

1 UNITED STATES PATENT AND TRADEMARK OFFICE
2 BEFORE THE PATENT TRIAL AND APPEAL BOARD

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4 NETFLIX, INC.,

5 Petitioner,

6

7 Case No. IPR2021-00303

8 -against- U.S. Patent No. 8,270,992

9

10 AVAGO TECHNOLOGIES

11 INTERNATIONAL SALES PET. LIMITED

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13 Defendant.

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17 DECEMBER 1, 2021

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19 REMOTE DEPOSITION OF GHASSAN ALREGIB

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21

22

23 Stenographically Reported By:

24 Mark Richman, CSR, RPR, CCR, CM

25 Job No. 201930

<p>Page 2</p> <p>1</p> <p>2</p> <p>3 Wednesday, December 1, 2021</p> <p>4 10:30 a.m.</p> <p>5</p> <p>6</p> <p>7 Deposition of Ghassan AlRegib, held via</p> <p>8 videoconference (Zoom), with the witness and</p> <p>9 all parties participating remotely, pursuant to</p> <p>10 the Rules of the United States Patent and</p> <p>11 Trademark Office, Before the Patent Trial and</p> <p>12 Appeal Board, subject to such stipulations as</p> <p>13 may be recited herein or attached hereto,</p> <p>14 before Mark Richman, a Certified Shorthand</p> <p>15 Reporter, Registered Professional Reporter and</p> <p>16 Notary Public within and for the State of New</p> <p>17 York, who officiated in administering the oath</p> <p>18 to the witness.</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>	<p>Page 3</p> <p>1 A P P E A R A N C E S:</p> <p>2 ON BEHALF OF THE PETITIONER:</p> <p>3 SHEPPARD, MULLIN, RICHTER & HAMPTON</p> <p>4 Four Embarcadero Center</p> <p>5 San Francisco, CA 94111</p> <p>6 BY: CHRIS PONDER, ESQ.</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p> <p>11 ON BEHALF OF THE PATENT OWNER:</p> <p>12 AD SERO</p> <p>13 8210 Southpark Terrace</p> <p>14 Littleton, Colorado 80120</p> <p>15 BY: DANIEL YOUNG, ESQ.</p> <p>16</p> <p>17</p> <p>18 ALSO PRESENT REMOTELY:</p> <p>19 ZIJIAN HAN, Law Clerk, Sheppard, Mullin</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>
<p>Page 4</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 GHASSAN ALREGIB, called as a</p> <p>3 witness, having been first duly sworn</p> <p>4 by the Notary Public (Mark Richman),</p> <p>5 was examined and testified as</p> <p>6 follows:</p> <p>7 EXAMINATION BY MR. PONDER:</p> <p>8 Q. Good morning. Could I ask you</p> <p>9 for the pronunciation of your name? I</p> <p>10 just want to make sure I have it</p> <p>11 correct.</p> <p>12 A. Good morning. Ghassan AlRegib.</p> <p>13 Q. Thank you. Dr. AlRegib, have you</p> <p>14 been deposed previously?</p> <p>15 A. Yes.</p> <p>16 Q. Okay. Before we get started,</p> <p>17 since you're familiar with the process,</p> <p>18 I won't spend as much time going through</p> <p>19 the ground rules, but I think it's</p> <p>20 useful if I just remind you a few things</p> <p>21 about the deposition process.</p> <p>22 First, do you understand that you</p> <p>23 have taken an oath to tell the truth?</p> <p>24 A. Yes.</p> <p>25 Q. Today's deposition will be</p>	<p>Page 5</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 recorded via transcript by the court</p> <p>3 reporter and in order for the court</p> <p>4 reporter to make the record, it's very</p> <p>5 important that you provide verbal</p> <p>6 answers and try to avoid nonverbal</p> <p>7 responses such as shaking of the head</p> <p>8 and that sort of thing.</p> <p>9 Does that make sense?</p> <p>10 A. Yes.</p> <p>11 Q. If you need a break please let me</p> <p>12 know. I'm happy to take a break</p> <p>13 whenever you need one. I just ask that</p> <p>14 if there's a question pending, if you</p> <p>15 could answer the question before we take</p> <p>16 the break, that will be appreciated. Is</p> <p>17 that okay with you?</p> <p>18 A. Yes, that's okay.</p> <p>19 Q. Okay. During this process you're</p> <p>20 not allowed to discuss your testimony</p> <p>21 with anyone until your examination has</p> <p>22 concluded. Do you understand that?</p> <p>23 A. Yes, I understand.</p> <p>24 Q. Is there anyone in the room with</p> <p>25 you at this time?</p>

<p style="text-align: right;">Page 6</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 A. No, nobody in the room except me.</p> <p>3 Q. Okay. And is this a home office</p> <p>4 or an office? Where are you?</p> <p>5 A. It's my office.</p> <p>6 Q. If you don't understand a</p> <p>7 question would you please let me know</p> <p>8 and I can try to rephrase the question?</p> <p>9 A. I will.</p> <p>10 Q. So unless you say otherwise, I'll</p> <p>11 assume you understood the question. Is</p> <p>12 that okay with you?</p> <p>13 A. That sounds good.</p> <p>14 Q. During the deposition, patent</p> <p>15 owner's counsel may object to a</p> <p>16 question, but please answer my question</p> <p>17 unless patent owner's attorney instructs</p> <p>18 you to not, not to answer. Okay?</p> <p>19 A. Okay.</p> <p>20 Q. Are you on any medication today?</p> <p>21 A. No.</p> <p>22 Q. Is there any other reason that</p> <p>23 you can't provide accurate and truthful</p> <p>24 testimony today?</p> <p>25 A. No, nothing I can think of.</p>	<p style="text-align: right;">Page 7</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 Q. Do you have access to the</p> <p>3 exhibits in this matter?</p> <p>4 A. Yes, I have them as hard copies</p> <p>5 and I have them as PDFs on my screen.</p> <p>6 Q. Great. And are those clean</p> <p>7 copies, or do they have any notes or</p> <p>8 anything inserted in them other than the</p> <p>9 original copies from the patent office?</p> <p>10 A. Both are clean copies, the PDF</p> <p>11 and the hard copies, all clean.</p> <p>12 Q. Great. Unless I ask you to do</p> <p>13 so, please do not access anything on</p> <p>14 your computer during the deposition</p> <p>15 today other than the clean exhibits.</p> <p>16 Is that -- do you understand</p> <p>17 that?</p> <p>18 A. I understand that.</p> <p>19 Q. Okay. When were you first</p> <p>20 approached by Avago regarding assisting</p> <p>21 them with the '992 patent?</p> <p>22 A. The exact date actually escapes</p> <p>23 my mind, but it's earlier in the fall,</p> <p>24 this fall, that time, early fall maybe</p> <p>25 is more accurate.</p>
<p style="text-align: right;">Page 8</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 Q. Other than your work on these</p> <p>3 IPRs involving Netflix, have you ever</p> <p>4 been an expert for Avago or its related</p> <p>5 companies?</p> <p>6 A. No. Outside these IPRs, no.</p> <p>7 Q. And you know Avago is related to</p> <p>8 another company called Broadcom?</p> <p>9 A. Yes, I understand that.</p> <p>10 Q. And another company that's</p> <p>11 related to Avago is Computer Associates</p> <p>12 or CA?</p> <p>13 A. Yes. I don't work for, for that</p> <p>14 company, no.</p> <p>15 Q. How are you being compensated for</p> <p>16 your testimony today?</p> <p>17 A. Yes, at each individual month I</p> <p>18 send an invoice of the hours I spend and</p> <p>19 that's how I get compensated.</p> <p>20 Q. And what is your hourly rate for</p> <p>21 this matter?</p> <p>22 A. \$375 an hour.</p> <p>23 Q. And is that the same for time</p> <p>24 spent testifying and any other tasks</p> <p>25 that you spend working on this matter?</p>	<p style="text-align: right;">Page 9</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 A. Yes, same rate.</p> <p>3 Q. Let me ask you about your</p> <p>4 declaration. Do you have exhibit 2002?</p> <p>5 A. Yes.</p> <p>6 Q. And is this a true and accurate</p> <p>7 copy of the declaration you've submitted</p> <p>8 in this proceeding?</p> <p>9 A. Yes.</p> <p>10 Q. Are you aware of any errors or</p> <p>11 mistakes in your declaration that you</p> <p>12 wish to correct?</p> <p>13 A. Nothing off the top of my head</p> <p>14 right now.</p> <p>15 Q. I'd like to share with you a new</p> <p>16 exhibit. I don't believe you've</p> <p>17 accessed the share file site, so perhaps</p> <p>18 I should send it through the chat</p> <p>19 window. Would that work for everyone?</p> <p>20 Does that work for you, Dr. AlRegib?</p> <p>21 A. It works for me.</p> <p>22 Q. Okay.</p> <p>23 (Exhibit 1010, Materials</p> <p>24 Considered was marked for</p> <p>25 identification.)</p>

<p style="text-align: right;">Page 10</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 Q. Dr. AlRegib, have you received</p> <p>3 exhibit 1010?</p> <p>4 A. Yes, through the chat on the Zoom</p> <p>5 and I opened it in case I need it.</p> <p>6 Q. And is this a true and accurate</p> <p>7 copy of the materials that you've</p> <p>8 considered in preparing your</p> <p>9 declaration?</p> <p>10 A. Yes, the list is the material I</p> <p>11 used in my declaration, yes.</p> <p>12 MR. PONDER: Just for the court</p> <p>13 reporter's benefit, I believe all</p> <p>14 exhibits have been placed in a folder</p> <p>15 you can access.</p> <p>16 Q. How much time have you spent</p> <p>17 working on this matter in preparation of</p> <p>18 submitting the declaration?</p> <p>19 A. I don't keep the numbers in my</p> <p>20 head. For the preparation of the</p> <p>21 declaration, maybe in the range of 30</p> <p>22 hours. 30 hours.</p> <p>23 Q. And does that include the time</p> <p>24 spent reviewing or studying these</p> <p>25 materials listed on exhibit 1010?</p>	<p style="text-align: right;">Page 11</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 A. Yes, that includes the</p> <p>3 consideration of these materials.</p> <p>4 Q. About how much time have you</p> <p>5 spent reviewing and studying the '992</p> <p>6 patent?</p> <p>7 A. An actual time maybe was, you</p> <p>8 know, the process, you read it first and</p> <p>9 then you read the second time carefully.</p> <p>10 You look at other materials, you come</p> <p>11 back to it. So to have an exact number</p> <p>12 of hours on it, but it has been the</p> <p>13 central, you know, patent, so I have</p> <p>14 been reading it quite a bit.</p> <p>15 Q. Okay. Did you review the entire</p> <p>16 prosecution file history, exhibit 1002</p> <p>17 or did you review only certain portions?</p> <p>18 A. The file history is a very long</p> <p>19 document. I looked at, you know,</p> <p>20 portions that really relate to the</p> <p>21 claims. But I skimmed through the whole</p> <p>22 thing. But my careful consideration is</p> <p>23 for certain portion.</p> <p>24 Q. Can you estimate how much time</p> <p>25 you've spent reviewing or studying the</p>
<p style="text-align: right;">Page 12</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 file history?</p> <p>3 A. Yes, it's very hard to look at</p> <p>4 specific document and look at how many</p> <p>5 hours I spent on each one because it's</p> <p>6 back and forward process, I mean patents</p> <p>7 between different components. So I</p> <p>8 can't really give you an exact hour. I</p> <p>9 looked at all the material of the</p> <p>10 project as a package, back and forward</p> <p>11 on each one of them.</p> <p>12 Q. About how much time did you spend</p> <p>13 reviewing the declaration of Dr. Myler?</p> <p>14 A. I read the entire declaration few</p> <p>15 times. But exact number of hours, I</p> <p>16 can't really give you exact number of</p> <p>17 hours or even approximation.</p> <p>18 Q. Okay. How much time would you</p> <p>19 say you spent reviewing the Barnes</p> <p>20 reference, exhibit 104?</p> <p>21 A. Yeah, it's again one of the</p> <p>22 references in the matter, both of them.</p> <p>23 I read entire patent and then again</p> <p>24 backward and forward. So exact number</p> <p>25 of hours each element is very hard for</p>	<p style="text-align: right;">Page 13</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 me to come up with.</p> <p>3 Q. And would that be the same answer</p> <p>4 for 1005, the Shaw reference?</p> <p>5 A. Yes.</p> <p>6 Q. Do you remember how much time you</p> <p>7 spent reviewing exhibit 1007 which is</p> <p>8 the Broadcom opposition?</p> <p>9 A. Yes, for this one I looked at</p> <p>10 only the part that really concerns this</p> <p>11 patent. If I remember correctly, it was</p> <p>12 a very couple of pages at most, if I'm</p> <p>13 not mistaken.</p> <p>14 Q. And how would you describe your</p> <p>15 review of exhibit 2004, which is the</p> <p>16 order regarding the Netflix motion to</p> <p>17 dismiss?</p> <p>18 A. It's similar to 1007. There's a</p> <p>19 certain part about '992 that I read</p> <p>20 which is short of the entire document.</p> <p>21 Q. And how much time did you spend</p> <p>22 reviewing the decision granting</p> <p>23 institution?</p> <p>24 A. Yes, I read the document several</p> <p>25 times because again part of that</p>

