IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Petition by Zetec, Inc. for *Inter Parties* Review of U.S. Patent no. 6,823,269

DECLARATION OF GREG COLVIN

I, GREG COLVIN , hereby declare that:

1. I am currently employed as director of OEM Solutions at Zonar Systems. Zonar Systems provides systems and software for commercial vehicle tracking. I was previously Vice President of Engineering at Zonar Systems, responsible for engineering and development of hardware and software products.

2. Prior to my employment at Zonar Systems, I had been employed in various capacities at Zetec, Inc. My positions at Zetec were: Engineering Program Manager (2005-2007), Software Development Supervisor/Engineer (1994-2004); Product Application Specialist (1992-1994); and Field Service Technician (1990-1992).

3. Throughout my employment at Zetec, I was involved in the design, testing and implementation of eddy current testing products. This work included software design and implementation on Zetec's EddyNet software.

4. I collected and analyzed eddy current data at customer sites including data from steam tubes on nuclear power generation facilities.

5. I am familiar with the process known as signal injection and personally performed that process to combine eddy current data from more than one source, prior to the filing date of the '269 Patent. The process of signal injection was well known not only within Zetec but in the non-destructive examination industry at that time.

6. EddyNet was used to acquire and analyze data from eddy current probes. EddyNet is mentioned in US Patent 6,823,269 (the "'269 Patent") as an eddy current acquisition, analysis and database management tool.

7. I have been asked by counsel for Zetec, Inc. to give my expert opinion as one of ordinary skill in the art regarding the validity of claims in the '269 Patent. I consider one of ordinary skill in the art of the '269 patent at the time that it was filed to be someone who has at least ten years of relevant experience in eddy current testing, or someone with an electrical engineering degree, and at least five years of experience in eddy current testing.

8. In forming my opinion, I have relied on my prior experience as one of ordinary skill in the art as well as the following documents: the '269 Patent, the report by Sean Sullivan titled "Guidelines for Qualifying Eddy Current Technology for CANDU Steam Generator Tube Inspection COG-98-371-1" (Ex. 1105, "Sullivan"); U.S. Patent 5,194,149 (Ex. 1106, "Holt"); U.S. Patent 4,763,274 (Ex. 1108, "Junker '274"); European Patent Office patent no EP 0 990 897 (Ex. 1109, "Winslow"); and the claim construction chart attached hereto as Exhibit A to the Declaration of Greg Colvin.

9. I understand that a claim is invalid if it is anticipated or obvious. I understand that anticipation of a claim requires that every element of a claim is disclosed expressly or inherently in a single prior art reference, arranged as in the claim. I further understand that obviousness of a claim requires that the claim be obvious from the perspective of a person of ordinary skill in the relevant art, at the time the invention was made. In analyzing obviousness, I understand that it is important to understand the scope of the claims, the level of skill in the relevant art, the scope and content of the prior art, the differences between the prior art and the claims, and any secondary considerations. I also understand that a claim of a patent is obvious if it is directed to a

structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, and the combination yields only a predictable result, unless other evidence shows that the claim would not have been obvious.

10. I understand that claims in an *inter partes* review are given their broadest reasonable interpretation that is consistent with the patent specification.

11. I also understand that the earliest patent application filing leading to the ’269 Patent was made on April 12, 2002. I have therefore analyzed obviousness as of that day or somewhat before, understanding that as time passes, the knowledge of a person of ordinary skill in the art will increase. I understand that the owner of the ‘269 Patent (Westinghouse) might try to prove an earlier date of invention. If this occurs, I reserve the right to revise my opinion.

12. In forming my opinion, I have relied on the patent claims and disclosure, the prior art exhibits to the Petition for *inter partes* review, and my own experience and expertise of the knowledge of the person of ordinary skill in the relevant art in the relevant timeframe.

Claim 1 of the ‘269 Patent Is Anticipated by Sullivan, Ex. 1105

13. I have studied Claim 1 of the ‘269 patent and I believe it is invalid because all of the elements are disclosed in Sullivan as I describe below in detail and therefore, Claim 1 is anticipated by Sullivan.

14. Claim 1 states: “A method of synthesizing nondestructive examination data to be used for training data analysts and/or testing inspection techniques comprising the steps of . . . .” Sullivan describes guidelines for qualifying eddy current techniques, which would be “testing

inspection techniques" and in Section 4.5 describes the process of "signal injection." As described in Sullivan, "signal injection" was a process for synthesizing nondestructive eddy current examination data.

