Aram Systems Ltd. v. NovAtel Inc. et al.

[Indexed as: Aram Systems Ltd. v. NovAtel Inc.]

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2009 ABCA 262

Alberta Court of Appeal
Conrad, Watson and Rowbotham JJ.A.

Heard: December 5, 2008
Judgment rendered: July 31, 2009

Trade secrets and confidential information — General — Common law duty of confidence — Where no breach of confidence found — Concepts in public domain and which may be transferable to another industry is simply idea and cannot be cloaked with confidence — Information conveyed by Aram to NovAtel was easily ascertainable and had not been subject of any effort on Aram's behalf to maintain its secrecy.

Trade secrets and confidential information — General — Where breach of confidence found — After meeting Aram filed continuation in part application including elements of Fenton's proposal which were not originally claimed by Aram — Even though NovAtel information was eventually made public it was still subject to protection afforded under patent laws.

Patents — Inventorship — General — Aram and NovAtel dispute ownership of U.S. patent issued to NovAtel — Conception of invention is complete when idea is so clearly defined in inventor's mind that only ordinary skill would be necessary to reduce invention to practice — No extensive research or experimentation would be needed — Large burden of proof on unnamed inventor claiming to be inventor — Heidebrecht unable to clearly and convincingly demonstrate that he had prior conception of invention and that he communicated conception to NovAtel.

Aram filed a provisional patent application for only the timing purposes of a GPS system in October 2002. In June 2003, Aram and Heidebrecht (engineering manager of Aram at the time) met with NovAtel and Fenton (chief technology officer at NovAtel) regarding GPS receivers. Following the meeting, Fenton prepared a proposal and informed Heidebrecht that he intended to apply for a provisional patent. Heidebrecht provided comments to Fenton regarding the proposal and in July 2003 NovAtel applied for a provisional patent including both timing and positioning purposes. In September 2003, Aram converted its provisional patent application into a regular patent application and subsequently filed a continuation in part that included elements of Fenton's proposal.

Aram claims that NovAtel wrongfully derived their patent from Heidebrecht who communicated his idea to NovAtel and Fenton during the June 2003 meeting. Aram further claims that NovAtel breached a non-disclosure agreement (NDA)

entered into by the parties at the June 2003 meeting as well as its duty of confidentiality. NovAtel counterclaims in respect of both the Patent ownership and alleged breach of the NDA by Aram.

Aram appeals from the decision of the trial judge, in which he concluded that Heidebrecht was neither the inventor nor the co-inventor of the patent at issue. The trial judge also determined that NovAtel and Fenton did not breach the NDA or their duty of confidentiality but Aram and Heidebrecht did breach their duty of confidence.

Held, appeal dismissed on all grounds.

Conception of the invention is complete when the idea is so clearly defined in the inventor's mind that only ordinary skill would be necessary to reduce the invention to practice, without extensive research or experimentation. There is a large burden of proof for one who claims to be an inventor or co-inventor since there is a presumption that the inventor named on an issued patent is correct. An alleged inventor's testimony must be sufficiently corroborated, preferably in the form of physical records made contemporaneously with the alleged prior invention. The suggestion of conception of an idea, rather than the means of accomplishing it, does not constitute joint or sole inventorship. Heidebrecht was unable to clearly and convincingly demonstrate that he had prior conception of the invention and that he communicated this conception to NovAtel. Merely making suggestions and giving assistance does not necessarily make one a sole or joint inventor. In determining inventorship, regard must be had to the scope of all patent claims, not just a select few.

The respondents did not breach any duty of confidence owed to the appellant, either at common law or under the NDA. The information conveyed by Aram to NovAtel at the June meeting was easily ascertainable and had not been the subject of any effort on Aram's behalf to maintain its secrecy. A concept that has been in the public domain and may be transferable to another industry is simply an idea and cannot be cloaked with confidence. Aram and Heidebrecht were in breach of confidence as Aram's continuation in part used information from Fenton's proposal. Once a patent application is filed and eventually made public, the patent serves to protect the invention and give the patent holder an exclusive monopoly. The 'confidential information', even though it is made 'public', is still subject to the protection afforded under the patent legislation. The patent process ought not to protect the appellant's actions in using confidential information merely because at a later date the patent is published and the information is made available to the public.

Cases referred to

Amax Fly Ash Corp. v. United States, 514 F.2d 1041 (1975) — **refd to**

Boehringer Ingelheim Vetmedica, Inc. v. Schering-Plough Corp., 320 F.3d 1339 (2003) — **refd to**

Free World Trust v. Électro Santé Inc. (2000), 9 C.P.R. (4th) 168, 194 D.L.R. (4th) 232, [2000] 2 S.C.R. 1024, 263 N.R. 150, 101 A.C.W.S. (3d) 796, 2000 SCC 66 — **refd to**