<p style="text-align: right;">Page 14</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 backward and forward process in</p> <p>3 preparation for my declaration and also</p> <p>4 preparation for my deposition.</p> <p>5 Q. You also noted here that you</p> <p>6 reviewed the patent owner's response in</p> <p>7 preparing the declaration; is that</p> <p>8 correct?</p> <p>9 A. Yes.</p> <p>10 Q. Okay. So there was a complete</p> <p>11 draft of the patent owner's response</p> <p>12 before you started drafting your</p> <p>13 declaration?</p> <p>14 A. I don't recall if it was before</p> <p>15 starting or after. I think it is in</p> <p>16 parallel process. But I definitely read</p> <p>17 it before finishing my response, my</p> <p>18 declaration, I read the patent owner's</p> <p>19 response complete.</p> <p>20 Q. Okay. Did you read the patent</p> <p>21 owner -- when did you read the patent</p> <p>22 owner's preliminary response?</p> <p>23 A. The preliminary response, that</p> <p>24 was earlier in the case, with the</p> <p>25 patent, when I started to learn about</p>	<p style="text-align: right;">Page 15</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 the project.</p> <p>3 Q. Okay. When you were retained,</p> <p>4 was the patent owner preliminary</p> <p>5 response already in existence or was the</p> <p>6 preliminary response something that was</p> <p>7 created after you were retained?</p> <p>8 A. No, I worked for the same counsel</p> <p>9 for another IPR within the same case,</p> <p>10 but different patent. So I was retained</p> <p>11 when I started working with that patent.</p> <p>12 Then I continued working on this one</p> <p>13 this summer.</p> <p>14 Q. Okay. So if I understand this</p> <p>15 correctly, you were already working with</p> <p>16 counsel for other patents at the time</p> <p>17 that the patent owners preliminary</p> <p>18 response was created, but you were not</p> <p>19 retained for working on the '992 patent</p> <p>20 at that time?</p> <p>21 A. Yeah, I mean I was retained to</p> <p>22 work on, on that case and then we</p> <p>23 continued working on this one. So I'm</p> <p>24 not sure if retained is the right word.</p> <p>25 So he approached me basically again and</p>
<p style="text-align: right;">Page 16</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 said there's a new patent here, and we</p> <p>3 discussed basically if I'm a good fit</p> <p>4 for it and we went from there. But I</p> <p>5 looked at that patent first and then I</p> <p>6 looked at the patent owner response</p> <p>7 second, before I looked at the other</p> <p>8 document.</p> <p>9 Q. Okay. Are there any other</p> <p>10 documents that you reviewed that are not</p> <p>11 listed on exhibit 1010 in connection</p> <p>12 with this, this patent, this matter?</p> <p>13 A. These are the materials I</p> <p>14 considered in my, in my preparation for</p> <p>15 declaration.</p> <p>16 Q. Did you review all portions of</p> <p>17 the Barnes reference or did you just</p> <p>18 focus on certain portions that were,</p> <p>19 say, identified in the petition or Dr.</p> <p>20 Myler's declaration?</p> <p>21 A. I read through the whole</p> <p>22 reference of Dr. Barnes and of course as</p> <p>23 the ground process I go back and look at</p> <p>24 certain portions, but I looked at the</p> <p>25 entire patent.</p>	<p style="text-align: right;">Page 17</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 Q. Did you review all portions of</p> <p>3 the Shaw reference or did you focus just</p> <p>4 on the portions that were identified in</p> <p>5 the petitioner Dr. Myler's declaration?</p> <p>6 A. I read the entire reference and</p> <p>7 then in the process of going back and</p> <p>8 forward, I went back to certain portions</p> <p>9 in the patent.</p> <p>10 Q. Did you review the Jagadeesan</p> <p>11 reference that's discussed in the file</p> <p>12 history?</p> <p>13 A. When I first read that file</p> <p>14 history document, I just very quickly</p> <p>15 reviewed that patent but not the entire</p> <p>16 careful reading, but I looked at it at</p> <p>17 the time.</p> <p>18 Q. Okay. And where did you get a</p> <p>19 copy of the Jagadeesan patent?</p> <p>20 A. From the published patent office.</p> <p>21 Q. Okay. So is that another item</p> <p>22 that perhaps should have been listed on</p> <p>23 your materials considered?</p> <p>24 MR. YOUNG: Objection to form.</p> <p>25 A. I wouldn't say that I read that</p>

<p style="text-align: right;">Page 18</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 carefully. I just want to make sure</p> <p>3 that I look at what the title is, what</p> <p>4 it looks like, but I didn't really spend</p> <p>5 time reading it carefully, no.</p> <p>6 Q. Why did you spend any time trying</p> <p>7 to confirm that what was said about the</p> <p>8 reference in the file history was</p> <p>9 accurate?</p> <p>10 A. No. I took what's in the file</p> <p>11 history.</p> <p>12 Q. Did you review a copy of the</p> <p>13 Kayama reference discussed in the file</p> <p>14 history?</p> <p>15 A. No, reviewing it as reading it</p> <p>16 completely, no.</p> <p>17 Q. Did you take any time to</p> <p>18 confirm that what was said about the</p> <p>19 Kayama reference in the file history was</p> <p>20 accurate?</p> <p>21 A. No. I took the file history as</p> <p>22 is.</p> <p>23 Q. What did you do to prepare for</p> <p>24 your deposition today?</p> <p>25 A. I read again through the</p>	<p style="text-align: right;">Page 19</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 materials, the patent, the references,</p> <p>3 the patent owner response, my</p> <p>4 declaration, Dr. Myler's declaration and</p> <p>5 the script of Dr. Myler's – transcript</p> <p>6 of Dr. Myler's deposition.</p> <p>7 Q. And how much time have you spent</p> <p>8 preparing for this deposition?</p> <p>9 A. Probably in the upper like more</p> <p>10 than 20 hours I would say in total.</p> <p>11 Maybe 20, 25, in that range. Maybe</p> <p>12 more. Maybe more, maybe close to 30, I</p> <p>13 would say.</p> <p>14 Q. In working on this matter, and</p> <p>15 when I refer to this matter I'm</p> <p>16 referring to this IPR proceeding, does</p> <p>17 that – is that understandable to you?</p> <p>18 A. Yes.</p> <p>19 Q. In working on this matter, did</p> <p>20 you have any conversations with anyone</p> <p>21 other than the attorneys at Adsero?</p> <p>22 A. No. The only conversation I have</p> <p>23 about this matter have been with the</p> <p>24 counsel.</p> <p>25 Q. Do you believe you had an</p>
<p style="text-align: right;">Page 20</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 adequate understanding of the '992</p> <p>3 patent?</p> <p>4 A. Yes, I believe I do.</p> <p>5 Q. Is there anything about the '992</p> <p>6 patent that you believe is unclear or</p> <p>7 that you are uncertain about?</p> <p>8 A. No. I think, no, I don't have</p> <p>9 any of that, no.</p> <p>10 Q. Is it your understanding that the</p> <p>11 title of the patent is Automatic Quality</p> <p>12 of Service Based Resource Allocation?</p> <p>13 A. Yes, that's the title of the</p> <p>14 patent.</p> <p>15 Q. What does Automatic Quality of</p> <p>16 Service Based Resource Allocation mean?</p> <p>17 A. So as the title basically, as the</p> <p>18 name and the words put them together,</p> <p>19 you are going to have automated way,</p> <p>20 automatic way to have a source, resource</p> <p>21 allocation of whatever different</p> <p>22 entities you have to get, or to deliver</p> <p>23 certain quality of service.</p> <p>24 So the source and allocation is</p> <p>25 based on the quality of service and then</p>	<p style="text-align: right;">Page 21</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 this is an automatic fashion. So that's</p> <p>3 kind of my understanding of this title.</p> <p>4 Q. And what does quality of service</p> <p>5 mean to a person of ordinary skill in</p> <p>6 the art at this time? And by "this</p> <p>7 time" I mean the time of the earliest</p> <p>8 filing date which I believe is 2003 for</p> <p>9 the '992 patent?</p> <p>10 A. So you have quality of service.</p> <p>11 You are providing certain service to a</p> <p>12 user and that service in the context of</p> <p>13 this patent be delivering certain</p> <p>14 information, certain media, certain</p> <p>15 content. And then you will have quality</p> <p>16 of service to the user of this material.</p> <p>17 That's kind of my very brief answer to</p> <p>18 that.</p> <p>19 Q. Okay. So in 2003, what would a</p> <p>20 person of ordinary skill in the art</p> <p>21 understand quality of service entails?</p> <p>22 A. Within the context of what we are</p> <p>23 talking about here in this patent, you</p> <p>24 have certain, certain materials, certain</p> <p>25 content, certain information. For</p>

<p>Page 22</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 example, just for the sake of an</p> <p>3 example, to be more specific, we are</p> <p>4 talking about media in this case. As an</p> <p>5 example could be a video, could be an</p> <p>6 audio, something of that sort.</p> <p>7 And then when you have a user on</p> <p>8 their machine, you have to service them</p> <p>9 with this material. Then there is a</p> <p>10 certain quality basically kind of, like</p> <p>11 matrix, if you like, to deliver this,</p> <p>12 this service and this content to them</p> <p>13 with basically the quality that they are</p> <p>14 expecting.</p> <p>15 For example, if you think about</p> <p>16 the video, there's a certain, you know,</p> <p>17 quality for the video, for the images</p> <p>18 themselves, for frame rate and so on and</p> <p>19 the same thing for the audio or text.</p> <p>20 So there's a quality into it and now how</p> <p>21 do you – quality of service means when</p> <p>22 they request this kind of material or</p> <p>23 this kind of media, this kind of object,</p> <p>24 how do you kind of deliver it and</p> <p>25 service them with a certain level of</p>	<p>Page 23</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 quality.</p> <p>3 Q. Okay. You mentioned that, you</p> <p>4 prefaced your answer within the context</p> <p>5 of this patent. So let me ask you about</p> <p>6 the meaning of quality of service</p> <p>7 outside the context of this patent.</p> <p>8 Did quality of service have a</p> <p>9 meaning to a POSITA that is different</p> <p>10 than quality of service as that term is</p> <p>11 used in the '992 patent?</p> <p>12 A. In general terms you have QA</p> <p>13 which is quality of service, again you</p> <p>14 have a user who is requesting certain,</p> <p>15 certain materials. Then, now as a</p> <p>16 system, you want to deliver this</p> <p>17 material and this content at the certain</p> <p>18 level of quality. So there's the</p> <p>19 components that define what quality of</p> <p>20 service you provide to the client or the</p> <p>21 user.</p> <p>22 Q. Okay. So how is that different</p> <p>23 than how that term is applied in the</p> <p>24 '992 patent?</p> <p>25 MR. YOUNG: Objection, form.</p>
<p>Page 24</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 A. As in the claims and the details</p> <p>3 of the patent, there are many different</p> <p>4 basically, you know, elements on how</p> <p>5 this patent provided inventive ways to</p> <p>6 really deliver such quality of service.</p> <p>7 The fundamental details about quality of</p> <p>8 service, you have two components. And</p> <p>9 then in the claim language basically,</p> <p>10 it's very detailed basically, kind of,</p> <p>11 you know, step by step in how that can</p> <p>12 be achieved by technology that is being</p> <p>13 invented in this patent.</p> <p>14 Q. Is the claimed method an example</p> <p>15 of Automatic Quality of Service Based</p> <p>16 Resource Allocation?</p> <p>17 A. Can you please repeat that</p> <p>18 question again?</p> <p>19 Q. Sure. Is claim 1 an example of</p> <p>20 an Automatic Quality of Service Based</p> <p>21 Resource Allocation?</p> <p>22 MR. YOUNG: Objection, form.</p> <p>23 A. If you look at the language of</p> <p>24 claim 1 it has quite a bit of details,</p> <p>25 right, it has, you know, first</p>	<p>Page 25</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 delivering, second delivering, you have</p> <p>3 termination, you have termination, then</p> <p>4 you have using. So there are quite a</p> <p>5 bit of details of how this patent</p> <p>6 achieves the quality of service</p> <p>7 allocation in an automatic fashion. So</p> <p>8 it's, it's claim 1 specifies basically,</p> <p>9 or the claims in general specify how</p> <p>10 this patent would use this technology to</p> <p>11 deliver quality of service, to your</p> <p>12 question.</p> <p>13 Q. Okay. I didn't quite understand.</p> <p>14 Are you saying that claim 1 is an</p> <p>15 example of the Automatic Quality of</p> <p>16 Service Based Resource Allocation</p> <p>17 referred to by the title of the patent?</p> <p>18 A. What I'm saying is claim, the</p> <p>19 claims and the claim language in this</p> <p>20 patent detail and specify how this</p> <p>21 patent delivers quality of service that</p> <p>22 you're asking about. So there's quite a</p> <p>23 bit of details in the claims of how this</p> <p>24 patent is viewing this invention.</p> <p>25 Q. Sure. And I understand that</p>

<p>Page 26</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 claim 1 relates to quality of service.</p> <p>3 But what I'm asking is, do you believe</p> <p>4 that claim 1 is an example of what the</p> <p>5 patent title suggests, which is an</p> <p>6 Automatic Quality of Service Based</p> <p>7 Resource Allocation?</p> <p>8 MR. YOUNG: Objection, form.</p> <p>9 A. You are asking basically if the</p> <p>10 claim language provides Automatic</p> <p>11 Quality of Service Resource Allocation?</p> <p>12 Q. Yes.</p> <p>13 A. If you look at the claim</p> <p>14 language, basically we have different</p> <p>15 details, basically we have different</p> <p>16 components. Either we have the media</p> <p>17 service, we have quality is there,</p> <p>18 delivering is there. So basically it's</p> <p>19 providing the details of the components</p> <p>20 that provide quality of service for the</p> <p>21 user.</p> <p>22 Q. Okay. And does all quality of</p> <p>23 service involve some sort of resource</p> <p>24 allocation?</p> <p>25 MR. YOUNG: Objection to form.</p>	<p>Page 27</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 A. No, there is quality of service</p> <p>3 are really different components to it.</p> <p>4 So you have an object, you have a</p> <p>5 material, you have information. That's</p> <p>6 one component. And then how you're</p> <p>7 going to deliver it to a user, that is</p> <p>8 another component. And then the user</p> <p>9 will be able to consume it or use it, so</p> <p>10 there's another component. So there's</p> <p>11 quite a bit basically of details within</p> <p>12 that, that kind of framework or that</p> <p>13 end-to-end view of that technology.</p> <p>14 So when you say about resource</p> <p>15 allocation, then you have to be more</p> <p>16 specific about what kind of resources</p> <p>17 you are looking at.</p> <p>18 Q. I'm just trying to understand if</p> <p>19 you think claim 1 is a fair example of</p> <p>20 what the patent title suggests, which is</p> <p>21 Automatic Quality of Service Based</p> <p>22 Resource Allocation?</p> <p>23 MR. YOUNG: Objection to form.</p> <p>24 Q. So I'm understanding that you're</p> <p>25 saying -- it seems like you're agreeing</p>
<p>Page 28</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 that claim 1 is an example of quality,</p> <p>3 of determining quality of service. And</p> <p>4 I'm just trying to understand if these</p> <p>5 other aspects suggested by the title of</p> <p>6 the patent are also present in claim 1?</p> <p>7 A. I think usually that's something</p> <p>8 we always try to read on patent or</p> <p>9 papers.</p> <p>10 (Reporter clarification.)</p> <p>11 A. I will repeat. The titles</p> <p>12 usually are kind of, they're usually not</p> <p>13 broad enough. So but the claim</p> <p>14 basically has much more details and</p> <p>15 specifics of how, how this patent or how</p> <p>16 this invention is providing this quality</p> <p>17 of service. There's more details in the</p> <p>18 claims than what's just in the title.</p> <p>19 In the title basically just give you an</p> <p>20 idea that this patent is about quality</p> <p>21 of service, about quality of service of</p> <p>22 the locations, but the details are in</p> <p>23 the claims.</p> <p>24 Q. Okay. And so is it your opinion</p> <p>25 that the title of the patent isn't broad</p>	<p>Page 29</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 enough to cover claim 1?</p> <p>3 MR. YOUNG: Objection, form.</p> <p>4 A. You look at it, there is, there's</p> <p>5 a service, there's quality of service,</p> <p>6 there's automatic fashion there, and</p> <p>7 then you have different resources being</p> <p>8 allocated, either at the server or at</p> <p>9 the user machine to deliver this content</p> <p>10 at high quality.</p> <p>11 I think more or less it's broad</p> <p>12 enough to describe, describe the claim</p> <p>13 language.</p> <p>14 Q. Okay. Are you familiar with the</p> <p>15 term "a portable system"?</p> <p>16 A. Yes.</p> <p>17 Q. Okay. What would a POSITA have</p> <p>18 understood the term "a portable system"</p> <p>19 to mean in 2003?</p> <p>20 A. Yeah, at the time 2003 that was</p> <p>21 really even before we had the iPhone,</p> <p>22 right. So at the time portable system</p> <p>23 you can understand from a technical</p> <p>24 aspect, portable means you can take it</p> <p>25 around, it's moving, right, and that</p>

