonable royalty (*AlliedSignal Inc v DuPont Canada Inc*, [1998] F.C.J. No. 190 at para 22 [*AlliedSignal*]).

[602] While Rovi may not offer television services to Canadian customers, there is some evidence that they do provide products to Canadian Pay-TV providers who use Rovi's products in the television services that they provide to end users.

[603] I find this to be a neutral factor in this analysis.

(e) *Complexity of Calculating an Accounting of Profits*

[604] The last factor to be weighed against is whether calculating an accounting of profits would be too complex or the result would unreliable. *(Eurocopter v Bell Helicopter Textron Canada Ltée*, 2012 FC 113, at paras 411-414). Complexity alone does not prevent the Court from exercising its discretion, but such a consideration may weigh heavily in denying the remedy (*Philip Morris Products S.A. v. Marlboro Canada Ltd.*, [2015] F.C.J. No. 1564 [*Philip Morris*

Products SA], at para 29). This is because the inventor is only entitled to that portion of the infringers' profit which is causally attributable to the invention, i.e. "perfect compensation" (*Nova Chemicals Corp v Dow Chemical Company*, 2020 FCA 141[*Nova Chemicals*], at para 48). However, this Court has held that where the amount of profits at stake is significant, complexity is not determinative. Moreover, the calculation of damages can be just as complex as the accounting of profits (*Philip Morris Products SA*, at paras 29-31).

[605] Rovi argues that this factor is not a reason not to award an accounting of profits in this case for three primary reasons. First, its experts were able to calculate the profits earned from the infringement using standard and reliable methodologies. There is no evidence that these methodologies were inappropriate, and Videotron's experts also agreed that these methods were neither overly complex nor unreliable. Second, Rovi contends that complexity is not determinative where the total amount of profits at stake is significant, and that is the case here as the total amount of profits at stake is up to [redacted]. Third, when considering that complexity is not determinative of whether an accounting of profits should be granted, and since the other factors favour this accounting of profits, the complexity factor should not disentitle a party to an award of an accounting of profits.

[606] Videotron maintains that Rovi should not be awarded a monetary remedy based on Videotron's profits from the alleged infringements, and instead can only be entitled to an amount based on a reasonable royalty. First, Videotron claims that since Rovi failed to make an election for an accounting of profits after due inquiry and full discovery as required, their own pleadings restricted them to the legal remedy of damages.

[607] Videotron argues that the unreliability and complexity of calculating an accounting of profits weigh against the award of an accounting of profits in this case, because Rovi's expert relied on novel theories and assumptions, particularly as it relates to its hypothetical market reconstruction, and lacks any factual support for its claims. Additionally, if liability is found, Videotron argues that if an accounting of profits based on a portfolio access fee was conducted, it would not lead to perfect compensation. According to Videotron, Rovi conducted an incorrect assessment of market value in its market reconstruction theory, which results in an incorrect calculation and an inflated result. I agree with Videotraon that this factor militates against granting an accounting of profits. While the complexity of the evidence could be overcome, I am not satisfied that using any methods proposed by Rovi's expert to calculate profits, which would be fraught with insufficient, speculative, and contradicted evidence would allow me to arrive to reliable and appropriate amount reflecting Videotron's profits.

[608] Given that the factors weigh against the granting an accounting of profits, I conclude that the appropriate remedy is a reasonable royalty.

C. *Reasonable Royalty*

[609] The reasonable royalty rate is defined as the amount the infringer would have to pay if they had been licensed under the patent, instead of infringing the patent (*AlliedSignal Inc v Du Pont Canada Inc* (1998), 78 CPR (3d) 129 (FCTD) at para 199).

[610] There is a dispute between the parties as to whether the portfolio rate in the prior Videotron Licence is the appropriate royalty, or whether that rate needs to be apportioned over

each patent in Rovi's Canadian IPG patent portfolio. Rovi submits that the portfolio rate is the appropriate one and seeks judgment in the amount of [redacted], inclusive of prejudgment interest to June 30, 2020.

[611] Videotron submits that should a particular Videotron system feature be found to infringe a valid claim in the Asserted Patents, the appropriate remedy is a one-time reasonable royalty, capped at no more than Videotron's cost to remove or design-around the subject-matter of the relevant asserted patent claim. The uncontroverted evidence at trial was that the approximate cost for such a design change would have been $150,000 per feature.

[612] The evidence before me is clear that Videotron was not willing to pay to renew its licence to Rovi's portfolio in 2016. Beyond the uncontradicted evidence of Mr. Chistiano, who explained why Videotron was not willing to accept to enter into a new licence arrangement with Rovi, there was direct factual evidence at trial relating to the value of Videotron system features in the market from Ms. Paquet (having a decade of relevant experience at Videotron and now a Vice-President of Marketing and Content) and from Mr. Lessard (General Manager of Big Data Strategies and Business Intelligence). Both witnesses, as well as quarterly "tracking surveys" and a survey from an independent firm, consistently reflected the limited impact of system features on consumer choice.