15. Claim 1 further states: "generating data collected at a field site of a component from non-destructive examination of the component, which data collected at the field site includes noise. . ." In the context of the '269 Patent, I would have understood "field site" to be a location remote from the laboratory site where a specimen was prepared. Sullivan describes in Section 4.5 "a data file generated from a scan of an in-service tube." I understand this description in Sullivan to be an eddy current scan of a tube from a field site and that the scan of such an in-service tube would have included noise. This understanding is supported by the statement in Sullivan Section 4.5: "This method can be used to simulate the distortion of flaw signals by the background noise encountered in scans of the in-service SG tubes."

16. Claim 1 further states: "creating a specimen that simulates the component undergoing non-destructive examination with a selected flaw. . . ." Sullivan describes in several places the creation of a specimen that simulates a flaw in a steam generator tube. These include the following quotes: Section 4.3, first line: "tubes with laboratory-prepared flaws are considered to be acceptable in qualifying eddy current techniques . . . ." On the same page, three lines from the bottom, Sullivan states: "laboratory-prepared samples should be scanned with the eddy current techniques with flaw detection . . . ." In section 4.4, line 2. Sullivan states: "the flaws may be laboratory-induced." In Section 3.2, lines 5-7. Sullivan states: "[The] flaw size detection requirement . . . should be established through . . . mock-ups that simulate the process of defect formation . . . and tube failures." Lastly, in Section 3.4.1, last paragraph, Sullivan states: "Laboratory methods have been developed that can induce real fatigue cracks and SCC [stress

corrosion cracks] in SG [steam generator] tubes." Thus, the statement "creating a specimen that simulates the component undergoing non-destructive examination with a selected flaw" is disclosed in Sullivan, and when Sullivan states "selecting a certain portion of a data file with a flaw signal in it" in Section 4.5 one of ordinary skill in the art would have understood that to mean a flaw signal from a prepared specimen as disclosed in the sections quoted above. This understanding is supported by the fact that Paragraph 4.5 is directed to simulating the distortion of flaw signals by background noise encountered in an in-service tube. If one is combining a signal from an in-service tube that has noise to create such a signal, then the specimen would logically be from a tube that does not have noise, like the laboratory-prepared samples or from a computer model of a clean flaw signal.

17. Claim 1 further states: "generating nondestructive examination data at a laboratory site, remote from the field site, from the specimen of the component undergoing non-destructive examination . . . ." As described in the preceding paragraph, Sullivan discloses the laboratory preparation of a specimen tube with a flaw in it. Sullivan in Section 4.5 also states: "selecting a certain portion of a data file with a flaw signal in it." One of ordinary skill in the art would have known that when Sullivan refers to the "data file with a flaw signal in it" that is a data file generated from the laboratory-prepared flaw and the most logical place where that data file would be generated is wherever the laboratory prepared flaw was made, and that this is where one would have assumed Sullivan meant that the signal was prepared. This is especially so because Sullivan also describes generation of computer modeled flaws in Section 4.6 and it would not have been likely that such models would have been generated at the field site.

18. Claim 1 further states: "combining at least some of the nondestructive examination data collected at the field site with at least some of the nondestructive examination data collected

at the laboratory site. . . .” Sullivan in Section 4.5 describes this very process. He states: “selecting a certain portion of a data file with a flaw signal in it . . . and adding the result to appropriate sections of a data file generated from a scan of an in-service tube.” As I describe above, the data file with a flaw in it is one prepared and collected at the laboratory site remote from the field site and this is combined with the data file collected at the field site.

19. Lastly, Claim 1 states: “to establish a combined data train that reflects the nondestructive examination response to the selected flaw in a background representative of data collected at the field site.” This is precisely what Sullivan is describing in Section 4.5 and is stated as: “This method can be used to simulate the distortion of flaw signals by the background noise encountered in scans of the in-service SG tubes.”

20. For the reasons stated above, I conclude that all of the elements of Claim 1 of the ‘269 Patent are disclosed in Sullivan and that Claim 1 is invalid as anticipated by Sullivan.

Claim 1 of the ‘269 Patent is Obvious in View of Holt (Ex. 1106) and Junker ‘274 (Ex. 1108)

21. In addition to the reasons stated regarding Sullivan, I also believe Claim 1 is invalid because it is obvious in view of Holt and in further view of Junker ‘274.

