

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MASSACHUSETTS

L-3 COMMUNICATIONS SECURITY
AND DETECTION SYSTEMS
CORPORATION DELAWARE,

Plaintiff,

v.

AMERICAN SCIENCE &
ENGINEERING, INC.,

Defendant.

CIVIL ACTION NO. 04-10339-RWZ

**L-3'S REPLY MEMORANDUM IN SUPPORT OF ITS MOTION FOR
PARTIAL SUMMARY JUDGMENT THAT CERTAIN CLAIMS OF U.S.
PATENT NO. 5,903,623 ARE INVALID UNDER
35 U.S.C. §102(b)**

Plaintiff, L-3 Communications Security and Detection Systems Corporation Delaware ("L-3"), is filing this Reply Memorandum to respond to certain issues raised in AS&E's Opposition ("Opp.") (D.I. 66).

INTRODUCTION

As explained below, all of the issues raised by AS&E can be addressed with one simple observation: the entire "detailed description" portion of the '623 patent was copied, nearly verbatim, from the contract AS&E entered into with the Army sixteen months before it filed its first patent application ("the Army Contract") (D.I. 60, Ex. 1)¹.

¹ Exhibit 1 referred to in this memorandum (the Army Contract) was attached to the Surreply Declaration of Robert M. Abrahamsen in Support of L-3's Opposition to AS&E's Motion for Partial Summary Judgment (D.I. 60). Exhibits 8 and 9 (referred to below) are attached to the accompanying Reply Declaration of Robert M. Abrahamsen in Support of L-3's Motion for Partial Summary Judgment that Certain Claims of U.S. Patent No. 5,903,623 Are Invalid Under 35 U.S.C. §102(b).

This point was clearly raised in L-3's opening memorandum (D.I. 63 at 6-9). Apparently realizing it could not substantively respond, however, AS&E chose to ignore it.

To illustrate the striking similarity between the description in the Army Contract and the '623 patent, L-3 has prepared the chart attached to this memorandum as Exhibit A. In it, the left-hand column shows the "Background" and "Detailed Description" portions of the '623 patent specification, and the right-hand column shows the corresponding description from the Army Contract, along with references to the pages of the contract at which such description can be found. AS&E's arguments that the claims at issue cannot be read on the product described in the Army Contract, and that the product described in the Army Contract was not "ready for patenting," thus cannot hold water.

ARGUMENT

I. The Army Contract and Proposal that Led to It Were Not Considered by the Examiner

AS&E began its argument (Opp. at 12) with the misleading assertion that the PTO had already considered the validity challenge raised by L-3's motion. The only thing the patent examiner was apprised of, however, was that the invention was developed, at least in part, under a government contract. The Examiner was not informed that a contract to build and deliver a Mobile CargoSearch System had been signed more than a year before AS&E's first patent application was filed. Nor was he informed of other facts sufficient for him to conclude that the subject of the Army Contract was prior art. AS&E's "extra burden" argument is thus erroneous.

II. All of the Limitations of the Claims at Issue Were Met by the Subject of the Army Contract

AS&E's argument that certain claim limitations were not met by the "proposed system" in the contract is curious, to say the least. AS&E used the exact same figures and language to describe the operation of the system in its patent as in the Army Contract, yet it argued that certain claim terms directed to such commonly-described operations would not have been met by the proposed system.

The first limitation AS&E took issue with was "traverse." In particular, AS&E disputed whether in the proposed system the pencil beam of radiation, which was described as repeatedly sweeping through a 43 degree angle, would have "traversed" large objects such as SUV's or taller cars within the meaning of the claims. The basis for AS&E's argument was its 30(b)(6) witness's questioning of whether a 43 degree sweep angle would scan certain taller vehicles all the way from top to bottom. The drawings used to illustrate this sweeping action of the pencil beam in both the proposal and the patent specification are reproduced below:

