EXHIBIT A

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7   IN THE UNITED STATES DISTRICT COURT FOR THE

8   NORTHERN DISTRICT OF CALIFORNIA

9   OAKLAND DIVISION

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    PACIFIC CENTURY INTERNATIONAL,)   **No. C-11-02533 DMR**
12 LTD.,   )
)
13   Plaintiff,   )   **SUPPLEMENTAL DECLARATION OF**
                  v.   )   **PETER HANSMEIER ADDRESSING**
14   )   **THE COURT'S JULY 14, 2011 ORDER**
    DOE 1,   )
15   )
              Defendant.   )
16   )
)
17 _____)

18   **SUPPLEMENTAL DECLARATION OF PETER HANSMEIER ADDRESSING THE**
                       COURT'S JULY 14, 2011 ORDER

19 I, Peter Hansmeier, declare under penalty of perjury as true and correct that:

20   1.   I am a technician at Media Copyright Group, LLC ("MCG"). On behalf of its clients,

21 MCG monitors and documents Internet-based piracy of our clients' copyrighted creative works. I

22 submit this supplemental declaration in response to the Court's July 14, 2011 Order Requesting

23 Supplemental Information from Plaintiff relating to its *Ex Parte* Application for Leave to Take

24 Expedited Discovery, and, specifically, on two technical questions relating to BitTorrent swarms and

25 interactions amongst its users.

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2.   This declaration is based on my personal knowledge, and if called upon to do so I would be prepared to testify as to its truth and accuracy.

Background

3.   I begin my response by describing the process by which files are distributed via the BitTorrent protocol. First, an individual locates a file to be distributed. In this case, that file was a particular version of Plaintiff's copyrighted video "Amateur Cream Pies – Erin Stone" (hereinafter "the Video").

4.   Second, the individual creates a torrent file from the video file. A torrent file is simply a file that contains the hash value of the file to be distributed along with certain other meta-information, including directions that lead a BitTorrent program to the swarm. One important quality of a torrent file is that it is much smaller than the file that is to be distributed. For example, a torrent file could be as small as 20kb when the video file associated with the torrent file is 700mb. This quality is important because distributing a 20kb file is much less demanding than distributing a 700mb file.

5.   Third, the individual uploads the torrent file to one or more torrent indexing websites, such as the aptly-named piratebay.org.

6.   Finally, from there, other individuals locate the particular torrent file via search queries or keyword indexes and load the torrent file into their BitTorrent software. The BitTorrent software follows the directions contained in the torrent file to locate the swarm.

7.   By way of background, a "swarm" is the aggregate group of individuals involved with uploading and downloading a particular file. In order for two individuals to be classified as being in the same swarm, there must be a connection between them. For instance, if one group of individuals ("Group A") distributed data only among themselves while another group of individuals

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("Group B") distributed data only among their group—with no data transfer between the two groups—Groups A and B would be considered distinct and separate swarms.

8.   In my work for Plaintiff, I scour the Internet for swarms with files containing our client's works. In certain cases I will observe multiple swarms. Typically, the multiple swarms arise as a consequence of differences in the underlying file to be distributed (i.e. same general content, but the video file is a different resolution or file extension). In other cases, I will observe a single swarm.

9.   The BitTorrent protocol encourages the formation of a single swarm, so the most fertile grounds for identifying infringers tends to be the largest swarm. Nevertheless, in certain cases I have actually observed multiple large discrete swarms formed to distribute different versions of a client's copyrighted work. An example of this occurred in monitoring infringement for another client, Hard Drive Productions, Inc. There, we observed what we believed to be three separate swarms distributing the same basic work, "Amateur Allure – Natalia." It is my understanding that Plaintiff's counsel in that case proceeded to file three separate lawsuits in California with respect to the single work—one for each swarm. In this case, we only found one significant swarm, and each of the IP addresses belonging to the Doe Defendants was associated with infringing activity of single file in that swarm.

QUESTION 1:

If an individual uploads the same file with its unique hash value to multiple, independent BitTorrent websites, do the swarms that develop from these separate uploads interact? If so, under what circumstances?

10.   I would answer the first part of this question in the affirmative, provided that the torrent file uploads were made on non-proprietary networks.

