

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

**AS&E's LR 56.1 STATEMENT OF MATERIAL FACTS
OPPOSING L-3's MOTION FOR PARTIAL SUMMARY JUDGMENT
CONCERNING THE VALIDITY OF U.S. PATENT NO. 5,903,623**

American Science & Engineering, Inc. ("AS&E") disputes Paragraphs 3 and 4 of L-3's Local Rule 56.1 Statement of Facts. The Mobile CargoSearch System claimed in the patents-in-suit was not "ready for patenting prior to February 12, 1995," contrary to L-3's allegations in Paragraph 3 of its statement. Nor were all of the recited claims of the '623 patent met by the subject matter of the Army Contract before February 12, 1995, contrary to L-3's allegations in Paragraph 4 of its statement. The material facts recited in Sections A and B below dispute L-3's statement of material facts. AS&E states additional material facts relevant to this dispute in Section C below.

A. The System Was Not "Ready for Patenting" (disputing L-3's Paragraph 3)

1. In January 1994, AS&E proposed to the United States Army to build a mobile version of AS&E's CARGOSEARCH x-ray inspection system, then in development and

eventually installed at Otay Mesa, California. **Exh. C**, AS&E MOBILE CARGOSEARCH™ X-Ray Inspection System Technical Proposal, dated January 31, 1994, at p. A-1 and B-5.

2. The CARGOSEARCH x-ray inspection system at Otay Mesa (the “Otay Mesa installation”) is a fixed-site, drive-through inspection system that, to a lay person, might look like a car wash. That is, a car or truck to be inspected (*e.g.*, at a border crossing like Otay Mesa) is pulled through the installation via a chain or conveyor belt apparatus. **Exh. A**, Deposition of Joseph A. Callerame, dated February 17, 2005 (“Callerame depo.”), at 29-32.¹

3. Converting the Otay Mesa fixed-site system into a mobile system turned out to be more difficult than originally anticipated. As AS&E’s Rule 30(b)(6) designee, Dr. Callerame, testified, the MOBILESEARCH system differs “[i]n many ways” from the Otay Mesa “car-wash system.” **Exh. A**, Callerame depo. at 29-30. For example, in addition to the primary and obvious difference (self-propelled mobility), the mobile system has one x-ray source and the Otay Mesa fixed-site system has two sources. To Dr. Callerame, that was “a very significant difference.” *Id.* at 30. Another significant difference is that the “angle of attack of the x-rays on the cargo is substantially different between the two systems.” *Id.* Dr. Callerame went on to explain during the deposition why the angle of attack matters and how it differs between the two systems. *Id.* at 30-31. He then listed other differences, such as the detectors and other elements. *Id.* at 31-32.

¹ All cited exhibits and deposition testimony appear in AS&E’s Appendix of Exhibits In Support Of AS&E’s Opposition To L-3’s Motion for Partial Summary Judgment Concerning the Validity of U.S. Patent No. 5,903,623. AS&E has filed these exhibits and testimony under seal because a majority of them contain confidential information. The portions of the exhibits and testimony cited in this Statement of Facts and in AS&E’s brief, however, are not confidential. Accordingly, neither the brief nor the Statement of Facts need to be impounded.

4. The claimed mobile system was not fully developed--either conceived or reduced to practice--when AS&E first proposed to the U.S. Army to convert the Otay Mesa fixed-site (*i.e.*, “car-wash”) system to a self-propelled mobile system. All of the differences that Dr. Callerame discussed, and other problems, needed to be researched, conceived, tested, and reduced to practice before the final invention was ready for patenting.

5. AS&E entered into a “cost-plus-fixed-fee” contract with the government. A cost-plus-fixed fee contract is for an item that is still in development--*i.e.*, that is not yet an existing product but which instead requires research and development. Callerame depo. at 35-37 (defining the term “cost-plus-fixed-fee”); 157 (“Considerable design requirements existed” in the wake of the proposal and the October 1994 contract); 158 (“more work needed to be done . . .”); 195 (“One does not know in these types of programs [cost-plus-fixed-fee] how long the actual reduction to practice will be”); 196 (“And so in a cost-plus program, one does not know for sure whether the conclusion will be successful”).

6. AS&E made clear to the U.S. Army contract authorities that the contract was for a “proposed program to develop a fully-mobile version of the 450 kV CARGOSEARCH system..” **Exh. D**, October 1994 Contract at AS&E00502402 (emphasis added). As such, AS&E told that Army that it “will develop a system design specification,” which task “will include specification of the truck and the truck body.” *Id.* at AS&E00502428 (emphasis added). The use of the future tense “will” shows that these tasks had not yet been performed.

7. Likewise, AS&E emphasized that “major tasks” remained to complete, including “System Conceptual Design and Specification.” *Id.* at AS&E 00502427 (emphasis added).

8. Dr. Callerame confirmed that there was much to be done after the contract was signed in October 1994. See **Exh. A**, Callerame depo. at 159 (“Every proposal I’ve ever worked

on had a key design phase in it, and so does this. And on page C-2 here [of the proposal], it says, ‘AS&E will develop a system design specification which will establish the design criteria, operational requirements, and performance characteristics’”).

