UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TWITTER, INC.

Petitioner

v.

VIDSTREAM, LLC

Patent Owner

Case IPR2017-00830
U.S. Patent No. 9,083,997

DECLARATION OF JAMES OLIVIER

I. Qualifications and Experience

1. My name is James Olivier, I am at least 18 years old and qualified to testify in this proceeding.

2. I have been retained by VidStream LLC as a technical expert to provide information and my opinion regarding U.S. Pat. No. 9,083,997 (the "'997 Patent"). I am compensated on an hourly basis for my work in connection with this declaration.

3. I am currently an Adjunct Professor Telecommunications and Network Engineering Program Southern Methodist University's Graduate School of Electrical Engineering, where I teach MPLS enabled applications to graduate students. One of the primary MPLS enabled applications I teach is the transport of video over various network architectures, i.e. broadcast video over IP/MPLS, hierarchical video-on-demand library distribution using BGP, Video Content Delivery Networks, and MPLS-based networks supporting triple-play services. This class also covers video bandwidth reservations using RSVP and traffic engineering for video transport. In addition, this class also covers for professional real-time broadcast TV distribution over MPLS, MPLS-VID, and typical Internet video streaming applications, which involve the sending of low-bandwidth video streams to end users' PCs without any quality guarantees. I am also the owner of Olivier Consulting, where I provide consulting services for advanced network / product

design along with IP consulting and am also a member of the technical staff of McAlexander Sound, where I specialize in Telecommunications Architecture / Software.

4. I have three degrees from The Ohio State University. I have a Ph.D. from The Ohio State University in Electrical Engineering with minors in Discrete Mathematics, Computer Science and Microelectronics, a Masters in Electrical Engineering with a minor in Robotics and Artificial Intelligence, and a Bachelor of Science degree in Electrical Engineering. I have published papers in the areas of coding theory and multiprocessor computer systems.

5. I have extensive experience in the design and development of networked video systems. I have been involved in the development and design of equipment for networked video since my start at AT&T Bell Laboratories in 1990, where I worked as a Member of Technical Staff. It was there where I first began my work with video networking products such as an Asynchronous Transfer Mode 'ATM' based set top box and monitored networked video transport standard setting bodies such as the ATM Forum and DAVIC, the Digital Audio-Visual Council.

6. At DSC during the years 1995 - 1996, I was the Senior Manager in charge of a Broadband Intelligent Network 'BB-IN' based video on demand delivery system, which was demonstrated at SuperComm, a U.S. telecommunications trade show. While at DSC, I was also their corporate representative to the ATM Forum,

participating in bi-monthly standards body development, which included standards for networked video transport.

7. At Samsung during the years 1996 -1999, I was a Principal Engineer for wireless broadband services over UMTS. I worked at Samsung Telecommunications America designing their next generation cellular switch, a Universal Mobile Telecommunications System (UMTS) switch. While at Samsung, I was also their corporate representative to the International Telecommunication Union, ("ITU"), which is the agency of the United Nations responsible for information and communication technologies. I was also Samsung's corporate representative to the 3GPP standards body. It was there that I participated in the development of standards for advanced wireless networks, including video transport.

8. At Marconi during the years 1999 – 2002, I worked on several systems for the access video market, such as Digital Subscriber Line (DSL) networks and Hybrid fiber-coaxial (HFC) networks. These systems were triple play systems which provide voice, video and data. While at Marconi, I was responsible for the web site design of the Network Management System for the entire North American Access product division.

9. At Navini Networks during the years 2002 - 2003, I was responsible for the design and development of a sign on web site which managed and authorized users for different services in a broadband CDMA network. This system consisted

of multiple Apache Web Servers providing the web pages to the users and a centralized key storage facility to manage the various keys needed to authorize the different services. In addition, I was responsible for the layer 2 and layer 3 aspects of the video transport within the Navini System.

10. Since 2003, I have been a member of the technical staff at McAlexnder Sound as well as the sole consultant at Olivier Consulting. In these roles, I have provided Technology Research and Intellectual Property investigations into a number of different network technologies, which allows me to interact with engineers and their managers.

11. For example, consulting at Telstrat, I lead technology investigations related to the research, specification, design, and architecture of Telstrat's Next Generation Access Product, which delivered video, including analog, digital, HDTV and IPTV. Consulting at Crane Aerospace, I investigated scalability, address assignment, access, and security for a large Wireless Sensor Network.

12. I have opined on the meaning of claim terms to one of ordinary skill in the art on numerous occasions. For example, I provided opinions on the meanings of claim terms in QPSX Developments 5 Pty Ltd. v. Nortel Networks, Inc and In the Matter of Certain Wireless Devices, Including Mobile Phone and Tablets II, USITC Inv. No. 337-TA-905.

13. My CV is attached hereto as Exhibit A, which shows my education and experience in more detail.

14. Because of my background, training, and experience, I am qualified as an expert to explain the background of the technology encompassed by the '997 Patent as well as on the meaning that the claim terms of the'997 Patent discussed herein would have had to a person of ordinary skill in the art ("POSITA") in 2012 reading the claims in light of the specification and file history. The opinions I express in this declaration are from the perspective of such a POSITA in 2012.

15. I have reviewed U.S. Pat. No. 9,083,997 and its file history. I have also reviewed the materials cited herein. For the references on which the Grounds raised in the Petition rely, I have been asked to analyze those references as if they qualify as prior art but I have not independently undertaken to determine, and therefore express no opinion as to, whether those references legally qualify as prior art to the '997 Patent. In addition to the documents filed with the Petition, I have also reviewed and considered the following documents:

16. Ex. 2005 is a true and correct copy of the Library of Congress MARC Manual, available at https://www.loc.gov/aba/publications/FreeDCM/DCM_2011-04.pdf. As shown on page 2, it was available to the public in November 2011.

17. Ex. 2009: Transcript of Deposition of Kevin C. Almeroth, Ph.D.

II. The ’997 Patent

18. I have reviewed U.S. Patent No. 9,083,997 (“the ’997 Patent”), entitled “Recording and Publishing Content on Social Media Websites,” by Inventors Mark A. Harwell, Christopher W. Wyatt, and Ryland M. Reed, now assigned to VidStream, LLC, which was filed on November 12, 2012, claims priority to a provisional application filed on May 9, 2012, and issued on July 14, 2015. I have also reviewed its file history. I have also reviewed the materials cited herein.

19. The ’997 Patent describes methods, systems, and computer storage mediums “for recording and publishing content on social networking websites and other websites.” *See* ’997 Patent at Abstract.

20. I have reviewed each of claims 20-35 of the ’997 Patent that Petitioner is challenging in its petition.

III. Understanding of Applicable Legal Principles

21. I have been informed that a patent typically includes a number of figures and a “written description” of those figures, which together form the “specification” of the patent.

22. I have also been informed that the claims of a U.S. Patent appear at the end of the document, following the specification, and that these claims set forth the boundaries of the invention. I have further been informed that the clauses that make up a claim are known as “claim elements” or “claim limitations.”

23. I have been informed that an issued patent results from a patent application filed with the U.S. Patent and Trademark Office, and that the process of filing a patent application through to obtaining an issued patent may also be known as "prosecution." I understand that during the application process, the Patent Office reviews the application and may reject the claims over patents, published patent applications, technical papers, and other printed publications that together are known as "prior art." I further understand that a patent applicant may respond to these rejections by amending the claims or by making arguments as to why the prior art does not teach one or more claims of the patent. I further understand that if the Patent Office is persuaded that these amendments or arguments make the claimed invention novel and nonobvious over the cited prior art, the patent office will allow the application to issue as a patent.

