

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

INTERNATIONAL BUSINESS MACHINES CORPORATION

Petitioner

v.

DIGITAL DOORS, INC.

Patent Owner

IPR2023-00973

U.S. Patent No. 8,468,244 B2

PETITION FOR *INTER PARTES* REVIEW

UNDER 35 U.S.C. § 312 AND 37 C.F.R. § 42.104

**EXPERT DECLARATION OF
DR. WILLIAM C. EASTTOM II (CHUCK EASTTOM) PH.D., D.SC.**

I. INTRODUCTION

1. I have been retained by counsel for DigitalDoors, Inc. (“DigitalDoors” or “Patent Owner”) and asked to provide my opinion on the validity of claim 1 of U.S. Patent No. 8,468,244 in view of two references, U.S. Patent 8,601,598 (“Ozzie”, EX1006) and US Patent Application 2003/0182435 (“Redlich”, EX1005), particularly focusing on whether the ’244 Patent’s “means for parsing remainder data...” element is present in Redlich.

II. BACKGROUND AND QUALIFICATIONS

2. My name is William C. Easttom II (Chuck Easttom). I have over 30 years of experience in the computer science industry including extensive experience in cybersecurity. I have authored 42 computer science books, including textbooks used at over 60 universities around the world.

3. I hold a Doctor of Science degree in Cyber Security from Capitol Technology University (Dissertation topic “A Comparative Study of Lattice Based Algorithms for Post Quantum Computing”). I also hold a Doctor of Philosophy (Ph.D.) in Nanotechnology (Dissertation topic “The Effects of Complexity on Carbon Nanotube Failures”) from Capitol Technology University, and a Doctor of Philosophy (Ph.D.) in computer science from the University of Portsmouth (Dissertation topic “A Systematic Framework for Network Forensics Using Graph Theory). I also hold three master’s degrees (one in Applied Computer Science, one

in Education, and one in Systems Engineering). I am an inventor with 26 computer science patents. I also hold over 70 industry certifications, including numerous cybersecurity certifications.

4. I am a Distinguished Speaker for the Association of Computing Machinery (ACM) and a Senior Member of the Institute for Electrical and Electronics Engineering (IEEE) and a Senior Member of the Association of Computing Machinery (ACM). The IEEE is the world's largest and most preeminent engineering organization. Among other activities, the IEEE creates industry standards including hardware, software, and other engineering and computer science standards. I am also a Distinguished Visitor of the IEEE. I have been a member of the IEEE Software & Systems Engineering Standards Committee for several years. I worked on the DevOps 2675 standards group from 2017 to 2019. I am also currently the Vice Chair of the IEEE p23026 Standards Group "Systems and Software Engineering -- Engineering and Management of Websites for Systems, Software, and Services Information." I am also a Member of the IEEE Engineering in Medicine and Biology Standards Committee, Standard for a Unified Terminology for Brain-Computer Interfaces P2731, from 2020 to present. I chair one of the subgroups.

5. I am an adjunct lecturer at Georgetown University, teaching graduate courses in *Requirements Engineering* and *Cryptography*. I am also an adjunct

professor at Vanderbilt University teaching graduate computer science courses, including a course in *quantum computing* and a graduate course in *digital forensics*.

6. During the time period of 1996 to 2000, I worked for Boeing Aerospace on software for the NATO AWACS program, Alegis Systems Group as a Sr. Software Engineer, and as Director of Academic computing for Southeastern Oklahoma State University. While working at NATO AWACS, data security was a key concern. When I was working at Alegis Systems Group, I was developing software for banks. This provided me with an understanding of financial software and transactions. Due to personally identifiable information, financial information, and other sensitive information being processed, security was a substantial concern. While working as Director of Academic computing for Southeastern Oklahoma State University, I was responsible for all cybersecurity for the university including authentication and authorization methods.

7. From 2007 to 2009 I worked extensively with medical software including Electronic Medical Records (EMR) and medical billing. Furthermore, my second master's degree included a semester research project in electronic medical software. Such software has rigorous security requirements.

