

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

VALTRUS INNOVATIONS LTD. and
KEY PATENT INNOVATIONS LTD.,

Plaintiffs,

v.

SAP AMERICA, INC. and SAP SE,

Defendants.

Civil Action No. 2:24-cv-21

JURY TRIAL DEMANDED

**EXPERT REPORT OF NICK FEAMSTER, PH.D.
REGARDING INVALIDITY OF CERTAIN ASSERTED CLAIMS**

Dated: May 12, 2025



Nick Feamster, Ph.D.

I. INTRODUCTION

1. My name is Nick Feamster, Ph.D. I am a Professor of Computer Science at the University Chicago. I have prepared this report as an expert witness on behalf of the above-captioned defendants (collectively, “SAP” or “Defendants”) in the above-titled case. In this report, I give my opinions as to whether the asserted claims of U.S. Patent No. 6,889,244 (the “’244 Patent”), U.S. Patent No. 7,152,182 (the “’182 Patent”), U.S. Patent No. 7,313,575 (the “’575 Patent”), U.S. Patent No. 7,936,738 (the “’738 Patent”) (collectively, the “Asserted Patents”) were anticipated or obvious in light of the prior art. I provide technical bases for these opinions as appropriate.
2. This report contains statements of my opinions formed to date and the bases and reasons for those opinions. I may offer additional opinions based on further review of materials in this case, including opinions and/or testimony of other expert witnesses.
3. I have summarized in this section my educational background, career history, publications, and other relevant qualifications. My full curriculum vitae is attached as Exhibit 1 to this report.
4. In forming my opinions, I am relying on my education and experience as described below.

A. Educational Background

5. I received my Ph.D. in computer science from the Massachusetts Institute of Technology in 2005, where I completed a dissertation titled “Proactive Techniques for Correct and Predictable Internet Routing.” In 2001, I completed a Master of Engineering in Electrical Engineering and Computer Science at the Massachusetts Institute of Technology; my Master’s thesis, titled “Adaptive Delivery of Real-time Streaming Video” and written from 2000 to 2001, developed new Internet transport protocols to deliver streaming video over Internet paths with variable packet loss.

in this matter, I will be paid my customary consulting rate of \$600 per hour. My compensation does not depend on the outcome of this case.

II. LEGAL STANDARDS

29. Attached as Exhibit 3 to this report is a copy of the 2019 American Intellectual Property Law Association (“AIPLA”) Model Patent Jury Instructions, which were provided to me by counsel for Defendants. I am not an attorney, and I have referred to these jury instructions for my understanding of the relevant legal principles.

III. LEVEL OF ORDINARY SKILL IN THE ART

30. In reaching the opinions set forth in this report, I have analyzed the Asserted Patents discussed herein from the perspective of a person of ordinary skill in the art (“POSITA”) as of the time of the alleged invention. *See* AIPLA Model Patent Jury Instructions at 2.
31. I believe that a POSITA would have at least a bachelor’s degree in electrical engineering, computer science, or equivalent training, and at least two years of work experience in computer or software systems, including, but not limited to, systems or software related to databases, data redundancy, fault-tolerance, data processing, or networking. Additional education can compensate for work experience, and vice versa.
32. For the ’182 Patent, I understand that the relevant time period for assessing the knowledge of a POSITA is on or around **June 6, 2003**, which is when the application that issued as the ’182 Patent was filed. At the time of the earliest claimed priority date of the ’182 Patent (**June 6, 2003**), based on my personal and professional experiences, I believe I am qualified to analyze the ’182 Patent from the perspective of a POSITA. My opinion expressed below would not change even if the POSITA were to be found to have slightly more or less skill or if the relevant date were slightly earlier or later.