<p>Page 30</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 means if you're taking it with you here</p> <p>3 or there, that means it has to have, you</p> <p>4 know, certain limitations in terms of</p> <p>5 weight, size which translates into, you</p> <p>6 know, limited, you know, processing</p> <p>7 power, limited memory, limited, you</p> <p>8 know, display, for example. It's not</p> <p>9 like a PC, it's something that's much</p> <p>10 more -- it's portable, it's something</p> <p>11 you can carry around with you. So it</p> <p>12 translates into quite a bit of limited</p> <p>13 capabilities if you like.</p> <p>14 Q. Give me examples of commercially</p> <p>15 available portable systems in 2003?</p> <p>16 A. I mean the first thing that comes</p> <p>17 to my mind is a laptop or a tablet at</p> <p>18 the time, that kind of portable system.</p> <p>19 Q. Okay. What about portable, a</p> <p>20 PDA, can you think of any commercially</p> <p>21 available PDAs in 2003?</p> <p>22 A. Yes, I mean on the top of my mind</p> <p>23 is iPhone wasn't until 2007, I believe,</p> <p>24 was the year. I'm not sure if we had</p> <p>25 something similar before then. You had</p>	<p>Page 31</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 the mobile phones, but they were, not</p> <p>3 sure if we can call them portable</p> <p>4 system.</p> <p>5 Q. Okay. So, for example, were you</p> <p>6 familiar or knew about the Palm Pilot?</p> <p>7 A. I know what the Palm, Palm Pilot,</p> <p>8 I think with the stylus that you write</p> <p>9 on the screen, for example.</p> <p>10 Q. Would a Palm Pilot have been a</p> <p>11 portable system?</p> <p>12 A. I really don't, have never used</p> <p>13 it so I'm not sure basically. But if it</p> <p>14 has processing unit, it has memory, it</p> <p>15 has connectivity to some network and can</p> <p>16 be moved around, then that's kind of a</p> <p>17 portable system.</p> <p>18 Q. Yes. And in asking the question</p> <p>19 I asked you about a PDA, probably should</p> <p>20 make sure we're on the same page. Does</p> <p>21 PDA refer to a personal digital</p> <p>22 assistant?</p> <p>23 A. Yes, that's in the language in</p> <p>24 the patent.</p> <p>25 Q. Are you familiar with any other</p>
<p>Page 32</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 personal digital assistants that were</p> <p>3 known or available in 2003?</p> <p>4 A. Not something specific. I think</p> <p>5 the description that I gave kind of</p> <p>6 general, general description of what</p> <p>7 such a system would look like.</p> <p>8 Q. Were you familiar with Pocket,</p> <p>9 the Pocket PC product?</p> <p>10 A. It sounds like a PDA but I'm not</p> <p>11 sure. I don't remember ever using it.</p> <p>12 Q. Have you ever heard of the Compaq</p> <p>13 iPaq, I-P-A-Q?</p> <p>14 A. Yes, that sounds familiar, though</p> <p>15 I never used it. Sounds familiar.</p> <p>16 Q. What about the iPod, would that</p> <p>17 be a PDA?</p> <p>18 A. The iPod has processing, has a</p> <p>19 memory, at the time it was only output,</p> <p>20 was just audio. You have to connect to</p> <p>21 it your headphones at the time, right.</p> <p>22 There was no screen, right, to interact</p> <p>23 with it. So for audio streaming that</p> <p>24 would be, that could be a PDA.</p> <p>25 Q. Okay. And when was the first</p>	<p>Page 33</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 iPod released?</p> <p>3 A. I don't have that too much on the</p> <p>4 top of my head.</p> <p>5 Q. Okay. But do you know if it was</p> <p>6 at least available before the filing of</p> <p>7 the '992 patent?</p> <p>8 A. I think late '90s was available,</p> <p>9 right, the iPod. I don't know which</p> <p>10 form but it was available in the late</p> <p>11 '90s.</p> <p>12 Q. Okay.</p> <p>13 A. Sorry. I take that back. I was</p> <p>14 confusing 1996 with 2006. I'm not</p> <p>15 really sure. So my answer is, I cannot,</p> <p>16 I cannot tell exactly.</p> <p>17 Q. Okay. Is it your understanding</p> <p>18 that the claims recite a portable</p> <p>19 system?</p> <p>20 MR. YOUNG: Objection, form.</p> <p>21 A. In the claim it says, in the</p> <p>22 preamble it says in a portable system,</p> <p>23 yes.</p> <p>24 Q. Do you have an opinion on whether</p> <p>25 a portable system is a claim limitation?</p>

<p style="text-align: right;">Page 34</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 A. Given the claim language in the</p> <p>3 context of the claim, then portable</p> <p>4 system, it makes sense as a limitation,</p> <p>5 it's a limitation here.</p> <p>6 Q. Do you agree that the portable</p> <p>7 system is an important aspect of the</p> <p>8 claims?</p> <p>9 MR. YOUNG: Objection, form.</p> <p>10 A. If you look at the context later</p> <p>11 on within the claim language about the</p> <p>12 second, you know, delivering the higher</p> <p>13 quality content on the second system,</p> <p>14 then it makes sense basically the</p> <p>15 portable system, it adds some limitation</p> <p>16 and constraints that really feed into</p> <p>17 the limitation the system has in</p> <p>18 deciding on or not. I would say it</p> <p>19 makes sense, it's part of the claim</p> <p>20 language, yes, limitation.</p> <p>21 Q. And is it your opinion that a</p> <p>22 portable system, as that term is used in</p> <p>23 this patent, would have included a</p> <p>24 laptop computer in 2003?</p> <p>25 A. Yes. I think a portable system</p>	<p style="text-align: right;">Page 35</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 is, as I defined it earlier, is a system</p> <p>3 that can move around. So it has,</p> <p>4 doesn't really have access to very</p> <p>5 powerful CPU or powerful memory, it's</p> <p>6 limited in its resources, also in what</p> <p>7 it can share with the user, either audio</p> <p>8 or video are limited to the screen or</p> <p>9 speakers also limited in their</p> <p>10 capability. So any device that falls</p> <p>11 within these definitions will be a</p> <p>12 portable system.</p> <p>13 I think a laptop, it has limited</p> <p>14 processing power, has a finite, limited</p> <p>15 memory at the time and display also is</p> <p>16 small, otherwise would not be portable.</p> <p>17 So I think it could be also a portable</p> <p>18 system.</p> <p>19 Q. What was typical of mass market</p> <p>20 laptop computers in 2003 as far as</p> <p>21 processors, memory and storage space?</p> <p>22 A. Yeah, the specifics I mean I</p> <p>23 can't really, you know, remember from</p> <p>24 top of my head what they were. But</p> <p>25 compared to what we have now, they were</p>
<p style="text-align: right;">Page 36</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 very limited.</p> <p>3 Q. Well what about compared to</p> <p>4 desktop computers that were available in</p> <p>5 2003?</p> <p>6 A. I think they would be limited</p> <p>7 compared to what we have in a PC.</p> <p>8 Q. Well wouldn't a portable device</p> <p>9 or personal digital assistant have</p> <p>10 significantly more limitations than a</p> <p>11 laptop computer in 2003?</p> <p>12 A. It will -- I mean I can imagine</p> <p>13 it should have, you know, much more</p> <p>14 limited but it is real basic. It</p> <p>15 depends. But overall it's limited in</p> <p>16 capabilities for sure.</p> <p>17 Q. Were you aware of the fact that</p> <p>18 -- strike that.</p> <p>19 Were you aware of portable</p> <p>20 workstation laptops in 2003?</p> <p>21 MR. YOUNG: Objection, form.</p> <p>22 A. Can you repeat that?</p> <p>23 Q. Yes. Were you aware of portable</p> <p>24 workstation laptops that existed in</p> <p>25 2003?</p>	<p style="text-align: right;">Page 37</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 MR. YOUNG: Objection, form.</p> <p>3 A. I'm not sure what you are</p> <p>4 referring to. Again, it's a laptop,</p> <p>5 right, so it will have, compared to a PC</p> <p>6 it has limited resources. But now when</p> <p>7 you start to compare different quality</p> <p>8 it is very, very difficult to do.</p> <p>9 Q. Would you agree that there were</p> <p>10 laptop computers in 2003 that had more</p> <p>11 resources than desktop computers that</p> <p>12 existed in 2003?</p> <p>13 MR. YOUNG: Objection.</p> <p>14 A. I cannot really tell about like</p> <p>15 if there was. But again, the general</p> <p>16 sense is that the laptop to be able to</p> <p>17 really carry it around with you, it has</p> <p>18 to be limited.</p> <p>19 Q. So is it your opinion that laptop</p> <p>20 computers in 2003, there were no laptop</p> <p>21 computers in 2003 that were equivalent</p> <p>22 in performance and functionality as</p> <p>23 desktop computers available in 2003?</p> <p>24 MR. YOUNG: Objection, form.</p> <p>25 A. It's really kind of difficult to</p>

<p style="text-align: right;">Page 38</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 have a general statement like that.</p> <p>3 You're comparing different models. For</p> <p>4 example, are you talking about the</p> <p>5 general laptop, or do you have a</p> <p>6 specialized laptop for a specific,</p> <p>7 basically a moveable PC more or less,</p> <p>8 right? So we're talking about very</p> <p>9 different models.</p> <p>10 I cannot really just have a</p> <p>11 general statement to say yes or no on</p> <p>12 this. You have to compare different</p> <p>13 models, what the purpose of these models</p> <p>14 and what the purpose of the computer.</p> <p>15 But in general –</p> <p>16 Q. Let me ask you – go ahead.</p> <p>17 A. Yes, I just want to say in</p> <p>18 general, the laptop is, to be portable,</p> <p>19 it will have, you know, the point of</p> <p>20 being portable means you can carry it</p> <p>21 around with you, especially as a PDA,</p> <p>22 the personal means less weight, limited</p> <p>23 memory, limited CPU and so on.</p> <p>24 Q. Are you familiar with what the</p> <p>25 size of hard disk drives for laptop</p>	<p style="text-align: right;">Page 39</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 computers were in 2003?</p> <p>3 A. The hard drive like HDD size?</p> <p>4 Q. Yes, like the storage size? Let</p> <p>5 me ask that again.</p> <p>6 So are you familiar with what</p> <p>7 size in megabytes or gigabytes laptop</p> <p>8 hard drives were available in 2003?</p> <p>9 Sorry, that was a terrible question.</p> <p>10 Could you tell us what sizes in</p> <p>11 megabytes or gigabytes laptop hard</p> <p>12 drives were available in 2003?</p> <p>13 A. Yes, I can't remember from the</p> <p>14 top of my head but they were much</p> <p>15 smaller than what we have nowadays for</p> <p>16 sure. But the exact, I'm sorry, I can't</p> <p>17 remember. They were more limited than</p> <p>18 what we have now.</p> <p>19 Q. How do they compare to the size</p> <p>20 of hard drives that were available in</p> <p>21 desktop computers in 2003?</p> <p>22 A. They were much smaller in memory</p> <p>23 and in capacity for sure, yes.</p> <p>24 Q. Would they be half the size, a</p> <p>25 quarter of the size, even smaller, less</p>
<p style="text-align: right;">Page 40</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 than that?</p> <p>3 A. Yes, it depends on the models,</p> <p>4 right. But for them to be, really be</p> <p>5 able to be portable, they have to be</p> <p>6 much smaller I imagine, yes.</p> <p>7 Q. You mentioned moveable PC.</p> <p>8 What's a moveable PC?</p> <p>9 A. It's just a portable, right. I</p> <p>10 should have said portable. Portable, to</p> <p>11 take it from one place to another.</p> <p>12 Q. Would a portable PC be a portable</p> <p>13 device?</p> <p>14 A. A POSITA at the time, a PDA is</p> <p>15 something that you can really carry it</p> <p>16 with you as a user, something that's</p> <p>17 very easy to manage, carry around. So</p> <p>18 when you carry a PC, it's not portable,</p> <p>19 I don't think that's as a portable PDA.</p> <p>20 Q. Is it fair to say that claim 1 is</p> <p>21 specifically directed to a portable</p> <p>22 system, digital media and using</p> <p>23 bandwidth to make the quality of service</p> <p>24 determination?</p> <p>25 MR. YOUNG: Objection, form.</p>	<p style="text-align: right;">Page 41</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 A. Can you repeat the second part of</p> <p>3 the question?</p> <p>4 Q. Sure. Let me ask the whole</p> <p>5 question because I'm not sure which</p> <p>6 portion you mean as the second part.</p> <p>7 So do you agree that – strike</p> <p>8 that. Sorry.</p> <p>9 Is it fair to say that claim 1 is</p> <p>10 specifically directed to a portable</p> <p>11 system digital media and using bandwidth</p> <p>12 to make the quality of service</p> <p>13 determination?</p> <p>14 MR. YOUNG: Objection, form.</p> <p>15 A. Claim 1 has, has those elements,</p> <p>16 but also it has much more than that. So</p> <p>17 there's quite a bit of, you know, first</p> <p>18 delivering limitation, there's another</p> <p>19 determination limitation, user</p> <p>20 limitation and second delivering</p> <p>21 limitation. There's really more than</p> <p>22 what you just described in the question.</p> <p>23 Q. Okay. So my summary of claim 1</p> <p>24 would not be a fair summary?</p> <p>25 A. It's missing certain components</p>