9. AS&E spent many months designing, developing, testing, and reducing to practice the mobile x-ray system after it signed the contract with the U.S. Army. In particular, AS&E held a so-called “preliminary design review” on February 14, 1995 (two days after the critical date). As Dr. Callerame explained, however, the preliminary design review is just that--preliminary, not final. Thus, at the preliminary design review--which occurred after the critical date--there could be “mistakes in it or errors in the design.” **Exh. A**, Callerame depo. at 238. Dr. Callerame went on to explain, “That’s why it’s called a preliminary design review. The implication is it’s not the final.” *Id.*

10. AS&E documents prepared at or around the time of the preliminary design review show that the system still needed testing and that AS&E still didn’t know that it would work. For example, a document entitled “Preliminary Design Review” (**Exh. E**), dated February 14, 1995, shows that the hydraulic device for operating the scan drive (*i.e.*, the separate drive train that propels the inspection truck at a very slow and precise pace while it scans the object) was not even scheduled to be procured, let alone tested, until April 1995.² Other components of the system also needed to be procured. *See Exh. E* at AS&E 01701967. Furthermore, the testing of the completed system was not scheduled to be done until August and September 1995. *Id.*

² This hydraulic scan drive is claimed in various independent and dependent claims of the ‘623 patent. For example, Claim 19 requires “a second drive train, distinct from the first drive train, for propelling the vehicle in a first direction during inspection of the object.” ‘623 Patent, Col. 11 at *ll.* 37-39. So that limitation of the claims, as well as others, were not yet reduced to practice and ready for patenting before the critical date of February 12, 1995.

11. After reading the Preliminary Design Review document, Dr. Callerame concluded that “[i]t’s not clear at all to me that this initial version at this point [February 1995] was viable, so I don’t know whether this version is good or not.” **Exh. A**, Callerame depo. at 170. In other words, as the documents show, much development work still remained after the preliminary review.

12. A document entitled “Scientific and Technical Report” for Contract No. DAAB10-95-C-0001 (*i.e.*, the October 1994 contract) summarizes the development of the mobile x-ray system. This document shows that as a result of the preliminary design review, “Twenty-three Action Items (AIs) resulted from that presentation” and that six of these action items required further “technical analysis.” **Exh. F** at AS&E06201350. A letter from AS&E to the Army, dated February 22, 1995--ten days after the critical date--includes minutes of the preliminary design review. These meeting minutes show that many aspects of the mobile x-ray system still needed to be calculated, designed, and tested. See, e.g., **Exh. G** at AS&E02900227 (“AS&E had discussed the effects but not calculated them”). The minutes also include a list of action items, many of which remained “open” after the preliminary review. *Id.* at AS&E02900233.

B. The Mobile CargoSearch System Did Not Meet the Listed Claims (disputing L-3’s Paragraph 4)

13. United States Patent No. 5,903,623 (“the ‘623 patent”) has fifty-seven claims. Claim 1 of the ‘623 patent is directed to a mobile x-ray inspection device and provides as follows:

1. A device, for inspecting a large object with penetrating radiation, the device comprising:

(a) a self-propelled vehicle capable of on-road travel;

- (b) a source of penetrating radiation, mounted on the vehicle, for providing a beam of penetrating radiation;
- (c) a beam stop for absorbing the beam of penetrating radiation after traversal of the object; and
- (d) at least one detector coupled to the vehicle, the at least one detector having a signal output so that the beam is caused to traverse the object in a first direction as the vehicle is moved and the signal output characterizes the object.

Exh. B, '623 Patent at Col. 10, *ll.* 27-39.

14. The other independent claims (Claims 19 and 42-45) all share several limitations in common with Claim 1 and, in particular, the requirement that the beam of penetrating radiation “traverse” the object being scanned. *See, e.g.*, Claim 19 at Col. 11, *ll.* 44-46 (“so that the beam is caused to traverse the object”); Claim 42 at Col. 12, *ll.* 60-61 (“a beam stop for absorbing the beam of penetrating radiation after traversal of the object”) (emphasis added).

15. The mobile x-ray inspection system offered for sale to the U.S. Army did not disclose at least this “traverse” claim limitation in the claims of the '623 patent. *See* Callerame depo. at 156 (“Well, a 45-degree beam, depending on the size of the cargo that’s being scanned, will not traverse the cargo . . . it will not traverse the truck”); 236 (“As I said before, the traversal of the objection part is something I would take some issue with . . .”); 237 (“Again, my objection to the word ‘traverse’”); 243-44 (“traversing the object” is not shown in the contract materials).

16. The contract/proposal does not show that the “angle of regard” of the radiation beam is adjustable and does not show that “a way to aim the source up or down.” *Id.* at 242-243. As such, the proposal does not disclose a device that includes “a steering arrangement for steering the orientation of the angle of regard with respect to the horizontal,” as Claims 13, 36, and 53 all require. *Id.*

17. Moreover, not all of the drawings in the 1994 proposal are the same as those in the specification of the '623 patent. For example, when asked whether Figure B-16 in the proposal and Figure 3 in the patent are substantially the same, he testified that, to his schooled eye, it is not clear that the figures are identical. **Exh. A**, Callerame depo. at 223-224. He went on to catalog various substantial differences between the drawings in the proposal and the patent figures. *Id.* at 224-227.

C. Additional Material Facts: There Is No Case or Controversy

18. L-3 targets in its summary judgment motion only those claims that involve backscatter (or side scatter) imaging.

19. L-3's own technical documents, obtained from its website (www.L-3com.com/xray) show that L-3's mobile cargo x-ray inspection systems employ transmission detection only. The documents do not mention backscatter detection at all. *See, e.g.*, **Exh. H**, Technical Specification for Model CX-450M ("The CX-450M sets itself apart from other mobile systems by producing a superior transmission image").

20. AS&E has not accused L-3 of infringing claims in the two patents-in-suit that require backscatter imaging.

Dated: Boston, MA
March 17, 2005

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