Army Contract Drawings

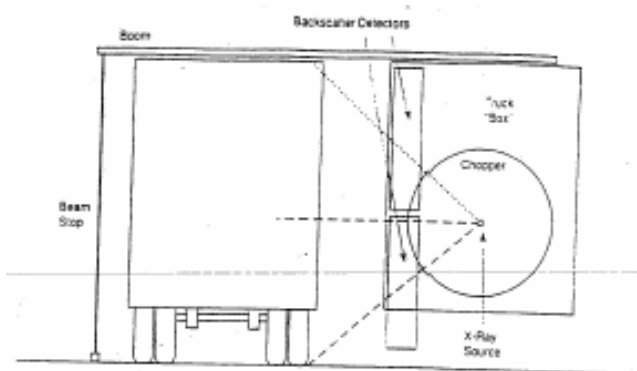


Figure 8(a): Scan geometry of the Mobile CARGOSEARCH System as deployed for inspection of large vehicles.

'623 Patent Drawings

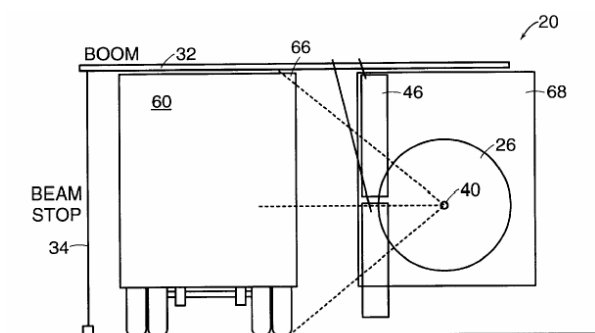


FIG. 5A

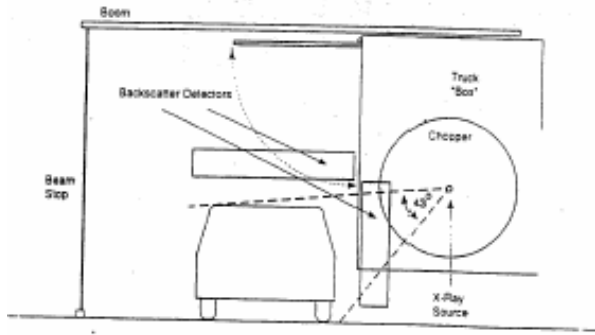


Figure 5 (a): Scan geometry of the Mobile CARGOSEARCH System as deployed for inspection.
Note the deployment of the upper detector.
B-19 DAWID-65-C-001 ATTACHMENT 1

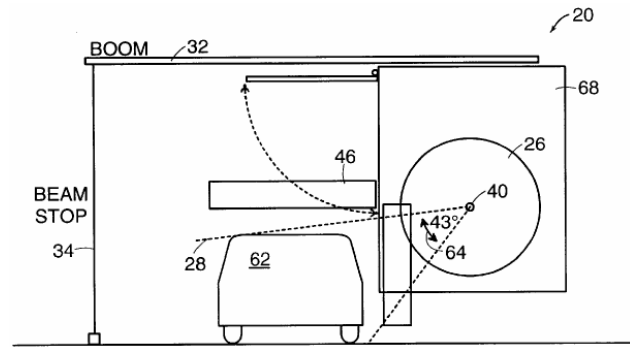


FIG. 5B

Given that the “proposed system” described in the contract and the only system described in the patent both use the same x-ray source to produce a pencil beam that sweeps through 43 degrees (as illustrated above), L-3 is at a loss as to how AS&E believes this limitation can be read on the embodiment described in its patent without also reading on the system proposed in the Army Contract. AS&E appears to be arguing for an interpretation of the claims that would exclude the only embodiment described in its patent. It is well settled, however, that such a construction of the claims cannot be correct. E.g., Vitronics v. Conceptronic, 90 F.3d 1576, 1583-84 (Fed. Cir. 1996); Dow Chemical Co. v. Sumitomo Chemical Co., 257 F.3d 1364, 1377-78 (Fed. Cir. 2001) (exclusion of preferred embodiments given “great significance” in construing claims); Hoechst Celanese Corp. v. BP Chemicals Ltd., 78 F.3d 1575, 1580-81 (Fed. Cir. 1996); (“it is unlikely that an inventor would define the invention in a way that excluded the preferred embodiment, or that persons of skill in this field would read the specification in such a way”); Interactive Gift, 256 F.3d at 1343; Microsoft Corp. v. Multi-Tech Systems, Inc., 357 F.3d 1340, 1354 (Fed. Cir. 2004).