<p>Page 42</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 in the claim.</p> <p>3 Q. Is it fair to say that the '992</p> <p>4 patent is directed to improving the</p> <p>5 functionality of a communication network</p> <p>6 used to provide digital media services?</p> <p>7 MR. YOUNG: Objection, form.</p> <p>8 A. Let me make sure I understand the</p> <p>9 question. So you are saying basically</p> <p>10 patent '992 is providing technology to</p> <p>11 improve the quality delivering media?</p> <p>12 Is that what the question is? The</p> <p>13 question was long enough so --</p> <p>14 Q. Sure, sure. Does the '992 provide</p> <p>15 technology to improve the functionality</p> <p>16 of a communication network that is used</p> <p>17 to provide digital media services?</p> <p>18 MR. YOUNG: Objection, form.</p> <p>19 A. It's improving or providing a</p> <p>20 methodology that deliver quality content</p> <p>21 and service to the user. If there are</p> <p>22 any components in there, there are</p> <p>23 certain components that have to do with</p> <p>24 the network itself or the communication</p> <p>25 channel, that is another component that</p>	<p>Page 43</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 have to do with quality itself and there</p> <p>3 are some other components as well. But</p> <p>4 it's not only about the networking but</p> <p>5 also about the content as well.</p> <p>6 Q. Okay. So is the '992 patent</p> <p>7 trying to improve the functionality of</p> <p>8 communications network?</p> <p>9 MR. YOUNG: Objection, form.</p> <p>10 A. I think of that, that kind of</p> <p>11 communication network to deliver content</p> <p>12 and media, the media services to a user,</p> <p>13 and it's basically patent is providing</p> <p>14 different technologies and components to</p> <p>15 really, the end result is really to</p> <p>16 provide quality basically digital</p> <p>17 service and content to the user.</p> <p>18 The network connection and</p> <p>19 channel is where basically you have</p> <p>20 streaming coming from. But it's</p> <p>21 consistent. But overall it's quality of</p> <p>22 service, of delivering content and media</p> <p>23 to the user.</p> <p>24 So there are other components</p> <p>25 under that patent, but we can't ignore</p>
<p>Page 44</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 all the components or some of the</p> <p>3 components.</p> <p>4 Q. So would it be better to say that</p> <p>5 the '992 patent is not really directed</p> <p>6 to improving the functionality of the</p> <p>7 communications network; it's more about</p> <p>8 providing a media service?</p> <p>9 MR. YOUNG: Objection to form.</p> <p>10 A. Yeah, it's not separate, you</p> <p>11 know, one from the other, right. It's</p> <p>12 looking at you have a media, digital</p> <p>13 media service to certain user. Now what</p> <p>14 this patent is really coming up with the</p> <p>15 invention part of it or the inventive</p> <p>16 part, really coming up with ways or a</p> <p>17 way to deliver such, such quality. And</p> <p>18 part of that has to do with</p> <p>19 communication, the network part and</p> <p>20 other part has to do with the contents,</p> <p>21 and there's other parts have to do with</p> <p>22 the -- with the end user machine and</p> <p>23 then the server.</p> <p>24 So there are really all these</p> <p>25 components. You cannot really separate,</p>	<p>Page 45</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 separate or drop any component and just</p> <p>3 subtract it and it only be based on</p> <p>4 certain part of the invention. I think</p> <p>5 the invention is different parts as in</p> <p>6 the claim language to it.</p> <p>7 Q. What was the problem that the</p> <p>8 '992 patent is trying to solve?</p> <p>9 A. So now you have, you have a</p> <p>10 client or a user and is listening or is</p> <p>11 viewing or is consuming, put it that</p> <p>12 way, is consuming a certain media</p> <p>13 content. But this patent is coming up</p> <p>14 with an inventive component of it, is to</p> <p>15 come up with ways to improve basically</p> <p>16 the quality the user is consuming. What</p> <p>17 it's really coming up with is this way</p> <p>18 you're looking for other, other ways,</p> <p>19 other content, same content but</p> <p>20 different, higher quality, and that is</p> <p>21 where the claim language is saying</p> <p>22 basically there's a component where I'm</p> <p>23 delivering certain content now to the</p> <p>24 user, digital media content at certain</p> <p>25 quality level to this user.</p>

<p>Page 46</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 Now next I'm going to determine</p> <p>3 that there is a connection or a possible</p> <p>4 connection with a second system, that</p> <p>5 basically connection has a high</p> <p>6 bandwidth and now I want to basically</p> <p>7 kind of look if it has digital media</p> <p>8 content, the same one the user is</p> <p>9 looking at, but now the second system</p> <p>10 has a higher, higher quality, higher</p> <p>11 quality level. And after identifying or</p> <p>12 determining there is such a system, then</p> <p>13 the patent goes into using that</p> <p>14 connection to get that media content at</p> <p>15 higher level from the second system.</p> <p>16 But at the same time it's really very</p> <p>17 important component is I will be able to</p> <p>18 deliver this content for the user to</p> <p>19 consume at this higher level, quantity</p> <p>20 level.</p> <p>21 So there's quite a bit of steps</p> <p>22 and inventive components into the patent</p> <p>23 that goes into delivering the higher</p> <p>24 quality for the current, current media.</p> <p>25 Q. Is there any part of the '992</p>	<p>Page 47</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 patent where the inventors described the</p> <p>3 problem they were trying to solve?</p> <p>4 A. Sorry, there was some noise in</p> <p>5 the papers. Can you repeat the</p> <p>6 question, please.</p> <p>7 Q. Sure. Is there a particular</p> <p>8 portion of the '992 patent where the</p> <p>9 inventors identify the problem they were</p> <p>10 trying to solve?</p> <p>11 A. We can look at the patent,</p> <p>12 different functions, different steps in</p> <p>13 there. Off the top of my head I can</p> <p>14 look at that.</p> <p>15 Q. So the patent is exhibit 1001.</p> <p>16 (Exhibit 1001, US Patent</p> <p>17 8,270,992 was marked for</p> <p>18 identification.)</p> <p>19 A. I am looking for if they have a</p> <p>20 statement here is the existing problem</p> <p>21 in the current system.</p> <p>22 Q. Sure, yes.</p> <p>23 A. Off the top of my head, I cannot</p> <p>24 really remember if they make such a</p> <p>25 statement.</p>
<p>Page 48</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 Q. Is it fair to say the '992 patent</p> <p>3 seeks to solve a problem of delivering</p> <p>4 low quality content in unstable network</p> <p>5 environments by using quality of service</p> <p>6 based network resource allocation?</p> <p>7 MR. YOUNG: Objection, form.</p> <p>8 A. That's a very long question.</p> <p>9 Q. Sure, I can read it back to you.</p> <p>10 A. Please.</p> <p>11 Q. Is it fair to say that the '992</p> <p>12 patent solves the problem of delivering</p> <p>13 low quality content in unstable network</p> <p>14 environments by using quality of service</p> <p>15 based network resource allocation?</p> <p>16 MR. YOUNG: Objection, form.</p> <p>17 A. There are many components there.</p> <p>18 I'm not sure I'm comfortable with</p> <p>19 there's any kind of -- sounds very</p> <p>20 limiting for what it is trying to do.</p> <p>21 '992 is trying to cover the components</p> <p>22 in there. They are providing technology</p> <p>23 that enable a system that delivering</p> <p>24 certain media content to a user at a</p> <p>25 certain quality level to really be on</p>	<p>Page 49</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 the lookout and delivering digital media</p> <p>3 content at higher quality.</p> <p>4 What I was talking about before,</p> <p>5 different component, different, and they</p> <p>6 have laid out different steps, different</p> <p>7 steps in this technology to achieve</p> <p>8 that.</p> <p>9 That's kind of the long answer.</p> <p>10 But I think that's how I view the '992</p> <p>11 patent.</p> <p>12 Q. So you think my summary the</p> <p>13 problem is trying to solve is too narrow</p> <p>14 a description of the problem?</p> <p>15 A. I think it's really very</p> <p>16 difficult to take such a description and</p> <p>17 then without going through the steps,</p> <p>18 what you are talking about in each one</p> <p>19 of them. That's basically where the</p> <p>20 quality they are providing, there's</p> <p>21 different components to it.</p> <p>22 So I think without going through</p> <p>23 the details of what the claims are and</p> <p>24 what each part, you're talking about</p> <p>25 quality, we are talking about network</p>

<p>Page 50</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 connection and delivery to this user.</p> <p>3 And I think without going into each one</p> <p>4 of these, very difficult just to have an</p> <p>5 answer yes or no.</p> <p>6 Q. Is it fair to say that claim 1 is</p> <p>7 directed to selecting a source of visual</p> <p>8 media content for delivery to a portable</p> <p>9 system based on bandwidth?</p> <p>10 MR. YOUNG: Objection, form.</p> <p>11 A. That's only part of it, right. I</p> <p>12 lay that out in my declaration where</p> <p>13 determining limitation, that's basically</p> <p>14 what it's doing. But there's component</p> <p>15 within that limitation. There are some</p> <p>16 other limitations as well, using,</p> <p>17 delivering. But even under that</p> <p>18 limitation, I will read it again. Okay,</p> <p>19 it says by a communication bandwidth</p> <p>20 that is high enough to provide a digital</p> <p>21 media content to the user at a higher, a</p> <p>22 quality level higher than the current</p> <p>23 quality level.</p> <p>24 So what you just said basically</p> <p>25 is only a small part of what the claim</p>	<p>Page 51</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 is trying to make but there is more</p> <p>3 component to that, other things that are</p> <p>4 being mentioned in it.</p> <p>5 Q. Okay. So my summary of claim 1</p> <p>6 is, is again too narrow, so wouldn't be</p> <p>7 a fair characterization of claim 1?</p> <p>8 A. Yes, I think it is missing other</p> <p>9 components in the claim.</p> <p>10 Q. Okay.</p> <p>11 A. Or other limitation.</p> <p>12 Q. Is it fair to say that the point</p> <p>13 of novelty or the invention lies in</p> <p>14 determining whether the second system on</p> <p>15 a network may be capable of delivering</p> <p>16 higher quality content to the user of</p> <p>17 the first system?</p> <p>18 MR. YOUNG: Objection, form.</p> <p>19 A. The patent, I mean the invention</p> <p>20 there is much more than that. There is</p> <p>21 basically in the determining limitation,</p> <p>22 it's determining there is a network</p> <p>23 connection with the second system.</p> <p>24 First of all, that should be available.</p> <p>25 And then that connection with the second</p>
<p>Page 52</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 system has a bandwidth that's high</p> <p>3 enough, but high enough for what? It's</p> <p>4 high enough to be able to provide the</p> <p>5 digital media that the user is consuming</p> <p>6 right now but in this case the second</p> <p>7 system will be providing that at a</p> <p>8 quality level higher than the current</p> <p>9 quality level the user is consuming.</p> <p>10 Then there is that kind of</p> <p>11 component in the using limitation where</p> <p>12 you can obtain that digital media at the</p> <p>13 higher quality from the second system.</p> <p>14 But also there's very important</p> <p>15 part of the invention which is that</p> <p>16 getting the data is one thing or the</p> <p>17 media is one thing but also being able</p> <p>18 to deliver it to be consumed by the user</p> <p>19 is another limitation. That's a very</p> <p>20 important part.</p> <p>21 So there is that kind of</p> <p>22 optimization, kind of handshaking things</p> <p>23 happening to say yes, even if I get this</p> <p>24 digital media content at higher level,</p> <p>25 higher quality level, I need to make</p>	<p>Page 53</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 sure that I will be able to deliver it</p> <p>3 to the user, user can consume it either</p> <p>4 from limitation in the user machine that</p> <p>5 it's displaying or speakers quality or</p> <p>6 even CPU or and so on.</p> <p>7 So there's really more than just,</p> <p>8 there are quite a bit of components in</p> <p>9 the invention here than what you just</p> <p>10 described in the question.</p> <p>11 Q. Let me ask you about digital</p> <p>12 media content. Are you familiar with</p> <p>13 that term?</p> <p>14 A. Yes.</p> <p>15 Q. Okay. And was digital media</p> <p>16 content a term that was known to POSITAS</p> <p>17 in 2003 without even looking at the '992</p> <p>18 patent?</p> <p>19 A. Yes, I mean I would say as a</p> <p>20 medium, digital, that means you are</p> <p>21 digitizing whatever coming from, you</p> <p>22 know, webcam, for example, something</p> <p>23 like that. The content is digital, it's</p> <p>24 a media, information put in a certain</p> <p>25 media, it was known. You put it in a</p>

<p>Page 54</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 certain structure to deliver certain</p> <p>3 information, images, videos or even text</p> <p>4 actually, audio, speech, music.</p> <p>5 So I would say yes, it was known.</p> <p>6 Q. And does that -- is that the same</p> <p>7 meaning that a person of ordinary skill</p> <p>8 in the art would have understood applies</p> <p>9 to digital media content in the context</p> <p>10 of the '992 patent?</p> <p>11 A. Yes, without off the top of my</p> <p>12 head the exact sentences in the patent.</p> <p>13 But in general digital media content is</p> <p>14 what I described. You have some</p> <p>15 information structured in a certain way,</p> <p>16 that could be an image or a video or</p> <p>17 audio or speech, music or text. Then</p> <p>18 these are digitalized, meaning that you</p> <p>19 have them represented into bits. You</p> <p>20 need to deliver them using packets on</p> <p>21 the packet network. It has certain</p> <p>22 content with a certain, you know, page</p> <p>23 in there. That is a typical term we</p> <p>24 used at the time.</p> <p>25 Q. Do you agree that the '992 patent</p>	<p>Page 55</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 does not use the term media content or</p> <p>3 digital media content apart from the</p> <p>4 claims?</p> <p>5 MR. YOUNG: Objection, form.</p> <p>6 A. Can you please repeat the</p> <p>7 question? Sorry for that.</p> <p>8 Q. Sure. Do you agree that the '992</p> <p>9 patent does not use the term media</p> <p>10 content or digital media content outside</p> <p>11 of the claims?</p> <p>12 MR. YOUNG: Objection, form.</p> <p>13 A. Yeah, I cannot off the top of my</p> <p>14 head. I have to look at the patent</p> <p>15 again and see whether they used that</p> <p>16 term.</p> <p>17 Q. Well, sure, maybe if you take a</p> <p>18 look at your expert declaration,</p> <p>19 paragraph 81.</p> <p>20 A. Paragraph 81, yes, I'm there in</p> <p>21 my declaration, looking, yes.</p> <p>22 Q. The first sentence you say "The</p> <p>23 '992 patent uses the term 'information'</p> <p>24 to refer to 'media content.'"</p> <p>25 Do you see that?</p>
<p>Page 56</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 A. Yes, I see that.</p> <p>3 Q. And does that refresh your</p> <p>4 recollection of whether the patent uses</p> <p>5 the term media content in the written</p> <p>6 description?</p> <p>7 MR. YOUNG: Objection, form.</p> <p>8 A. I think I have the details like</p> <p>9 in the rest of that page where we talk</p> <p>10 about higher quality information and how</p> <p>11 digital media content and information</p> <p>12 basically refers to that.</p> <p>13 Q. I'm just asking you, trying to</p> <p>14 understand something very simple which</p> <p>15 is do you agree that there is nowhere in</p> <p>16 the patent where the word "media</p> <p>17 content" appears other than the claims?</p> <p>18 A. I have to really look at the</p> <p>19 patent more carefully. Off the top of</p> <p>20 my head, to me the media content is</p> <p>21 basically a way where you have</p> <p>22 information is packaged in a certain</p> <p>23 way. So information and the media</p> <p>24 content, the content of the media is the</p> <p>25 information. So both of them are always</p>	<p>Page 57</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 related to each other, even for a POSITA</p> <p>3 at the time it's a known kind of</p> <p>4 equivalence for that.</p> <p>5 Q. Is it your opinion that</p> <p>6 information is synonymous with media</p> <p>7 content?</p> <p>8 A. When you say media content, it</p> <p>9 means media by definition, right? It</p> <p>10 has information and it is organized in a</p> <p>11 certain fashion, certain way.</p> <p>12 Q. Okay.</p> <p>13 A. That information could be, you</p> <p>14 know, I'm trying to think of an example.</p> <p>15 But yes the information is in that video</p> <p>16 or audio, text even. And this patent,</p> <p>17 when I look at the context we talk about</p> <p>18 quality of information, quality of media</p> <p>19 content equivalent, that might be the</p> <p>20 equivalent of the patent.</p> <p>21 Q. Is information a broader term</p> <p>22 than media content?</p> <p>23 A. Outside the four corners of the</p> <p>24 journal, outside of this patent,</p> <p>25 information is information. Now when</p>