8. In addition to the summary, I have provided here, I describe my qualifications, issued patents, publications, and experience as an expert witness in greater detail in my curriculum vitae ("CV") attached as Exhibit 2015.

III. MATERIAL CONSIDERED

9. In forming my opinions, I have considered the following:

- U.S. Patent No. 8,468,244, EX1001;
- The petition for IPR2023-00973;
- All exhibits to that petition;
- US Patent 8,601,598 (“Ozzie”), EX1006;
- US Patent Application 2003/0182435 (“Redlich”), EX1005;
- The IPR Institution Decision;
- The expert declaration of Dr. Erez Zadok, EX1003;
- All exhibits to that declaration; and
- Any references cited in this declaration.

IV. SUMMARY OF OPINIONS

10. The petitioner and Dr. Zadok have not pointed to anything in the asserted prior art that parses remainder data as required by claim 1 of the ’244 Patent.

11. The function that the petitioner and Dr. Zadok identify as parsing remainder data in the ’244 Patent’s claim 1 does not exist in the asserted prior art.

V. REFERENCES AT ISSUE

12. Redlich (U.S. Patent Publication US2003/0182435), EX1005

13. Ozzie (U.S. Patent 8,601,598), EX1006

VI. POSITA

14. Petitioner asserts that a person of ordinary skill in the art “would have had a bachelor’s degree in computer science, computer engineering, electrical engineering, or equivalent, and approximately two years of experience working in the field of data storage systems and data security as of January 5, 2007.” Pet., 9.

15. The Institution Decision adopted the Petitioner’s definition of the level of skill in the art. Paper 10.

16. For the purposes of this declaration, I will use that definition of POSITA without conceding that it is necessarily correct.

VII. OVERVIEW OF THE ’244 PATENT

17. At a high level, the ’244 Patent is directed towards a distributed computer system process that uses a plurality of data stores in a server cloud for respective security designated data, each with its own access controls. The primary focus is security of said data.

18. The ’244 Patent claims extracting data and then storing the extracted data in content data stores in a cloud storage. The remainder data is then parsed into new data segments, which are then stored in granular data stores.

VIII. ANALYSIS

19. I first note that one of the prior art documents that Dr. Zadok and the petitioner rely on, US Patent Application 2003/0182435 (“Redlich”, EX1005), is from the inventors of the ’244 patent: Ron M. Redlich and Martin Nemzow and

assigned to Digital Doors Inc. Throughout his declaration, Dr. Zadok points to similarities he believes exist between Redlich and the '244. As both are from the same inventors, and both related to security of data, one would expect numerous similarities. However, the issue is not whether there are similarities, but rather whether or not the claim limitations of the '244 are found in Redlich.

A. Claim limitation analysis.

Claim 1f: means for parsing remainder data not extracted from said data to be processed and storing the parsed data as data segments in respective granular data stores;