Garrett Corp. v. United States, 422 F.2d 874 (1970) — **refd to**

General Motors Acceptance Corp. of Canada v. Town and Country Chrysler Ltd. (2007), 288 D.L.R. (4th) 74, 88 O.R. (3d) 666, 232 O.A.C. 168, 163 A.C.W.S. (3d) 337, 2007 ONCA 904 — **refd to**
Hess v. Advanced Cardiovascular Systems Inc., 106 F.3d 976 (1997) — **refd to**
Home Diagnostics, Inc. v. LifeScan, Inc., 381 F.3d 1352 (2004) — **refd to**
Housen v. Nikolaisen (2002), 211 D.L.R. (4th) 577, [2002] 2 S.C.R. 235, 10 C.C.L.T. (3d) 157, 30 M.P.L.R. (3d) 1, [2002] 7 W.W.R. 1, 272 W.A.C. 1, 219 Sask. R. 1, 286 N.R. 1, 112 A.C.W.S. (3d) 991, 2002 SCC 33, [2002] S.C.J. No. 31 — **refd to**
Huck Manufacturing Co. v. Textron Inc., 187 U.S.P.Q. 388 (1975) — **apld**
International Corona Resources Ltd. v. LAC Minerals Ltd. (1989), 26 C.P.R. (3d) 97, 61 D.L.R. (4th) 14, [1989] 2 S.C.R. 574, 44 B.L.R. 1, 35 E.T.R. 1, 6 R.P.R. (2d) 1, 69 O.R. (2d) 287*n*, 36 O.A.C. 57, 101 N.R. 239, 16 A.C.W.S. (3d) 345 — **refd to**
JPMorgan Chase Bank v. Mystras Maritime Corp. (2008), 305 D.L.R. (4th) 442, 174 A.C.W.S. (3d) 4, 2008 FCA 399, [2008] F.C.J. No. 1736 [leave to appeal to S.C.C. refused 304 D.L.R. (4th) vii] — **refd to**
O'Reilly v. Morse, 56 U.S. 62, 15 How. 62, 14 L. Ed. 601 (1853) — **refd to**
Phillips v. AWH Corp., 415 F.3d 1303 (2005) — **refd to**
Trovan, Ltd. v . Sokymat SA, 299 F.3d 1292 (2002) — **apld**
United States v. Adams, 383 U.S. 39, 15 L. Ed. 2d 572 (1966) — **refd to**

APPEAL from a judgment of Macleod J., 68 C.P.R. (4th) 92, [2009] 3 W.W.R. 725, 98 Alta. L.R. (4th) 1, 449 A.R. 288, 170 A.C.W.S. (3d) 840, 2008 ABQB 441, concluding that Heidebrecht was neither the inventor nor the co-inventor of the patent at issue and that NovAtel and Fenton did not breach the non-disclosure agreement or their duty of confidentiality but Aram and Heidebrecht did breach their duty of confidence.

D.D. Horne, *A. Macklin*, Q.C., *S.B. Cody* and *C. Narvey*, for appellant, Aram Systems Ltd.

T.S. Ellam and *K.L. Smyth*, for respondents, NovAtel Inc. and Patrick C. Fenton.

BY THE COURT:—

I. Introduction

[1] The appellant ARAM Systems Ltd. (Aram) is in the business of designing and manufacturing seismic data acquisition equipment. The respondent NovAtel Inc. (NovAtel) designs and manufactures customized global positioning system (GPS) devices for incorporation by its customers into specialized equipment. Patrick Fenton (Fenton) is the chief technology officer of NovAtel. Norman David Heidebrecht (Heidebrecht) is the former engineering manager of Aram.

[2] Aram and NovAtel dispute the ownership of a patent issued to NovAtel on October 3, 2006, by the United States Patent and

Trademark Office (USPTO) (Patent). Aram claims that NovAtel wrongfully derived the Patent from Heidebrecht, who communicated his idea to NovAtel and Fenton at a meeting on June 18, 2003 (June 18 Meeting). Aram further claims that NovAtel breached a non-disclosure agreement (NDA) entered into by the parties at the June 18 Meeting as well as its duty of confidentiality. NovAtel counterclaims in respect of both the Patent ownership and alleged breach of the NDA by Aram.

[3] Aram appeals the trial judge's conclusions that: Heidebrecht was neither the inventor nor the co-inventor of the Patent; NovAtel and Fenton did not breach the NDA or their duty of confidentiality; and Aram breached the NDA.

II. Background

[4] The facts are set out in detail in the trial judge's reasons: *Aram Systems Ltd. v. NovAtel Inc.*, 2008 ABQB 441, 68 C.P.R. (4th) 92. They can be summarized as follows.

A. Technology Involved

[5] Seismic data, which is generally used in the exploration for hydrocarbons, is acquired by sending shockwaves at strategic points on the earth's surface. Geophones measure how long it takes the waves to leave the seismic source, reflect off a rock boundary, and return to the geophone. To ensure accurate data, it is important to know the position of the geophones as well as the timing of the initiation of the shockwave when it receives the signals reflected by the geophones.

[6] The most accurate information on positioning and timing is available through the use of a GPS consisting of approximately 30 satellites, each of which emits a signal. The signals emanating from these satellites provide information which allows calculation by a GPS receiver of its precise position as well as the precise time. GPS devices have not historically been used in seismic measurement systems because of their cost and the weak satellite signals which could be interrupted or contaminated by foliage.

B. Patent

[7] In the spring of 2002, after reading an article about the use of GPS in Emergency 911 situations (E911), Heidebrecht thought of adapting the concept of E911 or assisted GPS to seismic data acquisition. Based on that concept, a base GPS receiver would be located

in an area having a clear view of the sky, with assisting "slave" receivers in the field where signals might be weakened. Heidebrecht described this concept as "neighbour assist".

[8] In October 2002, Heidebrecht, who had assigned his rights to Aram, filed a patent application which dealt with the use of GPS to deal with *timing* issues in seismic systems. This patent application does not mention the *positioning* issues in seismic systems, and does not include any reference to the neighbour assist concept.