24. I have also been informed that the paper record of the application, rejections by the patent office, arguments and amendments by the applicant, and other documents associated with the application are known as the "file history" or "prosecution history."

25. I understand that a patent claim is unpatentable if it is obvious over the prior art, *i.e.*, if a person of ordinary skill in the art at the time of the invention would have viewed the claimed invention as obvious. Obviousness may be shown by considering more than one item of prior art in combination with others or based on

a single prior art reference in combination with the general state of the art. However, a claim is not rendered obvious merely because the various limitations of the claim can be found piecemeal in the prior art. Obviousness requires a conclusion that a person of skill at the time of the patent at issue would have had some reason to combine the piecemeal prior art in some way that would lead to the subject matter claimed in the patent. In evaluating whether such a reason exists, I understand that it can be useful to consider whether the evidence shows one or more of the following:

- Combining prior art elements according to known methods to yield predictable results
- Simple substitution of one known element for another to obtain predictable results
- Use of a known technique to improve similar devices (methods or products) in the same way
- Applying a known technique to a known device (method or product) ready for improvement to yield predictable results
- "Obvious to try" – choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success
- Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design

incentives or other market forces if the variations would have been predictable to one of ordinary skill in the art

- Some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art teachings to arrive at the claimed invention.

26. I understand that the reason to select and combine features, the predictability of the results of doing so, and a reasonable expectation of success may be found in the teachings of the prior art references themselves, in the nature of any need or problem in the field that was addressed by the patent, in the knowledge of persons having ordinary skill in the field at the time, as well as in common sense or the level of creativity exhibited by persons of ordinary skill in the art. I further understand that there need not be an express or explicit suggestion to combine references. In determining the differences between the invention covered by the patent claims and the prior art, I understand that the prior art references are not looked at in isolation. Rather, the claimed invention as a whole must be considered, and it must be determined whether or not it would have been obvious in light of all of the prior art.

27. Additionally, it is my understanding that certain types of modifications to the prior art may be considered non-obvious modifications under the law. For example, a non-obvious modification may be one where the prior art teaches away

from a particular combination of elements, or one where a proposed combination changes the basic operating principle of the prior art being modified.

28. The obviousness of a patent is assessed from the perspective of a person of ordinary skill in the art at the time of the alleged invention. Such a person is presumed to know all prior art within that field. The person of ordinary skill faced with a problem is able to apply his or her experience and ability to solve the problem and also look to any available prior art to help solve the problem.

IV. Pertinent Art and Level of Ordinary Skill

29. I understand and have been instructed that claim construction is a matter of law to be performed by the court. I further understand and have been instructed that claim terms should construed through the eyes of one skilled in the art in light at the time of invention.

30. I understand and have been instructed that some of the factors that guide the definition of a person of ordinary skill are (1) the education level of those working in the field, including the inventor, (2) the sophistication of the technology, (3) the types of problems encountered in the art, (4) the prior art solutions to those problems, and (5) the speed at which innovations are made may help establish the level of skill in the art.

31. Based on my experience and understanding of the patent, the relevant art for the ’997 Patent is the video recording and publishing across a communication network.

32. Based on my experience, in my opinion, a person of ordinary skill in the art would have had a combination of technical education and experience that would have given such a person a first-hand understanding of the types of tools, particularly web-based tools, used in video recording and publishing across a communication network.

33. The technology addressed in the ’997 Patent was moderately sophisticated and would have required some experience to fully appreciate and understand. Generally speaking, the problem addressed and solved by the ’997 Patent is “creating various forms of content on social media websites and publishing that s[a]me content.” *See* ’997 Patent at 1:19-21.

34. In my opinion based on the analysis of the above factors, a person of ordinary skill in the art at the time of the ’997 Patent would have had a Bachelor of Science in Electrical Engineering, Computer Engineering, or Computer Science and about two years of experience in the area of networked video, or equivalent experience and education.

35. I am familiar with the knowledge and capabilities that a person of ordinary skill in the art of networked video would have possessed in May 2012,

especially as to design of Internet based delivery of video. Specifically, my experience in the industry while consulting with engineers practicing in the industry during the relevant timeframe has allowed me to become personally familiar with the knowledge and capabilities of a person of ordinary skill in the area of networked video.

36. I have reviewed Dr. Almeroth's definition of a person of ordinary skill (Ex. 1079, ¶¶ 24-26) and note that his definition is very similar to mine. Regardless, applying his definition instead of mine would not change my opinions offered herein. At the time of the filing of the provisional application for the '997 Patent, in May 2012, I was a person of more than ordinary skill in the art.

V. Claim Construction

37. I understand and have been instructed that claim construction is a matter of law to be performed by the court. I further understand and have been instructed that claim terms should be construed as one of ordinary skill in the art would have understood them in light of the surrounding claim language, other claims, the specification, and its file history, which are generally referred to as intrinsic evidence. I also understand and have been instructed that cited references are considered intrinsic evidence. I also understand and have been instructed that extrinsic evidence, which is evidence outside of the file history, such as dictionaries

and technical articles, may be relied upon to, for example, show how one skilled in the art would have understood the claim language at the time of the invention.

38. I understand that the claims Twitter is challenging in this proceeding are claims 20-35 (the "Challenged Claims"), of which claims 20 and 31 are independent.

39. I have been informed that, in this proceeding, the claims are to be given their broadest reasonable interpretation ("BRI") in light of the specification as they would be interpreted by one of ordinary skill in the art ("POSITA"). I have further been informed that, under the BRI standard, words of a claim are given their plain meaning unless that would be inconsistent with the specification and prosecution history.

40. I have also been instructed that on May 9, 2018, the United States Patent and Trademark Office issued a notice of proposed rulemaking, and that the proposed rules would amend the rules for IPR proceedings by replacing the current broadest reasonable interpretation claim construction standard for interpreting unexpired patent claims to an approach that follows *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (*en banc*) ("*Phillips* standard").

41. I have been informed that, under the *Phillips* standard, "the words of a claim are generally given their ordinary and customary meaning," which "is the meaning that the term would have to a person of ordinary skill in the art in question

at the time of the invention, *i.e.*, as of the effective filing date of the patent application."

42. I have further been informed that, under the *Phillips* standard, "the ordinary meaning of a claim term is its meaning to the ordinary artisan after reading the entire patent." Thus, the *Phillips* standard requires that a claim term be read "in the context of the entire patent, including the specification," and that the "specification is the single best guide to the meaning of a disputed term." In addition the specification, intrinsic evidence such as the prosecution history and extrinsic evidence such as dictionaries may be consulted.

43. I have been informed that it is not reasonable to interpret individual words of a claim without considering the context in which those words appear. I have also been informed that it is the use of a particular claim term in the context of the written description and by those of skill in the art that correctly reflects both the "ordinary" and "customary" meaning of the term in the claims.

44. While I do not necessarily agree with Dr. Almeroth's interpretations of claim terms (Ex. 1007 at ¶¶ 53-69), the points on which I disagree would not meaningfully change the points analyzed below so I do not address those points in detail here.

