MORRISON & FOERSTER LLP
MICHAEL A. JACOBS (Bar No. 111664)
mjacobs@mofo.com
MARC DAVID PETERS (Bar No. 211725)
mdpeters@mofo.com
DANIEL P. MUINO (Bar No. 209624)
dmuino@mofo.com
755 Page Mill Road, Palo Alto, CA 94304-1018
Telephone: (650) 813-5600 / Facsimile: (650) 494-0792

BOIES, SCHILLER & FLEXNER LLP
DAVID BOIES (Admitted *Pro Hac Vice*)
dboies@bsfllp.com
333 Main Street, Armonk, NY 10504
Telephone: (914) 749-8200 / Facsimile: (914) 749-8300
STEVEN C. HOLTZMAN (Bar No. 144177)
sholtzman@bsfllp.com
1999 Harrison St., Suite 900, Oakland, CA 94612
Telephone: (510) 874-1000 / Facsimile: (510) 874-1460
ALANNA RUTHERFORD (Admitted *Pro Hac Vice*)
575 Lexington Avenue, 7th Floor, New York, NY 10022
Telephone: (212) 446-2300 / Facsimile: (212) 446-2350 (fax)

ORACLE CORPORATION
DORIAN DALEY (Bar No. 129049)
dorian.daley@oracle.com
DEBORAH K. MILLER (Bar No. 95527)
deborah.miller@oracle.com
MATTHEW M. SARBORARIA (Bar No. 211600)
matthew.sarboraria@oracle.com
500 Oracle Parkway, Redwood City, CA 94065
Telephone: (650) 506-5200 / Facsimile: (650) 506-7114

Attorneys for Plaintiff
ORACLE AMERICA, INC.

UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

SAN FRANCISCO DIVISION

ORACLE AMERICA, INC. Plaintiff, v. GOOGLE, INC. Defendant.	Case No. CV 10-03561 WHA **DECLARATION OF CHRISTOPHER PLUMMER IN SUPPORT OF ORACLE AMERICA, INC.'S OPPOSITION TO GOOGLE'S MOTION TO STRIKE PORTIONS OF THIRD EXPERT REPORT** Dept.: Courtroom 8, 19th Floor Judge: Honorable William H. Alsup

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I, CHRISTOPHER PLUMMER declare as follows:

1. I am an employee of Oracle America, Inc. ("Oracle"). My title is Consulting Member of Technical Staff.

2. I have personal knowledge of the facts set forth herein. If called upon to testify, I could and would testify as follows.

3. I have a bachelor's of science in computer science from the University of Michigan. I work primarily in software development, and I have led projects concerning the Java virtual machine. I hold a number of patents on Java technology.

4. I have been employed as an engineer with Sun Microsystems, Inc. ("Sun"), now Oracle, since approximately 1997. Through my years of working at Sun, I have become very familiar with the Java technology, and I have helped to design and improve the Java platform as part of my regular work responsibilities at various points throughout my tenure at Sun, now Oracle.

5. For example, I have been working with virtual machines since I started working with Sun in the 1990s. I work primarily in the Java Embedded Group, mostly focused on virtual machines for embedded devices, and I am the virtual machine technical lead within that group. I have been working on Java embedded platforms since 1997. Many of those platforms have similar characteristics to a smartphone, especially with regard to processor and available memory. In fact, from 2007 to 2009, I helped develop a full Java "stack" whose sole purpose was to run on a smartphone. That was an implementation of the Sprint Titan specification for a Java-based phone stack, ultimately released by Samsung. I was also one of the lead engineers on a virtual machine that Sun created specifically for the Java ME platform, called the CVM.

6. I was therefore employed at Sun, and knowledgeable about the Java technology, in the 2006 time frame, when Sun and Google were actually negotiating for a Java license for Android.

7. In addition to the experience I outlined above, I have direct experience with Java-related patents, and have direct experience evaluating the performance benefits that the inventions covered by Java patents provide. I have evaluated patents in terms of their engineering performance before.

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8. I, along with four of my colleagues at Oracle, was asked by counsel for Oracle to conduct an analysis of certain patents held by Sun Microsystems, Inc. in the spring of 2006. Specifically, counsel requested that we determine which of Sun's Java patents would have been potentially relevant to a smartphone platform in 2006, and then determine which of those patents would have been expected, from an engineering perspective, to provide the greatest benefits to such a platform.

9. Along with the other engineers, I concluded that we could provide the analysis requested by counsel through the following steps:

- Identify relevant "blocks" of technology corresponding to functions that would be expected to be useful to a smartphone platform in 2006;
- Identify what subset of Sun's patent portfolio would have been useful to a smartphone platform in 2006;
- Assign those potentially relevant patents to the technology blocks;
- Rank the relative importance of those technology blocks; and
- Rate the patents on a three-point scale.