22. Claim 1 states: “A method of synthesizing nondestructive examination data to be used for training data analysts and/or testing inspection techniques comprising the steps of . . .” The Abstract of Holt describes an inspection technique that is “a method for deriving an eddy current signature of a flaw in a tube proximate a contiguous member which is obscured in the composite signature of the flaw and contiguous member by subtracting from the composite signature a

reference eddy current signature generated by a facsimile of the tube and the contiguous member." This procedure describes a synthesis of nondestructive examination data for inspection of steam generator tubes. Holt addresses the problem of finding a flaw in a steam generator tube when the flaw is located at a place in the tube that is near a support structure holding the tube. The support structure affects the eddy current signature and can obscure the flaw. Holt solves this by preparing a reference signal from a known undamaged tube with the same support material adjacent and subtracting the reference signal from a scan of an in-service tube near a support structure. The premise is that the effect of the support structure will be cancelled out leaving any information not common to both the reference tube and the in-service tube. This would theoretically include any flaws in the in-service tube and any noise that is not common to both signals, which is likely to be present because many forms of background noise are random and would not be common to both the reference and the in-service tube signals. One such source of noise noted by Holt is wobble of the eddy current probe (Ex. 1106, col. 3 lines 21-25).

23. Claim 1 further states: "generating data collected at a field site of a component from non-destructive examination of the component, which data collected at the field site includes noise. . ." Holt discusses the generation of eddy current data collected from an in-service steam generator tube at a field site (Ex. 1106, col. 4, lines 20-25). Holt further describes that the scan of the in-service tube includes noise in the form of interference from support structures (Ex. 1106, col. 3, lines 33-35).

24. Claim 1 further states: "creating a specimen that simulates the component undergoing non-destructive examination with a selected flaw. . . ." Holt discusses the generation of a reference eddy current signal by scanning a reference or facsimile tube having a support plate

member (Ex. 1106, col. 3, lines 62-67). Holt does not specifically discuss that a specimen is created having a flaw, but Junker '274 discusses scanning a laboratory-prepared specimen tube with a flaw for the purpose of detecting a flaw in a component undergoing non-destructive examination. "The test section is provided with standard flaws in the form of 20%, 40%, 60% and 100% through-wall holes of specified diameter . . . ." (Ex. 1108, col. 6, lines 4-10). Junker '274 shows a technique of using a prepared flaw specimen to generate a reference signal to enhance the recognition of a flaw in the tube undergoing test in the field. It would have been obvious for a person of ordinary skill to combine the creation of a prepared flaw specimen in Junker '274 with the system of Holt, as both are directed to recognizing a flaw in an in-service tube and the use of a prepared specimen for the same purpose as in Claim 1.

25. Claim 1 further states: "generating nondestructive examination data at a laboratory site, remote from the field site, from the specimen of the component undergoing non-destructive examination . . . ." Holt also shows the reference data may be taken from a site remote from the in-service tube. "The reference tube and contiguous member may be adjacent to or remote from the service tube and contiguous member" (Ex. 1106, col. 4, lines 9-12).

26. Claim 1 further states: "combining at least some of the nondestructive examination data collected at the field site with at least some of the nondestructive examination data collected at the laboratory site. . . ." Holt describes that the "reference scan" is subtracted from the in-service scan to produce a flaw signal (Ex. 1106, col. 5, lines. 1-2). This is also described in Holt in Figure 3, blocks 34, 36 and column 4, lines 28-47. My understanding of the term "combine" in the context of data is to unite more than one piece of data into a single number or expression. By subtracting the reference scan from the service scan, Holt combines two signals. Junker '274 also describes "combining" of two eddy current data signals, by mixing two signals acquired at

different frequencies: “Frequency mixing is a means of cancelling or suppressing one of two superimposed signatures which have been produced at the same tube location. In eddy current inspection, the specific application of mixing is to “cancel” the tube support plate signatures and, thus, expose any superimposed tube defect signatures” (Ex. 1108, col. 12, lines 3-9).

27. Lastly, Claim 1 states: “to establish a combined data train that reflects the nondestructive examination response to the selected flaw in a background representative of data collected at the field site.” The combined data train in Holt subtracts out the support member but the resulting data train in Holt would still contain a background representative of data collected at the field site, since only the support member signature is subtracted out while other noise on the signal would still be there, e.g. wobble as described in Junker ‘274 (Ex. 1108, col. 3, lines 21-25). While Holt did not produce the combined data stream from a prepared specimen having a flaw and a remotely located field tube, Junker does show this (Ex. 1108, col. 6, lines 4-10), but just does not show that the prepared specimen and the field tube data are collected at different locations. I believe that it would have been obvious to one of skill in the art to combine the teachings of Holt and Junker ‘274 to produce a simulated flaw in the context of background noise for the purpose of creating a consistent or standardized flaw signature in a background of the numerous variations in eddy current signals that can obscure a flaw, including discontinuities, and wobble on the probe. The purpose of creating such a standardized flaw would have been to test technicians or to test the automated flaw detection system disclosed in Junker ‘274 with a standardized flaw signal in the presence of real-world noise.