<p style="text-align: right;">Page 58</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 you organize it in certain structures it</p> <p>3 can form, become media content. That's</p> <p>4 basically when it's text, for example,</p> <p>5 or images or videos or audio or speech.</p> <p>6 But in the context of this patent they</p> <p>7 are equivalent.</p> <p>8 Q. So do you agree that all media</p> <p>9 content is information, but not all</p> <p>10 information is media content?</p> <p>11 A. So the media content has the</p> <p>12 information you want to relay to the</p> <p>13 user, right, or to the consumer. It has</p> <p>14 that information in there. But of</p> <p>15 course when you are structuring the</p> <p>16 information in a certain fashion, for</p> <p>17 example, you have text put into a</p> <p>18 document, then you will have white</p> <p>19 spaces, you will have other stuff there.</p> <p>20 So it is part of the packaging of</p> <p>21 information for media, you know,</p> <p>22 content. You add some stuff to it. Is</p> <p>23 that information or not? I mean it's</p> <p>24 again is the same content as the media</p> <p>25 content has the information.</p>	<p style="text-align: right;">Page 59</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 I'm sorry if I'm not answering</p> <p>3 your question exactly, but I think it's</p> <p>4 taken within the context of the patent.</p> <p>5 I think it's very important because</p> <p>6 that's what my reading of the patent</p> <p>7 basically is, that the media content and</p> <p>8 information are equivalent.</p> <p>9 Q. Okay. Well let's not start with</p> <p>10 the patent. Let's start with what a</p> <p>11 person of ordinary skill in the art --</p> <p>12 sorry. Let's start with what a person</p> <p>13 of ordinary skill in the art would</p> <p>14 understand information and media content</p> <p>15 to mean in 2003, okay? So in 2003 --</p> <p>16 A. Yes.</p> <p>17 Q. -- would a POSITA have understood</p> <p>18 that media content is information, but</p> <p>19 not all information is media content?</p> <p>20 Is that true?</p> <p>21 A. So media content is information</p> <p>22 that is structured in a certain format,</p> <p>23 to follow certain format for the</p> <p>24 consumption.</p> <p>25 Now you have different ways how</p>
<p style="text-align: right;">Page 60</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 to give you some information. I can</p> <p>3 give it to you as a text or I can give</p> <p>4 it to you as an image, text, video or so</p> <p>5 on. That's when the media comes into</p> <p>6 play in the general sense, right?</p> <p>7 So the media content has the</p> <p>8 information in it, right?</p> <p>9 Now if I'm looking at media</p> <p>10 content and I can get information from</p> <p>11 that, whether it's text or an image,</p> <p>12 that's all. To exclude one from the</p> <p>13 other I think basically there's the</p> <p>14 equivalence there to do exclusions.</p> <p>15 Q. What would a POSITA understand</p> <p>16 stream to mean in 2003?</p> <p>17 A. Stream, so it basically says you</p> <p>18 are having -- you have certain file,</p> <p>19 like certain content from a server and</p> <p>20 then you want to deliver. So basically</p> <p>21 we have -- we have this information or</p> <p>22 this kind of data put into a packet.</p> <p>23 And now you are sending it as a stream</p> <p>24 to, to another node, to a user, for</p> <p>25 example, over that system.</p>	<p style="text-align: right;">Page 61</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 So this kind of a stream,</p> <p>3 streaming or stream I mean like, is like</p> <p>4 a stream or kind of a river like of data</p> <p>5 packets flowing through that, through</p> <p>6 that channel or network.</p> <p>7 Q. How -- is a stream media content?</p> <p>8 A. I didn't hear the first part.</p> <p>9 How is?</p> <p>10 Q. Sorry. Is a stream media</p> <p>11 content?</p> <p>12 A. Now when you send a stream, when</p> <p>13 you are streaming a certain media</p> <p>14 content, the media content is within the</p> <p>15 stream but you are sending some other</p> <p>16 stuff when you are doing the packets.</p> <p>17 You are packetizing the media content.</p> <p>18 You are preparing it into packets and</p> <p>19 then you are delivering these packets or</p> <p>20 selling these packets on the wire, on</p> <p>21 the channel or the network. And the</p> <p>22 media content is there but these are</p> <p>23 kind of packetizing into packets so for</p> <p>24 the network to deliver.</p> <p>25 Q. So is it fair to say that the</p>

<p>Page 62</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 stream contains additional information</p> <p>3 that is not media content?</p> <p>4 A. For example, at the time of the</p> <p>5 content if you think of the MPEG as a</p> <p>6 standard, the MPEG is a very well known</p> <p>7 standard for video compression, video</p> <p>8 coding, and the standard itself is</p> <p>9 specifically, has certain, certain</p> <p>10 hidden set of information so that it</p> <p>11 will become a, become an MPEG stream.</p> <p>12 You encoded the encoder and then</p> <p>13 you have that content in there and then</p> <p>14 you add some standard of the MPEG.</p> <p>15 So this additional information,</p> <p>16 additional hidden information, for</p> <p>17 example, really is part of the standard,</p> <p>18 like for MPEG for example or even JPEG</p> <p>19 or even MP3, they all have a specific</p> <p>20 kind of additional information you add</p> <p>21 to be able, to be able to decode this at</p> <p>22 the end, the receiving end.</p> <p>23 Now are these part of the</p> <p>24 information media content itself? One</p> <p>25 could say no. But you need those</p>	<p>Page 63</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 information to be able to decode and</p> <p>3 display or listen to the content at the</p> <p>4 receiver end.</p> <p>5 Q. So you agree that a stream of</p> <p>6 media content includes both information</p> <p>7 representing the media content as well</p> <p>8 as additional information that may be,</p> <p>9 for example, required by the encoding</p> <p>10 standard?</p> <p>11 A. Yes. And those could be used for</p> <p>12 decoding the media content itself, the</p> <p>13 receiver, for example. That's fair.</p> <p>14 Q. Okay.</p> <p>15 MR. PONDER: I think we've been</p> <p>16 going for an hour and 15 minutes.</p> <p>17 Let's take a ten-minute break.</p> <p>18 MR. YOUNG: Sounds good.</p> <p>19 (A recess was had.)</p> <p>20 MR. PONDER: Let's go back on the</p> <p>21 record.</p> <p>22 Q. Would a POSITA have been familiar</p> <p>23 with the term quality level in 2003</p> <p>24 apart from the '992 patent?</p> <p>25 A. Yes, quality level is a term</p>
<p>Page 64</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 familiar to a POSITA.</p> <p>3 Q. And is the term quality level in</p> <p>4 the '992 patent used in the same way as</p> <p>5 it was commonly used by POSITAs in 2003?</p> <p>6 A. Yes, when you say media, digital</p> <p>7 media at a certain quality level, it's</p> <p>8 understood by a POSITA at the time.</p> <p>9 Q. Okay. Well what does quality</p> <p>10 level mean as applied to media content?</p> <p>11 A. So the best way to answer this is</p> <p>12 just to use some examples. When you are</p> <p>13 -- the easiest way in this context is to</p> <p>14 look at when you are coding an image or</p> <p>15 a video or an audio, then you really</p> <p>16 want to produce a very low bit rate</p> <p>17 meaning not a large file size then you</p> <p>18 compress quite a bit. In that case you</p> <p>19 are trading off quality to the file</p> <p>20 size. You want to produce a small file</p> <p>21 size and you are sacrificing the</p> <p>22 quality.</p> <p>23 In the example of images or JPEG</p> <p>24 or MPEG or videos, that means you will</p> <p>25 get quite a bit of pixilation, maybe</p>	<p>Page 65</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 some blurriness, so that is degradation</p> <p>3 in the quality of this context. If you</p> <p>4 really want to maximize the quality then</p> <p>5 you really don't compress it very much</p> <p>6 so you keep all the details and you have</p> <p>7 very high quality content, for example,</p> <p>8 for videos or audio and so on.</p> <p>9 So that's kind of what a POSITA</p> <p>10 will understand quality level for media</p> <p>11 content.</p> <p>12 Q. I believe you offered an opinion</p> <p>13 that quality of information refers to</p> <p>14 the quality of the information itself;</p> <p>15 is that, is that correct?</p> <p>16 A. I'm not sure I understand the</p> <p>17 question. The quality of information</p> <p>18 refers to the quality of information</p> <p>19 itself?</p> <p>20 Q. Yes. I believe that's from</p> <p>21 paragraph 81 of your declaration.</p> <p>22 A. Yes, that's basically what I have</p> <p>23 in paragraph 81. I see that, yes.</p> <p>24 Q. Okay. Well what does it mean</p> <p>25 when you say quality of the information</p>

<p>Page 66</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 itself?</p> <p>3 A. Yes, so as I mentioned earlier,</p> <p>4 like a digital media, you have a certain</p> <p>5 information structured in a certain</p> <p>6 format, right, either text in an image</p> <p>7 or a video format, and the idea is</p> <p>8 there's a quality level to it.</p> <p>9 Now, for example, you can imagine</p> <p>10 you have an image and then there is, you</p> <p>11 know, image of a certain object that if</p> <p>12 you really compromise the quality then</p> <p>13 the quality of the information is also</p> <p>14 itself is being reduced, for example, or</p> <p>15 enhanced or kept at the same level.</p> <p>16 That's what I refer to as quality of the</p> <p>17 information itself in that context in</p> <p>18 paragraph 81.</p> <p>19 Q. So is media content, when it's</p> <p>20 provided at two different quality</p> <p>21 levels, how do you provide to the two</p> <p>22 different things that each provide the</p> <p>23 different quality level of the media</p> <p>24 content?</p> <p>25 MR. YOUNG: Objection, form.</p>	<p>Page 67</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 A. I'm not sure I understand the</p> <p>3 question. So you have digital media</p> <p>4 content at quality level let's say 1,</p> <p>5 and then the same digital media content</p> <p>6 at a higher quality level, say quality</p> <p>7 number 2. Then the question is how do</p> <p>8 you differentiate between the two?</p> <p>9 Q. Yes. How do you refer to the two</p> <p>10 different, those two different things?</p> <p>11 A. So basically a POSITA at the time</p> <p>12 would kind of -- this is something</p> <p>13 actually I spend all my career doing,</p> <p>14 which is about quality of media.</p> <p>15 There's a lot especially in it. But in</p> <p>16 a very short answer, I would say we have</p> <p>17 enough basically kind of modeling of</p> <p>18 what really capture the quality of media</p> <p>19 content, whether it be an image or a</p> <p>20 video or an audio, for example.</p> <p>21 But a POSITA at the time, it's</p> <p>22 very, very clear what basically</p> <p>23 differentiate between two quality</p> <p>24 levels.</p> <p>25 At the end of the day, the</p>
<p>Page 68</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 contents of this patent and overall for</p> <p>3 media content delivery, at the end of</p> <p>4 the day the user is consuming the media</p> <p>5 and all those quality levels</p> <p>6 differentiation take that human into the</p> <p>7 loop and basically a human can easily</p> <p>8 say quality number 1 is worse than</p> <p>9 quality number 2.</p> <p>10 So it can be observed, it can be</p> <p>11 noticed, and that's basically what real</p> <p>12 quality of media content is all about.</p> <p>13 Q. Okay. So what I'm trying to</p> <p>14 understand is what do you refer to the</p> <p>15 two different things, the one that's the</p> <p>16 quality number 1 and the other one</p> <p>17 that's quality number 2, would you refer</p> <p>18 to them as different versions of the</p> <p>19 media content, different encodings of</p> <p>20 the media content? What is the</p> <p>21 terminology the POSITA would use to</p> <p>22 refer to these two different things that</p> <p>23 have the different quality levels of the</p> <p>24 same media content?</p> <p>25 MR. YOUNG: Objection, form.</p>	<p>Page 69</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 A. You have the media content, but</p> <p>3 now you have one at a lower level in</p> <p>4 terms of quality than the other one. So</p> <p>5 you have a media content that's lower</p> <p>6 quality than, or higher quality than the</p> <p>7 other one.</p> <p>8 Q. Okay. So there's no term for</p> <p>9 that other than calling it media content</p> <p>10 at a lower quality, media content at a</p> <p>11 higher quality?</p> <p>12 A. If you are referring specifically</p> <p>13 to the quality of the media content</p> <p>14 separate from the information, then</p> <p>15 quality is the metric we are using here.</p> <p>16 Q. Yes, Dr. AlRegib, what would you</p> <p>17 call it when you're trying to store it,</p> <p>18 for example? Obviously you can't tell</p> <p>19 the computer bring up the second</p> <p>20 version, the version at a higher</p> <p>21 quality. Would there be separate files?</p> <p>22 Are they -- what is the actual thing</p> <p>23 holding the media content at the two</p> <p>24 different versions, the two different</p> <p>25 quality levels?</p>