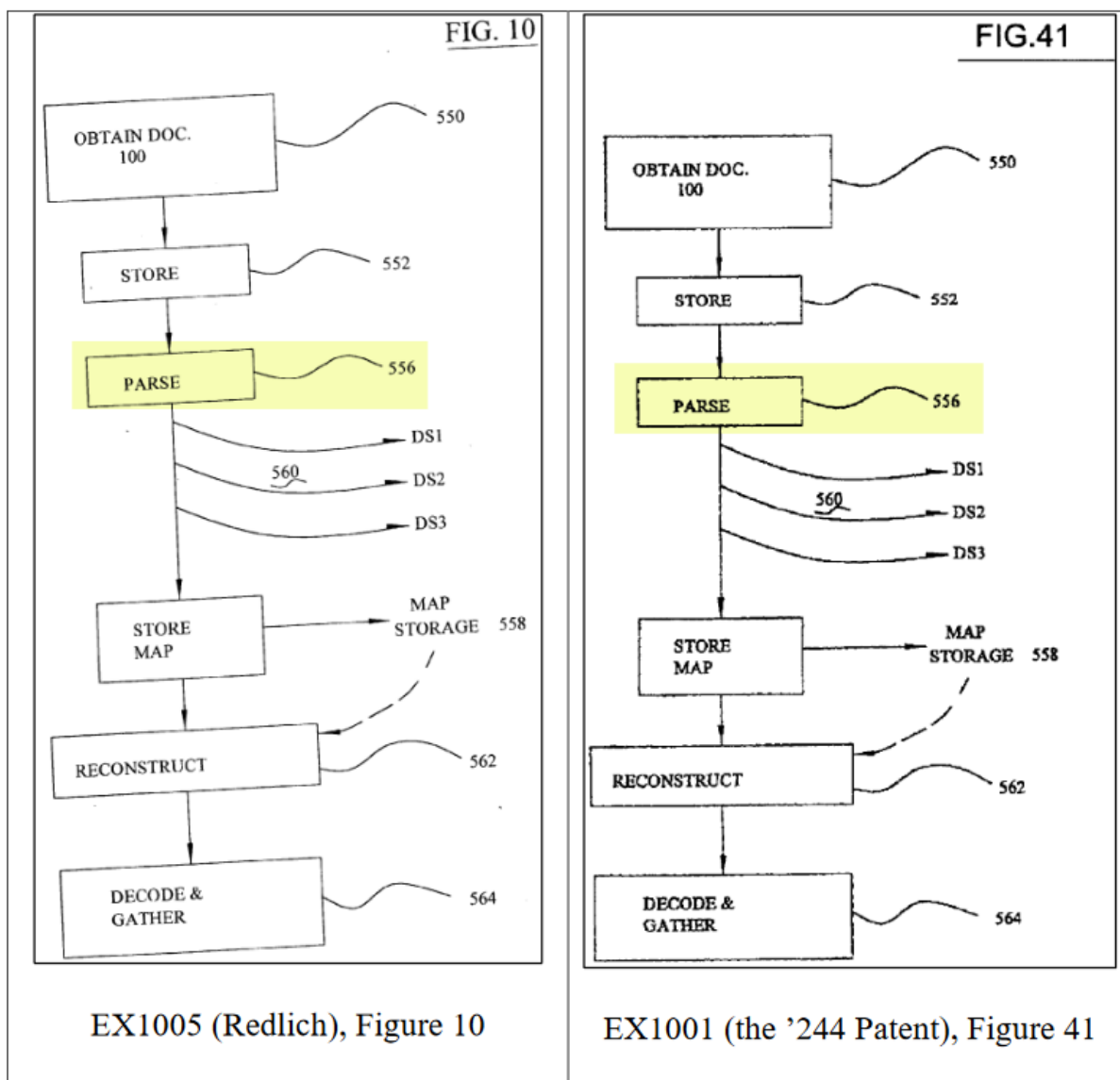
20. Neither the petition nor Dr. Zadok point to anything in Redlich or Ozzie that parses the remainder data. Redlich, which the petition and Dr. Zadok primarily rely upon, does not teach, mention, or suggest parsing the remainder data.

21. The petition starts this discussion of this element by citing to ¶ 35 and Figure 10 in Redlich. That discussion and figure, however, teach using a filter on the data that is originally input into the system, not using that filter on a portion of the data after an initial extraction step. EX1005, ¶ 35. Redlich discusses that Figure 10 at ¶ 231. And its discussion makes clear that the parsing Figure 10 illustrates is occurring on the original “plain text document or data object.” EX1005, ¶ 231. The *result, not the input* of the parsing is remainder data: “the parsed document 100

constitutes at least remainder data and data which is extracted or parsed or segmented out.” EX1005, ¶ 231.

22. Dr. Zadok claims that Figure 10 in Redlich is the same algorithm as Figure 41 in the '244 patent. What Dr. Zadok points to is merely showing that the '244 and Redlich each have a parsing algorithm and nothing about whether the function of Redlich's Figure 10 algorithm is used to parse remainder data.