VI. Nassiri and Bradford Do Not Render Obvious Providing a Content Capture User Interface within Displayed Instances of a First Graphical User Interface . . . In Response to a User Selection of a Link Included in a Graphical User Interface . . . wherein the Content Capture User Interface is Provided within a Frame Displayed in the First Graphical User Interface

45. Nassiri does not include a link on a webpage to permit a user to load the video recorder into its iframe on that webpage. Rather, Nassiri automatically loads its video recorder interface into an iframe in a webpage at the same time it loads the webpage itself. The Petition and Dr. Almeroth therefore rely on Bradford to add a link to load the video recorder interface into Bradford's iframe. *See* Petition at 18-21 (asserted reasons to combine), 27-30 (claim element [20.1.3]), and 54 (claim element [31.1.3], relying solely on explanation of claim element [20.1.3]); *see also* Ex. 1007 at ¶¶ 101-106 (asserted reasons to combine), ¶¶ 129-138 (claim element [20.1.3]), and ¶ 230 (claim element [31.1.3], relying solely on explanation of claim element [20.1.3]). However, as explained in detail below, there are several problems with the proposed modification to Nassiri and, ultimately, a POSITA would not have been motivated to alter Nassiri.

A. Nassiri does not disclose a link to an iframe

46. Nassiri discloses two different ways executable instructions, *i.e.* the HTML of the webpage, may include instructions for video capture. Nassiri teaches the instructions for video capture may or may not be embedded in the webpage.

"The executable instructions for video capture 115 may provide the functionality of a video recorder, and may or may not be embedded within the executable instructions for website display." *See id.* at ¶ [0018].

47. In case one, the instructions for video capture are not embedded in a current webpage. Nassiri teaches that "[i]n some examples, the executable instructions for video capture 115 include a link to a separate video capture page." *See id.* at ¶ [0018]. In this case, the webpage being displayed does not contain the instructions for video capture; instead, a link is provided (e.g., via "a card, email, or other promotional material sent by the enterprise") to a separate video capture page. *See id.* at ¶ [0030]. Dr. Almeroth does not assert that this first case corresponds to the claims of the '997 Patent.

48. In case two, when the instructions for video capture are embedded in the current web page, Nassiri teaches the use of an iframe to embed the instructions for video capture in the web page provided by the enterprise computing system. Nassiri teaches that, "[f]or example, an HTML iframe may be used to embed a video recorder in a web page provided by the enterprise computing system 110." *See id.* at ¶ [0019]. This iframe directly embeds the instructions for video capture into the current web page, such that the video capture interface is automatically loaded into the iframe when the webpage is loaded. In Nassiri, the instructions for video capture are retrieved from the Universal Resource Locator ("URL") at,

http://record.videogenie.com/media/ as src attribute indicates. *See id*. at ¶ [0019]. Stated another way, in what Nassiri calls an "embedded link," the link is the web address for the video capture interface included in the "src" attribute for the iframe code, such that the link is ***never*** displayed on the webpage or selected by a user.

49. Dr. Almeroth's declaration correctly describes the functionality of the iframe in Nassiri when he states:

> When the **contributor computing system accesses the enterprise computing system's webpage** with that inline frame code, the "src" tag and its corresponding URL value calls the executable instructions for video recording hosted on the video host computing system, which causes **a video recorder interface to be displayed at the contributor computing system**.

Ex. 1007 at ¶ 84 (emphasis added). Therefore, as acknowledged by Dr. Almeroth, when the iframe html code in a webpage is downloaded and displayed at the contributor system, the video recorder software interface is automatically and immediately displayed at the contributor computing system, as illustrated by example in Figure 3 of Nassiri. In the second case with the iframe, the link to the video recorder software is ***not*** displayed on the webpage or selected by a user.

50. It is also important to note that the iframe taught in Nassiri does not contain the optional attribute, 'name', since Nassiri does not contemplate that this iframe may need to be referenced from another link.

2. Nassiri's iframe cannot be targeted by a link

51. It is important to note that Nassiri's iframe code would need to be modified before it could ever be targeted by a link in the manner suggested by Dr. Almeroth. This is because the iframe taught in Nassiri does not contain the optional attribute, 'name'. The only video recorder iframe disclosed in Nassiri is as follows:

> "<iframe style="height:460px; width:820px; border:0px" border=0 frameborder=0 width="820" height="460" src=http://record.videogenie.com/media/?uid=123A45B6789C00D12E></iframe>."

See id at ¶ [0019]; *see also* Ex, 1007 at ¶ 83.

52. The absence of the 'name' attribute means it would have been impossible for Nassiri to contain a link to this iframe. Dr. Almeroth concedes as much in his description of Bradford to supplement Nassiri's teaching. Ex. 1007 at ¶¶ 136-137 (describing Bradford's use of 'name' attribute "to load content in inline frames within an already existing webpage"). As such, Nassiri does not contain any teachings of the claim limitations "providing, on a first webpage, a link to media recorder software stored on a video management server system; receiving a request to invoke the media recorder software within a displayed instance of the first webpage".

3. Dr. Almeroth mischaracterizes Nassiri

53. Dr. Almeroth incorrectly asserts that:

> When Bradford's teachings are considered in light of Nassiri, a POSITA would have understood that, for example, the link to the executable instructions for video recording on a webpage would target an iframe on the webpage using the target attribute, and the video recorder would be loaded inside the inline frame of the webpage having the name specified in the target attribute.

Ex. 1007 at ¶ 137. This seems to suggest that Nassiri discloses targeting its iframe with a link and Bradford merely guides interpretation of Nassiri. That could not be further from the truth. There is no disclosure in Nassiri for a link which when clicked could update only a portion of the webpage with the iframe, nor can there be. Because the iframe disclosed in Nassiri does not contain a name attribute, there can be no other link anywhere in Nassiri which can reference this iframe. *See* paragraphs 51-52 above. The teachings of Bradford make this very clear. It is the name attribute which means a particular inline frame is capable of being a target for a link. *Id.* If there is no name attribute for an iframe, it cannot be a target for any link:

Targeting inline frames

The `iframe` has one last attribute—which isn't new—the `name` attribute, which can be used to identify a particular inline frame among other inline frames used on a page. Doing so means a particular inline frame can be used as a target for links when the `target` attribute is set to a particular inline frame's name. Here's an example:

```
<iframe name="terms" src="tnc.html">
        <a href="tnc.html" target="_blank">View Terms and Conditions</a>
</iframe>
<a href="page2.html" target="terms">Next page</a>
```

In this case, when the "Next page" hyperlink text is clicked, the `page2.html` page is loaded into the "terms" inline frame.

See Ex. 1010 at 8/11 (Bradford p. 161).

54. Dr. Almeroth agrees, stating that "Bradford also describes the use of the '**name**' attribute **for targeting inline frames**, such that content from a particular link on a webpage can be loaded into a specific iframe." *See* Ex. 1007 at ¶ 99 (emphasis added); *see also id.* at ¶ 136 (relying on Bradford for use of the 'name' attribute of an iframe to target the iframe with a link).

55. Since Nassiri does not teach these claim limitations, the Petitioners and Dr. Almeroth seek to combine the teachings of Nassiri with that of Bradford to meet these claim limitations.