The next limitation AS&E took issue with was “a steering arrangement for steering the orientation of the angle of regard with respect to horizontal.”

The portions of the Army Contract and the patent specification (also shown in Exhibit A to this memorandum) that describe this feature are reproduced below:

'623 Patent

FIG. 5A [reproduced below] shows a cargo container inspection system 20, in accordance with a preferred embodiment of the invention, as deployed for inspection of a full-sized tractor-trailer 60 while FIG. 5B [also reproduced below] shows the same cargo container inspection system 20 deployed for inspection of a passenger van 62.

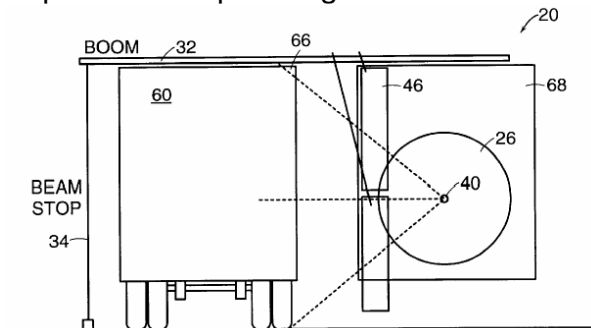


FIG. 5A

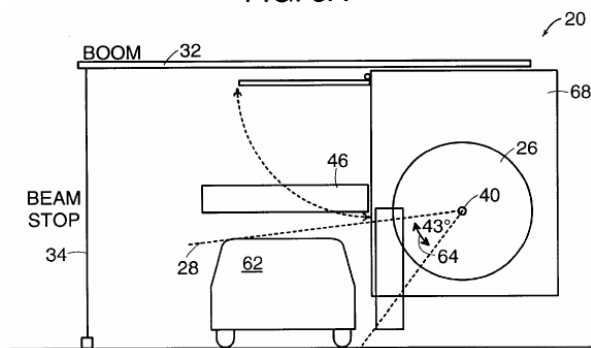


FIG. 5B

The angle of elevation 64 of the 43° scanning beam can be changed depending upon the application. For optimum versatility, the range of limiting angles extends from at least 55° below horizontal to 55° above horizontal. This corresponds to an angular adjustment of the source axis from -33.5° to +33.5°. (Col. 6, line 62 – col. 7, line 5)

Army Contract

Figure 8 [reproduced below] shows the Mobile CARGOSEARCH scan geometry as deployed for inspection of a full-sized tractor-trailer (top) or a passenger car (bottom).

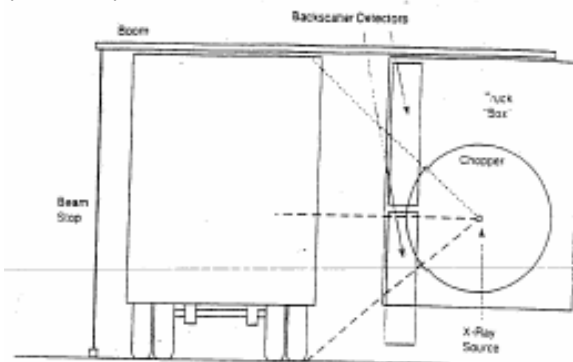


Figure 8 (a): Scan geometry of the Mobile CARGOSEARCH System as deployed for inspection of large vehicles.

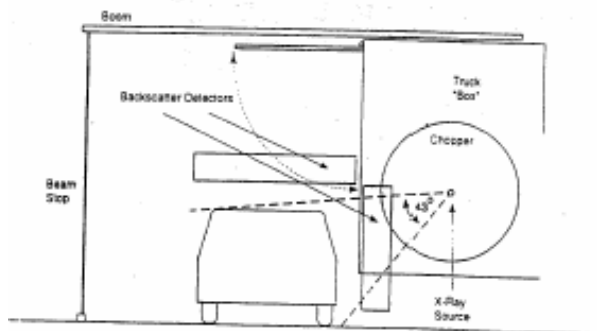


Figure 8 (b): Scan geometry of the Mobile CARGOSEARCH System as deployed for inspection of a passenger car. Note the deployment of the upper detector.

