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Civil Action No: 12 CIV 0095 (RJS)

Plaintiff,

-against -

REDIGI, INC.,

Defendant.
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DECLARATION OF JONATHAN LIN IN SUPPORT OF DEFENDANTS' MOTION FOR SUMMARY JUDGMENT

I, Jonathan David Lin, pursuant to 28 U.S.C. § 1746, declares under the penalty of perjury, as follows:

- I am a Software Developer at ReDigi Inc. and am in charge of the code which makes up the ReDigi proprietary "Media Manager" software that runs on all supported Windows platforms.
 (the "Windows Media Manager")
 - 2. I have held this position for over 6 months.
- 3. Previously I was pursuing a Bachelor of Science in Electrical Engineering and Computer Science (Course 6-2) at the Massachusetts Institute of Technology. In addition to my studies, I worked with the MIT EECS department as a 6.01 Lab Assistant, with the MIT Cathode/Anode Satellite Thruster for Orbital Repositioning (CASTOR) Project as an undergraduate

researcher, and with the MIT Kerberos Consortium as a student programmer. In September of 2011 I took a leave of absence from MIT, and on January 1st of 2012 I joined ReDigi.

- 4. The ReDigi Media Manager performs multiple functions allowing for the discovery, transfer, and management of eligible music files as well as the continual scanning for marketed songs to enforce compliance with the ReDigi Terms of Service.
- 5. The Windows Media Manager uses either of two distinct algorithms to migrate music files from the user's computer to the ReDigi Cloud depending on whether the user purchased the music file before or after installing the Windows Media Manager.
- 6. In either case, the Eligible File¹ is never copied or reproduced and in both cases, the file ends up in ReDigi Cloud. This is achieved through the use of our own written file migration procedure that does not involve the use of copying or reproduction.

FILE TRANSFERS FROM THE REDIGI WINDOWS CLIENT TO THE REDIGI SERVER

(A) Introduction to the ReDigi Windows Client

- 7. The purpose of the software is to manage the relationship between the music files on a user's computer running Microsoft Windows operating system (the "Windows Computer") and the contents of the user's ReDigi account.
- 8. The Windows Media Manager performs four main tasks: First, it scans a user's permanent hard drives, attached drives, and any mounted removable media for music files (the "Searchable Drives") and makes a preliminary evaluation of each music file that it finds. Information about music files that may be eligible for storage on ReDigi servers (the "ReDigi Cloud") and sale on the ReDigi marketplace is stored in a ReDigi database and updated whenever any changes are made to

^{1 &}quot;Eligible File(s)" solely refers to the original source file purchased from iTunes by the user as determined by Media

the user's Searchable Drives. Second, the Windows Media Manager alerts the ReDigi server (as well as the user) if a music file is found that has already been sold or set-for-sale by him or her through ReDigi. Third, the Windows Media Manager migrates Eligible Files from the user's computer to his or her ReDigi Cloud. Fourth, the Windows Media Manager provides the ability to manage Eligible Files that have been migrated to the user's ReDigi Cloud account. A user can download copies for his or her personal use (the "Personal Use Copy) and a user to set his or her Eligible Files for sale or cancel existing sale.

9. The Windows Media Manager uses either of two distinct algorithms to migrate Eligible Files from the user's computer to the ReDigi Cloud, depending on whether the user purchased the Eligible File before or after installing the Windows Media Manager.

(B) Eligible File migration and sale of Eligible Files purchased after the Windows Media Manager was installed (ReDigi 2.0)

- 10. Since June 11, 2012, after the Windows Media Manager is installed, the music files that a user purchases from iTunes are no longer downloaded directly to the user's hard drive. ReDigi has developed a method to store the Eligible Files output from iTunes directly onto ReDigi's Cloud, instead of the user's hard drive.
- 11. Normally, music files purchased from iTunes are downloaded to the user's hard drive in a temporary directory inside the iTunes Media folder. However, when the ReDigi Windows Media Manager software is installed, it replaces the iTunes Media folder with a link to a ReDigi user level file system which intercepts Eligible File downloads and re-routes them to the ReDigi Cloud where it is assigned a unique key that is solely associated with that user and that Eligible File (the "Key").
- 12. The ReDigi user level file system communicates with the Windows Media Manager via a direct socket connection, and with iTunes indirectly via Dokan, an open-source operating system

library module that allows special user level file systems to co-exist with regular fixed and removablemedia file systems that are also attached to the user computer, eg. an ipod, ipad, external drive.

