

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

QUEST INTEGRITY USA, LLC,)
)
 Plaintiff,)
)
 v.) Civ. No. 14-1482-SLR
)
 CLEAN HARBORS INDUSTRIAL)
 SERVICES, INC.,)
)
 Defendant.)

QUEST INTEGRITY USA, LLC,)
)
 Plaintiff,)
)
 v.) Civ. No. 14-1483-SLR
)
 COKEBUSTERS USA INC.,)
)
 Defendant.)

MEMORANDUM ORDER

At Wilmington this ~~13th~~ day of June, 2015, having reviewed the pending motions for a preliminary injunction filed by plaintiff Quest Integrity USA, LLC (“Quest”) in the above captioned litigation, as well as the papers filed in connection therewith, and having heard oral argument on the same;

IT IS ORDERED that the motions (D.I. 7)¹ are denied, for the reasons that follow:

1. **Procedural background.** Quest initiated the above law suits on December

¹If the docket item numbers differ as between the two cases, the court will so note.

15, 2014, by filing complaints against Clean Harbors Industrial Services, Inc. (“Clean Harbors”) and Cokebusters USA Inc. (“Cokebusters”) (collectively, “defendants”)² asserting infringement of U.S. Patent No. 7,542,874 (“the ‘874 patent”), entitled “2D and 3D Display System and Method for Furnace Tube Inspection.” (D.I. 1, Ex. A) Quest seeks a preliminary injunction against the defendants, asserting that they have begun to use infringing furnace tube inspection systems. Defendants oppose the relief, arguing that they do not infringe and that the ‘874 patent is invalid.

2. Plaintiff Quest is a limited liability company organized and existing under the laws of the State of Texas and having its principal place of business in Kent, Washington. Defendant Clean Harbors is a corporation organized and existing under the laws of the State of Delaware and having its principal place of business in Norwell, Massachusetts. Defendant Cokebusters is a corporation organized and existing under the laws of the State of Delaware and having its principal place of business in Houston, Texas. The court has original subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a). Venue is proper in the District of Delaware pursuant to 28 U.S.C. §§ 1391(b)-(c) and 1400(b).

3. **Factual background.** In order to convert highly flammable raw petroleum into useful products such as jet fuel and diesel oil, refineries heat process fluids using “furnaces” comprised of a heat source surrounded by serpentine furnace tubing. Because furnace tubes operate under extreme pressure in close proximity with highly flammable petroleum products, an undetected loss of furnace tube integrity can lead to

²Quest also filed a complaint against A. Hak Industrial Services US LLC, Civ. No. 14-1481, but that suit has since been voluntarily dismissed. (D.I. 24)

“hazardous health and catastrophic safety conditions, including fire and explosion.”

(D.I. 8 at 2)

4. To manage such operational risks, refineries periodically shut down for “planned turnarounds” to perform inspections and maintenance. During planned turnarounds, refineries typically: (a) clean furnace tubes; (b) inspect furnace tubes to detect loss of integrity; and (c) fix damaged furnace tubes identified during the inspection. Defendants have traditionally performed the first of the above steps, cleaning furnace tubes to remove residual coke. Quest’s work traditionally has followed “de-coking” companies, performing the second step with its FTIS™ furnace tube inspection system.³ Refineries would then use Quest’s inspection data to complete the final step. (*Id.*) Not surprisingly, a refinery that is shut down is not making money; therefore, a system that improves the efficiency of the periodic inspections and maintenance would be valuable.

5. **Prior art technology.** The prior state of furnace tube inspection system art includes external furnace tube inspection, which involves random spot check measurements of furnace tube wall thickness and a visual search for exterior tube damage. “This approach is slow and inaccurate, leaving many flaws undetected, especially for inaccessible tubes.” (D.I. 8 at 3) The next advance in the industry came in the 1990s and involved the use of “internal ultrasonic inspection ‘pigs’”⁴ which “were

³“FTIS” stands for Furnace Tube Inspection Services.