[9] In its search for a low-cost GPS receiver that could be incorporated into its system, Aram approached NovAtel and both parties met on June 18, 2003. Following the June 18 Meeting, Fenton began working on a proposal that would use assisted GPS for both timing and positioning of seismic data acquisition. Fenton told Heidebrecht that he intended to apply for a provisional patent and sent the proposal to Heidebrecht for his comments. Heidebrecht provided Fenton with feedback on his proposal on August 6, 2003.

[10] On July 17, 2003, NovAtel filed a provisional US patent based on Fenton's proposal. At Heidebrecht's request, Fenton taught Heidebrecht a "GPS 101" course during the month of August 2003.

[11] On September 1, 2003, Aram converted its October 2002 provisional patent application into a regular patent application. On October 25, 2003, Aram's patent attorneys filed a Continuation In Part to the application of September 1, 2003. The Continuation In Part included the elements of Fenton's proposal as well as the previous Aram applications. As explained by the expert patent attorney, David Quinlan, a Continuation In Part is an application repeating some substantial part or all of the earlier non-provisional application and adding matters not disclosed in the earlier non-provisional application. A "Continuation" is simply a second application having the same disclosure as a prior application and filed before the prior application becomes abandoned or patented. A typical Continuation application comprises a copy of the prior application, often accompanied by an amendment and the required reference to the prior application.

[12] Both Aram and NovAtel initiated patent applications in the U.S. but it was NovAtel which first obtained the Patent on October 3, 2006.

[13] The Patent contains 27 claims. Claims 1, 10, 17 and 25 are "independent claims". Independent claims do not incorporate the

terms of another claim of the Patent. The remaining claims are dependent claims. Dependent claims incorporate an earlier claim and then describe, for example, "the system of claim 1...".

III. Trial Decision

[14] The trial judge correctly noted that it was not his role to determine whether the subject matter of the Patent was inventive in that it was an advance over the prior art. That determination had been made by the USPTO. The trial judge described the Patent very generally as "a system which uses GPS in the acquisition of seismic data for both timing and positioning purposes": para. 76. He then examined claim 1 and concluded that it did not incorporate the concept of "assisted GPS" but that claim 2 did: para 79. After analyzing claim 1 of the Patent, the trial judge determined that the inventive element of claim 1 was the concept of "batch processing" which maximized the availability of useful data when the slave GPS units at the geophones had clear, albeit brief, views of satellites: para. 80. The trial judge found that Heidebrecht had a general notion that averaging data over a long period of time would be helpful, but did not understand that the "trick" was not to average the data, but to identify the carrier phase measurement in the received data which was "garbage" (Novel Batch Processing): para. 81. The trial judge made other findings regarding Heidebrecht's knowledge of GPS and assisted GPS which will be discussed more fully later in these reasons. The trial judge concluded that as Heidebrecht did not have the knowledge to reduce the invention to practice, Heidebrecht did not conceive the invention and, accordingly, was neither an inventor nor co-inventor of the Patent.

[15] The trial judge also found that the respondents had not breached the NDA or their common law duty of confidentiality. Indeed, he found Aram and Heidebrecht in breach of their obligations to the respondents.

IV. Standard of Review

[16] Although findings of foreign law are a "question of fact of a peculiar kind": *Kent Trade and Finance Inc. v. JP Morgan Chase Bank*, [2008] F.C.J. No. 1736 at para. 33, 305 D.L.R. (4th) 442 *sub nom. JPMorgan Chase Bank v. Mystras Maritime Corp.* (*Kent Trade*) citing *Parkasho v. Singh*, [1967] 1 All E.R. 737 at 746, the Ontario Court of Appeal and the Federal Court of Appeal have recently recognized the unique position of appellate courts in

reviewing these findings of fact and held that the appropriate standard of review to apply where the trial judge has determined the content of foreign law is correctness: *Kent Trade* at para. 3; *General Motors Acceptance Corp. of Canada v. Town and Country Chrysler Ltd.*, 2007 ONCA 904, 88 O.R. (3d) 666 at para. 35, 288 D.L.R. (4th) 74.

[17] A trial judge's findings of fact should not be reversed unless it can be shown that the trial judge made a palpable and overriding error: *Housen v. Nikolaisen*, 2002 SCC 33, [2002] 2 S.C.R. 235 at para. 10, 211 D.L.R. (4th) 577.

V. Law on Inventorship

[18] The parties agreed that the decision should be governed by American patent law and argued accordingly. Both parties provided extensive expert reports and testimony. The experts agreed that a person alleging that the subject matter of a patent claim was derived from him must prove:

1. prior conception of the invention; and
2. communication of that conception to the patentee.

The experts also agreed that conception is complete when the idea is so clearly defined in the inventor's mind that only ordinary skill would be necessary to reduce the invention to practice, without extensive research or experimentation. "Joint invention connotes collaboration of effort to produce a complete and operative invention. One who merely suggests an idea of a result to be accomplished, rather than the means of accomplishing it, is not a joint inventor": *Garrett Corporation v. United States*, 422 F.2d 874 at 881 (Ct. Cl. 1970) (*Garrett Corporation*). "The suggestion or conception of an idea or appreciation of a result to be accomplished, rather than the means of accomplishing it, particularly when the means constitute an essential part of the invention, does not constitute joint or sole inventorship": *Huck Manufacturing Company v. Textron, Inc.*, 187 U.S.P.Q. 388 at 407 (E.D. Mich. 1975) (*Huck Manufacturing*).