The angle of elevation of the 43° scanning beam can be changed depending upon the application. For optimum versatility, the range of limiting angles will extend from at least 55° below horizontal to 55° above horizontal. This corresponds to an angular adjustment of the source axis from -33.5° to +33.5°. (D.I. 60, Ex. 1 at 70, 74)

As is evident from this comparison, the contract and the patent include the same figures and nearly identical descriptions of how the “angle of elevation” of the scanning beam can be changed. Thus, this limitation can be read on the system proposed in the contract in the same way it must necessarily be read on the only disclosed embodiment.

Finally, AS&E took issue with whether the proposed system was to include a beam stop. The following excerpt from the Army Contract, however, plainly indicated that a beam stop was to be employed in the proposed system.

In order to assure compliance with FDA radiation safety requirements as administered by the Center for Devices and Radiological Health (CDRH), the proposed system has provisions for a deployable beam stop device.

(D.I. 60, Ex. 1 at 79) (emphasis added).

Thus, all of the limitations of the claims identified in L-3’s motion were, in fact, met by the subject of the Army contract. No genuine issue of material fact is in dispute on that score.

III. The Invention Was Indisputably² Ready for Patenting Prior to the Critical Date

As noted in L-3’s opening memorandum, the “ready for patenting” prong of the on-sale bar test of Pfaff v. Wells Electronics, Inc. may be satisfied by “by proof that prior to the critical date the inventor had prepared drawings or other description of the invention that were sufficiently specific to enable a person skilled in the art to practice

² AS&E’s argument (Opp. at 17-18) that L-3 “conceded” that a question of material fact exists on the “ready for patenting” issue appears to be a last ditch effort to obfuscate the issues presented and avoid judgment entering against it. AS&E latched onto a single sentence in a concluding portion of L-3’s memorandum (where L-3 was discussing its entitlement to additional discovery), and conveniently ignored the portion of L-3’s memorandum in which the “ready for patenting” issue was actually addressed (D.I. 57, Ex. 1 at 5-11). A review of that discussion makes perfectly clear that L-3 has never made any such concession, for indeed the issue is undisputable. (E.g., id. at 5) (“The Mobile CargoSearch System was ... indisputably ready for patenting as of the effective date”) (emphasis added).

the invention.” Pfaff, 52 U.S. 55, 67-68 (1998). See also Weatherchem Corp. v. J.L. Clark, Inc., 163 F.3d 1326, 1333 (Fed. Cir. 1998) (“Like the drawings in Pfaff, these detailed drawings of the cap design contained each limitation of the claims and ‘were sufficiently specific to enable a person skilled in the art to practice the invention.’”); STX, LLC v. Brine, Inc., 211 F.3d 588, 591 (Fed. Cir. 2000) (“According to the undisputed record, prior to the [pre-critical date] sale, STX had sufficient grasp of its invention ... to allow it to gain approval for its design..., and later produce [products] that were the subject of the ... sale.”).

AS&E argued (Opp. at 14-16) that the invention was not ready for patenting: (1) because additional development work was done after the critical date, and (2) because the viability of the proposed design was not known until after the system had been built and tested. Even if true, however, neither of these purportedly “disputed” facts would alter the outcome of this case.

A. That AS&E Did Additional Development Work After the Critical Date Is Irrelevant

For an invention to have been ready for patenting under the Pfaff test, it is not necessary for an inventor to have worked out all of the details needed to implement the claimed invention. Robotic Vision, 249 F.3d 1307, 1311 (Fed. Cir. 2001). The only relevant inquiry is whether sufficient details had been conceived at the time such that the inventor could have supplied a description in a patent application that would have enabled one of ordinary skill in the art to practice the invention. Id. (“whether or not the software needed to implement the claimed method existed at the time of the disclosure is irrelevant, provided that the disclosure of the invention was made prior to the critical date and was sufficiently specific to enable a person skilled in the art to practice the

invention”). Thus, that additional development work may have been required after the critical date does not necessarily mean that the invention was not “ready for patenting” prior to it.