⁴According to the declaration of Richard Roberts, the Vice President and General Manager of Quest, the word “pig” as used in the oil refinery industry may be related to “a squealing noise made by the earliest devices while traveling through the pipe; alternately, it has also been [an] acronym derived from the initial letters of the term

capable of gathering improved data over manual inspection, but they remained an inaccurate and time consuming option.” (D.I. 11, ¶ 18) More specifically, the inspection tool collected inspection data at pre-determined time intervals as it progressed through the furnace. The collected inspection data was extracted and the various readings were converted to “calibrated engineering units” which were then examined by an engineer “in order to identify thinning, bulging and other flaws within the furnace.” (‘874 patent, col. 1:53-64) As further described by the inventors of the ‘874 patent,

[o]ne problem with the furnace tube inspection systems of the prior art is that it is difficult to correlate the inspection data collected from the furnace with the physical geometry of the furnace. This is due to the fact[, *inter alia*,] that the inspection tool does not progress through the furnace at a constant rate. . . . All of these conditions generate a correlation (i.e., mapping or scaling) problem between the collected inspection data and the precise location of the inspection tool with respect to the physical geometry of the furnace. . . .

Another problem with the furnace tube inspection systems of the prior art is that the inspection data is not displayed in a manner that readily “announces” problem areas within the furnace. Conventionally, the inspection data has been presented in a one-dimensional tabular format, which is deficient in that an engineer must peruse each line of data to determine if a potential problem has arisen. It can be appreciated that this method of examining the inspection data is time-consuming, inefficient, and does not readily permit a comparison between one section of tubing and another.

(*Id.* at col. 1:65-col. 2:29) As a result of these inefficiencies, “most large refineries found inspection pigs unreliable and continued using external furnace tube inspections.”

(D.I. 8 at 4)

6. **‘874 patent.** As explained in the specification, in order to solve the correlation problem, the system of the ‘874 patent includes a computer “that may be

‘Pipeline Inspection Gauge’ or ‘Pipeline Intervention Gadget.’” (D.I. 11 at 4 n.1)

programmed to generate a plurality of data markers in relation to the inspection data, wherein each of the data markers identifies a location of a physical feature of the furnace (such as a bend, an external raised surface, cross-over piping, a thermal well, a weld, a flange, a schedule change and/or a diameter change).” ('874 patent, col. 2:59-65) “The computer is also programmed to partition the inspection data at the data markers so as to correlate the inspection data to the appropriate tube segments of the furnace.” (*Id.* at col. 3:21-23)

7. In order to solve the “reporting” problem, “[p]referably, the computer is further programmed to generate a display of the partitioned inspection data, wherein the display is a two-dimensional or three-dimensional representation of one or more of the tube segments of the furnace.” (*Id.* at col. 3:23-27) “The display may be used to visually detect problem areas within the furnace so that the appropriate tube segments may be repaired or replaced by the plant maintenance personnel.” (*Id.* at col. 3:27-30)

8. It is important to note that figure 10A specifically forecasts the fact that there are two primary embodiments captured by the claims⁵ of the '874 patent, the “semi-

⁵Independent claim 1 and dependent claim 3 are representative of such:

1. A system for displaying inspection data collected from a furnace with a specified physical geometry, wherein said furnace comprises a plurality of tube segments interconnected by a plurality of bends so as to allow stacking of at least a portion of said tube segments, said system comprising:
 - a storage device for storing said inspection data; and
 - a computer programmed to:
 - partition said inspection data at a plurality of data markers each of which identifies a location of a physical feature of said furnace so as to correlate said inspection data to said physical physical geometry of said furnace;
 - generate a display of at least a portion of said partitioned inspection

automatic” and the “automatic” embodiments. In the former (disclosed in examples 1-3 and arguably disclosed in independent claims 1, 11 and 33), a data analyst may analyze the computer generated display of data and input bend location information into the computer so that the computer can generate data markers. In the latter (disclosed in example 4 and arguably disclosed in independent claims 24 and 40), the computer is programmed to analyze the inspection data in order to generate the data markers. Both embodiments use a computer to “partition” the inspection data at the data markers in order to correlate the inspection data to the physical geometry of the furnace, and then to generate a display of the inspection data reflecting such.