23. Figure 10 of Redlich is executed at the beginning of the process, before there is any remainder data. The figures, as shown in Figure 288 of Dr. Zadok's declaration are shown here:



24. A POSITA would easily recognize that this is filtering at the beginning of the process, and not on remainder data. Remainder data is what is left after this process. Redlich states “Fig. 10 diagrammatically illustrates a chart showing the key components of the parsing, dispersion, multiple storage and reconstruction (under security clearance) of data” (EX1005, ¶¶ 91, 231). Redlich further describes the steps in Figure 10 “Reconstruction step 562 enables a person with the appropriate security

to obtain the map from map storage 558, decode the map, gather the dispersed, parsed segments of document 100 and compile the document. This is noted in function 564” (EX1005, ¶232). This final step in Figure 10 is dealing with the output, the parsed data, not another parsing step.

25. Redlich states “Document or data object 100, in function element 550, is created or obtained by the input computer device. The document is stored in a normal manner in customary data store 552. A parsing algorithm function 554 is utilized in parsing step 556. The parsing algorithm, as stated earlier, targets the plaintext document or data object 100 and splits, cuts and segments (that is, parses) the document by bit count, word, word count, page, line count, paragraph count, any identifiable document or icon characteristic, or other identifiable feature such as capital letters, italics, underline, etc. Hence, the parsed document 100 constitutes at least remainder data and data which is extracted or parsed or segmented out. A plurality of data extracts maybe obtained. The parsed data (which is both the extract data and remainder data) is then dispersed into storage facilities data store DS 1, 2, 3, 4, etc.” (EX1005, ¶ 231). Redlich is quite clear, the parsing step 556 of Figure 10, which leads to storing data into DS 1, 2, 3, 4, etc. parses the document into both extracted and remainder data. It is not parsing the remainder data, rather the remainder data is a product of the parsing. Therefore, Figure 10 of Redlich does not and cannot demonstrate a means for parsing remainder data.

26. The petitioner and Dr. Zadok also point to ¶ 34 of Redlich (EX1003, ¶¶ 104, 105, 110, 117, 164, 166, and 182; Pet., 16, 17, 20). That paragraph states “The method for securing data in a computer system in one embodiment includes establishing a group of security sensitive words, characters, icons, data Streams or data objects, filtering the data input from a data input device and extracting the security sensitive data. *The extracted data is separated from the remainder data and is separately stored*” (emphasis added).

27. It is quite clear that this is pointing to parsing the original data, not the remainder data. More importantly, on page 20 of the petition, the petitioner acknowledges this: “Similar to the ’244 Patent, *Redlich describes extracting the security sensitive data to result in extracted data and remainder data*. Compare EX1005, ¶¶34 (“The method for securing data ... includes ... extracting the security sensitive data. The extracted data is separated from the remainder data....”) with Petition page 20-21 (emphasis added). This is not parsing the remainder data, but rather it produces the remainder data.

28. The petition only really discusses the notion of parsing remainder data in three successive paragraphs on pages 59-60. The first paragraph cites four pieces of evidence, but none establishes parsing of remainder data either. EX1005, ¶ 37 describes “pars[ing]” a copy of the data “in its original state,” *not* after an extraction step that results in remainder data. EX1005, ¶ 106 (emphasis added) describes

parsing “of the plain text *source* document,” resulting in remainder data as a byproduct, not an input of the parsing process. It’s not clear why the petition cites EX1005, ¶ 143, because it merely describes “extraction of data elements in [an original] data object” and says nothing about parsing, let alone parsing of remainder data. In fact, this statement comes from a discussion of steps 238, 240, and 242 which are part of Figure 4 of Redlich. Figure 4 describes the parsing of the original data, not remainder data. Finally, EX1005, ¶ 238 describes parsing the original “documents or content” into data groups, of which remainder data would be one. Again, the remainder data is a byproduct, not the input.

29. Dr. Zadok’s report essentially copies this discussion of the petition word-for-word at EX1003, ¶¶ 230-32 and does not add any new evidence, so further discussion of that part of his report is unnecessary.