- 13. Normally, when a software program, such as iTunes, writes to a file system location, a system request is made to the operating system to write data to the physical device eg. hard drive, dvd drive, external hard drive corresponding to that file system. The purpose of the Dokan kernel module / library and the ReDigi user level file system is to take that system request and forward it to the ReDigi Windows Media Manager, which itself responds to the request.
- 14. The ReDigi user level file system remains transparent most of the time, forwarding file system requests and piping the Eligible File directly from iTunes to the ReDigi Windows Media Manager software, which directs the purchased Eligible File directly to the ReDigi Cloud.
- 15. Because the iTunes' file system request(s) to write the Eligible File, meta data and acoustics are intercepted before they reach the user's hard drive, the Eligible File is never written or saved to the user's computer. As a result, the **original source iTunes music file**, that is, the Eligible File, that the user purchased from iTunes is saved directly, for the first time anywhere, on the ReDigi's Cloud servers.

(C) File migration of Eligible Files purchased before the Windows Media Manager was installed

- 16. A ReDigi user may migrate an Eligible File from his or her hard drive to the ReDigi Cloud, if the music file passes an initial validation check. When the ReDigi user, who has now downloaded the Windows Media Manager, makes a request to migrate an iTunes music file, the Windows Media Manager looks up all copies of that particular Eligible File in the local database of the user's Searchable Drives, eg. all copies if the David Bowie song, "Life on Mars".
- 17. The Eligible File is migrated in many small pieces (hereafter "Blocks") by lifting the blocks from the user's hard drive and migrating them to the ReDigi Cloud. (Note that the word Block

here refers to an arbitrarily small (about 4000 bytes) section of the music file, as opposed to a file system block, (defined as the minimum length of a section of data stored in a particular file system type.)

- 18. The Eligible File Blocks are transferred in reverse (starting at the end, ending at the beginning) order: one by one, blocks are chopped off of the end of the file, reversed, and migrated to the ReDigi Cloud.
- 19. Each Block is processed in exactly the same way. First, the position of the Block is defined so that the end of the Block is aligned to the current end of the Eligible File, and the contents are read into memory. The Block is removed from the end of the file by truncating the Eligible File, so that the file shrinks by an amount equal to the length of the Block. The "SetEndOfFile" command, which is part of the Windows file system management functions, is used to truncate the Eligible File.
- 20. The contents of the Block are migrated to the ReDigi Cloud via a binary HTTP post request.
- 21. Each Block is taken from the current end of the Eligible File as it shrinks. Thus, each successive Block contains the data content just prior to the previous one. Since the ReDigi Cloud receives the Blocks that make up the Eligible File in reversed order, the ReDigi Cloud receives the original whole Eligible File in reverse order without any discontinuities.
- 22. As each Block is migrated from the user's hard drive to the ReDigi Cloud, and saved to the ReDigi Cloud, the user's hard drive file shrinks in size and the server Eligible File grows in size accordingly.
- 23. It is still the original file and the Eligible File has never been copied, it has been migrated. When all of the Blocks, have reached the ReDigi cloud server they are re-assembled in

the Cloud Locker and are in a format that is perceivable and can be played using an Mp3 player or other program.

24. This is all achieved without copying and without reproduction and without deletion of the Eligible File.

(D) Management of music files that have been migrated to the ReDigi Cloud

25. When an Eligible File is migrated to the ReDigi Cloud, it is assigned both an identifier that specifies whether the file is stored in reverse or normal order and a unique key that is solely associated with that user and that Eligible File (the "Key").

26. A user can download a copy for his or her personal use (the "Personal Use Copy"). If at some point, the user wishes to sell the Eligible File, he or she informs the Windows Media Manager, which deletes all of the user's Personal Use Copy(ies) of the Eligible File before setting it for sale on the ReDigi website.

- 27. Eligible Files that have been set for sale cannot have copies downloaded. If at some point, the user wishes to cancel the sale of a Eligible File, he or she informs the Windows Media Manager which removes the listing from the ReDigi website.
- 28. When the Eligible File is sold to the other user, no copy, no reproduction and no transfer is involved the Key to that specific Eligible File is simply transferred on the ReDigi database from one user's ReDigi Cloud account and added to another user's ReDigi Cloud account.

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

Executed on July 20, 2012 in Cambridge, Massachusetts.

Jonathan David Lin