9. A further observation from the specification: The inventors of the ‘874 patent contemplated the use of “relational data” in the storage device that, along with “inspection data,” help in generating the data markers that identify the locations of, e.g., furnace bends. A “plurality of time intervals” is one example given of such relational data. (See, e.g., col. 7:16-28; figures 3, 4, and 8)

10. The parties have not asked the court to construe any claim limitations, instead relying on “plain and ordinary meaning.” It is apparent to the court, however,

data arranged to represent said physical geometry of a plurality of said tube segments and enable visual detection of a problem area comprising one or more of said tube segments; and wherein said inspection data is collected by one or more devices selected from the following group: an ultrasonic transducer, a laser profilometer, and combinations thereof.

3. The system of claim 1, wherein said computer is further programmed to generate said data markers based upon input from a data analyst.

(‘874 patent, col. 16:24-50)

that the language used in the claims should be construed broadly in light of the specification, especially the words “correlate” and “represent” in the context of the introductory word “comprising” used in the independent claims. Quest’s experts Dr. Robert Caligiuri and Dr. Srinivasan Jagannathan did include in their supplemental and rebuttal declaration the “plain and ordinary meaning” of three limitations, to wit:

38. The term “bend” means a connection between tube segments that allows for a change in orientation.

39. The term “partitioning the inspection data” in the ‘874 [p]atent refers to dividing the inspection data into subsets of smaller size.

40. The term “generate a display of at least a portion of said partitioned inspection data arranged to represent said physical geometry” means to create a visual representation of at least a portion of the inspection data in a manner corresponding to the physical arrangement of tube segments.

(Civ. No. 14-1483, D.I. 96 at 8) The dictionary definition of the word “represent” includes the following: “to serve as a sign or symbol,” to portray by pictorial art: delineate, depict,” “to serve as the counterpart or image of; typify.” *Webster’s Third New Int’l Dictionary* 1926 (3d ed. 1993). “Correlate” is defined in the dictionary as “to put in relation with each other: connect systematically,” *id.* at 511, and referred to in the patent as “mapping or scaling” (‘874 patent, col. 2:14).

11. **Legal standard.** “The decision to grant or deny . . . injunctive relief is an act of equitable discretion by the district court.” *eBay, Inc. v. MercExchange, LLC*, 547 U.S. 388, 391 (2006); *Abbott Labs. v. Andrx Pharm., Inc.*, 452 F.3d 1331, 1334 (Fed. Cir. 2006). The grant of such relief is considered an “extraordinary remedy” that should be granted only in “limited circumstances.” *See Kos Pharma., Inc. v. Andrx Corp.*, 369 F.3d 700, 708 (3d Cir. 2004) (citation omitted). A party seeking preliminary injunction

relief must demonstrate: (1) a reasonable likelihood of success on the merits; (2) the prospect of irreparable harm in the absence of an injunction; (3) that this harm would exceed harm to the opposing party; and (4) the public interest favors such relief. See, e.g., *Sciele Pharma Inc. v. Lupin Ltd.*, 684 F.3d 1253, 1259 (Fed. Cir. 2012); *Abbott Labs v. Sandoz, Inc.*, 544 F.3d 1341, 1344 (Fed. Cir. 2008). “If either or both of the fundamental requirements -- likelihood of success on the merits and probability of irreparable harm if relief is not granted -- are absent, an injunction cannot issue.” *Antares Pharma., Inc. v. Medac Pharma., Inc.*, 55 F. Supp. 3d 526, 529 (D. Del. 2014) (citing *McKeesport Hosp. v. Accreditation Council for Graduate Med. Educ.*, 24 F.3d 519, 523 (3d Cir. 1994)).

12. At the preliminary injunction stage of a case, the movant “must demonstrate that . . . at least one of [the] allegedly infringed claims will . . . likely withstand the validity challenges presented by the accused infringer.” *Abbott Labs.*, 452 F.3d at 1335 (citation omitted).