[19] There is a presumption that the inventor named on an issued patent is correct: *Amax Fly Ash Corp. v. United States*, 514 F.2d 1041 at 1047 (Fed. Cir. 1975) (*Amax*). Therefore, the burden of proof for one who claims to be an inventor or co-inventor is high. Misjoinder or nonjoinder of inventors must be proven with "clear and convincing evidence": *Garrett Corporation* at 880. The rationale

for this high standard was explained in *Hess v. Advanced Cardiovascular Systems*, 106 F.3d 976 (Fed. Cir. 1997) (*Hess*) at 980 quoting *Amax* at 1047:

> The temptation for even honest witnesses to reconstruct, in a manner favorable to their own position, what their state of mind may have been years earlier is simply too great to permit a lower standard.

[20] In *Trovan, Ltd. et al. v. Sokymat et al.*, 299 F.3d 1292 at 1302 (Fed. Cir. 2002) (*Trovan*) the United States Court of Appeals noted that in order to meet the clear and convincing burden of proof, "alleged co-inventors must prove their contribution to the conception with more than their own testimony respecting the facts surrounding a claim of derivation or priority of invention." Accordingly, an alleged inventor's testimony must be sufficiently corroborated: "reliable corroboration preferably comes in the form of physical records that were made contemporaneously with the alleged prior invention": *Trovan* at 1302.

VI. Analysis

A. Patent Derivation

1. Did the trial judge correctly construe the Patent?

[21] The appellant contends that the trial judge erroneously assumed that all claims were a subset of claim 1 and therefore failed to consider each of the 27 claims within the Patent separately. It submits that had the trial judge analyzed all of the claims, or at least the independent claims, he would have concluded that Heidebrecht was the inventor or co-inventor of claims 10 and 25. These claims do not incorporate the concept of Novel Batch Processing. The respondents acknowledge that there is no separate analysis of each claim but submit that it is implicit in the reasons for judgment that the trial judge considered them.

[22] Before determining whether a patent has been derived, it is essential to know what the invention is. To do so, each claim of the patent must be construed, as they represent "the measure of the invention" and serve to define specifically the subject matter which the inventor is trying to patent: *Garrett Corporation* at 879. Although the applicable law is U.S. law, Binnie J. provided a useful discussion of the importance of claims construction in *Free World Trust v. Électro Santé Inc.*, [2000] 2 S.C.R. 1024, 9 C.P.R. (4th) 168 at paras. 14 and 15:

> Patent claims are frequently analogized to "fences" and "boundaries", giving the "fields" of the monopoly a comfortable pretense of bright line demarcation. Thus, in Minerals Separation North American Corp. v. Noranda Mines, Ltd., [1947] Ex. C.R. 306, Thorson P. put the matter as follows, at p. 352:
>
> > By his claims the inventor puts fences around the fields of his monopoly and warns the public against trespassing on his property. His fences must be clearly placed in order to give the necessary warning and he must not fence in any property that is not his own. The terms of a claim must be free from avoidable ambiguity or obscurity and must not be flexible; they must be clear and precise so that the public will be able to know not only where it must not trespass but also where it may safely go.
>
> In reality, the "fences" often consist of complex layers of definitions of different elements (or "components" or "features" or "integers") of differing complexity, substitutability and ingenuity. A matrix of descriptive words and phrases defines the monopoly, warns the public and ensnares the infringer. In some instances, the precise elements of the "fence" may be crucial or "essential" to the working of the invention as claimed; in others the inventor may contemplate, and the reader skilled in the art appreciate, that variants could easily be used or substituted without making any material difference to the working of the invention. *The interpretative task of the court in claims construction is to separate the one from the other, to distinguish the essential from the inessential, and to give to the "field" framed by the former the legal protection to which the holder of a valid patent is entitled.* [emphasis added]

[23] As the above passage demonstrates, the analysis of each claim or "fence" is essential in order to delineate the intellectual property in need of protection.

[24] The law requires a trial judge to undertake an independent claims construction analysis before determining prior conception of the invention. While the trial judge did make some conclusory statements about claims 1 and 2, and correctly identified the relevant test for patent derivation, he erred by failing to engage in any specific interpretation of the scope of the other claims, particularly claims 10 and 25 which the appellant says are at the heart of its case.

2. Did the trial judge err in dismissing Aram's Patent derivation claim?

[25] The appellant submits that this court can examine the matter *de novo* and determine: (1) the subject matter of claims 10 and 25; and (2) whether Heidebrecht is the inventor or co-inventor of claims 10 and 25. The appellant says that the trial judge's findings of fact support a conclusion in its favour. The respondents submit that the trial judge's findings regarding Heidebrecht's knowledge are a

complete answer to the appellant's submissions on claims 10 and 25, and would result in dismissal of the appeal.

(a) Subject matter of claims 10 and 25

[26] In construing claims 10 and 25, this court must first seek to determine the meaning they would have to a person of ordinary skill in the relevant art at the time of the invention: *Home Diagnostics, Inc. v. LifeScan, Inc.*, 381 F.3d 1352 at 1355 (Fed. Cir. 2004) (*Home Diagnostics*). The court must also be mindful to construe the claim in light of the specification if a claim term is defined "in a manner inconsistent with its ordinary meaning": *Boehringer Ingelheim Vetmedica, Inc. v. Schering-Plough Corp.*, 320 F.3d 1339 at 1347 (Fed. Cir. 2003) as cited in *Home Diagnostics* at 1355. Moreover, both claims must be read with a view to ascertaining the invention: *United States v. Adams*, 383 U.S. 39, 49, 86 S. Ct. 708, 15 L. Ed.2d 572 (1966) cited in *Phillips v. AWH Corporation*, 415 F.3d 1303 at 1316 (Fed. Cir. 2005).