28. For the reasons stated above, I conclude that Claim 1 is invalid because it would have been obvious at the time of the filing of the ‘269 Patent in view of the combination of Holt and Junker.

Claims 2-10 of the ‘269 Patent

29. As a general matter, Claims 2 -10 do not add anything to Claim 1 that would not have been obvious to one of skill in the art at the time the ‘269 Patent was filed. Claims 2-4 discuss various basic calibration steps that would have been standard procedure for anyone operating an eddy current probe at the time of the ‘269 Patent filing. Claims 5-8 discuss how the data is collected and, again, these steps would have been standard procedure or obvious variations at the time of the ‘269 Patent filing. Claim 9 says that only a segment of the data is used, which again is obvious to one skilled in the art for at least the reason that typical data files cover hundreds of feet of tubes and the areas of interest are usually only portions of the file. Claim 10 discusses the use of a mathematical model instead of a sample of an actual specimen and mathematical models of eddy current responses were used and well known by practitioners of ordinary skill in the art at the time the ‘269 Patent was filed.

30. **Claim 2** states: “separately calibrating the data collected at the field site and the data collected at the laboratory site so that the data collected at the field site and the data collected at the laboratory site have the same relative signal strengths corresponding to a first flaw.” I understand the term “signal strengths” to mean signal amplitude. Sullivan, Section 4.6 discusses normalizing real and simulated signals to a common calibration flaw. Normalizing is understood by one of skill in the art to be adjusting signals to a common standard. It is well known in the field of eddy current testing that the term normalize implies adjusting or calibrating a signal based on signal strength or phase since each of these factors correspond to the ability to detect a flaw in the material under inspection. The use of calibration standard flaws was well known and

is mentioned, for example, as stated above by Sullivan. It would have been not only obvious, but necessary, to calibrate both the lab specimen data and the field acquired data to some standard so that the combined data stream actually reflected a simulated flaw in background noise. If the two signals were not calibrated, the prepared flaw could appear larger or smaller than it actually was and the combined data would not serve its intended purpose.

31. In addition to Sullivan's recognition of the need to normalize (i.e. calibrate) simulated and real signals to be combined, Junker '274 also recognizes this in the statement that the system should be recalibrated each time a probe is changed (Ex. 1108, col. 6, lines 10-12). Claim 1 does not state whether the same probe or two different probes are used, but I presume that two different probes could be used and as such, Junker '274 demonstrates that each signal should be calibrated to a common "standard" flaw. One of skill in the art would recognize that such a calibration would be as to amplitude and phase. For these reasons and those stated in the preceding paragraph, I conclude that Claim 2 is invalid as obvious.

32. **Claim 3** states: "The method of claim 2 wherein the first flaw is provided by a calibration standard." The use of calibration standard flaws was well known at the time the '269 Patent was filed and, for example, is described in Junker '274 (Ex. 1108, col. 6, lines 1-15): "In order to calibrate the system a test section of tube . . . is provided with standard flaws." I conclude that Claim 3 is invalid because it would have been obvious in light of well-known practice at the time of filing of the '269 Patent and also in light of the quoted specific example in Junker '274.

33. **Claim 4** states: "separately calibrating the data collected at the field site and the data collected at the laboratory site so that the data collected at the field site and the data collected at the laboratory site have the same relative signal orientation." I refer to my comments above

regarding calibrating both signals as to signal amplitude. It is equally important to calibrate eddy current signals in phase, again, because phase is critical to whether the signal is shows evidence of a flaw. A specific example of an eddy current patent that discusses this is Winslow, which states: "pipeline analysis relies on relative changes in phase and amplitude values to indicate a change in pipeline wall thickness" (Ex. 1109, p. 10, paragraph 60). The need to align phase in two separately acquired signals is also discussed in Holt, which discusses eddy current signals recorded on magnetic tapes and that "the tapes are played back in synchronism and phase" (Ex. 1106, col. 5, lines 18-19). I conclude that Claim 4 is invalid because it would have been obvious in light of well-known practice at the time of filing of the '269 Patent and also in light of the quoted specific examples in Winslow and Holt.