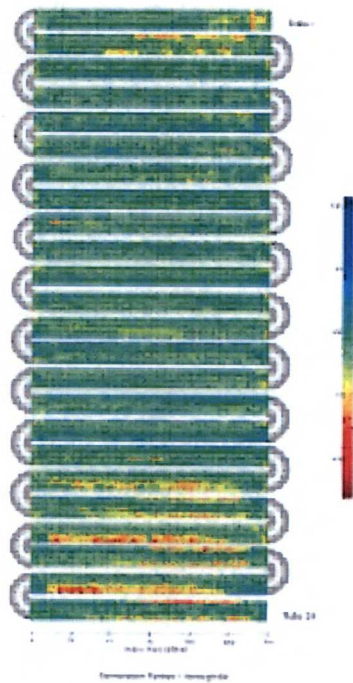
As to the burden regarding invalidity allegations, “[v]alidity challenges during preliminary injunction proceedings can be successful, that is, they may raise substantial questions of invalidity, on evidence that would not suffice to support a judgment of invalidity at trial.” . . . In resisting a preliminary injunction, however, one need not make out a case of actual invalidity. Vulnerability is the issue at the preliminary injunction stage, while validity is the issue at trial. The showing of a substantial question as to invalidity thus requires less proof than the clear and convincing showing necessary to establish invalidity at trial.

Id. (citation omitted).

13. Even if a movant demonstrates a likelihood of success on the merits, there is no presumption of irreparable harm. See, e.g., *eBay*, 547 U.S. at 393. To establish

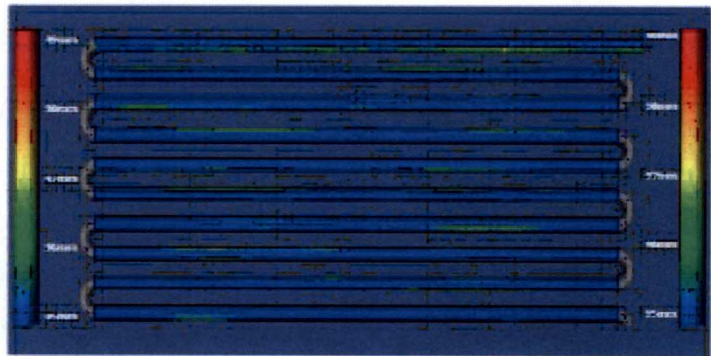
irreparable harm, the movant must “clearly establish[] that monetary damages could not suffice.” *Id.* at 1348. Moreover, Federal Circuit precedent requires a showing of some causal nexus between the alleged infringement and the alleged harm. *See Apple, Inc. v. Samsung Elec. Co., Ltd.*, 735 F.3d 1252, 1359-60 (Fed. Cir. 2013) (“Sales lost to an infringing product cannot irreparably harm a patentee if consumers buy that product for reasons other than the patented features.”).

14. **Likelihood of success on the merits: Infringement.** Quest argues that the Clean Harbors “Smart Pig” (“the CH system”) infringes. With respect to the limitations in dispute, Quest argues that the CH system includes a computer programmed to “partition said inspection data at a plurality of data markers” and to “generate a display of at least a portion of said partitioned inspection data arranged to represent” the physical geometry of the furnace.



(Civ. No. 14-1482, D.I. 8 at 8-9) Clean Harbors denies infringement because, *inter alia*, it uses a technician to manually identify data markers. (Civ. No. 14-1482, D.I. 48 at 18; D.I. 82, ¶ 79) Given the disclosures in the specification and the broad language used in the claims of the '874 patent, however, the court finds that Quest has made a *prima facie* showing of infringement by the CH system.

15. Quest also contends that the Cokebusters “Intelligent Pig” with “Roxtail Software” (“the CB system”) infringes the disputed partitioning limitation because “[t]he software of the [CB system] ‘accurately presents all captured data in a user friendly manner’ that allows ‘[t]ube measurement & condition [to be] rapidly assessed on-site.’ . . . Each measurement [taken by the CB system] represents a separate data marker” which is “displayed with the tube bends excised as shown” below. (Civ. No. 14-1483, D.I. 8 at 8)