[27] Claim 10 recites:

> A seismic measurement system including: a plurality of digitizer units and associated geophones for collecting data relating to seismic activities; one or more base GPS receivers with substantial views of at least portions of the sky, the one or more base GPS receivers providing tracking assistance information relating to GPS satellites in view; a plurality of slave GPS receivers at the remaining locations of the digitizer units with one or more of the slave GPS receivers operating in locations in which at various times the signals from GPS satellites in certain sky locations are unavailable, weakened or corrupted by multipath at the one or more slave GPS receivers, the slave GPS receivers utilizing the tracking assistance information to acquire and track signals from the GPS satellites and produce timing signals that are tied to the timing of the codes in the tracked GPS satellite signals to control the timing of data collection by the digitizer units; and a data recording and control center for collecting and analyzing the data provided by the respective digitizer units.

[28] The seismic measurement system defined in claim 10 can be characterized by the following elements:

(1) digitizer units and associated geophones that collect seismic data;

(2) GPS receivers with substantial views of at least portions of the sky that provide tracking assistance information relating to GPS satellites in view;

(3) slave GPS receivers at the remaining locations of the digitizer units which use the tracking assistance to acquire signals from the GPS satellites and produce timing signals; and

(4) a data recording and control center for collecting and analyzing the data provided by the respective digitizer units.

[29] Claim 25 recites:

> A method for making seismic measurements, the method including The steps of: collecting data relating to seismic activities at a plurality locations; at one or more locations with substantial views of at least portions of the sky producing tracking assistance information relating to satellites in view and providing the tracking assistance information to the other locations; utilizing the tracking assistance information at restricted view locations in which at various times the signals from satellites in certain sky locations are unavailable, weakened or corrupted by multipath to acquire and track signals from the satellites and produce timing signals that are tied to the timing of the codes in the tracked satellites signals to control the timing of data collection by the digitizer units; collecting and analyzing the seismic activity data to produce seismic measurement data; and storing the seismic measurement data for processing to determine seismic activities at the locations.

[30] Claim 25 is characterized by the following steps:

(1) seismic data is collected at many locations;

(2) the locations which have a substantial view of at least a portion of the sky produce tracking assistance information relating to satellites in view and information to the other locations;

(3) the tracking assistance information is used at restricted view locations where the signals from satellites are unavailable, weakened or corrupted to acquire and track signals from the satellites and produces timing signals that are tied to the timing of the codes in the tracked satellites; and

(4) seismic data is collected and analyzed to produce the seismic measurement data and is stored for processing to determine seismic activity at the locations.

[31] We agree with the appellant that claims 10 and 25 do not include the concept of Novel Batch Processing, and hence the trial judge's conclusions in this regard do not apply to these claims. However, the appellant provides little guidance with respect to how claims 10 and 25 should be construed. The appellant's witnesses were led through the wording of these claims but offered little assistance as to their meaning. Indeed it appears that the parties did not dispute the actual construction of the terms within those claims. In our view a plain meaning reading of claims 10 and 25 leads to the conclusion that the inventive element of claims 10 and 25 is the

concept of "assisted GPS" in the context of seismic data acquisition. Dr. Pratap Misra was qualified to give expert opinion evidence in the area of GPS. He described assisted GPS (or AGPS). He said that AGPS is to assist a GPS receiver by relieving it of some of the tasks it normally must perform. He described Fenton's invention as a GPS-based seismic data collection system which provided three significant improvements over the normal GPS processing techniques. These three innovations were: (1) the implementation of an autonomous assisted GPS system at a seismic data collection site to generate and transmit the assistance data to the AGPS receivers located at each digitizer unit along a seismic survey cable to enable them to track GPS signals even when blocked by foliage; (2) development of an improved computational method for processing the satellite signal measurements collected over an extended period of time from the AGPS receivers at each digitizer unit to calculate the precise position of each AGPS receiver; and (3) leveraging the precise positions obtained in (2) of the AGPS receivers located at each digitizer unit to enable these receivers to provide precise timing synchronization for seismic data collection with the significantly reduced requirement of having to track only a single satellite at a time. So it is the combination of the assisted GPS and its application to the collection of seismic data that forms the subject matter of claims 10 and 25.

(b) Was Heidebrecht the inventor or co-inventor of claims 10 and 25?

[32] Heidebrecht must demonstrate clearly and convincingly that he: (1) had prior conception of the invention (i.e., the inventive concept of "assisted GPS" in claims 10 and 25); and (2) communicated this conception to NovAtel.

[33] The appellant submits that the following passages of the trial judgment demonstrate that Heidebrecht had prior conception of claims 10 and 25:

> I believe on June 18 Heidebrecht ... described the process of seismic acquisition generally: para. 85;
>
> He [Heidebrecht] described how the master GPS receiver located at the control house or "dog house" would supply tracking assistance information to the slave units: para. 26;
>
> I find also that Heidebrecht discussed the idea of having a GPS unit with a clear view of the sky in the doghouse and the possibility of it assisting the GPS units located in the field whose view of the sky might be obstructed: para. 85;

> I believe on June 18 Heidebrecht, for at least a good portion of the meeting, did lead the conversation and described the process of seismic acquisition generally and the accuracy requirements for timing ... In addition to talking about the timing problems,: para. 85.