10. I was not asked to provide any economic valuation of the patents in suit. Instead, my analysis of "value" was confined to the engineering benefit that the patents would be expected to provide a smartphone platform.

11. Throughout the process, I understood that Dr. Mark Reinhold was the leader of the team. I understood that he would make all final decisions, and that I was helping him to review the patents in the interest of time and to ensure that the final analysis was as accurate and comprehensive as possible.

12. Dr. Reinhold asked me to begin working on this project on or about January 24, 2012. I had not done any work for Prof. Cockburn prior to that date.

13. At the outset of the process, I understand that George Simion of Oracle ran searches through Sun's patent databases to acquire a list of over 1,300 Java related patents that we were to review. I am confident that the list included all of the relevant patents for this assignment.

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14. In the first step of the process, our team, led by Dr. Reinhold, identified 22 technology blocks that would have been relevant to a smartphone platform in 2006. We brainstormed the list of logical functional components on or about January 24, 2012; over the course of the next few days, we refined that list to come up with the final list of 22 blocks. In order to contribute to this exercise, I used my personal experience, expertise, understanding of Google's objectives in 2006 based on a Product Requirements Document that I understand Google provided to Sun in 2006, and knowledge of the Java platform. I am confident that the 22 technology blocks that we identified represent the full range of Java technology that would have been relevant to a smartphone in 2006.

15. In the second step of the process, our team as a whole, led by Dr. Reinhold, reviewed every one of the patents in the list of 1,300+ patents captured by the searches discussed above to determine which patents would have been relevant to a smartphone platform in 2006.

- Our team divided up the group of 1,300+ patents to ensure that every patent was evaluated by at least one person. We could not all look at every patent because of limitations on time. I personally looked at each patent I was assigned to evaluate with care, and I have no reason to believe my colleagues did not do the same.
- We reviewed the patents by looking at the titles, abstracts, descriptions, application dates, and inventor names. When we believed it would be useful to do so, we also reviewed the specifications and claims by retrieving the patent from the USPTO web site. This is a reasonable way to ascertain a patent's rough usefulness in a smartphone, because, in my experience, the content used for the abstract and description are provided by engineers, will provide the most useful information to another engineer, and will explain the general purpose of a patent and its claimed invention with enough specificity to understand its scope, application, and potential advantages. In contrast, in my experience information in the claims is less useful in understanding the nature of the invention.
- Although reviewing and categorizing the patents was time-consuming, it was not hard. Patents filed by Java engineers relating to improvements in Java technology use

familiar terms, and in many cases I myself or another member of the team had direct experience with the invention or implementations of the invention.

- I finished reviewing my portion of the 1,300+ patents on or about January 26, 2012.
- When we had finished classifying each patent we were assigned to review, the members of the team who had special expertise with one or more of the technology blocks reviewed and re-confirmed the accuracy of our categorization for some of the blocks. We discussed any inconsistently classified patents, and discussed any patents that I or one of my colleagues had indicated needed further attention or discussion.

16. The final responsibility for deciding on the list of potentially relevant patents fell to Dr. Reinhold. After this process, Dr. Reinhold determined that 569 patents out of the original 1,300+ would, in fact, be potentially relevant to a smartphone platform in 2006, and had classified each of those patents into one of the 22 groups. I agreed with all of Dr. Reinhold's determinations.

17. In the third step of the process, our team, led by Dr. Reinhold, ranked the 22 technology groups. We distinguished among them by determining the benefits they would be expected to provide a smartphone platform in terms of speed, startup, footprint (i.e. memory requirements), and security.

- We determined that these four criteria were reasonable criteria on which to rank the patents because software patents in the Java portfolio are almost always designed to provide one of these benefits. In my experience, and based on my knowledge of the Java platform, if I were to consider what benefits I would want to provide a Java-based smartphone in 2006, these are the criteria I would choose. These are the criteria that we routinely used at Sun and now at Oracle to evaluate our own Java implementations.
- We ranked these groups independent of the patents that were contained within them.
- Based on our ranking system, two or more groups occasionally tied.

18. We had completed this process on or about January 30, 2012.

19. In the fourth step of the process, our team, led by Dr. Reinhold, reviewed the specific patents, and evaluated each patent on a three-point scale, in which the best score was a 1. The ratings reflected the benefit that our team, led by Dr. Reinhold, would have expected the patented inventions

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to provide a smartphone platform in 2006. The top rating, a 1, was reserved for those patents that were either required by the Java platform specification for compatibility, or that would bring an order of magnitude improvement to the key metrics of speed, startup, footprint, or security. The middle rating, 2, was assigned to patents that would bring a significant improvement to the key metrics of speed, startup, footprint, or security. The bottom rating, 3, was assigned to patents that would have been relevant but would not have provided the benefits of a 1 or 2 rated patent.