<p style="text-align: right;">Page 70</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 A. Yes, for example based on your</p> <p>3 question, when you are encoding a video,</p> <p>4 for example, or an image, then you have,</p> <p>5 you know, an app, like a parameter that</p> <p>6 says when I include this at this level</p> <p>7 quality or this level of bit rate and</p> <p>8 then you produce basically kind of a bit</p> <p>9 scheme that represent that quality level</p> <p>10 of that media. Maybe you have another</p> <p>11 encoder that says okay, I'm going to</p> <p>12 encode this at a lower level quality or</p> <p>13 a lower bit rate, and then you encode it</p> <p>14 and then you have the same content but</p> <p>15 different quality level.</p> <p>16 Q. Okay. Let me try to ask you</p> <p>17 about your paragraph 28 opinions. Could</p> <p>18 you turn there, please.</p> <p>19 A. I'm there now.</p> <p>20 Q. At the bottom of page 10 you say</p> <p>21 "To illustrate, the table below shows</p> <p>22 exemplary file sizes I have calculated</p> <p>23 for a five-minute stereo audio track</p> <p>24 sampled at 44.1 kilohertz (16-bit</p> <p>25 quantization) and encoded in different</p>	<p style="text-align: right;">Page 71</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 formats."</p> <p>3 You see that?</p> <p>4 A. Yes, I see it.</p> <p>5 Q. So is the source digital media</p> <p>6 content the five minute stereo audio</p> <p>7 track sampled at 44.1 kilohertz with</p> <p>8 16-bit quantization?</p> <p>9 A. Yes, that's basically the raw,</p> <p>10 the raw file, yes.</p> <p>11 Q. Okay. So that do we want to</p> <p>12 refer to that as the raw, that's the raw</p> <p>13 file that's the original media content?</p> <p>14 A. Yes, there's no loss of</p> <p>15 information.</p> <p>16 Q. So in the first row of your table</p> <p>17 it says W-A-V which is pronounced WAV</p> <p>18 CD-audio lossless, do you see that?</p> <p>19 A. Yes.</p> <p>20 Q. So is that the first encoding</p> <p>21 that you're proposing as an example?</p> <p>22 A. Yes, as indicated in that table.</p> <p>23 This is lossless, so we don't really</p> <p>24 have, as a WAV file, we don't really</p> <p>25 have beyond the 16 quantization bit. So</p>
<p style="text-align: right;">Page 72</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 there is no lossy information there in</p> <p>3 that coding, so we get the same quality.</p> <p>4 Q. Okay. So that's the highest, is</p> <p>5 that the highest quality encoding of the</p> <p>6 four examples here?</p> <p>7 A. For this specific example, yes.</p> <p>8 Q. And each of these items in a row</p> <p>9 are different coding formats; is that</p> <p>10 what I understand the first heading to</p> <p>11 mean?</p> <p>12 A. Yes.</p> <p>13 Q. So the first row which says MP3,</p> <p>14 320 kbps, that's a different encoding</p> <p>15 from the first encoding?</p> <p>16 A. Yes.</p> <p>17 Q. And is that a higher quality</p> <p>18 encoding or a lower quality encoding</p> <p>19 than the first element in the table?</p> <p>20 A. When you are encoding with,</p> <p>21 either with MP3 or MPEG or JPEG, we</p> <p>22 refer to this as loss compression or</p> <p>23 encoding meaning you are losing some</p> <p>24 information. That's the only point of</p> <p>25 how you can be able to compress and a</p>	<p style="text-align: right;">Page 73</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 get a lower file size for the same</p> <p>3 media. And that translates, this</p> <p>4 compression or this lossy translates</p> <p>5 into a degradation into the quality</p> <p>6 level once you decode and listen to it.</p> <p>7 That's why we get a lower file size.</p> <p>8 Q. So is the MP3 at 320 kilobits per</p> <p>9 second lower quality than the WAV</p> <p>10 encoding in the first row?</p> <p>11 A. Yes, that's what it says in here,</p> <p>12 trading off quality for file size.</p> <p>13 Q. Okay. And then the next row</p> <p>14 after that, this is the third row, it</p> <p>15 says MP3, 192 kilobits per second,</p> <p>16 correct?</p> <p>17 A. Yes.</p> <p>18 Q. And that encoding is lower</p> <p>19 quality than both the first WAV encoding</p> <p>20 and the MP3 at 320 kilobits per second</p> <p>21 encoding, correct?</p> <p>22 A. Yes, that makes sense.</p> <p>23 Q. And then the last encoding is MP3</p> <p>24 at 128 kilobits per second, correct?</p> <p>25 A. Correct.</p>

<p>Page 74</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 Q. And that is the lowest quality</p> <p>3 version of the media content in this</p> <p>4 table?</p> <p>5 A. Yes, that makes sense.</p> <p>6 Q. And the way we know that it's the</p> <p>7 lowest quality is because the file</p> <p>8 contains the least amount of information</p> <p>9 as compared to the other encoding</p> <p>10 formats?</p> <p>11 A. The file is a product. How we</p> <p>12 know it is from the bit rate, and the</p> <p>13 bit rate is in the first column next to</p> <p>14 that. So we know it from the 320</p> <p>15 kilobits per second compared to 128</p> <p>16 kilobits per second, for example. From</p> <p>17 there we know the 128 kilobits per</p> <p>18 second will have a lower quality. It</p> <p>19 translates in general to have a lower</p> <p>20 file size.</p> <p>21 Q. What do the numbers next to the</p> <p>22 MP3 represent, where it says 320</p> <p>23 kilobits per second, 192 kilobits per</p> <p>24 second and 128 kilobits per second?</p> <p>25 A. That's basically what we refer to</p>	<p>Page 75</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 as the compression rate or bit rate or</p> <p>3 the encoded file, meaning that you are</p> <p>4 encoding this to be at this level, 320</p> <p>5 kilobits per second.</p> <p>6 Remember, when we have encoder,</p> <p>7 it's very complex but usually the way we</p> <p>8 control the different components in an</p> <p>9 encoder is to say here is that target</p> <p>10 bit rate. For example, we would like to</p> <p>11 have this file to be able to, you know,</p> <p>12 hear it or play it or send it at this</p> <p>13 level, at this quality level which is if</p> <p>14 we have 128 kilobits per second then</p> <p>15 that's great, if not then we can lower</p> <p>16 it to 100 or 128. So these are the bit</p> <p>17 rate for the encoder to really compress</p> <p>18 this file, that bit stream, that kilobit</p> <p>19 per second. That's kind of the unit we</p> <p>20 use to define basically the bit rate for</p> <p>21 the compression.</p> <p>22 Q. Just to make sure we're clear</p> <p>23 because I'm not sure the court reporter</p> <p>24 got the terms that you were using</p> <p>25 clearly, did you say that the number is</p>
<p>Page 76</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 the encoding bit rate or a different --</p> <p>3 or did you use a different word?</p> <p>4 A. Yes, that's basically the bit</p> <p>5 rate at which the encoder encoded the in</p> <p>6 this case the audio to produce a file at</p> <p>7 this bit rate. So now we have this many</p> <p>8 kilobit in one second. If we have more,</p> <p>9 like 320, that means we have better</p> <p>10 quality. If we have only 128 kilobit in</p> <p>11 one second, that means we have lower</p> <p>12 quality.</p> <p>13 Q. Okay. Now in your example here</p> <p>14 where we have the four different</p> <p>15 encodings, are they stored as separate</p> <p>16 files or are they contained in a single</p> <p>17 file? How are they actually physically</p> <p>18 stored?</p> <p>19 A. Actually you have an encoder.</p> <p>20 Then you give the encoder basically the</p> <p>21 parameter. You say encode this file at</p> <p>22 320 kilobit per second. Then to produce</p> <p>23 an MP3 file at 320 kilobit per second.</p> <p>24 Then you encode later on at some other</p> <p>25 time, now include the audio of this file</p>	<p>Page 77</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 at 192 kilobit per second to produce</p> <p>3 another, another file or another thing</p> <p>4 at that 192 kilobit per second rate.</p> <p>5 Q. Okay.</p> <p>6 A. These you have stored separate</p> <p>7 from each other.</p> <p>8 Q. Okay. So in this example where</p> <p>9 you've had a raw source file which was</p> <p>10 the original media content, you've</p> <p>11 produced with an encoder four separate</p> <p>12 files, each file containing the same</p> <p>13 digital media content but encoded at</p> <p>14 different bit rates?</p> <p>15 A. Yes, I mean the MP3 or these</p> <p>16 three different MP3 quality or bit</p> <p>17 streams or bit files or files, the WAV</p> <p>18 one that's basically how we store the</p> <p>19 audio, right, when we get it from the</p> <p>20 microphone basically digitizer. Usually</p> <p>21 we get it at this level. So the</p> <p>22 encoding just to make sure there's no</p> <p>23 compression happening here, it's kind of</p> <p>24 the raw data.</p> <p>25 Q. Okay.</p>

<p style="text-align: right;">Page 78</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 A. Without any lossy compression.</p> <p>3 That's why I put in parentheses</p> <p>4 lossless, meaning this represents the</p> <p>5 original audio without losing any</p> <p>6 information, any high frequency.</p> <p>7 Q. Sure. Would you agree that</p> <p>8 encoding is different from compression,</p> <p>9 that you can encode media without</p> <p>10 compressing it?</p> <p>11 A. No, for a POSITA, I mean that's</p> <p>12 actually something in our community. To</p> <p>13 encode you put things into a certain</p> <p>14 format, right. Now what we usually use</p> <p>15 this like we say MP encoder it implies</p> <p>16 you are compressing the compression. So</p> <p>17 it's really not clearcut, even at the</p> <p>18 time, really, when it says encoding it</p> <p>19 means you are compressing.</p> <p>20 Q. Is it necessary, if you have two</p> <p>21 different encodes, is it necessary for a</p> <p>22 person to be able to distinguish the</p> <p>23 difference between the encodings for it</p> <p>24 to be a different quality level?</p> <p>25 MR. YOUNG: Objection, form.</p>	<p style="text-align: right;">Page 79</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 A. Yeah, I want to make sure I</p> <p>3 understand this question because so you</p> <p>4 say a person is looking at two, at two</p> <p>5 videos, let's say, and these two videos</p> <p>6 are from the same content but are</p> <p>7 encoded different bit rates? Is that</p> <p>8 the question?</p> <p>9 Q. Yes. Is it necessary for the</p> <p>10 user to be able to perceive a difference</p> <p>11 between the two encodings for the</p> <p>12 quality levels to be different?</p> <p>13 MR. YOUNG: Objection, form.</p> <p>14 A. So you're asking really a good</p> <p>15 question from a technical point of view</p> <p>16 because that's something we have been</p> <p>17 spending almost my career on.</p> <p>18 When you are delivering a service</p> <p>19 to a human, a user, which is the case</p> <p>20 that we are discussing here, right, when</p> <p>21 you want to, you know, add, have</p> <p>22 different compression bit rates or</p> <p>23 different bit streams, it's really for</p> <p>24 the user to perceive a difference in</p> <p>25 terms of the quality between them.</p>
<p style="text-align: right;">Page 80</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 We try our best to minimize, but</p> <p>3 usually when you have these stored on a</p> <p>4 server, and this is an example, you have</p> <p>5 quite a bit of a difference between 320</p> <p>6 kilobit per second audio and 128 or 192</p> <p>7 kilobit per second audio.</p> <p>8 The user will differentiate the</p> <p>9 quality between these two. And that's</p> <p>10 basically what we are looking at in here</p> <p>11 when you look at can I get this stream</p> <p>12 at a higher quality level? That means</p> <p>13 the user will be able to differentiate,</p> <p>14 the user will be able to tell the</p> <p>15 difference, as a human user.</p> <p>16 Q. Do you agree in the example of</p> <p>17 the WAV file in this table and the</p> <p>18 encoding, MP3 encoding at 320 kilobits</p> <p>19 per second, that those are two different</p> <p>20 quality levels?</p> <p>21 A. Yes, these two things are</p> <p>22 different quality levels, yes.</p> <p>23 Q. Okay. And do you agree that some</p> <p>24 people listening to these two different</p> <p>25 encodings wouldn't be able to tell the</p>	<p style="text-align: right;">Page 81</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 difference between the two?</p> <p>3 MR. YOUNG: Objection, form.</p> <p>4 A. No, when we are saying basically</p> <p>5 different quality, that means these are</p> <p>6 perceived quality. That's basically</p> <p>7 what the human will be observing.</p> <p>8 That's what we refer to as the quality</p> <p>9 difference in here. When you say 320</p> <p>10 kilobits per second or a WAV or 192 or</p> <p>11 128 kilobits per second, then these are</p> <p>12 the bit rates for the encoders. But</p> <p>13 also they have a difference in the</p> <p>14 perceived quality by the user. So they</p> <p>15 would be different, yes.</p> <p>16 Q. Okay.</p> <p>17 A. It is to deliver the highest</p> <p>18 quality which is the WAV but we have</p> <p>19 limited resources with the compression.</p> <p>20 Q. So just looking at the first two</p> <p>21 entries in the table in paragraph 28, is</p> <p>22 it fair to say that those first two</p> <p>23 encodings are each at a different</p> <p>24 quality level, but are not perceived by</p> <p>25 a user as having two different quality</p>

<p>Page 82</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 levels?</p> <p>3 MR. YOUNG: Objection, form.</p> <p>4 A. The first part of your question I</p> <p>5 think these are two streams and they are</p> <p>6 encoded different. Whenever we say we</p> <p>7 have a different bit rate encoding, we</p> <p>8 have a trade-off between quality and</p> <p>9 file size or bit rate than quality.</p> <p>10 If the fact that we don't really</p> <p>11 have any relation in terms of the</p> <p>12 quality, then nobody would even code the</p> <p>13 first one. But the reality is that you</p> <p>14 are losing information. That's why with</p> <p>15 the first one it's called lossless, MP3,</p> <p>16 320 kilobits per second there's loss of</p> <p>17 information and you gain lower file</p> <p>18 size.</p> <p>19 So what are you gaining?</p> <p>20 Basically you are gaining the reduction</p> <p>21 in the file size, but are you paying on</p> <p>22 the cost is quality.</p> <p>23 So there is a difference in the</p> <p>24 quality between the two.</p> <p>25 Q. Okay. But is there a difference</p>	<p>Page 83</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 between the perceived quality of the</p> <p>3 two?</p> <p>4 A. Yes. Whenever we talk about</p> <p>5 digital media content and whenever we</p> <p>6 talk about within this application this</p> <p>7 content that we are discussing in this</p> <p>8 project, this case, then that is</p> <p>9 whenever we say quality, that's the</p> <p>10 perceived quality by the user which is</p> <p>11 the end consumer of this media.</p> <p>12 Q. Okay. So it's your understanding</p> <p>13 that in claim 1, when it refers to</p> <p>14 quality level, the difference has to be</p> <p>15 a perceived difference in quality, not</p> <p>16 simply a technical difference in quality</p> <p>17 level?</p> <p>18 MR. YOUNG: Objection, form.</p> <p>19 A. When you look at, as an example,</p> <p>20 you say one of the clauses, to provide</p> <p>21 the digital media content to the user at</p> <p>22 a quality level higher than the current</p> <p>23 quality level. My understanding is that</p> <p>24 basically you are delivering this to</p> <p>25 that user, and then there is two</p>
<p>Page 84</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 different levels, there is a current</p> <p>3 quality level and there is a higher</p> <p>4 quality level. So basically at the end</p> <p>5 of the day, the user is the consumer of</p> <p>6 this media at these two different</p> <p>7 quality levels.</p> <p>8 Q. Okay. So if I understand your</p> <p>9 answer, you're saying that because of</p> <p>10 this clause in claim 1, that we have to</p> <p>11 judge whether the quality level is</p> <p>12 higher with reference to whether the</p> <p>13 user perceives the quality level to be</p> <p>14 higher?</p> <p>15 MR. YOUNG: Objection, form.</p> <p>16 A. Whenever you say quality, the</p> <p>17 whole claim here is to get the media</p> <p>18 from a second system and to obtain it at</p> <p>19 a higher level, quality level to the</p> <p>20 user. And since the user is the</p> <p>21 consumer of this media, then the quality</p> <p>22 that we are already providing from the</p> <p>23 second system will be at a higher level,</p> <p>24 of the consumed media will get a higher</p> <p>25 level of quality.</p>	<p>Page 85</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 And now the context of what</p> <p>3 you're asking these questions about like</p> <p>4 in the last few minutes is within the</p> <p>5 encoding and compression bit rate</p> <p>6 coding. And you refer to the example I</p> <p>7 have in the table in my declaration for</p> <p>8 the MP3.</p> <p>9 And in that case basically,</p> <p>10 whenever we have such different encoding</p> <p>11 bit rates and there are differences</p> <p>12 between them, those would be observed by</p> <p>13 a user. There's a difference in the</p> <p>14 quality and it will be noticeable.</p> <p>15 Q. Okay. But the plain language</p> <p>16 then for your first example, the format,</p> <p>17 let's say we're listening to the WAV CD</p> <p>18 audio lossless format, and the portable</p> <p>19 device determines that there is an MP3</p> <p>20 at 320 kilobits per second available,</p> <p>21 would that 320 kilobits per second MP3</p> <p>22 media content be at a higher quality</p> <p>23 level than the WAV CD audio that the</p> <p>24 user is listening to?</p> <p>25 MR. YOUNG: Objection, form.</p>