4. Nassiri's principal purpose is to entice and enable users into recording video responses

56. Nassiri's purpose is "to obtain authentic marketing materials from customers or other individuals;" specifically, "promotional videos may be received directly from customers or other individuals." Ex. 1009 at ¶ [0015]. To this end,

Nassiri describes two ways for its system to receive a request "to display or otherwise access a video recorder." *Id.* at ¶ [0030].

- "the request may be a ***request*** initiated by a contributor ***to access a standalone video recorder site***" (*id.* (emphasis added)); or
- "the request may come from an enterprise in accordance with embedded code in another of the enterprise's sites or content providing applications" (*id.*).

Thus, Nassiri provides two options. In the first, a user intentionally requests to access the video recorder. *Id.* ("the request may accordingly be initiated by the contributor computing system 130"). In the second, the enterprise intentionally loads the video recorder. *Id.* ("or the enterprise computing system 130 in other examples). In either instance, there is no mistake: the entity making the request is intending to request the video recorder.

5. A POSITA would not have modified Nassiri based on the teachings of Bradford as the Petitioners have described

57. Petitioner seeks to modify the iframe taught in Nassiri to add a name attribute as described in Bradford. But this on its own is not enough to teach these claim limitations. Just adding a name attribute to the iframe of Nassiri does not provide for a link to this iframe. As I described above, since there was no name for

the iframe in Nassiri, there can be no link which targets this iframe. Dr. Almeroth states:

> When Bradford's teachings are considered in light of Nassiri, a POSITA would have understood that, for example, the link to the executable instructions for video recording on a webpage would target an iframe on the webpage using the target attribute, and the video recorder would be loaded inside the inline frame of the webpage having the name specified in the target attribute.

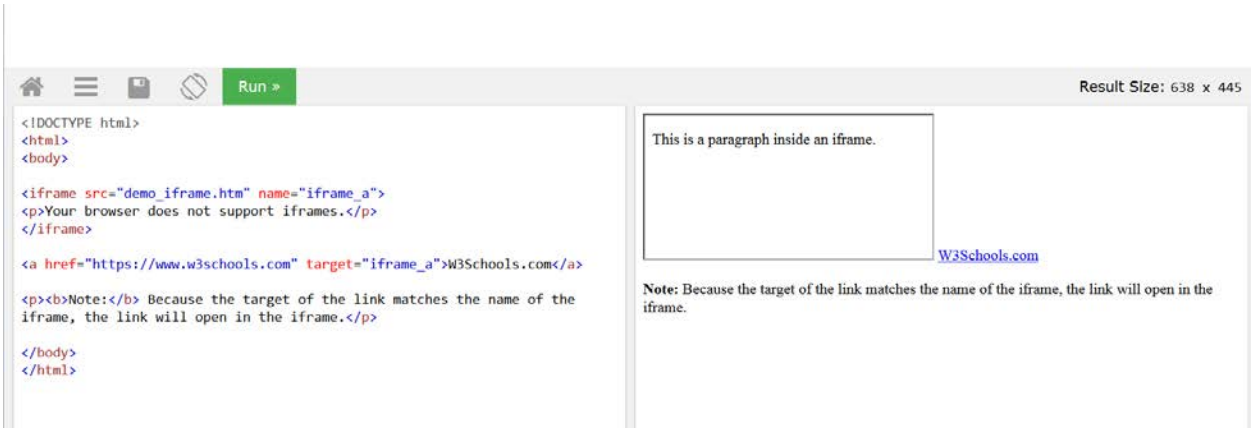
See Ex. 1007 at ¶ 137.

58. Dr. Almeroth does not provide example HTML source code as how this could work. But seemingly, he is a postulating a new link on the webpage which has a target attribute of the iframe. This link would reference the instructions for video recording on a webpage, http://record.videogenie.com/media/, and load that URL into the iframe with the newly added 'name' attribute.

59. But a POSITA would not seek to make such changes on Nassiri's webpage for several reasons. First of which is that leaving the iframe empty would leave either blank space or an error message: *i.g.*, what is the POSITA to do with the existing iframe? Dr. Almeroth never addresses this. In particular, what should be done with the src attribute of the existing iframe in Nassiri? If the src attribute was left just as it was in the example from Nassiri, then the software at http://record.videogenie.com/media/ would automatically load and display in the iframe. This result would be two separate loads of the exact same software on the

webpage, which would make no sense to a POSITA, as it is extremely wasteful of resources for no gain.

60. In order to visually demonstrate the various scenarios, and illustrate why a POSITA would not make the changes proposed by Dr. Almeroth, I have constructed various coding examples of iframes so that I can capture and display the results. I will demonstrate these changes in web based software at https://www.w3schools.com/tags/att_iframe_name.asp which shows exactly how a web page would be displayed under the various scenarios. This is publicly available software which takes in HTML code and displays the result in a nearby window, used for teaching purposes. When a user clicks "try it for yourself", a new webpage is opened. A user can then edit the HTML in the window to the left and then click the run button at the top and the results will display in the window to the right as shown here.



61. In this example, the HTML software on the left side of the screen starting with "<html> is executed and produced the web page displayed to the user

on the right side, which shows an iframe with the text in it, “This is a paragraph inside an iframe.” In this way, changes to the web page can be made on the left side and when the user clicks ‘Run’, the screen on the right side is updated to show the results of those changes.

62. I used this web-based software to show the operation of iframes and the results of the modifications to Nassiri that Petitioner proposes. To begin with, I started from the iframe described in Nassiri:

> <iframe style=“height:460px; width:820px; border:0px” border=0 frameborder=0 width=“820” height=“460” src=http://record.videogenie.com/media/?uid=123A45B6789C00D12E></iframe>

See id at ¶ [0019].

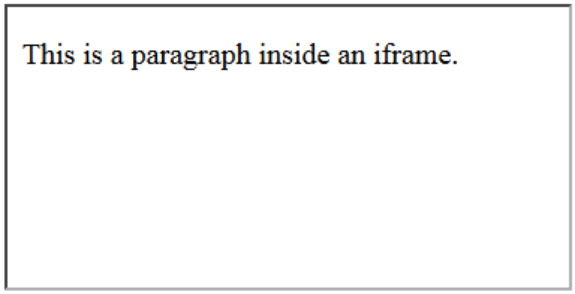
63. Because the src attribute in Nassiri does not point to actual software available on the internet, I have substituted the file “demo_iframe.htm” for the file http://record.videogenie.com/media in Nassiri. This will not change the operation of the iframe in the webpage at all, only the contents of the iframe will be different. The only change is that instead of a url file which loads the video recorder interface, a file is loaded which states, “[t]his is a paragraph inside an iframe.” When you see that sentence on a webpage, what would be there in the actual teachings of Nassiri would be the user interface as shown by example in Figure 3 of Nassiri.

64. With this change I can demonstrate why a POSITA would not be motivated to make the changes proposed by the petitioners or Dr. Almeroth.