(*Id.*) Cokebusters denies infringement, based on the contention that “its data is taken and applied for imagery on a continuous basis” (Civ. No. 14-1483, D.I. 54 at 15); i.e., Cokebusters “does not partition to data mark at specific locations, but rather takes one continuous reading of data from start to finish reporting the entirety of the results color-coded and shaped to the furnace in question.” (Civ. No. 14-1483, D.I. 102 at 8) In

response, Quest argues that there is nothing in the patent which requires that the data be partitioned during inspection. The fact that “inspection data [is] displayed onto proper tube segments . . . requires that the system partition the data at the bends to properly arrange the data to the correct tube segment” (Civ. No. 14-1483, D.I. 93 at 2); i.e., “the display inherently shows partitioned inspection data,” regardless of when the “partitioning” occurs. (*Id.*; D.I. 96, ¶ 100) At least to the extent the asserted claims of the ‘874 patent are system claims, the court concludes that Quest has made a *prima facie* showing of infringement by the CB system.

16. Likelihood of success on the merits: Invalidity. In the papers, the parties address (in a not very helpful way) multiple prior art references. The court shall address one,⁶ the February 17-23, 2003 final report prepared by Quest for Orion Norco Refining located in Norco, Louisiana. (Civ. No. 14-1483, D.I. 61, ex. 12A) (“the Norco Report”) Quest, in the Norco Report, provides an explanation of the process employed by its then current FTIS™. After the inspection of the furnace by the “FTIS™ Intelligent Pig” is completed and “[o]nce the ultrasonic data is processed, it is then stored for downloading to the data station at the end of the inspection.” (*Id.* at 3)

The data analysis computer is a rugged, Pentium®-based portable computer that utilizes the Windows NT®/XP® system. This computer is provided with the custom FTIS application software. The FTIS software enables the operator to configure the FTIS tool, download data from Flash RAM, and process and display collected data.

⁶The ‘874 patent claims priority from U.S. Provisional Patent Application No. 60/576,276, which was filed on June 1, 2004, the “critical date.” A patent is invalid if the invention was “in public use or on sale in this country more than one year prior to the date of application in the United States.” 35 U.S.C. § 102(b). Defendants contend, *inter alia*, that Quest began publicly using versions of the FTIS system that embodied every element in the asserted claims before the critical date of June 1, 2004.

...

The FTIS software package allows operator control and configuration of the FTIS tool from within a fully menu driven graphical user interface. The FTIS software also provides analysis, display, and reporting capability. Displays consist of tabular, cross-sectional, and color surface plots of the data.

(Id. at 3-4) With respect to “2D Modeling,”

QUEST has designed custom software, which allows 2-Dimensional (2-D) viewing of the “entire” piping coil (refer to Figure 3). The color bar to the right represents a range of wall thickness in inches. The piping coil data begins in the bottom left corner and moves to the right. It then moves up one row and repeats the left to right motion throughout the length of the inspection. Over a mile of piping can be presented on a single plot.

(Id. at 4) As to the physical geometry of the furnace, Quest

utilized the furnace pipe/coil layout numbering system that the Orion Norco facility had provided for this examination. The pipe segment count progressed in a positive direction while traveling from the FTIS “Outlet” (Radiant) flange through the piping coil towards the “Inlet” (Convection) flange. All positioning references in this report use this axial positioning system (see Figure 5).