Space Systems/Loral, Inc. v. Lockheed Martin Corp., 271 F.3d 1076 (Fed. Cir. 2001), relied upon by AS&E, is not to the contrary. In Space Systems, the court found that although the limitations of the claims at issue had been conceived by the inventor, he had not yet developed the details concerning how to implement the invention to a point where he could have provided an enabling description and thus filed a patent application on it. Space Systems, 271 F.3d at 1079-80. Space Systems thus stands only for the limited proposition that additional details necessary for the preparation of an enabling disclosure must be conceived before the critical date. The rationale of Space Systems would not apply to situations, such as that presented here, where an enabling disclosure (the Army Contract) had actually been prepared prior to the critical date, and additional development work was done after the preparation of that disclosure.

EZ Dock v. Schafer Systems, Inc., 276 F.3d 1347 (Fed. Cir. 2002), the other Federal Circuit case relied upon by AS&E, simply does not stand for the proposition for which it was cited. AS&E argued that, according to EZ Dock, the “ready for patenting” prong of the Pfaff test “requires proof that an invention will work for its intended purpose.” (Opp. at 14). That is not what the case says. In the cited portion of EZ Dock (276 F.3d at 1352), the court was discussing whether and how evidence of “experimental use” may be employed to negate what would otherwise be an on-sale bar. In addressing whether the experimental use negation could still be relied upon after Pfaff, the EZ Dock court merely noted that “Like evidence of experimentation

sufficient to negate a bar, reduction to practice involves proof that an invention will work for its intended purpose.” It did not articulate any “requirement” that an invention must be shown to work for its intended purpose in order for it to be “ready for patenting,” as AS&E would lead the Court to believe. Moreover, on the very same page AS&E cited, the EZ Dock court explained that evidence of experimental use is relevant only to the question presented in the first prong of the Pfaff test, namely, whether the sale was “commercial,” as opposed to a sale intended primarily to allow experimentation.

Because AS&E cannot genuinely contend³, and indeed has not contended, that the purpose of delivering a system to the government pursuant to the Army Contract was primarily to allow the inventors to conduct experimentation, see Allen Engineering Corp. v. Bartell Industries, Inc., 299 F.3d 1336, 1352 (Fed. Cir. 2002) (“What is important to an assessment of the commercial versus experimental significance of a sale is not necessarily the posture of the invention’s overall development, but the nature

³ AS&E’s 30(b)(6) witness on the topic, Dr. Joseph Callerame, and the lead inventor on the ‘623 patent, Dr. Roderick Swift, testified as follows:

(1) that it was AS&E’s intent at the time the contract was signed to reduce the invention to practice before it was delivered to the government (Callerame Tr. (Ex. 8) at 196; Swift Tr. (Ex. 9) at 73-74);

(2) that AS&E did not expect to retain any control over the use or disposition of the Mobile CargoSearch system after it was delivered to the government (Callerame Tr. (Ex. 8) at 189-91; Swift Tr. (Ex. 9) at 75-76);

(3) that the government was not required to allow AS&E to access the Mobile CargoSearch system after delivery (Callerame Tr. (Ex. 8) at 187-88);

(4) that the government was not under any obligation of secrecy with respect its use of the Mobile CargoSearch system (Callerame Tr. (Ex. 8) at 198-99); Swift Tr. (Ex. 9) at 76);

(5) that the intended recipient of the Mobile CargoSearch system (U.S. Customs) was AS&E’s best customer at the time the contract was signed (Callerame Tr. (Ex. 8) at 92);

(6) that it was not the intent of the contract to allow the government to conduct experimentation (Swift Tr. (Ex. 9) at 76);

(7) that it was the intent of the contract to make money and to sell additional products to the customer (Swift Tr. (Ex. 9) at 67, 77);

(8) that AS&E has sufficient facilities in-house to fully test the Mobile CargoSearch system and determine that it would work for its intended purpose before it was delivered to the government (Callerame Tr. (Ex. 8) at 197; Swift Tr. (Ex. 9) at 74-75); and

(9) that the government was not obligated to conduct any particular tests using the delivered Mobile CargoSearch system or report the results of any such tests to AS&E (Callerame Tr. (Ex. 8) at 187-89; Swift Tr. (Ex. 9) at 68).