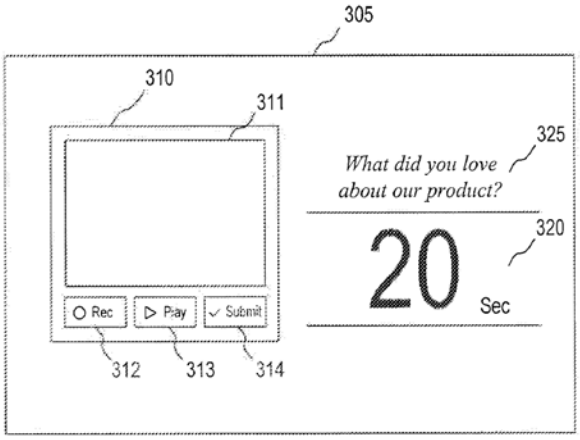
65. The operation of the iframe in Nassiri is shown below, with the file substitution described above. I also changed the frameborder attribute to 1 so that the boundary of the iframe will be visible. The HTML source code, which is known as the executable instruction for the webpage in Nassiri, is shown below.

```
<!DOCTYPE html>
<html>
<body>
<iframe style="height:460px; width:820px; border:0px" border=0
frameborder=1 width="820" height="460"
src="demo_iframe.htm"></iframe>
```

66. The result of this HTML source code when displayed on the browser of the contributor system, is shown below. Recall that the video recorder such as is shown by example in Nassiri's Figure 3 has been replaced with a simple html file which states "This paragraph is inside an iframe."



67. As I stated earlier, in Nassiri this would correspond to a video recording interface (e.g., Figure 3 of Nassiri) in an iframe.



68. If we make the change to the iframe above as Dr. Almeroth suggests, it would add a name attribute to this version of the iframe of Nassiri. I will call this iframe 'iframe_a.'

<iframe style="height:460px; width:820px; border:0px" border=0 frameborder=1 width="820" height="460" src="demo_iframe.htm" **name="iframe_a"**></iframe>

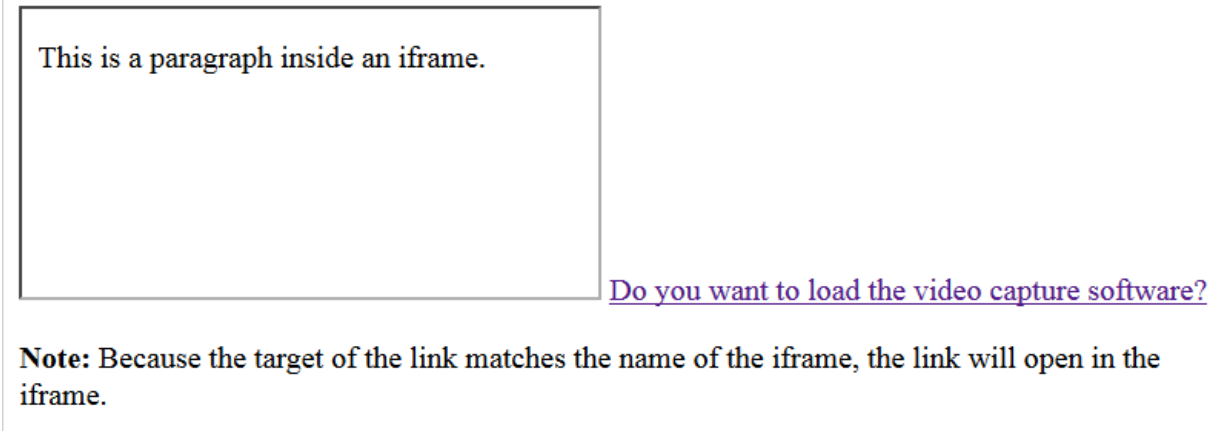
69. And then I will add a new link to the web page. Dr. Almeroth never explains what this additional link would look like but perhaps it would say something like 'Do you want to load the video capture software?'

 Do you want to load the video capture software? ?

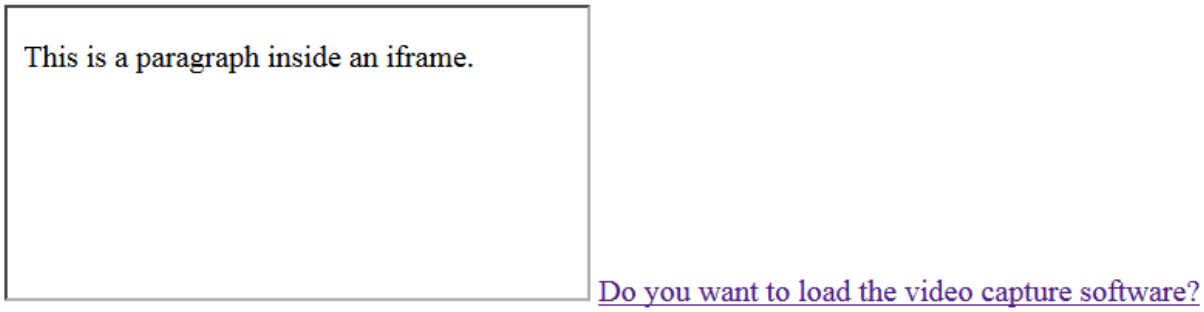
70. Since we do not have access to record.videogenie.com/media, I again substitute the file 'demo_iframe.htm' for this file. The HTML code for this webpage would then be:

```
<!DOCTYPE html>
<html>
<body>


<iframe style="height:460px; width:820px; border:0px" border=0
frameborder=1 width="820" height="460"
src="demo_iframe.htm" name="iframe_a"></iframe>

<a href="demo_iframe.htm" target="iframe_a">Do you want to load the video
capture software?</a>

<p><b>Note:</b> Because the target of the link matches the name of the
iframe, the link will open in the iframe.</p>

</body>
</html>
```

71. And when this web page loads, the display is shown below.



72. When the added "Load Recorder Software" link is clicked, the results are shown below.



Note: Because the target of the link matches the name of the iframe, the link will open in the iframe.

73. As shown, nothing changes! Therefore a POSITA would not be motivated to make these changes. Moreover, a POSITA would never do this because of the wasted effort of reloading the same video recording interface that has already been loaded.

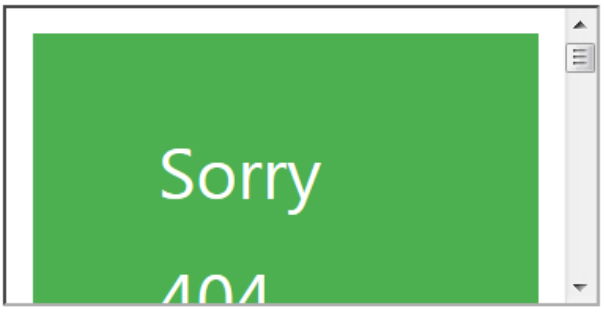
74. The fundamental flaw in Dr. Almeroth's purported reasons for making the proposed changes to Nassiri is what to do with the src attribute in the iframe. There are two options:

- First, if the "src" attribute is not removed, then nothing changes when the user clicks on the added link because the video recorder interface has previously been loaded in the iframe, in which case there cannot be any reason to modify Nassiri.
- Alternatively, if the "src" attribute is removed, then there is no point of having an iframe, since nothing will be displayed in it.

75. The problem, however, with removing the src target from the iframe of Nassiri is that then there would be no reason for the iframe when the webpage initially loaded. Specifically, if the target reference is removed and the src attribute is left blank, then an error occurs, as shown below.

```
<!DOCTYPE html>
<html>
<body>


<iframe style="height:460px; width:820px; border:0px" border=0
frameborder=1 width="820" height="460"
src= name="iframe_a"></iframe>

<a href="demo_iframe.htm" target="iframe_a">Do you want to load the video
capture software?</a>

<p><b>Note:</b> Because the target of the link matches the name of the
iframe, the link will open in the iframe.</p>

</body>
</html>
```

76. Which produces the output shown below, when loaded.



Do you want to load the video capture software?