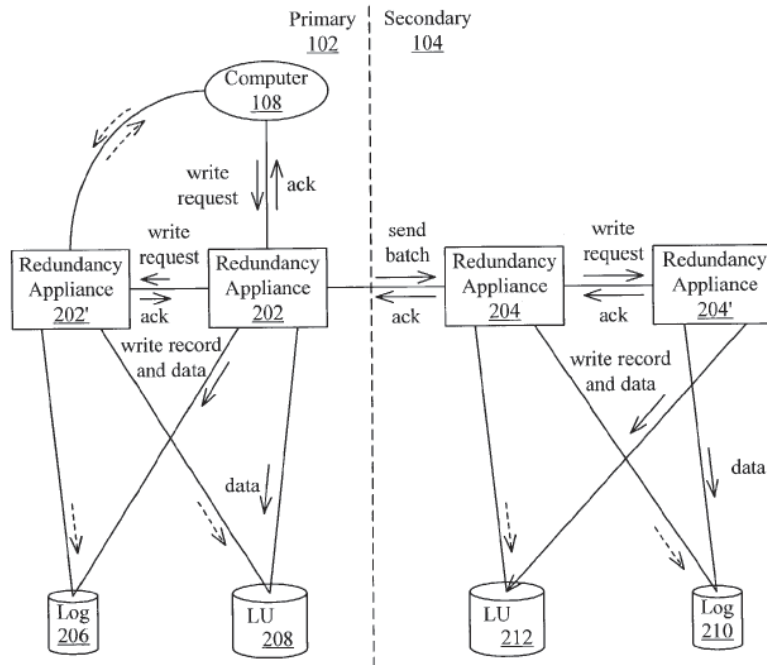


FIG. 11

'182 Patent, Figure 11

106. Another way the '182 Patent purports to improve data redundancy techniques is through “batching” read and write requests before transmission between storage systems. '182 Patent, 6:6-17. For example, the '182 Patent describes gathering write transactions into “batches” that are forwarded from a primary storage system to a secondary storage system. '182 Patent, 6:6-17. The batches can be organized based on “certain criteria, such as the number of transactions, the amount of data to transfer at a time or a time interval.” '182 Patent, 9:13-16.

2. The '182 Patent – File History

107. The '182 Patent issued from Application No. 10/456,053 (“’053 Application”), filed June 6, 2003, which is a standalone nonprovisional application with no priority claim. '182 Patent, Cover. Therefore, the earliest possible effective filing date for the '182 Patent is June 6, 2003.

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**APPENDIX 1 TO EXPERT REPORT OF NICK FEAMSTER, PH.D.:
DETAILED ANALYSIS OF THE INVALIDITY OF THE '182 PATENT**

I. INVALIDATING PRIOR ART FOR THE '182 PATENT¹

1. In addition to the opinions stated in my Expert Report regarding invalidity of certain claims, which I incorporate herein by reference, this Appendix includes additional detailed opinions regarding the '182 Patent.

2. Some of the terms used in the claims may have specific meanings and be understood to mean something different in the context of a database or database management system. But to the extent that certain functionality is accused of infringement based on the use of the same or similar word that is used in a claim term, that functionality existed well before the applicant filed the application for the alleged invention in the '182 Patent.

3. I understand that SAP served invalidity contentions in this case on May 20, 2024 (the "Invalidity Contentions"). While SAP's Invalidity Contentions refer to many items of prior art, this report addresses a subset of the prior art, namely:

- U.S. Patent App. Pub. No. 2003/0225760, SAP VAL_0355224-0355243, ("*Ruuth*"), published Dec. 4, 2003, under pre-America Invents Act (AIA) 35 U.S.C. § 102(e);
- U.S. Patent App. Pub. No. 2003/0093638, SAP VAL_0355142-0355159, ("*Margerie*"), published May 15, 2003, under pre-AIA 35 U.S.C. § 102(a), (e);
- U.S. Patent No. 5,889,935, SAP VAL_0355970-0356028, ("*Ofek*"), issued Mar. 30, 1999, under pre-AIA 35 U.S.C. § 102(a), (b);
- U.S. Patent No. 5,239,640, SAP VAL_0355657-0355668, ("*Froemke*"), issued Aug. 24, 1993, under pre-AIA 35 U.S.C. § 102(a), (b);
- The Adaptive Server Enterprise 12.5 system offered by Sybase, Inc., and publicly disclosed at least as early as 2001, under pre-AIA 35 U.S.C. § 102(a), (b), (g)(2), features of which are described in the following references:

¹ Pinpoint citations to page numbers in this Appendix typically refer to the PDF page number (which does not necessarily match the document page number).