30. Dr. Zadok’s EX1003, ¶ 233 again refers to parsing a “plain text document,” not remainder data, so it fails to help him. The sole piece of evidence he cites from Redlich, EX1005 ¶ 106, just describes the parsing algorithm’s operation: “... by bit count, word, word count, page count, line count, paragraph count... identifiable document characteristic, capital letters, italics, underline, etc.” While this statement details how the parsing algorithm operates, the only parts of it germane to the issue of what data that algorithm is designed to parse, i.e. its function, are the two places where Redlich states it is applying that algorithm to the “plain text

document,” not remainder data. So this piece of evidence undermines Dr. Zadok and IBM.

31. IBM’s last paragraph on this subject again cites to Dr. Zadok, this time EX1003, ¶¶ 234-235. These two paragraphs consist primarily of Dr. Zadok’s unsupported statements about what a person of ordinary skill in the art “would have understood.” EX1003, ¶¶ 234-35. It’s a bit hard to respond to these statements unmoored to any actual evidence. Those statements in the first of these two paragraphs are interesting, because Dr. Zadok is contending that one of skill “would have understood” that “the remainder data would also need to be stored in data stores.” EX1003, ¶ 234. The reason this statement is interesting is because Redlich actually describes storage of remainder data, explaining that remainder data can remain in its original storage or be added the network if necessary. *See* EX1005 ¶ 35 (“the remainder data is also stored in the network if necessary”); ¶ 36 (“[a] storage system stores extracted data and remainder data (if necessary).”). These statements in Redlich about storage of remainder data are a problem for Dr. Zadok and IBM, however, because they are describing storage without there being an intervening step that parses the remainder data. So while Dr. Zadok seems to be arguing that a POSITA would understand the need for storage, and that storage could involve a prior parsing step, Redlich says just the opposite: storage of remainder data without parsing.

32. Dr. Zadok then spends ¶ 235 arguing that a POSITA would have considered parsing remainder data prior to storage “to ensure that there is sufficient capacity.” EX1003 ¶ 235. The only thing he cites for support is the same thing he cited in his ¶ 233 about how the parsing algorithm operates, “by bit count, word, word count,” etc. EX1003 ¶ 235 (quoting EX1005 ¶ 106). Again, that statement is merely about operation of the parsing algorithm and doesn’t support what Dr. Zadok is trying to argue. So he effectively has no evidence for his position about the need for parsing to ensure “sufficient capacity.”

33. Instead, there is evidence in Redlich directly to the contrary. The portions of Redlich about remainder-data storage I quoted two paragraphs above specify that the remainder data can remain in the original location or can be stored in the network if necessary. *See* EX1005 ¶ 35 (“the remainder data is also stored in the network if necessary”); ¶36 (“[a] storage system stores extracted data and remainder data (if necessary).”). Remember that the remainder data is the original data less the extracted data. So remainder data is already a subset of the original data and already has been reduced in size. If the remainder stays in its original location, for example, it already will require less memory capacity than it already had when it and the extract data were originally being stored together. “Sufficient capacity” would not be a concern. And, in the alternative, being stored elsewhere

within a larger network would open up much more possible storage, so, again, sufficiency would not be a concern.

34. In the end, Dr. Zadok does not assert that Redlich discloses parsing remainder data, but rather that, in Dr. Zadok's opinion, this is "one way that a POSITA would consider for storing the remainder data." EX1003 ¶ 235. His unsupported contention does not establish the claimed function, parsing remainder data.

IX. CONCLUSIONS

35. Upon completing my analysis, I have reached the following conclusions.

36. The petitioner and Dr. Zadok have not pointed to anything in the asserted prior art that parses remainder data as required by claim 1 of the '244 patent.

37. The process that Dr. Zadok identifies as parsing in '244 does not exist in the asserted prior art.

38. The asserted prior art neither anticipates nor renders obvious claim 1 of the '244 patent.

Dated: March 1, 2024



Dr. William C. Easttom II