Note: Because the target of the link matches the name of the iframe, the link will open in the iframe.

Moreover, some browsers in 2012 produced a pop-up error message if the src attribute was left blank.

77. Another option would be to remove the src attribute entirely, but even this would be confusing to the user because an iframe with no src attribute is a waste of space on a web page as it performs no function. The HTML code shown below has the src attribute removed entirely.

```
<!DOCTYPE html>
<html>
<body>


<iframe style="height:460px; width:820px; border:0px" border=0
frameborder=1 width="820" height="460"
 name="iframe_a"></iframe>

<a href="demo_iframe.htm" target="iframe_a">Do you want to load the video
capture software?</a>

<p><b>Note:</b> Because the target of the link matches the name of the
iframe, the link will open in the iframe.</p>

</body>
</html>
```

78. When this webpage is loaded it produces the following display.

Note: Because the target of the link matches the name of the iframe, the link will open in the iframe.

79. This large blank space in the middle of the webpage would be confusing to users and would not facilitate the capture of promotional videos, which is a goal of Nassiri. It would instead seem to the user that an error has occurred.

80. Moreover, as explained in Section VI.4 above, Nassiri's overarching purpose was to present the video recorder to contributors who could record and submit videos. Ex. 1009 at ¶ [0030]. This was Nassiri's entire point: either the user has decided to record a promotional video and subsequently requests the video recorder (meaning there is no point in asking again), or the enterprise has pre-embedded the video recorder in a webpage served to a user (and the presentation of the webpage itself is the request). However, the changes proposed in the Petition and Dr. Almeroth's declaration, stop the user in his tracks rather than making it easy for the user to provide the requested video. A POSITA would have been motivated to make webpages easier to use, not more difficult, and would have been acutely

aware that adding steps and difficulty would negatively impact the number of user promotional videos captured by Nassiri.

81. As explained above, the sole purpose of Nassiri was to facilitate the collection of as many user videos as possible to increase customer conversion events. *See, e.g.*, Ex. 1009 at ¶ [0015]). And, because Dr. Almeroth's proposed modifications to Nassiri would have slowed that process by inhibiting and slowing the loading of a video recorder, a POSITA would have reasonably expected those modifications to lower the capture rate of videos and thereby frustrate the purpose of Nassiri's system. For these reasons alone, a POSITA would have been strongly motivated to ***not*** make the change proposed by Dr. Almeroth.

6. Dr. Almeroth's asserted motivations for his proposed modifications to Nassiri simply did not exist in Nassiri's system

82. Dr. Almeroth also asserts several purported needs or concerns which he believes would motivate a POSITA to combine the teachings of Bradford and Nassiri, as he has described. *See* Ex. 1007 at ¶¶ 105-106. Overall, Dr. Almeroth does not point to any evidence to support the existence of any of these needs or concerns in Nassiri's system. Nevertheless, I will address each of them here.

83. First, Dr. Almeroth states that with his proposed changes

> only users who expressed an intention to record a video—by clicking the link—would cause the video recording software to execute thereby sparing valuable resources on the video host computing system

See Ex. 1007 at ¶ 105.

84. This is misguided and ignores the teachings of Nassiri. As explained in Section VI.4 above, Nassiri discloses only two types of requests to load the video recorder, both of which are very much intentional:

- "the request may be a ***request*** initiated by a contributor ***to access a standalone video recorder site***" (*id.* at ¶ [0030] (emphasis added)); or
- "the request may come from an enterprise in accordance with embedded code in another of the enterprise's sites or content providing applications" (*id.*).

In either instance, there is no mistake: the entity making the request is intending to request the video recorder, such that there is no point in further asking a user whether they wish to record a video. If the user decides not to, the user will simply not record a video. Dr. Almeroth points to nothing in Nassiri or any other evidence that would suggest that there was any problem here to solve.

85. Furthermore, considering that the system of Nassiri is designed to receive large numbers of videos, which are extremely large in size and bandwidth compared to the loading of links to video recording software that remains hosted on the video host computing system 120, the resources required to simply load the link already embedded in Nassiri's iframe are relatively miniscule. Stated another way, resources on the video host computing system are relatively cheap compared to the

potential loss of promotional videos which his proposed changes would cause. A POSITA would therefore have believed the relatively very small amount of resources potentially saved by Dr. Almeroth's proposed solution would not have been worth it, given the POSITA's reasonable expectation of loss of videos, user confusion, and error messages.

86. Second, Dr. Almeroth states that his proposed changes allow:

> Nassiri's video recorder interface to be presented to the user within the context of the currently displayed webpage, and without causing the user's web browser to load an entirely new webpage.

See Ex. 1007 at ¶ 106.

87. This too is mistaken. As explained above, Nassiri already presented the video recorder interface within an already loaded webpage. This is what the iframe in Nassiri accomplished. *See* Ex. 1009 at ¶ [0019] ("For example, an HTML iframe may be used to embed a video recorder in a web page provided by the enterprise computing system 110."); *see also id.* at ¶ [0018] ("The link may, in some examples, be provided in a page of or otherwise integrated with other information provided by the enterprise computing system 110.") and ¶ [0030] ("In other examples, the request may come from an enterprise in accordance with embedded code in another of the enterprise's sites or content providing applications."). Therefore, because Nassiri already loaded the video recorder into Nassiri's iframe—"without causing the user's

web browser to load an entirely new webpage"—there was simply no motivation to modify Nassiri to do so.

88. Dr. Almeroth attempts to support this last asserted motivation by explaining that: "[l]oading an entirely new webpage is slower and requires more resources (e.g., bandwidth, CPU time) than loading a portion of a webpage, e.g., loading only the iframe portion." Ex. 1007 at ¶ 106. But this statement, like the motivation it is offered to support, depends on a false choice. Nassiri already loads its webpage with the iframe, such that there is no simply need to "load an entirely new webpage" to access the video recorder.

89. Dr. Almeroth concludes that "[a]ccordingly, it would have been obvious to a POSITA that more efficient resource usage and faster webpage loading times could be achieved by using a link within the webpage that, when selected, loads the video recorder interface within an iframe of the webpage." *Id.* However, as explained in paragraphs 83-85 above, the system resources required to load the webpage are so miniscule relative to those required to receive, process, and redistribute videos that no reasonable POSITA would be motivated by the savings. To the contrary, as also described in paragraphs 80-85 above, such a POSITA would affirmatively avoid making the proposed modification because doing so would have been expected to make it more difficult for users to submit videos and therefore

reduce the number of videos received, which would have directly interfered with Nassiri's purpose.

VII. GROUNDS 1 & 2: Nassiri, Bradford, and Zhu (and Tosh.0)

90. I have reviewed the Petition's and Dr. Almeroth's explanation of the proposed combination of Nassiri (Ex. 1009), Bradford (Ex. 1010), and Zhu (Ex. 1013). While I do not agree with the reasons offered for combining Nassiri and Bradford with Zhu, the following explanation focuses on one or more claim elements for which the Petition's and Dr. Almeroth's theories depend only on the combination of Nassiri and Bradford.