- Sybase, Inc., “What’s New in Sybase Adaptive Server Enterprise?,” Adaptive Server Enterprise 12.5 (June 2001), SAP_VAL_0351032-0351197 (“*Sybase Source 1*”)
- S. Raghuram et al., “Taming the Downtime: High Availability in Sybase ASE 12”, *Proceedings of 16th International Conference on Data Engineering (Cat. No.00CB37073)*, San Diego, CA, USA, 2000, pp. 111-120, SAP VAL_0354365-0354374 (“*Sybase Source 2*”)
- J. Garbus, G. Tyrrell, “The Official Guide Sybase ASE 12.5 High Availability” (2002), SAP VAL_0354375-0354705 (“*Sybase Source 3*”)
- The HP MC/ServiceGuard system offered by Hewlett Packard Company, and publicly disclosed at least as early as 2002, under pre-AIA 35 U.S.C. § 102(a), (b), (g)(2), features of which are described in at least the following references:
 - Hewlett Packard Company, “Managing MC/ServiceGuard,” (March 2002), SAP VAL_0353147-0353536 (“*HP Source 1*”)
 - Hewlett Packard Company, “Designing Disaster Tolerant High Availability Clusters,” (June 2002), SAP_VAL_0842310-0842697 (“*HP Source 2*”)

A. State of the Art

4. This Section summarizes some basic facts about each prior art reference included in my analysis below. This summary is not exhaustive and additional pertinent details about each reference are discussed in greater detail in later sections.

1. According to the '182 Patent and Related Applications Incorporated by Reference

5. At the time when the application that issued as the '182 Patent was filed, key concepts underpinning the Patent’s purported invention were well developed in the art and generally known to a POSITA. These concepts include data redundancy and fault-tolerance, such as in the context of data storage, as well as different techniques and components for data storage.

6. For example, in the Background section of the '182 Patent, the applicant admitted multiple aspects of the purported invention of the '182 Patent were known in the art. These are described in the invalidity contentions cover pleading, which I have reproduced below. SAP

31. The remote site 14 includes a remote storage device 32, a remote storage controller 34, and optionally a memory cache 36. *Margerie* at [0028]. Margerie discloses that the remote site 14 can include redundant primary storage controllers 34 (e.g., 34a, 34b), redundant cache memories 36 (e.g., 36a, 36b), and redundant storage devices 32 (e.g., 32a, 32b). *Margerie* at [0029].

32. In operation, a data block 40 (e.g., packet, frame, message, file segment, etc.) is sent from the storage consumer 20 to the primary controllers 24, which is either directly written to the storage devices 22 or copied into memory caches 26 then written to the storage devices 22. *Margerie* at [0029]-[0030]; FIG. 2. Copies 44a, 44b of the data block are transmitted over the communication link 16 to the remote site 14. *Margerie* at [0028]. The primary store controllers 24 then generate a data write or transfer acknowledgement 42 that is sent to the storage consumer 20. *Margerie* at [0029]-[0030]. After transfer to the remote site 14, the remote storage controllers 34 of the remote site reconcile the multiple copies 44 of data block 40, ensure there are no errors in reconciliation, and then write the data block 40 to the memory caches 36 and/or remote storage devices 32. *Margerie* at [0029]-[0030]. The remote storage controllers then send individual transaction reports 48 back to the primary storage controllers 24. *Margerie* at [0029]-[0030].

b. Scope and Content of U.S. Patent No. 5,889,935 (Ofek)

33. U.S. Patent No. 5,889,935 to Ofek et al. (Ofek), titled “Disaster control features for remote data mirroring” was filed on March 17, 1997 and published on March 30, 1999. *Ofek* at Cover, SAP VAL_0355970-0356028. Based on my understanding, Ofek qualifies as prior art at least under pre-AIA 35 U.S.C. § 102(b) because the ’182 Patent was filed on June 6, 2003.

34. The inventors of the Ofek reference included Yuval Ofek, Natan Vishlitzky, and Haim Kopylovitz. *Ofek* at Cover. Each of these inventors are inventors on dozens of patents. *See., e.g.,* [https://patents.google.com/?inventor=Yuval+Ofek&oq=inventor:\(Yuval+Ofek\)](https://patents.google.com/?inventor=Yuval+Ofek&oq=inventor:(Yuval+Ofek)), (accessed