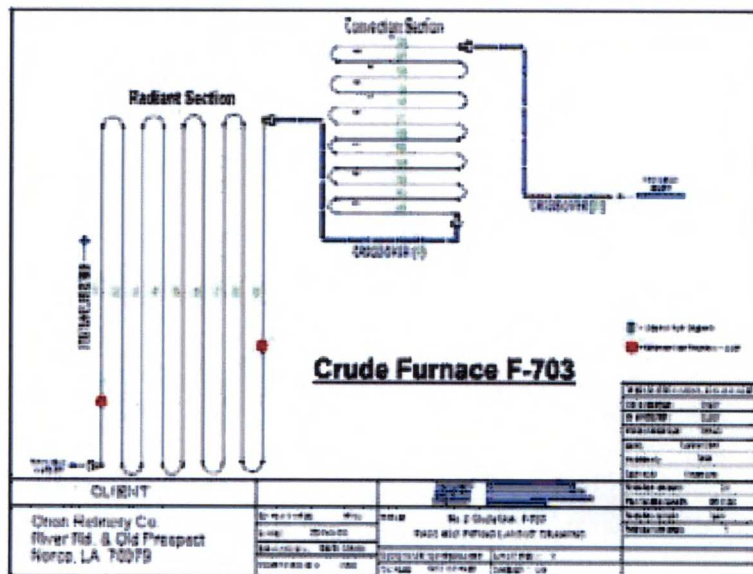


Figure 5. “Example” Pipe Layout Drawing

(*Id.* at 6) In summarizing the project, Quest explained that “[e]ach pass was broken down into 23 sections for easy identification and tracing,” e.g., sections numbered 1-9 “refer to the piping located in the Radiant portion of the pass.” (*Id.* at 7) According to Quest, “[e]ach pipe section number was located between two return bends. Each Section number has its own unique identifier for ease in locating flaws detected during the inspection” (*Id.* at 8) Figure 3 is a 2-dimensional viewing of the inspection data, organized by “Section Number” and identifying “Return Bends.”

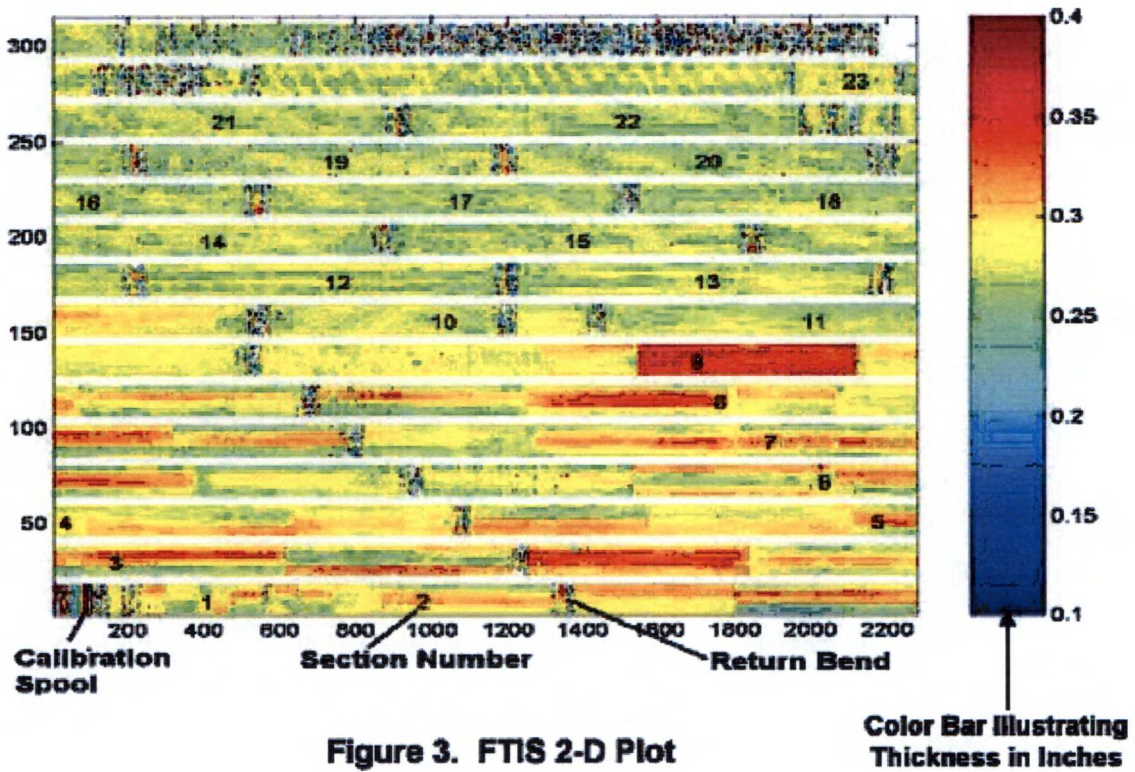


Figure 3. FTIS 2-D Plot

Color Bar Illustrating Thickness in Inches

(*Id.* at 4)