91. For each of independent claims 20 and 31, Ground 1 and Dr. Almeroth's testimony in support of Ground 1 depend solely on the proposed combination of Nassiri and Bradford as disclosing claim elements:

- "[20.1.3] in response to a user selection of a link included in a graphical user interface that includes display elements hosted on the web server system" (Pet. at 27-30 (citing Ex. 1007 at ¶¶ 129-138); *see also* Pet. at 18-21 (citing Ex. 1007 at ¶¶ 103-106);
- "[20.2.1] wherein the content capture user interface is provided within a frame displayed in the first graphical user interface" (Pet. at 30-31 (citing Ex. 1007 at ¶¶ 139-140); *see also* Pet. at 18-21 (citing Ex. 1007 at ¶¶ 103-106);

- "[31.1.3] in response to a user selection of a link included in a graphical user interface that includes display elements hosted on the web server system" (Pet. at 54 (referring back to the Petition's explanation of claim element [20.1.3]); and
- "[31.2.1] wherein the content capture user interface is provided within a frame displayed in the first graphical user interface" (Pet. at 54-55 (referring back to the Petition's explanation of claim element [20.2.1]).

Specifically, the Petition relies on Nassiri's disclosure of an iframe that automatically displays a video recorder, and Bradford's disclosure of a link targeting an iframe, to contend that the above-referenced claim features would have been obvious to a POSITA as of May 2012.

92. However, for the reasons explained in paragraphs 45-89 above, a POSITA would not have been motivated to modify Nassiri with Bradford's teachings as proposed in the Petition and by Dr. Almeroth. To the contrary, as also described in paragraphs 45-89 above, a POSITA would have instead been motivated to avoid those changes so as to not restrict or interfere with Nassiri's purpose.

93. Therefore, the asserted combination of Nassiri and Bradford does not render obvious claim elements [20.1.3] and [31.1.3]:

- "[20.1.3] in response to a user selection of a link included in a graphical user interface that includes display elements hosted on the web server system;"

- "[20.2.1] wherein the content capture user interface is provided within a frame displayed in the first graphical user interface;"
- "[31.1.3] in response to a user selection of a link included in a graphical user interface that includes display elements hosted on the web server system;"
- "[31.2.1] wherein the content capture user interface is provided within a frame displayed in the first graphical user interface."

Furthermore, because all other claims addressed in Grounds 1 and 2—claims 21-30 and 32-35—are dependent claims, it is my understanding that they also require the elements recited in the independent claim from which each depends. For that reason, the proposed combination of Nassiri, Bradford, and Zhu (and Tosh.0) also does not disclose or suggest all features of any of these dependent claims.

VIII. GROUND 2: A POSITA Would Not Have Been Motivated to Combine Tosh.0 with Nassiri and Zhu

94. Petitioner alleges that the combination of Nassiri, Bradford, and Tosh.0 renders claims 28, 30, and 33 obvious. Petition at 58. However, because there is no indication that Nassiri would be a useful source of videos for Tosh.0, and Tosh.0 itself does not otherwise suggest even compatibility with Nassiri's system, a POSITA simply would not have been motivated to combine Nassiri and Tosh.0.

B. Tosh.0 describes purely manual review and collection of videos

95. The New York Times article *Their Pain Is His Gain* describes a television show that broadcasts short video clips found by Comedy Central employees, and individually *pulled* from YouTube—***not*** submitted to Comedy Central for inclusion in the show. *See* Ex. 1017 at 2/3. Nor does Tosh.0 suggest that the show asks for or otherwise seeks submissions. To the contrary, the videos are "amateur Internet videos" that two full-time Comedy Central employees manually search for on YouTube. *See id.* "The scouring of YouTube takes two full-time researchers, 'who spend most of their time online, searching for the worst and the weirdest and the funniest clips.'" *See id.* "The researchers add suitable clips to a database of sorts that can be mined by writers and producers." *See id.* Tosh.0 contains no suggestion of user submission to Comedy Central, no suggestion of automated selection, and no suggestion of any other automation that might in any way be compatible with Nassiri.

C. A POSITA would not have been motivated to combine Tosh.0 with Nassiri and Zhu

96. Nassiri mentions that its system "may be implemented as any of a variety of devices including, but not limited to . . . set top boxes." *See* Ex. 1009 at ¶ [0016]. Thus, Nassiri mentions a set top box in a laundry list of possible implementations of its invention. Petitioner incorrectly alleges that this disclosure

of a "set top box" is sufficient disclosure of a "connect[ion] to a television for displaying traditional television programming" to motivate a POSITA to combine it with Tosh.0, a non-technical newspaper article exalting a television program that includes playback of video clips from the Internet. Petition at 54. But Dr. Almeroth conceded in his deposition that the term "set top box" does not necessarily imply traditional television programming. Ex. 2009 at 53:25-55:13.

97. Tosh.0 discloses manual review of videos by "two full-time researchers, who spend most of their time only, searching" for video clips to select for use in a television show. *See* Ex. 1017 at 3/3. Tosh.0 purposefully relies on manual review and selection of video clips, depending upon a human's sense of humor to filter out "the worst and the weirdest and the funniest clips." *See id.*

98. In reality, a POSITA would have no motivation to combine Tosh.0 with Nassiri. Nassiri's focus is on enabling enterprises to "captur[e], manag[e], and/or shar[e] videos" from customers to attract potential customers. *See, e.g.*, Ex. 1009 at Abstract. In contrast, Tosh.0 is a New York Times article praising how "Comedy Central has found a way to bring the spectacle of amateur Internet videos to television successfully." Ex. 1017 at 2/3. Tosh.0 nowhere mentions that users submit their videos to Comedy Central. Nor does Tosh.0 disclose or suggest using a computing device or a web browser to capture video, instead two full-time researchers spend most of their time searching for video clips on the Internet. A

POSITA looking to combine Nassiri with another reference would find no connections between these two references sufficient to suggest combining them.

99. Furthermore, there is no apparent reason to think that Tosh.0's full-time reviewers—searching for "the worst and the weirdest and the funniest clips"—would find anything of interest in Nassiri's customer videos. *See* Ex. 1017 at 3/3 ("both intentionally and unintentionally funny," as determined by "professional funny-video watchers").

100. Because there was no motivation for a POSITA to have combined Nassiri and Tosh.0, the asserted combination of Nassiri and Tosh.0 does not render obvious any of claims 28, 30, or 33.

IX. Conclusion

101. For the reasons explained above, the proposed combinations of Nassiri with the other references relied upon in the Petition do not disclose or suggest every feature of any of the challenged claims.

102. I declare under penalty of perjury that my statements in this declaration are true and correct.

6/29/2018	James Olivier Ph.D.
Date	James Olivier Ph.D.

Curriculum Vitae Dr. James L. Olivier

PROFESSIONAL SUMMARY

The foundation for my career began twenty seven years ago with a Doctorate in Electrical Engineering.

My work experience began with basic research in computer/communications systems at Harris Communications, and then to General Motors Research Labs. My career then progressed to the research and development of new products for a number of telecommunications companies with varying revenue ranges, from AT&T Bell Laboratories to Navini Networks, a small startup. My continued focus has been on data/telecommunication systems and products.

Over the last 12 years I have devoted my attention to industry consulting in the areas of intellectual property and networking technologies.