[34] In our view, these passages demonstrate that Heidebrecht did indeed come up with the general idea of assisted GPS in the context of seismic data acquisition. In fact, the trial judge noted that Heidebrecht contemplated the possible utility of adapting the assisted GPS concept to seismic data acquisition as early as July 2002. However, the applicable law is clear that the suggestion of conception of an idea, rather than the means of accomplishing it, does not constitute joint or sole inventorship. The mere fact that one makes suggestions and gives assistance does not necessarily make him or her a sole or joint inventor: *Huck Manufacturing Company* at 407.

[35] The trial judge found that Heidebrecht had: "a notion that *assisted GPS* could be used in a seismic context using the same principles which are utilized in E911 but did not have a firm idea as to how it could be accomplished.": para. 81. The trial judge explicitly stated that: "at best, Heidebrecht had a vague idea of what he would like to accomplish but not a clear idea.": para. 94. In our view the trial judge's discussion of Heidebrecht's knowledge was not restricted to the concept of Novel Batch Processing. His reasons demonstrate that he was not satisfied that Heidebrecht had sufficient knowledge of assisted GPS to conceive the invention.

[36] In *Hess* at 981, the United States Court of Appeals cited with approval *O'Reilly v. Morse*, 56 U.S. (15 How.) 62, 111. 14 L. Ed. 601 (1853):

> No invention can possibly be made, consisting of a combination of different elements... *without a thorough knowledge of the properties of each of them, and the mode in which they operate on each other*. And it can make no difference, in this respect, whether [the inventor] derives his information from books, or from conversation with men skilled in the science. If it were otherwise, no patent, in which a combination of different elements is used, could ever be obtained. [emphasis added]

[37] Two of the four characteristics of claim 10 require the use of GPS. In fact, the use of GPS in the base receiver is what ensures the accurate collection of data in the control centre when exposure of the slave receivers placed on the digitizer units is obscured or weakened. Without the tracking assistance between the base GPS receivers and the GPS satellites, the slave GPS receivers would be unable to

provide accurate seismic date. Similarly, claim 25 incorporates tracking assistance technology and the use of satellite signals to control the timing of data collection by the digitizer units.

[38] The trial judge observed that: "At the time of the June 18, 2003 meeting at Aram's premises, none of the Aram personnel knew very much about GPS and whether it was feasible to use GPS from a commercial or a technical standpoint.": para. 23. The trial judge carefully considered Heidebrecht's testimony. Heidebrecht's knowledge was thoroughly tested during cross-examination. The trial judge concluded: "I am satisfied from all the evidence, including the evidence of Heidebrecht himself that he did not have a clear idea as to how GPS could be used in the acquisition of seismic data or the means of accomplishing it.": para. 92. The trial judge further stated: "I am satisfied that Heidebrecht did not possess a deep understanding of any of the five subject matters required to prepare a proposal for a GPS based seismic data collection system.": para. 97.

[39] The trial judge looked for evidence which would corroborate Heidebrecht's assertions. He found that most of the documents tendered by the appellant were not authored by Heidebrecht and, of the remaining documents, the trial judge said: "To say those documents reflect even a portion of an invention is more than a stretch.": para. 89. He looked for corroborating evidence in the testimony of Aram employees and found that it did "little more than establish that Heidebrecht had an idea [...]" para. 90. The trial judge was critical of the evidence of Aram's witnesses and noted that: "the answers tended to serve Aram's interests. Also the questions were extremely leading." para. 87. The trial judge noted that Heidebrecht took GPS 101 from Fenton in August 2003.

[40] The trial judge applied the correct legal principles with respect to the law of inventorship. He applied the correct standard of proof. His findings of fact are well grounded in the evidence and entitled to appellate deference. Even after construing the inventive elements of claims 10 and 25 independently, we conclude that the trial judge's findings of fact do not support the appellant's submissions. Heidebrecht did not have sufficient knowledge of GPS to have a definite and permanent idea for a complete and operative invention. Heidebrecht's idea of assisted GPS in the context of seismic data acquisition was not clearly enough defined so that he could

have reduced it to practice without extensive research or experimentation. The information Heidebrecht possessed did not rise to the level of conception.

[41] In this regard, the appellant also contended that the trial judge overstated and misapplied the burden on the appellant in saying that the appellant had to lead clear and convincing evidence of the facts of what each party contributed to the final invention. In our view the trial judge's reasons do not misinterpret or misapply the principle set out in *Garrett Corporation* at 880. His finding was that Heidebrecht made no significant contribution to what he found to be Fenton's invention. On his positive fact findings, this was not a borderline case.

[42] The appellant also submitted that the trial judge overstated and misapplied the burden on the appellant by suggesting that the appellant had to prove that he alone produced a complete and operative invention. We do not read the trial judge's reasons that way. The trial judge applied the definition of "conception" agreed to by the parties. It may be that two people can collaborate on the production of a complete and operative invention which then meets the definition of a conception which can, by application of available ordinary skill, then be reduced to practice. However, the trial judge found that Fenton's independent development of the invention was by itself capable of being reduced to practice by application of ordinary skill widely available as to seismic science. By comparison, Heidebrecht's idea was nothing but a notion, and Heidebrecht's own knowledge was nothing more than the ordinary skill available elsewhere. In other words, the trial judge found no collaboration on the "conception" by Heidebrecht and Fenton: see para. 103. His fact findings in this regard are not tainted by palpable and overriding error. We are not persuaded that he erred in his approach to how a conception may arise from joint work of more than one inventor.

[43] Our conclusions apply equally to the appellant's grounds of appeal relative to claim 1 of the Patent. Accordingly, the trial judge did not err in dismissing Aram's patent derivation claim.