34. **Claim 5** states: "the data collected at the field site is collected from the step of operating a first eddy current detector and the data collected at the laboratory site is collected from the step of operating a second eddy current detector." This claim states an obvious practice both to one of skill in the art and even based on common sense. There are many reasons why a technician would not use the same probe: convenience, time-saving, and the fact that one of the two probes may become destroyed or otherwise unusable after the first test. Another example is that a data set for a laboratory-prepared sample flaw would be used and reused many times like a physical standard and the same file would be combined with noise from a variety of field sites to prepare simulated flaws in the noise associated with each site. In that case, it would be more likely than not that the data acquired at the field site would be from a different probe than the data acquired from the laboratory prepared specimen flaw. The use of more than one probe to acquire data even for a single inspection is discussed in Junker '274, which states that the system must be recalibrated "each time the probe is changed . . . and periodically during inspection."

(Ex. 1108, col. 6, lines 10-12). I conclude that Claim 5 would is invalid because it have been obvious in light of well-known practice at the time of filing of the ‘269 Patent and also in light of the quoted specific example in Junker ‘274.

35. **Claim 6** states “the method of claim 5, wherein the first and second detectors are the same type of detector.” The use of the same type of detector, is an obvious limitation.

36. A stated purpose of Claim 1 is to train technicians to recognize flaws in test signals by combining signals into a single data stream. It would have been practical to have signals from the same type of detector if the goal was to simulate what a flaw signal looked like in the context of background noise. Different types of detectors would have different responses to field-acquired noise and to the laboratory prepared flaw, so a combined signal would less realistic as coming from a single source if two different detector types were used. Junker ‘274 states that recalibration is necessary each time a probe (detector) is changed (Ex. 1108, col. 6, lines 10-12). This demonstrates either that a) more than one type of detector is used in the same inspection, in which case recalibration would be necessary, or b) that, even if two of the same types of detector are used, the response of those detectors can be sufficiently different to require recalibration, in which case, as stated above, one skilled in the art who is trying to simulate the response to a flaw in noise, would preferably do so with the same type of eddy current detector to achieve the most realistic response. For these reasons, I conclude that Claim 6 is invalid because it would have been obvious in light of Junker ‘274 and as a practical matter to one of ordinary skill in the art at the time the ‘269 patent was filed.

37. **Claim 7** states: “the method of claim 6 wherein the first and second detectors are operated at substantially the same inspection frequencies.” This would have been not only obvious but necessary at the time of the filing of the ‘269 Patent because the responses to the

materials under inspection (lab specimen and field tubes) would be different at different frequencies. The stated purpose of Claim 1 is to simulate a response to the laboratory-prepared flaw in a background representative of data collected at a field site. One of skill in the art would use the same inspection frequencies because the whole point is to accurately simulate a single response. Having two signals acquired at different frequencies would not accurately simulate a realistic response. Holt demonstrates this issue: "these tapes [of two different eddy current signals that are combined] are then played back in synchronism and phase" (Ex. 1106, col. 5, lines 17-18). It would not be possible to do this if the data on the two tapes were acquired at two different frequencies. In addition, combining data acquired at different frequencies could result in cancelling out information as described in Junker'274 (Ex. 1108, col. 12, lines 2-9). "Frequency mixing is a means of cancelling or suppressing one of two superimposed signatures which have been produced at the same location. In eddy current inspection, the specific application of mixing is to 'cancel' the tube support plate signatures and, thus, expose any superimposed tube defect signatures." I conclude that Claim 7 would have been obvious in light of well-known practice at the time of filing of the '269 Patent and also in light of either Holt or Junker '274.

38. **Claim 8** states: "The method of claim 6 wherein the first and second detectors are operated at substantially the same data collection rates." The need for collection data rates to be the same is an obvious limitation in view of the stated purpose of the invention to create combined data signal for training purposes. The combined signal would not serve its intended purpose if the data rates were different for the in-service specimen and the lab specimen because the signal having two different data rates would not correctly show what an actual flaw would look like in an in-service specimen. In addition, Holt discloses field and lab data collection at

the same data collection rates "preferably the scans [of eddy current tube data] are made at identical speeds." (Ex. 1106, col. 5, lines 17-18). Holt also states "these tapes [of two different eddy current signals that are combined] are then played back in synchronism and phase" (Ex. 1106, col. 5, lines 17-18). It would not be possible to play back the tapes in synchronism and phase if they were made at two different data collection rates. I conclude that Claim 8 is invalid because it would have been obvious in light of well-known practice at the time of filing of the '269 Patent and also in light of Holt.