17. The court is required to construe the patent consistently for purposes of its infringement and invalidity analyses. *See Amazon.com, Inc. v. Barnesandnoble.com,*

Inc., 239 F.3d 1343, 1351 (Fed. Cir. 2001) (“Because the claims of a patent measure the invention at issue, the claims must be interpreted and given the same meaning for purposes of both validity and infringement analyses.”). As explained above, the claims and the specification of the ‘874 patent (including the figures) inform the court as to the scope of the invention disclosed and support a broad interpretation of the patent. Quest agreed with such an interpretation when it argued, for infringement purposes, that it did not matter when or how data partitioning is done, so long as the ultimate display included data that was organized in a way that looked like the physical geometry of the furnace. The court finds that the broad scope of the ‘874 patent likewise encompasses the Norco Report.

18. Quest contends that the Norco Report is not invalidating prior art:

As is apparent, the display of the time strip charts are arranged to represent the passage of time - not the “physical geometry” of the furnace tube. . . . To be arranged to represent the physical geometry of the coil system, the data must be displayed in the same orientation of the tube coils so as to allow the user to easily identify a displayed problem in the actual furnace tubes and identify grouped problems across the physical geometry of the furnace. . . . In addition, in order to “partition at data markers” as required by the [‘874 patent,] the data must be separated at data markers collected from the system. Here, in contrast, they merely display data over time.

(Civ. No. 14-1482, D.I. 78 at 3)

19. Ironically, there is no figure in the ‘874 patent that represents the data as described by Quest above, and as embodied in the latest version of Quest’s FTIS™ commercial product. Instead, figures 3 and 4 of example 1 of the patent (called “strip charts,” as was figure 3 of the Norco Report) only display inspection data collected over time. In example 1 of the ‘874 patent, it is contemplated that a data analyst would

further inspect the strip charts “in order to identify the locations of the furnace bends.”

(Col. 10:47-48)

While analyzing strip chart 300 and/or strip chart 400, the data analyst moves a mouse across the horizontal strips and marks the locations of the furnace bends by clicking on the appropriate positions on the strip charts. Based upon this input from the data analyst, computer 102 is programmed to generate the date markers and place a roman numeral (signifying the tube segment number) followed by an “x” above the positions marked by the data analyst. **The various readings are thus partitioned at the data markers to thereby correlate the readings to the appropriate tube segments of the furnace.**

(Col. 10:58-67) (emphasis added) The above example is consistent with the explanation in the Norco Report. It is evident that the inspection data in the Norco Report has been divided into subsets of smaller size, i.e., according to data markers (return bends). The resulting display, while not as user-friendly as any of the contemporary systems, still presents the inspection data in a way that “maps” or “connects systematically” the data to the physical geometry of the furnace.

20. The court concludes that there is nothing in the specification or claims of the ‘874 patent that requires the inventive system to perform⁷ or look⁸ exactly like Quest’s latest commercial iteration of its FTIS™, so long as the inspection data can be displayed in a way that suggests data markers representing the physical geometry of the furnace. The Norco Report discloses all three of the “partitioning,” “correlating,” and

⁷Recall that Quest’s infringement position embraced systems that manually partition the data or arguably do not partition the data at all.

⁸According to Cokebusters, “2D/3D displays were not invented by Quest, and were being used before the critical date to display the geometry of many objects including furnace coils.” (Civ. No. 14-1483, D.I. 102 at 6)

“representing” limitations. Defendants have raised a substantial question of invalidity.⁹

21. **Irreparable harm.** Even if Quest had demonstrated a likelihood of success on the merits, the court finds that Quest has not carried its burden to clearly establish irreparable harm. In this regard, Quest asserted five types of irreparable harm.