<p>Page 86</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 A. I think we already established</p> <p>3 few minutes ago that when you have a</p> <p>4 lossless file, you haven't added to it</p> <p>5 any compression. That means you have</p> <p>6 not lost any information. So all the</p> <p>7 range of the audio, the music, the</p> <p>8 speech, everything is there. Now when</p> <p>9 you apply compression MP3 even at 320</p> <p>10 kilobits per second, you are applying a</p> <p>11 lossy. In other words, you are adding</p> <p>12 loss to your data, to your information,</p> <p>13 meaning that you are losing part of that</p> <p>14 content and that loss of the content</p> <p>15 translates into quality.</p> <p>16 Now I have an issue with the</p> <p>17 question because the question is really</p> <p>18 kind of trying to say that MP3, 320</p> <p>19 kilobits per second or even lower when</p> <p>20 we apply a lossy compression, the</p> <p>21 resulting media is worse in quality than</p> <p>22 the original media which is something I</p> <p>23 disagree with. They apply compression,</p> <p>24 you are losing information, in general</p> <p>25 terms, then the quality will be, will be</p>	<p>Page 87</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 less than the original format.</p> <p>3 Q. Okay. Well let me ask you about</p> <p>4 an example in the context of claim 1.</p> <p>5 Let's assume that we're using a portable</p> <p>6 system and with respect to the first</p> <p>7 delivery limitation there's delivering</p> <p>8 digital media content having a current</p> <p>9 quality level to a user. Let's assume</p> <p>10 that that digital media content having</p> <p>11 the current quality level is the MP3 at</p> <p>12 320 kilobits per second. Is that part</p> <p>13 clear?</p> <p>14 A. Yes. So now, yes.</p> <p>15 Q. Okay. Now let's go to the next</p> <p>16 step. Now let's say the portable, in</p> <p>17 the portable system we've determined</p> <p>18 that there's a network connection with a</p> <p>19 second system available and</p> <p>20 characterized by communication bandwidth</p> <p>21 that's high enough to provide digital</p> <p>22 media content to the user at a quality</p> <p>23 level higher than the current quality</p> <p>24 level. So let's say for applying that</p> <p>25 step, that the digital media content</p>
<p>Page 88</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 that's available is the WAV CD audio</p> <p>3 lossless format, okay, does that make</p> <p>4 sense?</p> <p>5 A. So far, yes.</p> <p>6 Q. So if we're practicing the claim,</p> <p>7 would the portable system perform the</p> <p>8 next step and use the second system to</p> <p>9 obtain the before CD audio?</p> <p>10 A. To answer that question I think</p> <p>11 we need to go all the way to the end</p> <p>12 which has basically the second delivery</p> <p>13 limitation. In this patent, this part</p> <p>14 of the invention, is that there is this</p> <p>15 kind of communication between system 1</p> <p>16 and the second system that even if the</p> <p>17 second system can deliver the WAV file,</p> <p>18 right, at a higher quality level than</p> <p>19 the current quality level, the system,</p> <p>20 system number 1 has to basically make</p> <p>21 sure that it will be able to deliver</p> <p>22 this to the user. So the user can</p> <p>23 really consume it. Meaning that this, I</p> <p>24 mention this in my declaration, that,</p> <p>25 you know, you will be able to, you know,</p>	<p>Page 89</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 play that file and get access to the</p> <p>3 entire spectrum of sound and frequencies</p> <p>4 in that file. You have enough speakers,</p> <p>5 you have enough CPU, you have enough bit</p> <p>6 rate, you have enough bandwidth to be</p> <p>7 able to really deliver this WAV file to</p> <p>8 the user and be consumed by the user.</p> <p>9 So I think there is that step is</p> <p>10 not only I can get this stream from the</p> <p>11 second system and the stream represents</p> <p>12 a WAV file that's higher quality than</p> <p>13 the MP3, 320 kilobits per second, but</p> <p>14 also I will be able to deliver it to the</p> <p>15 user, the user can consume it and listen</p> <p>16 to it at this high quality level.</p> <p>17 Q. Okay. Well assume that the</p> <p>18 user's device is able to consume the WAV</p> <p>19 audio format version of this media</p> <p>20 content. In that instance would the</p> <p>21 system performing this method obtain and</p> <p>22 deliver the WAV audio format and use</p> <p>23 that in place of the MP3 at 320 kilobits</p> <p>24 per second?</p> <p>25 A. Yes, I mean if all the components</p>

<p>Page 90</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 in the claim basically that I mentioned</p> <p>3 right now in my declaration of this</p> <p>4 file, then yes that's basically what the</p> <p>5 system will deliver to the user.</p> <p>6 Q. Okay. And it's your opinion that</p> <p>7 this will still happen even though you</p> <p>8 believe that people would consider there</p> <p>9 to be no difference, no perceived</p> <p>10 difference between the MP3 at 320</p> <p>11 kilobits per second and the WAV file</p> <p>12 format for the same digital media</p> <p>13 content?</p> <p>14 MR. YOUNG: Objection, form.</p> <p>15 A. Again, I think you are going back</p> <p>16 something we discussed a few minutes</p> <p>17 ago. You are indicating that -- you're</p> <p>18 talking about a specific example where</p> <p>19 between the WAV and MP3, 320 kilobit per</p> <p>20 second there is no quality difference?</p> <p>21 Or are you saying that the quality -- I</p> <p>22 think I answered this couple of minutes</p> <p>23 ago. That whenever you are losing</p> <p>24 information because of compression, then</p> <p>25 you are affecting the quality, in</p>	<p>Page 91</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 general terms, like the perceived</p> <p>3 quality. So I'm not really sure I</p> <p>4 totally understand the question.</p> <p>5 Q. Dr. AlRegib, I think the</p> <p>6 confusion here is you seem to be</p> <p>7 switching back and forth between</p> <p>8 perceived quality and quality.</p> <p>9 So what I understood you to say</p> <p>10 is that between the first two rows,</p> <p>11 there is a difference in quality level,</p> <p>12 which is indicated by the difference in</p> <p>13 the file size, but there's no perceived</p> <p>14 difference in quality because people</p> <p>15 listening to the two wouldn't be able to</p> <p>16 tell the difference; is that correct?</p> <p>17 A. No, no, that's not correct, no.</p> <p>18 No, definitely whenever you are losing</p> <p>19 information there will be, there will be</p> <p>20 a perceived quality differentiation.</p> <p>21 Meaning when I'm listening to these four</p> <p>22 files as a user, as a human user, I will</p> <p>23 tell the difference between the four</p> <p>24 files.</p> <p>25 Q. Okay.</p>
<p>Page 92</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 A. I teach in my classes. We listen</p> <p>3 to, we look at images, we look at videos</p> <p>4 that are encoded at different levels and</p> <p>5 then we see whether we perceive the</p> <p>6 differentiation in quality.</p> <p>7 Q. Okay. So let me just point you</p> <p>8 to paragraph 28 on page 11. And this is</p> <p>9 the fourth sentence down from the table.</p> <p>10 A. Yes.</p> <p>11 Q. Do you see where you say, "For</p> <p>12 example, many people consider the audio</p> <p>13 of a 320 kilobits per second MP3 file to</p> <p>14 be indistinguishable by the human ear</p> <p>15 from the lossless (WAV) audio file for</p> <p>16 most content"?</p> <p>17 A. Yes.</p> <p>18 Q. Okay. So, sir, are you saying</p> <p>19 that that statement is not correct, that</p> <p>20 there is a perceived difference in</p> <p>21 quality between those two files, the 320</p> <p>22 kilobits per second and the WAV audio</p> <p>23 encoding?</p> <p>24 MR. YOUNG: Objection, form.</p> <p>25 A. That statement is still correct.</p>	<p>Page 93</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 That's why I say many people will say</p> <p>3 it. Whenever we run tests for quality,</p> <p>4 we run it like with many different</p> <p>5 people. That's why I said many people</p> <p>6 will consider it. However, in general</p> <p>7 terms, whenever you have an example now,</p> <p>8 you have a stream, like I have a WAV</p> <p>9 file, okay, for example, and now I want</p> <p>10 to stream it, now do I -- which one of</p> <p>11 these options will be the best? And my</p> <p>12 best option is the 320 kilobits per</p> <p>13 second because that provides the highest</p> <p>14 quality. Is it basically close to the</p> <p>15 perceived quality of the WAV? Yes. Is</p> <p>16 it the same exactly, not perceived by</p> <p>17 everybody as the same. There will be</p> <p>18 differences in some cases and in some</p> <p>19 other cases not many differences. But</p> <p>20 in general, whenever you are compressing</p> <p>21 basically something there will be some</p> <p>22 differences in terms of quality.</p> <p>23 Here what the example we are</p> <p>24 talking about in here, the assumption</p> <p>25 that I have it when I wrote this one</p>

<p style="text-align: right;">Page 94</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 down is that nobody in their mind will</p> <p>3 stream basically raw data. Nobody will</p> <p>4 go to a video and just stream it or an</p> <p>5 audio stream as it is. We have to have</p> <p>6 an encoding because 50 megabyte is a lot</p> <p>7 compared to 11 megabyte, very expensive.</p> <p>8 So we don't really stream usually, as a</p> <p>9 common practice. Is that always the</p> <p>10 case? But maybe not. But you will go</p> <p>11 out of business if the stream is raw</p> <p>12 data. We always compress.</p> <p>13 Another question is, when you</p> <p>14 compress between 320 kilobit per second</p> <p>15 or 192 or 128, then what would be the</p> <p>16 best choice isn't, I mean my number one</p> <p>17 choice 320 because the difference will</p> <p>18 be very little compared to that. But is</p> <p>19 there a difference in the quality?</p> <p>20 Usually, yes.</p> <p>21 But again, you have to understand</p> <p>22 the context of streaming, we don't</p> <p>23 really stream raw data. It's very</p> <p>24 rarely. We don't stream the raw data,</p> <p>25 very expensive.</p>	<p style="text-align: right;">Page 95</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 Q. So looking at claim 1 again, the</p> <p>3 determining limitation, is it your</p> <p>4 opinion that it's not enough to</p> <p>5 determine whether the media content at</p> <p>6 the source on the second server is at a</p> <p>7 higher quality level; you also have to</p> <p>8 determine whether in the process of</p> <p>9 delivering it to the user, that the user</p> <p>10 will be able to obtain the higher</p> <p>11 quality level?</p> <p>12 A. Looking at the entire claim, and</p> <p>13 that's why we have determining</p> <p>14 limitation and the second delivering</p> <p>15 limitation where it's important that,</p> <p>16 that at the end of the day that the user</p> <p>17 will be able to consume this digital</p> <p>18 media content, the same digital media</p> <p>19 content but now at a higher quality</p> <p>20 level. Yes, it has to be able to</p> <p>21 consume that. That's my understanding</p> <p>22 from this claim.</p> <p>23 Q. Okay. So to use this example</p> <p>24 going back to the WAV file and the 320</p> <p>25 mbps, let's assume that the client --</p>
<p style="text-align: right;">Page 96</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 the user, the user's device is not able</p> <p>3 to get the full benefit of the WAV file.</p> <p>4 If it replays both files they will sound</p> <p>5 the same because of the capabilities of</p> <p>6 the device. In that instance, would</p> <p>7 providing the WAV file version of the</p> <p>8 media content deliver the media content</p> <p>9 at the higher quality level to the user?</p> <p>10 MR. YOUNG: Objection, form.</p> <p>11 A. If I may, allow me. It makes</p> <p>12 much more sense in the scenario that you</p> <p>13 just laid out in your question, is to</p> <p>14 say let's look at the MP3, 192 and 320</p> <p>15 kilobits per second. To me, that makes</p> <p>16 sense because we stream compressed data.</p> <p>17 I think that will make more sense</p> <p>18 in that context.</p> <p>19 Q. Well, I think the answer is that</p> <p>20 that's -- that is probably more</p> <p>21 defensible. But the reason why I'm</p> <p>22 asking about the WAV file and the 392</p> <p>23 kilobits per second is because I think</p> <p>24 there's a problem with your opinion</p> <p>25 here, the 320 kilobits per second. So</p>	<p style="text-align: right;">Page 97</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 if you could address that first and then</p> <p>3 I'll give you an opportunity to discuss</p> <p>4 the other option.</p> <p>5 MR. YOUNG: Objection to form.</p> <p>6 Q. Can I ask it again? Let me just</p> <p>7 ask the question again.</p> <p>8 A. Okay.</p> <p>9 Q. Okay. So assume that the</p> <p>10 portable device can play the WAV file</p> <p>11 format and it can play the 320 kilobit</p> <p>12 per second MP3 file, but the limitations</p> <p>13 on the device are such that they will</p> <p>14 both play back to the user, the user</p> <p>15 will perceive them and hear them at the</p> <p>16 same level of quality, okay?</p> <p>17 Would providing the WAV file</p> <p>18 format to that portable device deliver</p> <p>19 the digital media content at the higher</p> <p>20 quality level to the user?</p> <p>21 MR. YOUNG: Objection, form.</p> <p>22 A. To answer your question, this is</p> <p>23 where it is mentioned in the patent</p> <p>24 where there is that kind of handshaking</p> <p>25 happening between the two systems, to</p>