39. **Claim 9** states "The method of claim 1 wherein only a segment of data collected at one of either the field site or the laboratory site is combined with data collected at the other of either the field site or the laboratory site." The use of only a segment of data in any analysis is well-known in many fields including non-destructive testing with eddy current probes. Sullivan discusses adding "portions of a data file with a flaw signal in it . . . to appropriate sections of data file generated from a scan of an in-service tube" (Ex. 1105, p. 14, section 4.5). Thus, Sullivan discloses that "only a segment of the data collected at . . . the laboratory site is combined with data collected at the . . . field site." I conclude that Claim 9 is invalid as anticipated by Sullivan.

40. In addition to the disclosure of the use of only portions of a data file in Sullivan, use of only a segment of data is also disclosed in Junker '274, which discusses operating on "segments of elongated signatures" in eddy current data streams (Ex. 1108, col. 3, lines 42-46). Therefore, I conclude that Claim 9 is also invalid as obvious over Junker '274.

41. **Claim 10** states "the method of claim 1 wherein the specimen is a mathematical model and the data generated from the specimen is generated by the mathematical model." The use of computer models to simulate eddy current response was well known by those of skill in the art at the time of the filing of the '269 Patent. For example, Sullivan discloses that computer

modeling can be used "to accurately simulate probe responses to flaws equivalent to those found in in-service tubes." (Section 4.6, first bullet point.) The same Section, also suggests normalizing "both real and simulated signals . . . to a common calibration flaw." It would have been obvious to combine the signal injection teaching of Sullivan disclosed in Section 4.5 with the computer modeling teaching in Section 4.6 as a means for creating consistent flaw sample data without having to resort to preparing physical samples. In addition, Sullivan assumes that the use of computer modeling does not have to be based solely on computer modeling ("both real and simulated signals") and therefore presumes that background noise can be added from a non-simulated source, the most likely source of which would have been from field data of an in-service tube. In the alternative, Sullivan states that noise can also be modeled along with the flaw: "if the technique qualification is based only on computer modeling, the modeling codes must be able to accurately simulate the background noise." (Section 4.6). I conclude that Claim 10 is invalid because it would have been obvious in light of Sullivan and well-known practice at the time of filing of the '269 Patent and also in light of Section 4.6 of Sullivan.

42. In addition to the disclosure of the use of models in Sullivan, Winslow also discloses the use of a mathematical model: "a theoretical calibration value and a theoretical nominal value may be calculated using the standard eddy current equations and assumed conductivity and permeability values" (Ex. 1109, p.15, paragraph 103). Thus, I further conclude that Claim 10 is invalid as obvious over Holt in view of Junker '274 and further in view of the disclosure of the use of mathematical models in Winslow as all three references are directed to detection of flaws with non-destructive testing means.

43. I further declare that all statements made herein of my own knowledge are true, and that all statements made on information and belief are believed to be true; and further that these

statements were made with the knowledge that willful false statements and the like so made are punishable by fine and/or imprisonment under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing therefrom.

Date: 11/19/2014

Greg Colvin

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Petition by Zetec, Inc. for *Inter Parties* Review of U.S. Patent no. 6,823,269

EXHIBIT A TO DECLARATION OF GREG COLVIN

Claim term	Construction	Basis for Construction
field site (claim 1)	a location remote from a laboratory site	'269 patent: 2:11-30, file history of '269 patent
laboratory site (claim 1)	a location remote from the field site	'269 patent: 2:58-61, file history of '269 patent
noise (claim 1)	an unwanted signal or disturbance	Merriam Webster, Online Dictionary, definition 1(c) Ex. 1110
combining (claim 1)	uniting into a single number or expression	Merriam-Webster, Online Dictionary, definition 1(c) Ex. 1111, '269 patent (abstract)
signal strength (claim 2)	signal amplitude	agreed by patentee in W.D.Pa. case
calibration standard (claim 3)	a specimen created in accordance with a standard code, such as the ASME code	agreed by patentee in W.D. Pa. case
orientation / signal orientation (claim 4)	phase or rotation / signal phase or rotation	agreed by patentee in W.D. Pa. case
mathematical model (claim 10)	a symbolic model whose properties are expressed in mathematical symbols and relationships	Agreed by patentee in W.D. Pa. case