B. Confidentiality and Non-Disclosure Agreement (NDA)

[44] The appellant also alleged that the respondents breached their common law duty of confidence and the terms of the NDA

executed at the June 18 Meeting. The trial judge correctly noted the three elements necessary to demonstrate a breach of confidence:

1. the disclosure of information having a quality of confidence about it;
2. the communication of the information in circumstances in which an obligation of confidence arose; and
3. the unauthorized use of the information by the confidee to the confidor's detriment.

(*Lac Minerals Ltd. v. International Corona Resources Ltd.*, [1989] 2 S.C.R. 574, 26 C.P.R. (3d) 97)

[45] The NDA defines confidential information as:

> "Confidential information" means any trade secrets, information and data of a confidential or proprietary nature (whether oral, in tangible form or observed) obtained by the Receiving Party from the Disclosing Party which (a) derives economic value, actual or potential, from not being generally known to or readily ascertainable by other persons who could obtain economic value from its disclosure or use and (b) is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.

[46] With respect to the first requirement, the trial judge found that the information communicated by Aram to NovAtel at the June 18 Meeting was easily ascertainable and had not been the subject of any effort on the part of Aram to maintain its secrecy. He noted that on the contrary, Heidebrecht had discussed his ideas with other GPS suppliers for the purpose of ascertaining whether a low cost receiver was available on the market.

[47] The appellant submits that the trial judge erred in concluding that the entirety of Heidebrecht's concepts had been publicly disclosed prior to the June 18 Meeting. Again, this is a finding of fact reviewable on the standard of palpable and overriding error. The appellant says that this finding of fact is not sustainable on the evidence. It further submits that even if Heidebrecht disclosed aspects of or even the entirety of his concept to other suppliers, those suppliers would have been under an implied duty of confidence not to disclose such information to the public. It suggests that a presumption of confidentiality arises in the circumstance. The appellant says it was not sufficient for the respondents to adduce evidence regarding the identity of those suppliers; the respondents ought to have called the suppliers as witnesses to testify as to whether their conversations with Heidebrecht were either expressly or impliedly subject to confidentiality.

[48] In our view, the trial judge committed no palpable and overriding error in determining that the information disclosed by Heidebrecht at the June 18 Meeting was not confidential. The trial judge's finding was well founded in the evidence, and in particular the cross-examination of Heidebrecht and an earlier cross-examination of Heidebrecht on an affidavit, where he acknowledged discussing his ideas with suppliers. Moreover, the E911 concept had been in the public domain since at least 2002 and the suggestion that it might be transferable to seismic data acquisition was simply an idea, which could not be cloaked with confidence.

[49] We find it unnecessary to determine whether there was any additional onus on the respondents to adduce evidence on the part of the suppliers, because the trial judge also found that the appellant had not established the third requirement necessary to found an action for breach of confidence. The trial judge found that Heidebrecht had authorized the use of the information that had been given at the June 18 Meeting.

[50] On July 14, 2003, Fenton told Heidebrecht that he had asked NovAtel's patent person to draft a provisional patent application. Heidebrecht apparently expressed some anger and informed Fenton that he or Aram would also be filing a patent. The trial judge found that "whatever conversation took place on July 14, Heidebrecht did not clearly or unequivocally tell Fenton that Fenton did not have the right to file for a patent.": para. 125. The trial judge also noted that the communications between the two after July 14 supported this finding. On July 17, 2003, Fenton sent his proposal to Heidebrecht for comments. The course of conduct which followed was described by the trial judge at paras. 126, 127 and 128:

> After Fenton confirmed in writing that it was his intention to pursue a patent forthwith, Heidebrecht had several options by which he could have registered his displeasure or protected his perceived rights. He could have replied to the effect that Aram claimed ownership of the idea or that Fenton had no right to pursue a patent. He could have broken off the relationship. He could have consulted his solicitor. Instead, he responded that the proposal looked good, made some changes to it and asked what was the next course of action.
>
> Fenton responded as one would expect. He replied that the parties needed to have a business discussion to define their relationship because it was going to require considerable investment to take this concept to production. If Heidebrecht was of the view that his idea had been misappropriated, his further response to Fenton is bizarre. He responded that Aram needed to know more about the technical side in order to get a better understanding of the scope

> of the task before Aram could discuss the commercial side. This could only have meant to Fenton that Aram was otherwise onside with what had been communicated to it by NovAtel.
>
> It is remarkable in the extreme that Heidebrecht, while complaining bitterly to Harmon that NovAtel was stealing his idea, continued to play along with Fenton as if it were business as usual.

[51] The trial judge's conclusion that there was no unauthorized use of the information is well supported by the evidence and the appellant has not appealed this finding. We are not persuaded that the trial judge erred in concluding that the respondents did not breach any duty of confidence which they owed to the appellant, either at common law or under the NDA.

C. Aram's Breach of Confidence and NDA

[52] The trial judge declared Aram and Heidebrecht to be in breach of confidence and in breach of the NDA. He found that Aram's Continuation in Part application filed with the USPTO on October 25, 2003 was based largely upon Fenton's proposal. He concluded at para. 134:

> I have found that despite being unhappy with NovAtel's expressed intention to file for a patent with respect to the Fenton proposal, Aram took no steps to convey to NovAtel Aram's perception that its confidential information was being misused. While Heidebrecht testified that he expressed disappointment and anger at this proposition during a phone call with Fenton, he did not follow up in any way in the face of Fenton's written confirmation that he intended to pursue a patent on behalf of NovAtel. Moreover, the very next day, Aram pursued with its patent people the filing of a Continuation In Part using the Fenton proposal. It did not tell NovAtel it was doing so. In the result, Aram did precisely what it says NovAtel should not have done. Furthermore, while NovAtel was totally up front with what it was doing, Aram was not. In my view, even had there been grounds to do so it would not be appropriate to exercise this Court's jurisdiction to grant an equitable remedy with respect to NovAtel's pursuit of its patent.