[613] Ms. Paquet provided evidence specifically about Videotron features alleged to be infringing. Her testimony was that the absence of such features would not impact the subscriber base for Videotron. Her evidence was cogent and largely consistent with that of Mr. Lessard.

[614] Ms. Paquet was adamant in cross-examination that Videotron's subscribers do not make choices around staying or leaving based on the kind of functionality at issue in this case. Mr. Lessard also confirmed Videotron customers do not make decisions based on these technical features.

[615] Rovi submits that the evidence of Ms. Paquet and Mr. Lessard should not be accepted because it is inadmissible opinion evidence, unsupported, speculative, incredible, and contrary to the bulk of the evidence. It argues that their evidence was generally not credible and that her evidence on how consumers would react was opinion evidence and inadmissible as she was not qualified. Rovi argues that Ms. Paquet's evidence is based on bald assertions that are not supported by any contemporaneous evidence. I disagree.

[616] The rule on lay witness opinion on evidence was set out in *White Burgess Langille Inman v Abbott and Haliburton Co.*, 2015 SCC 23, at para 14 and confirmed in *Toronto Real Estate Board v Commissioner of Competition*, 2017 FCA 236 [*Toronto Real Estate Board*], at para 78. Generally, a lay witness can only provide evidence that is limited to facts of which they are aware. However, there are exceptions to this rule, which, in my view, apply to the evidence provided by Mr. Lessard and Ms. Paquet.

[617] In *Toronto Real Estate Board*, the Federal Court of Appeal affirmed that:

> [79] […] opinion evidence from lay witnesses is acceptable in limited circumstances: where the witness is in a better position than the trier of fact to form the conclusions; the conclusions are ones that a person of ordinary experience can make; the witnesses have the experiential capacity to make the conclusions; or where

> giving opinions is a convenient mode of stating facts too subtle or complicated to be narrated as facts.

[618] The Court also referenced *Pfizer Canada Inc. v Teva Canada Ltd.*, 2016 FCA 161, 400 D.L.R. (4th) 723(F.C.A.), which supports this finding, as it accepted "a corporate executive's testimony about what his pharmaceutical company would have done in the "but for" world in circumstances where the witness had actual knowledge of the company's relevant, real world, operations (*Toronto Real Estate Board*¸ at para 80). The threshold is therefore that a lay witness "cannot testify on matters beyond their own conduct and that of their businesses in the "but for" world" (at para 81).

[619] Both Ms. Paquet and Mr. Lessard's evidence did not stray into inadmissible opinion evidence. It was based on knowledge acquired over a number years in their respective roles with Videotron. They were intimately familiar with and attentive to the key aspects of Videotron's service: good customer service, customer service in French and "club illico", a French-language Netflix-like service.

[620] Rovi's expert, Dr. Bazelon agreed that "non-infringing alternatives do come into willingness to pay and willingness to accept" and if the infringer has an alternative to practicing it, such a design-around cost is a reasonable upper bound for a royalty.

[621] I am satisfied that Videotron had the wherewithal to come up with workable non-infringing alternatives for the implicated user interface components, which would not have affected its subscriber base. This is evidenced by their regular upgrades to their system.

[622] A plaintiff who has been wronged is entitled to a remedy. Yet, Rovi, who bears the burden of proof in this case and has been licencing these types of patents for decades, simply led no independent evidence of the value of its own patented features. When it couldn't make out its case through Videotron's witnesses, all it could point to is a portfolio of some 200 patents. There is no evidence establishing the value, if any, of these patents which would allow me to determine with any degree of certainty a reasonable royalty for the Asserted Claims themselves.

[623] Taken into account the particular facts of this case, I consider that an appropriate and reasonable royalty would be $150,000 per feature as proposed by Videotron.

XVI. Costs

[624] The parties requested at trial that costs be reserved to await either agreement by counsel, or, failing agreement, written submissions. The request was granted. In the event the parties cannot agree within 30 days of the date of this Judgment, they should submit a proposed timetable for service and transmittal to the Registry of their written submissions on costs.

JUDGMENT IN T-971-17

THIS COURT'S JUDGMENT is that:

1. The Plaintiff's action is dismissed.
2. The Defendant's counterclaim is allowed.
3. Claims 2, 7 and 8 of Canadian Letters Patent No. 2,337,061 are invalid and not infringed.
4. Claims 456, 459, 720 and 721 of Canadian Letters Patent No. 2,336,870 are invalid.
5. Claims 113, 116, 119, 120, and 123 of Canadian Letters Patent No. 2,730,344 are invalid and not infringed.
6. Claims 79 and 80 of Canadian Letters Patent No. 2,339,629 are invalid and not infringed.
7. The issue of costs is reserved.

"Roger R. Lafrenière"
Judge

FEDERAL COURT

SOLICITORS OF RECORD

DOCKET:	T-921-17
STYLE OF CAUSE:	ROVI GUIDES, INC. v VIDEOTRON LTD.
PLACE OF HEARING:	TORONTO, ONTARIO (IN PERSON) AND BY VIDEOCONFERENCE
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