Thus, none of the objective factors to be considered in assessing whether the use by the government could have been primarily for purposes of experimentation, see Allen Engineering, 299 F.3d at 1353, would support a finding that the experimental use negation should apply to the transaction here.

or purpose of the particular use to which the invention that is the subject of that sale is to be put”), the discussion in EZ Dock is not relevant to this case.

In any event, with regard to whether the disclosure in the Army Contract was enabling, AS&E ignored L-3’s argument that the disclosure provided in the ‘623 patent, as illustrated in Exhibit A to this memorandum, was nothing more than a repackaged version of the disclosure of the Army Contract.⁴ Its decision to ignore that argument is understandable, however, given that there is not a single material detail concerning the backscatter-only system that is described in the ‘623 patent that is not also described in the Army Contract. (AS&E did, however, systematically substitute the phrase “preferred embodiment of the invention” for the “proposed system” language that appeared in the contract).

AS&E cannot argue on the one hand that the patent provided a disclosure that would have enabled one of ordinary skill in the art to practice the claimed invention (as would be required under 35 U.S.C. §112, paragraph 1), and on the other hand that the invention disclosed in the Army Contract was not ready for patenting because a technical description had not been prepared that would have been enabling. It cannot have it both ways. Either the nearly-identical disclosures would have been enabling under 35 U.S.C. §112, paragraph 1, or not. AS&E has not asserted that the patent failed to provide an enabling disclosure, for to do so would render them invalid under 35

⁴ AS&E’s attempt (Opp. at 9) to characterize the differences between certain drawings in the patent and the contract as being “substantial” cannot withstand scrutiny. The only difference Dr. Callerame pointed out was the use of different reference numerals to label the items in the drawing. (Callerame Tr. (Ex. 8) at 223-227). A comparison of the descriptions of the two documents, however, reveals that the reference numerals were used to refer to the exact same component, and that those components functioned in the exact same way.

U.S.C. §112, paragraph 1. It must therefore concede that the Army Contract contained a description that would have been sufficient to enable one of ordinary skill in the art to practice the invention, and that the invention of the '623 patent was thus ready for patenting at the time the contract was signed.

B. The Ready for Patenting Test Does Not Require an Appreciation of the Viability of the Invention, and, in any Event, the Inventor Testified that He Believed the Invention Would Work for Its Intended Purpose Prior to the Critical Date

“Notably absent from [the ready for patenting] test is a requirement that an inventor have complete confidence that his invention will work for its intended purpose.” Robotic Vision Systems v. View Engineering, Inc., 249 F.3d 1307, 1312 (Fed. Cir. 2001) (emphasis added) (clarifying that neither Weatherchem nor STX held that “lack of skepticism regarding the ‘workability of an invention’ was an evidentiary requirement” of the “ready for patenting” test).

In Pfaff, the Court interpreted the word “invention” in §102(b) to require a complete “conception” of the claimed invention. Pfaff, 525 U.S. at 66. While it noted that perhaps the best evidence that conception of an invention had been completed would be proof that the invention had been reduced to practice, it acknowledged that other evidence sufficient to show a completed conception would also suffice. Id. at 66-67. In particular, the Court found that, because drawings the patentee sent to a manufacturer prior to the critical date fully disclosed the invention and were sufficient to enable the manufacturer to build the invention, the invention was “ready for patenting” as of the time those drawings had been prepared.

It is well established that “conception” is “the completion of the mental part of invention.” Burroughs Wellcome Co. v. Barr Labs., Inc., 40 F.3d 1223, 1227-28 (Fed.

Cir. 1994). “[T]he test for conception is whether the inventor had an idea that was definite and permanent enough the one skilled in the art could understand the invention.” Id. at 1228. “An idea is definite and permanent when the inventor has a specific, settled idea, a particular solution to the problem at hand, not just a general goal or research plan he hoped to pursue.” Id. “But an inventor need not know that his invention will work for conception to be complete.... He need only show that he had the idea; the discovery that an invention actually works is part of its reduction to practice.” Id. (internal citations omitted). “An inventor’s belief that his invention will work or his reasons for choosing a particular approach are irrelevant to conception.” Id. Whether the inventor had a reasonable expectation that his invention would work for its intended purpose simply is not a pertinent inquiry in determining whether conception had been completed. Id.