11.   When an individual uploads a torrent file to one or more BitTorrent websites, a single swarm tends to develop from those uploads so long as the directions in the torrent file are not associated with a proprietary network. For example, the company Facebook uses the BitTorrent

protocol to distribute its latest code updates to its web servers across the world. If a code update were to leak to the public and be uploaded on a common torrent indexing site, then the swarm that developed around the public torrent would presumably *not* interact with the swarm associated with Facebook's proprietary network. The proprietary nature of Facebook's company network would isolate the Facebook internal swarm from the general external swarm.

12.   If, on the other hand, the same torrent file was uploaded to two different regular BitTorrent websites, a single swarm would likely develop.

13.   The key factor to focus on is whether the "swarm-finding" mechanisms in a torrent file would tend to create a single swarm or would, for some reason, create a wall around a swarm. The standard implementation of the BitTorrent protocol tends to promote single swarms because as a general rule the larger the swarm the more effective the data transfer. The swarm finding mechanisms in a torrent file include trackers and distributed hash tables. Trackers are servers that contain a list of peers in the swarm. If two individuals are connected (directly or indirectly) to the same tracker then they are properly considered to be in the same swarm. Distributed hash tables allow each peer to serve as a tracker. The same logic applies.

14.   As an analogy, a swarm is like a party, and a torrent file is like an invitation to the party. If the same invitation (i.e. torrent file) is distributed to 30 groups (i.e. BitTorrent websites), then anyone who accepts the invitation (i.e. loads the torrent file into BitTorrent software) will ultimately end up at the same party—regardless of where they found the invitation. Only when the invitation is to a different party (i.e. to a file with a different hash) or contains special instructions (i.e. as in the Facebook example above), would there not likely be interaction among the party-goers.

15.   The BitTorrent protocol contains three swarm-finding mechanisms. The first is the use of trackers. Trackers are servers that contain a list of peers in a swarm. Most torrent files contain a list of trackers. When an individual loads a torrent file into BitTorrent software, that software

attempts to connect to the trackers listed in that torrent file. The major BitTorrent software also allows individuals to manually add trackers to a torrent file. Thus, if a given torrent file is uploaded to multiple torrent sites, but contains the same list of trackers, then the swarm that develops from those uploads is, by definition, one swarm. The second mechanism is distributed hash tables, which essentially allow peers to serve as trackers. The third mechanism is peer exchange, which allows peers to communicate information about what peers they are currently connected to with the other peers they are currently connected to. The major point of this is that peers who use a torrent file with different (or no) trackers listed in it can still be in the same swarm. Each of the later protocols that were added to BitTorrent (distributed hash tables and peer exchange) were implemented to reduce BitTorrent's reliance on trackers and improve the odds that swarms would merge.

QUESTION 2:

Is it *possible in any circumstances* that the resulting swarms that develop from these separate uploads would *not* interact? In other words, is there *any circumstance* in which two individuals could use BitTorrent to dowload a specific file with a given hash value and *not* have participated in the same swarm?

16.   The answer to this question is yes. As described above in the Facebook example, one instance where two torrent files with identical hash values would create distinct swarms is when one of the torrent files is distributed over a proprietary network.

17.   It is worth noting, however, that MCG has no ability to access proprietary networks, such as the Facebook corporate network, to monitor BitTorrent traffic. In other words, if there are proprietary swarms distributing Plaintiff's video, it is not likely the case that we are monitoring those swarms.

18.   A real world example of two distinct swarms arose in connection with recent popular uprisings in the Middle East where certain countries severed their connection to the outside Internet. At this time, we observed a decrease in infringers participating in the swarms we monitor from

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certain of the countries that apparently attempted to isolate their networks. While people inside the country might have been sharing data with one another, it would most accurate to say that the swarms in those countries were separate and distinct from the general swarm.

19.   It is also worth noting that the formation of a swarm is more or less probabilistic event—albeit a very high probability. To revive the party example from above, it is possible that partygoers would arrive at a party and immediately separate into two separate groups, without interacting the entire night, but the scenario is rather far-fetched.

20.   We can document very precisely the interactions amongst the Doe Defendants in this suit and our systems, but without further discovery (such as reviewing each Defendants' particular BitTorrent logs) we cannot document the interactions amongst the Doe Defendants and third parties. I am confident, however, that the Doe Defendants in this suit were in the same swarm because each of them communicated with our systems with respect to a specific file and by virtue of using BitTorrent have very likely done so amongst each other as well. If I believed that the Doe Defendants in this suit participated in separate swarms then I believe Plaintiff would have simply brought two separate suits, as our other monitoring clients have done in the past.

Executed on August 8, 2011, in Minneapolis, MN.

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Peter Hansmeier

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