a. **Lost market share.** The court recognizes that Quest and defendants are direct competitors. For purposes of these proceedings, the court will assume that defendants are now offering their inspection services as a free or discounted add-on to their de-coking contracts. (D.I. 8 at 6) Quest estimates that it has lost at least one inspection job to Clean Harbors in the past eight months (Civ. No. 14-1482, D.I. 78 at 11), and has lost at least two inspection jobs to Cokebusters in the past 12 months (Civ. No. 14-1483, D.I. 93 at 11). According to Quest, because many of Quest’s customers are price sensitive, Quest “risks the loss of up to half of its FTIS business absent preliminary injunctive relief.” (Civ. No. 14-1482, D.I. 78 at 11; Civ. No. 14-1483, D.I. 93 at 11)

b. **Price erosion.** According to Quest, its customers have begun to request pricing discounts to match defendants’ lower pricing. “Absent injunctive relief, Quest anticipates a need to lower pricing in order to prevent even more lost sales.” (Civ. No. 1482, D.I. 78 at 11)¹⁰

⁹Given the court’s conclusion on invalidity under § 102(b), defendants have also raised substantial questions of invalidity under § 103. (See, e.g., Civ. No. 14-1483, D.I. 54 at 2-10)

¹⁰The court notes that competition generally reduces prices, and even the documents relied on by Quest suggest that the free inspection services are a temporary marketing strategy. (See, e.g., Civ. No. 14-1482, D.I. 81, ¶ 78)

c. **Laying off trained field technicians.** Quest has grown its field technician workforce from 2 to 31 technicians during the time period 2005-2014. “Any significant reduction in revenue due to the [d]efendants’ continued alleged infringement will likely force Quest to lay off a portion of its field technician workforce.” (D.I. 9, ¶ 81)

d. **Lost opportunities.** Quest has launched a new program to expand the market to include smaller refineries, which have not previously used Quest’s system because they are “price sensitive.” (D.I. 8 at 16) Quest suggests that such potential customers will likely choose defendants’ less expensive systems. “The irreversible damage from this lost opportunity will be incalculable due to the lack of historical transaction pricing in this new market.” (*Id.*)

e. **Loss of good will and reputation.** Mr. Carter (a Quest expert) has opined that, if defendants are permitted to continue infringing, Quest’s “reputation may be harmed due to the defendants’ inferior inspection systems and services.” (D.I. 9, ¶ 95) Based on discussions with Mr. Roberts,¹¹ Mr. Carter states that “[t]he customer views the poorly collected data using the accused display technology and then likely associates the inferior inspection service with the patented technology.” (*Id.* and at n.144)

22. As noted above, Quest must “clearly establish” that monetary damages will not suffice and that the alleged harm is related to the alleged infringing features of the accused inspection services. Quest has failed to meet its burden. Quest has not even attempted to analyze the relative importance of patented versus non-patented features

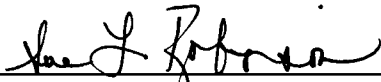
¹¹Discussions with Mr. Roberts form much of the basis of Mr. Carter’s opinion on the issue of irreparable harm.

and has tacitly conceded that several of the initially raised factors cannot be demonstrated. (See Civ. No. 14-1483, D.I. 93 at 11) And although the court recognizes that, to some extent, the irreparable harm analysis is a forward-looking exercise, nevertheless, the court is not persuaded that Quest has demonstrated that defendants pose a threat of irreparable harm if allowed to compete, given the size of the market, the large number of refineries, and the fact that the parties have been competing for years. (See Civ. No. 14-1483, D.I. 102 at 10)

23. Balance of harms. This factor is neutral or weighs in favor of defendants. All the parties stand to either lose or gain sales and market share, depending on whether Quest remains a legal monopolist or not. If Quest were the only entity able to perform inspection services, however, Quest would be able to have preferred relationships with particular de-coking companies to the detriment of others. Both defendants would be harmed if Quest refused to work with them, or charged customers higher rates to work with them.

24. Public harm. This factor is neutral. The public has an interest in protecting valid patents. On the other hand, as the commercial technology improves and more refineries (e.g., the smaller ones) embrace inspection systems like Quest's FTIS™, it may not be in the public interest to have a single provider of inspection services, not only in terms of pricing and but in terms of capacity and satisfying market demand.

25. **Conclusion.** For the reasons stated, the court denies the pending motions seeking a preliminary injunction. (D.I. 7)


United States District Judge