Thus, it cannot be a requirement of the “ready for patenting” test, which requires only proof of completed conception and possession of or the ability to provide an enabling disclosure, for a patentee to have subjectively appreciated that his invention would work for its intended purpose, or as AS&E put it, the “viability of the mobile search system design” (Opp. at 16), prior to the critical date.

In any event, the lead inventor on the ‘623 patent, Dr. Roderick Swift, testified that as of the time he prepared the proposal that lead to the Army Contract (i.e., in January 1994 – two years prior to the critical date) he was “reasonably confident” that AS&E could built the product described in the Contract and that it would work for its

intended purpose. (Swift Tr. (Ex. 9), at 49-51, 69).⁵ Thus, even if the “ready for patenting” test were construed to require an inventor to have had a reasonable expectation that his invention would work for its intended purpose prior to the critical date, such a test would indisputably be met on the facts here.

IV. There Exists an Actual Case or Controversy with Respect to All Claims in the ‘623 Patent

AS&E half-heartedly asserted (Opp. at 18-19) that the Court lacks jurisdiction to adjudicate the invalidity of 5 of the 44 claims listed in L-3’s motion, because those claims require “some form of scatter imaging” and L-3’s current products do not employ scatter imaging. AS&E did not, however, contest the Court’s jurisdiction to adjudicate the invalidity of the remaining 39 listed claims. Thus, at a minimum, those 39 claims should be declared invalid.

In any event, it is important to note that L-3 did, in the past, make a product that included scatter imaging, and AS&E asserted a closely-related patent in the same family as the ‘623 patent against that product. As noted in the papers filed by L-3 (D.I. 7-9, 13) in opposition to AS&E’s motion to dismiss for lack of a case or controversy (D.I. 4), moreover, L-3 was subjected to repeated threats that AS&E would assert its entire suite of MobileSearch patents against it. AS&E’s threats were not limited to any particular claims or any particular products. L-3 thus was, and remains, in reasonable apprehension of having the ‘623 patent, including the “scatter” claims identified in AS&E’s opposition, asserted against it.

⁵ Apparently, AS&E had not spoken with the lead inventor on its own patent before it filed its Opposition, in which it stated that “No physicist or engineer of any reputation would ever presume to believe that the system would work until it was actually tested.” (Opp. at 16).

Accordingly, a case or controversy presently exists with respect to all claims of the '623 patent. Vanguard Research, Inc. v. Peat, Inc., 304 F.3d 1249, 1255 (Fed. Cir. 2002); Fina Research, S.A. v. Baroid Ltd., 141 F.3d 1479, 1484 (Fed. Cir. 1998); Super Sack Mfg. Corp v. Chase Packaging Corp., 57 F.3d 1054, 1059 (Fed. Cir. 1995); Arrowhead Indus. Water, Inc. v. Ecolochem, Inc., 846 F.2d 731, 736 (Fed. Cir. 1988); Goodyear Tire & Rubber Co. v. Releasomers, Inc., 824 F.2d 953, 955-56 (Fed. Cir. 1987); C.R. Bard, Inc. v. Schwartz, 716 F.2d 874, 881 (Fed. Cir. 1983); Kos Pharmaceuticals, Inc. v. Barr Labs., Inc., 242 F. Supp. 2d 311, 315 (S.D.N.Y. 2003).

CONCLUSION

For the above reasons, L-3's motion for partial summary judgment that claims 1-7, 9, 11-13, 19-21, 23-30, 32, 34-36, 42-48, 50, 52, and 53 of the '623 patent are invalid under 35 U.S.C. §102(b) should be GRANTED.

Respectfully submitted,

L-3 COMMUNICATIONS SECURITY AND
DETECTION SYSTEMS CORPORATION
DELAWARE

Dated: April 4, 2005

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