20. By the time we began to rate the patents, we had reviewed many of them multiple times, in addition to our pre-existing familiarity with the underlying inventions. Again, I am confident that we had sufficient information to make an informed engineering assessment of the likely benefits of each patent. I and other senior engineers at Oracle, including each of the other four engineers on this assignment, regularly are called upon to make assessments of proposed innovations and improvements to Java technology. I and other engineers frequently make those assessments using information that is no more detailed than what is disclosed in the patent abstracts. In addition, I was able to apply my own knowledge of how some of the inventions had been implemented, and the performance benefits (or lack thereof) that resulted. The other engineers often had similar experiences that they shared with the team as we reviewed the patents and that informed our collective assessment. I agreed with all of the ratings that we settled on as a group.

21. In summary, we concluded:

- A group of 569 patents would be relevant to a smartphone in 2006.
- Those 569 patents fit into 22 technology groups.
- The most important technology group is the Boot group.
- There were seven patents ranked as 1 in the Boot group.
- The second most important technology group is the JIT group.
- There were twelve patents ranked as 1 in the JIT group.
- The third most important technology group is the interpreter group.
- There were three patents ranked as 1 in the interpreter group.

- It would not be possible, based solely on engineering considerations that would be knowable in 2006, to say which of the 22 patents we identified in the top three groups was the most or least valuable to a smartphone platform such as Android.

22. I believe that both the process we employed, and the results we came to, are reasonable and accurate. If I were on a team assigned to design a Java-based smartphone platform in 2006, the three most important groups of technology in terms of startup, speed, and footprint would have been boot, JIT, and interpreter.

23. I am confident that the team had sufficient time and information to ascertain the correct rating for each patent, and that we had the collective expertise with the Java platform to understand the relative importance of every one of the technology groups in a smartphone platform in 2006 and every one of the patents in the list of 569. I do not believe that there is anyone at Oracle that we could have added to the team who would have improved the accuracy of the process or the results.

24. Although I have some knowledge of the Android platform, and I have assisted lawyers in analyses to determine whether Android infringes Oracle's patents, my past work had no effect on my work for this assignment. My assistance in that regard was not confined to the seven patents on which Oracle has sued Google – I had looked at numerous other Java patents as well. I understand that Google has also claimed in papers filed with the Court I and my colleagues are "the very engineers who selected litigation patents at the outset." I know that statement to be false with respect to me. I have never selected any patents for this litigation or any other.

25. I understand that Google has also claimed in papers filed with the Court that I and my colleagues "admitted in deposition that they spent next to no time compiling their rankings and were influenced by their prior work in this case." I understand that Google also asserts in its papers that I and my colleagues "favor[ed] the patents they had already analyzed as part of this case." I know that all of those assertions are entirely untrue with regard to me, and are contrary to everything I observed as I watched my colleagues perform their work alongside me. Together we spent significant time categorizing, evaluating, and rating the patents, and applied decades of directly relevant engineering experience to do so. There was sufficient time to do the analysis that we were asked to do, and to do

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so in a reliable and responsible manner. I did not "favor" any of the asserted patents for any reason related to the litigation, and I was not "influenced" by my prior work in the litigation. The assistance I provided to help determine whether Android infringes Java patents did not cause me to mis-categorize any patent, nor did it cause me to rate any patent higher or lower than its technical merits warranted.

26. As I explained at my deposition, I did some work to assist in measuring the performance benefits to Android of the '104 and '205 patents in this litigation. As I further explained, my own personal assessment of the likely engineering benefit provided by those two patents relied "partly" on my work in connection with the litigation. It also relied on my other regular work and experience, unrelated to the litigation, as I explained by using the word "partly" in my answer. My ultimate assessment of the engineering benefit of the '104 and '205 patents was not affected by my other work in the litigation, because the other information that I already had available to me would have led me to the exact same conclusion. In every case, I considered each patent and technology group based on the objective engineering benefit I would have expected it to provide to a smartphone platform in 2006, in light of my engineering experience and my knowledge of Java technology, as described above.

I declare under penalty of perjury that the foregoing is true and correct.

DATED: February 23, 2012

/s/ Christopher Plummer

CHRISTOPHER PLUMMER

BOIES, SCHILLER & FLEXNER LLP
OAKLAND, CALIFORNIA

ATTESTATION OF FILER

I, Steven C. Holtzman, have obtained Chris Plummer's concurrence to file this document on his behalf.

Dated: February 24, 2012

BOIES, SCHILLER & FLEXNER LLP

By: /s/ Steven C. Holtzman
Steven C. Holtzman

Attorneys for Plaintiff
ORACLE AMERICA, INC.

BOIES, SCHILLER & FLEXNER LLP
OAKLAND, CALIFORNIA