[53] Indeed, Harmon, an employee of Aram, acknowledged that he relied upon Fenton's proposal to draft Aram's Continuation in Part application without seeking the consent of NovAtel, notwithstanding the existence of the NDA and the notations on the Fenton proposal that it was the proprietary information of NovAtel.

[54] The counterclaim alleged not only that Aram's October 25, 2003 Continuation in Part was a breach of confidence, but also that Aram's subsequent Continuations, filed with the USPTO on October 2, 2006, April 16, 2007 and August 3, 2007 constituted breaches of confidence by using Fenton's proposal.

[55] The trial judge's conclusion with respect to the counterclaim is found at para. 155:

> I have found in favour of the Defendants and, having done so, I am not aware of any relief that the Defendants require. My findings are consistent with the state of affairs, as I understand it, in the U.S. and other patent jurisdictions. I do not believe the Defendants have suffered any loss. To the extent that my judgment might be found useful in other jurisdictions, I believe it speaks for itself and does not require any consequential declaration or order. Nevertheless, I am prepared to hear the Defendants further on this issue and invite counsel for the Defendants to speak to this issue further.

[56] After the judgment was issued, the parties appeared before the trial judge to settle the terms of the judgment roll. The judgment roll proposed by NovAtel and Fenton included a provision similar to that which appears in the final judgment roll at para. 6:

> ARAM Systems Ltd., Norman David Heidebrecht and Donald G. Chamberlain shall abandon the following applications and take all necessary steps to effect the withdrawal of claims contained thereunder, including filing an express abandonment in the United States Patent and Trademark Office for:
>
> (a) United States Continuation Patent Application 11/537,719 filed October 2, 2006,
>
> (b) United States Continuation Patent Application 11/787,333 filed April 16, 2007;
>
> (c) United States Continuation Patent Application 11/833,642 filed August 3, 2007; and
>
> (d) any other patent filing that includes subject matter disclosed in the patent and patent applications listed in paragraph 5 of this Judgment Roll.

[57] Aram expressed two concerns to the trial judge. Those concerns now form the basis of its grounds of appeal. First, Aram submitted that as the inventive element of the Fenton proposal was the Novel Batch Processing concept, and as Aram's Continuations In Part did not include Novel Batch Processing, Aram did not use Fenton's confidential information. The trial judge said: "But it seems to me that I have not gone so far as to say that the Fenton app — invention is restricted only to claim 1 in batch processing." We have also concluded that the trial judge's findings of fact regarding Heidebrecht's knowledge were not restricted to the concept of Novel Batch Processing. Accordingly, there is no merit to this ground of appeal.

[58] Aram's second submission to the trial judge was that the Continuation In Part and Continuations which were filed after the Patent could not be a misuse of confidential information, because

once the Patent was filed, the information was in the public domain. Aram's counsel also pointed out that when the trial judge addressed the counterclaim in his reasons, he did not consider that argument, nor make a finding that Aram had breached its duty of confidence in this regard. The trial judge was concerned. He said that he assumed no further findings were necessary because he recalled that NovAtel's evidence was to the effect that they had not suffered any damages. He invited counsel to make further submissions on the point and adjourned the hearing to enable them to secure a date for further argument. The record does not disclose any further submissions. Within a week, the final judgment roll was agreed to by counsel. The judgment roll states that NovAtel will not pursue any trial on damages. It also stays para. 6 of the judgment roll, pending an appeal, further order of the Court of Queen's Bench or agreement between the parties.

[59] The appellant now asks us to determine the issue which the trial judge offered to decide and which the appellant declined to pursue. The appellant cites no authority in support of its submissions. In any event, it seems to us that the trial judge's finding that the appellant used the Fenton proposal for the purpose of filing its 2003 Continuation In Part is dispositive of the matter. As the respondents submit, regardless of when the Patent was made public, the fact remains that the appellant relied on and used proprietary information of NovAtel for the initial filing. Once a patent application is filed and eventually made public, the patent serves to protect the invention and give the patent holder an exclusive monopoly. The "confidential information" while made "public" is still subject to the protection afforded under the patent legislation. It seems to us that the patent process ought not to protect the appellant's actions in using confidential information, merely because at a later date the patent is published and the information made available to the public.

[60] Moreover, the Continuations referred to para. 6 of the judgment roll were filed to enable Heidebrecht to be included as an inventor or joint inventor in the event of a favourable outcome in the litigation. The remedy contemplated by para. 6 flows from the trial judge's findings. Given our decision to dismiss the appeal, we see no reason to interfere with the remedy.

VII. Conclusion

[61] Although the trial judge erred in not interpreting claims 10 and 25 of the Patent, even when those claims are construed, the trial judge's findings of fact solidly support the conclusion that Heidebrecht was neither the inventor, nor co-inventor of the invention. The appellant has not demonstrated any palpable or overriding error in those findings of fact. The trial judge's findings that the respondents did not breach their duty of confidence, but that the appellant did, is similarly entitled to appellate deference. We dismiss the appeal on all grounds.

Appeal dismissed.