EDUCATION PROFILE

Ph.D. Electrical Engineering, The Ohio State University, Columbus, Ohio, 1988 Dissertation: "*Concurrent Error Detection in Arithmetic Processors using GAN Codes*", Received separate minors in fields of Computer Science, Microelectronics and Semiconductor Fabrication, and Discrete Mathematics.

Recipient of the prestigious Kodak Fellowship, awarded nationally to 12 doctoral students in the fields of science and engineering.

MS. Electrical Engineering, The Ohio State University, Columbus, Ohio, 1985 Thesis: "*A Navigation System for a Vehicle with a Laser Rangefinder*"; Major areas of study were computer design and software engineering.

BS. Electrical Engineering, The Ohio State University, Columbus, Ohio, 1983 Graduated Cum Laude.

EXPERIENCE PROFILE

2017 - present **Adjunct Professor**
Telecommunications and Network Engineering Program
Southern Methodist University's Graduate School of Electrical Engineering

- Teaching Advanced Switching and Routing with MPLS at SMU's highly rated Telecommunications and Network Engineering program. Research interests include Video Transport, SD-WANs, Blockchains, IoT, and In-Networking Processing.

2003 - present **Olivier Consulting – Dallas Texas**
IP Consultant M^{c}Alexander Sound

- Technology Research and Intellectual Property Management, including IP Licensing, IP Protection, IP Validity, IP Portfolio Valuation, IP Strategy and IP Technical Consultation. Clients include Arista Networks, HTC Corporation, T-Mobile, Samsung, Vizio, Google Corporation, Level 3 Communications, AT&T, Amazon, Ericsson, and S.T Microelectronics.

- Recognized Expert before United States Federal District Courts in the Areas of
    - Congestion Control in Packet Switching
      QPSX v Nortel 2:05-CV-268, 2007

    - Cellular High Speed Packet Access Networks
      Wi-LAN Inc., v. Alcatel-Lucent et. al CV-6:10, 2013

    - Signaling Protocols in Cellular Networks
      Core Wireless Licensing S.A.R.L v. Apple 6:12-CV-100, 2015

- Recognized Expert before the International Trade Commission in the Areas of
    - Security and Firewalls in Routers and Switches;
      Investigation 337-TA-628, 2007

    - Cellphone Hardware and Software for Imaging;
      Investigation 337–TA-726, 2010

    - Operating Systems for Mobile Devices;
      Investigation 337–TA-744, 2011

    - Mobile Devices Hardware and Software Architectures;
      Investigation 337–TA-850, 2012

- Ethernet Switch Packet Processor Hardware and Software; *Investigation 337–TA-945, 2015*

- Lead Technology Research and Intellectual Property investigations in the following areas

    - Technology related to mobile camera system's software systems architecture. *HTC Corporation*

    - Technology related to gateway protocols between Cellular /PSTN Networks and the Internet. Investigated the design of a Packet Gateway and associated soft switch. *Level 3 Communications*

    - Technology related to content delivery decisions based on demographic information received from client subsystems. Technology related to Voice over IP technology implementation tradeoffs. *AT&T*

    - Technology investigation related to Metro Ethernet, MPLS, 802.17, and 802.3 access products. *Transpacific IP*

    - Technology investigation related to the research, specification, design, and architecture of the Telstrat's Next Generation Access Product, which delivered Video, including analog, digital, HDTV and IP based voice, including packetized and local services, and internet access. *Telstrat*

    - Technology investigation into the specification, design, and architecture of the Crane Wireless Sensor Network. Investigated scalability, address assignment, access, and security for a large Wireless Sensor Network. *Crane Aerospace*

2002 - 2003 **Navini Networks - Richardson, Texas**
Senior Manager

- Performed research and development in Navini's Wireless CDMA broadband System. Responsible for definition and implementation of layer 2 and layer 3 network protocols for Navini's Broadband Wireless Products. Developed features for network security, network services, service provisioning and subscriber management in a CDMA network.

1999 – 2002 **Marconi Communications - Irving, Texas**
Manager of Systems Engineering

- Responsible for design and development of new products and product evolution for Marconi's North American Access Division. Lead research and development efforts into new hardware and software systems, providing a wide range of data and telephony services. Designed new packet agnostic switching hardware and associated microprocessor subsystem. Responsible for development of access products ranging from high speed switching systems to complex management systems.

1996– 1999 **Samsung Telecommunications America - Richardson, Texas**
Principal Engineer

- Responsible for Service Control subsystem of Samsung's next generation wireless broadband UMTS switching system. Designed and developed a Java based platform for defining services for Samsung's next generation high-speed wireless switch. Areas of responsibility include traditional telephony services, wireless services, broadband services, and Internet services.

1995 – 1996 **DSC Switch Products Division – Plano, Texas**

Senior Manager: Intelligent Network Evolution and Business Planning

- Responsible for competitive assessments, cost comparisons and fitness of use of the entire DSC AIN product line. Directed Intelligent Network product and soft switch evolution plans, actively interacting with key customers and participating in relevant standards work.

- Lead developed and designed DSC's Broadband Intelligent Network products.

Senior Manager: ATM Systems Engineering Group

- Lead the systems engineering group in defining a new high speed ATM switches for enterprise and telecommunication networks. These efforts include the development of new Application Specific Integrated Circuits, (ASICs), multiprocessor architectures, communications subsystems, and software architectures.

1990 – 1995 **AT&T Bell Laboratories - Columbus, Ohio**
Member of Technical Staff

- Designed and implemented a variety of multiprocessor systems for use in the telecommunications network. These include a Signaling Processor Subsystem for AT&T's Central Office ATM Switch, a translation subsystem for AT&T Autoplex Cellular Switching System and improvements to the Common Network Interface (CNI) subsystem, which is a part of the 5ESS, 4ESS, NCP, and STP product lines.

1989 – 1990 **General Motors Research Laboratories - Warren, Michigan**
Senior Research Engineer: Computer Science Department

- Conducted research into basic computer science problems associated with the future development of vehicular systems. These areas include the design of fault tolerant control systems, new cost affective microprocessor architectures and software for reliability and performance modeling. Lead the development of an automotive testbed for the evaluation of prototype systems.

1988 – 1989 **Harris Communications – Melbourne, Florida**
Principal Engineer

- Conducted research and development into innovative computer systems for use in space systems. Studied coherency protocols for microprocessor memory systems. Developed fault tolerant multi-processor computer systems for use in Strategic Defense Initiative.

PUBLICATIONS

Olivier, J., Ozguner, F. "*A navigation algorithm for an intelligent vehicle with a laser rangefinder*", Proceedings of the 1986 IEEE International Conference on Robotics and Automation, Vol. 3, April 1986.

Olivier, J. L. and Ozguner, F. "*Design of Concurrent Error Detecting Systolic Arrays Using GAN Codes*" IEEE Transactions on Computer Aided Design, vol. 9, no. 10 October 1989.

Olivier, J.L. "*Low Cost Residue Prediction for Improved Addition Efficiency*", G. M. Research Publication, December 1989.

Olivier, J.L. and Tkacik, T.E., "*RELY, a Markov Modeling Package for System Reliability Prediction*" G.M. Research Publication, January 1990.

ISSUED PATENTS AND PATENT APPLICATIONS

- US 8334775 RFID-based asset security and tracking system, apparatus and method
- US 20090174772 Security and surveillance system
- US 20130201337 Rfid-based asset security and tracking system, apparatus and method