<p>Page 98</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 the system 1 and system 2, before even</p> <p>3 starting to get the data from the second</p> <p>4 system, that the user will be able to</p> <p>5 consume this data at the higher quality</p> <p>6 level.</p> <p>7 So does part of the inventive</p> <p>8 components of this patent. And I</p> <p>9 believe that's a very important</p> <p>10 component. Because otherwise it will</p> <p>11 not – this is really happening in the</p> <p>12 handshaking before any streaming is</p> <p>13 happening from the second system to</p> <p>14 avoid wasting any resources in this</p> <p>15 case. So, that is really something that</p> <p>16 is really at the core of this patent.</p> <p>17 Q. So if I understand correctly,</p> <p>18 you're saying that because you have this</p> <p>19 handshaking protocol, the system would</p> <p>20 determine that the client, the user</p> <p>21 won't receive any additional quality</p> <p>22 benefit from receiving the WAV file in</p> <p>23 this example?</p> <p>24 A. Yes, in this case that's fair.</p> <p>25 It will determine that the user will not</p>	<p>Page 99</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 be able to consume the higher quality</p> <p>3 level, then it will not see from the</p> <p>4 second system.</p> <p>5 Q. So even though it's feasible to</p> <p>6 provide both files, because it won't be</p> <p>7 reproduced to the user in a way that</p> <p>8 they can perceive the higher quality, it</p> <p>9 doesn't perform the claim limitation, it</p> <p>10 wouldn't try to perform the claim</p> <p>11 limitation?</p> <p>12 MR. YOUNG: Objection, form.</p> <p>13 A. The spirit, if I may use that</p> <p>14 word about this patent, is really</p> <p>15 providing digital media content service</p> <p>16 to a user. So it's important that the</p> <p>17 user will be able to consume the higher</p> <p>18 quality level of the media. That's</p> <p>19 really the important part of this, you</p> <p>20 know, handshaking step, yes.</p> <p>21 Q. So is it your opinion that claim</p> <p>22 1 requires this determination that using</p> <p>23 the media content from the second system</p> <p>24 will achieve higher quality for the</p> <p>25 user?</p>
<p>Page 100</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 MR. YOUNG: Objection, form.</p> <p>3 A. That's where the second delivery</p> <p>4 limitation basically delivering the</p> <p>5 digital media content at the higher</p> <p>6 level to the user instead of the current</p> <p>7 quality level comes into play.</p> <p>8 Q. And that opinion, you relied on</p> <p>9 that belief or that opinion in forming</p> <p>10 your opinions in this proceeding?</p> <p>11 MR. YOUNG: Objection, form.</p> <p>12 Q. Let me withdraw that question.</p> <p>13 Let me ask you on this table, paragraph</p> <p>14 28, the examples here are audio files,</p> <p>15 correct?</p> <p>16 A. Yes.</p> <p>17 Q. Can you give me some examples of</p> <p>18 well known encoding formats that could</p> <p>19 be used for video in 2003?</p> <p>20 A. Yes, I mean the most famous ones</p> <p>21 like MPEG1 and MPEG2.</p> <p>22 Q. Were there any other common</p> <p>23 encoding formats?</p> <p>24 A. Yes, so this is --</p> <p>25 Q. Sorry, let me ask you that</p>	<p>Page 101</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 because I think the transcript may be</p> <p>3 not correct. Did you say the formats</p> <p>4 were MP1 and MP2 or were you saying</p> <p>5 MPEG-1 and MPEG-2?</p> <p>6 A. That's MPEG-1 and MPEG-2. These</p> <p>7 are the, they were the most common ones</p> <p>8 at the time.</p> <p>9 Q. Was there a format called AVI?</p> <p>10 A. Yes.</p> <p>11 Q. How about QuickTime?</p> <p>12 A. Yes, there are many. There are</p> <p>13 tons of different formats. At the time,</p> <p>14 MPEG-1 and MPEG-2 they were kind of the</p> <p>15 most kind of future looking ones for the</p> <p>16 future of streaming and the like.</p> <p>17 Q. Okay and let's talk about MPEG-1</p> <p>18 for a moment. Is MPEG-1 capable of</p> <p>19 having different encoding bit rates?</p> <p>20 A. In general, all different video</p> <p>21 CODECs, they have what we refer to as</p> <p>22 the quality parameter, that parameter as</p> <p>23 an includer input will determine</p> <p>24 basically the quality of the decoded bit</p> <p>25 stream. So, yes, there is that kind of</p>

<p>Page 102</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 parameter to determine the quality.</p> <p>3 Q. Can you tell me what some of the</p> <p>4 common encoding bit rates were that were</p> <p>5 used with MPEG-1 in 2003?</p> <p>6 A. Not off the top of my head now.</p> <p>7 I have to go look back. But basically</p> <p>8 it's -- I cannot really exactly. But</p> <p>9 something like in the nature of megabits</p> <p>10 per second but I cannot give you the</p> <p>11 exact numbers, not off the top of my</p> <p>12 head right now.</p> <p>13 Q. Okay. Let me ask you about</p> <p>14 MPEG-2. Do you agree that MPEG-2 it was</p> <p>15 possible to use different coding bit</p> <p>16 rates?</p> <p>17 A. All the video CODECs and all the</p> <p>18 CODECs as an input parameter to the</p> <p>19 encoder you specify what the quality or</p> <p>20 the bit rate or the compression ratio.</p> <p>21 Q. Do you remember the range of bit</p> <p>22 rates that could be used with MPEG-2?</p> <p>23 A. Are you referring to the ones</p> <p>24 recommended by the standard or are you</p> <p>25 referring to the ones being used by the</p>	<p>Page 103</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 vendors?</p> <p>3 Q. If you remember either, I'll take</p> <p>4 whatever you remember about them.</p> <p>5 A. Yes, it's MPEG-2 supports lower</p> <p>6 bit rates than MPEG-1 and has higher bit</p> <p>7 rates. But I don't remember the exact</p> <p>8 numbers.</p> <p>9 Q. Was MPEG-2 more intended for</p> <p>10 below a 90 megabit per second or the</p> <p>11 lower range than what MPEG-1</p> <p>12 recommended?</p> <p>13 A. In general terms, although there</p> <p>14 is some recommendations in the standards</p> <p>15 itself. But as a vendor, basically you</p> <p>16 have kind a bit of flexibility to go</p> <p>17 beyond certain bit rate. So usually</p> <p>18 MPEG-2 at the time was more future</p> <p>19 looking about streaming than MPEG-1.</p> <p>20 The idea there to support lower bit</p> <p>21 rate.</p> <p>22 Q. Would a POSITA have known by 2003</p> <p>23 that one way to vary the quality of</p> <p>24 media content is to encode the content</p> <p>25 at different bit rates?</p>
<p>Page 104</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 A. Yes, a POSITA at the time who</p> <p>3 knows about decoding or decoding</p> <p>4 compression, they would.</p> <p>5 Q. Would a POSITA have known by 2003</p> <p>6 that one way to vary the quality of</p> <p>7 media content is to use different</p> <p>8 formats?</p> <p>9 A. Can you clarify what you mean by</p> <p>10 formats, different formats?</p> <p>11 Q. Sure. Would a POSITA have known</p> <p>12 by 2003 that one way to vary the quality</p> <p>13 of digital media content is use</p> <p>14 different formats such as to encode the</p> <p>15 media content with MPEG-1 and also to</p> <p>16 encode it with MPEG-2?</p> <p>17 A. Usually when you say MPEG-1 or</p> <p>18 MPEG-2 that's not enough. Usually you</p> <p>19 have MPEG-1 and which bit rate, for</p> <p>20 example. Same thing with MPEG-2. So as</p> <p>21 an example, I mentioned in that</p> <p>22 differentiation, you would know the</p> <p>23 quality of differentiation. Just to use</p> <p>24 that, usually you would have MPEG-2 bit</p> <p>25 rate as a component and there is an</p>	<p>Page 105</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 element to it.</p> <p>3 Q. Okay. Was it common for</p> <p>4 distributors of digital media content to</p> <p>5 encode digital media content in a</p> <p>6 plurality of different media formats?</p> <p>7 A. Meaning like MPEG-1 and MPEG-22</p> <p>8 for example, in the same content.</p> <p>9 Q. Yes.</p> <p>10 A. I cannot speak about the vendors</p> <p>11 but just from my point of view, you</p> <p>12 would like to have a versatile library</p> <p>13 of different content for different user</p> <p>14 with different players. I would mention</p> <p>15 that would be a good thing for the</p> <p>16 vendors.</p> <p>17 Q. When you're streaming video over</p> <p>18 a network, is it important to match the</p> <p>19 bandwidth of the network connection with</p> <p>20 the encoding bit rate?</p> <p>21 A. That's a good question in the</p> <p>22 sense of when you have a certain bit</p> <p>23 rate, I'm just looking at this from the</p> <p>24 language in the claim of '992 patent,</p> <p>25 that's where the term says a</p>

<p>Page 106</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 communication bandwidth that's high</p> <p>3 enough to provide digital media content</p> <p>4 at the higher, at the higher level,</p> <p>5 quality level. And that basically when</p> <p>6 I have enough bandwidth there to be able</p> <p>7 to put this bit stream on the -- on the,</p> <p>8 on that. But you have to have enough</p> <p>9 support in the patent language to do</p> <p>10 that. So it is a common sense that you</p> <p>11 want to put something on the stream or</p> <p>12 the network, on the wire that can be</p> <p>13 supported, otherwise you may suffer</p> <p>14 quite a bit of losing some, some</p> <p>15 packets.</p> <p>16 Q. Okay. So if the encoded bit rate</p> <p>17 of a stream is higher than the bandwidth</p> <p>18 of the network connection between the</p> <p>19 server and the user, will the stream be</p> <p>20 successfully delivered?</p> <p>21 MR. YOUNG: Objection, form.</p> <p>22 A. As if you are fitting something</p> <p>23 that is really big into something that</p> <p>24 is kind of a tube, it's very tough,</p> <p>25 right? You will just add more</p>	<p>Page 107</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 congestion to the network. It's not a</p> <p>3 good common practice.</p> <p>4 Q. I asked that question wrong. Let</p> <p>5 me reask it. We will get to that one.</p> <p>6 If the encoded bit rate is, of a</p> <p>7 stream is lower than the bandwidth of</p> <p>8 the network connection between the</p> <p>9 server and the user, will the stream be</p> <p>10 successfully delivered?</p> <p>11 MR. YOUNG: Objection, form.</p> <p>12 A. So it's the necessary condition</p> <p>13 but not sufficient, right, because when</p> <p>14 you say successfully delivered, now you</p> <p>15 are talking about a network, right. So</p> <p>16 now away from the language of the patent</p> <p>17 for a second, you are asking about I</p> <p>18 have system 1, system 2 that has a</p> <p>19 bandwidth between them that is high</p> <p>20 enough to accommodate a certain bit rate</p> <p>21 for a video, right? Now your question</p> <p>22 is, is that enough for the bit stream of</p> <p>23 that video to be successfully delivered</p> <p>24 to system 1? And the idea in here is</p> <p>25 that there are a lot of things happening</p>
<p>Page 108</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 in between that are outside the control</p> <p>3 of just the bandwidth, right?</p> <p>4 Congestion could happen, some packets</p> <p>5 could be dropped in the middle of that</p> <p>6 streaming.</p> <p>7 So I'm not going to say it's</p> <p>8 always going to be successfully</p> <p>9 delivered.</p> <p>10 Q. Would it be fair to say that you</p> <p>11 would generally expect that if the video</p> <p>12 stream is encoded at a bit rate that is</p> <p>13 lower than the network bandwidth</p> <p>14 connecting the server to the client --</p> <p>15 to the user, that generally speaking</p> <p>16 that will be sufficient for the stream</p> <p>17 to be successfully delivered?</p> <p>18 A. If the network conditions don't</p> <p>19 change, don't vary and no congestion</p> <p>20 takes place, then that could be the</p> <p>21 case, yes. But in practice there's</p> <p>22 quite a bit of things happening in the</p> <p>23 network. From a machine point of view,</p> <p>24 it's -- there are some other parameters</p> <p>25 there but the patent language in here is</p>	<p>Page 109</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 looking at bandwidth high enough. But</p> <p>3 now you are pushing this to the network</p> <p>4 and now that thing is the user, can the</p> <p>5 user consume it? Will we have every</p> <p>6 single packet transmitted is a different</p> <p>7 story.</p> <p>8 Q. Okay. So let's talk about the</p> <p>9 other condition which is where the</p> <p>10 encoded bit rate is higher than the</p> <p>11 networking bandwidth between the server</p> <p>12 and the user. What happens to the</p> <p>13 stream in that condition?</p> <p>14 A. Within the context of the '992</p> <p>15 patent?</p> <p>16 Q. I'm just in general asking about</p> <p>17 video streaming. And what I'm trying to</p> <p>18 ask about is would the client buffer the</p> <p>19 video? Like what are the typical things</p> <p>20 that video streaming systems in 2003</p> <p>21 would do when that situation is</p> <p>22 encountered?</p> <p>23 A. There are a lot of things</p> <p>24 happening in here. It depends on what</p> <p>25 that vendor system is, specifically is</p>

<p>Page 110</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 doing, right. You could have some</p> <p>3 vendor of some streaming qualities or</p> <p>4 systems or vendors that can say we can</p> <p>5 support that but we will have a much</p> <p>6 larger power at the user. The common</p> <p>7 practice is I cannot really tell, it</p> <p>8 depends on the vendors. A lot of</p> <p>9 vendors will not be able to support that</p> <p>10 from the get-go. So really depends on</p> <p>11 the vendor's intention what to support</p> <p>12 and what resources they want to allocate</p> <p>13 in this case.</p> <p>14 Q. If the encoding bit rate is</p> <p>15 higher than the network bandwidth, does</p> <p>16 that mean it's not possible for the</p> <p>17 client to stream the video and watch it,</p> <p>18 you know, watch it without any delays</p> <p>19 for buffering or pauses?</p> <p>20 MR. YOUNG: Objection, form.</p> <p>21 A. I mean the best analogy I use in</p> <p>22 my class is to think about if you have</p> <p>23 water basically coming. You have a very</p> <p>24 big pipe and then you have very tiny</p> <p>25 pipe in front of it. You try to squeeze</p>	<p>Page 111</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 that water and that rate into that small</p> <p>3 pipe basically it cannot really handle</p> <p>4 it. So just from that imagery of what</p> <p>5 happens to the water splashes and loss</p> <p>6 of data. That's what's happening to the</p> <p>7 network.</p> <p>8 So I think it's, for a POSITA</p> <p>9 that wouldn't really be a good practice</p> <p>10 because you are adding to the congestion</p> <p>11 of the network which you should be a</p> <p>12 good citizen and not add to the</p> <p>13 congestion of the network.</p> <p>14 Q. Okay. Were there – strike that.</p> <p>15 If we could just turn back to</p> <p>16 paragraph 29 of your declaration.</p> <p>17 A. I'm there.</p> <p>18 Q. Here you have an example of the</p> <p>19 CD quality WAV audio and the MP3 audio.</p> <p>20 I want to ask you about that example.</p> <p>21 Are those two different formats the same</p> <p>22 digital media content?</p> <p>23 A. I'm sorry, can you repeat the</p> <p>24 question again?</p> <p>25 Q. Sure. You refer to having CD</p>
<p>Page 112</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 quality WAV audio and having an MP3</p> <p>3 audio stored on a portable device. Do</p> <p>4 you see that?</p> <p>5 A. Yes.</p> <p>6 Q. Are those each the same digital</p> <p>7 media content or are they different</p> <p>8 digital media content?</p> <p>9 A. You have the same content at</p> <p>10 different quality levels.</p> <p>11 Q. Okay. And would each of those be</p> <p>12 the same file or would they be different</p> <p>13 files?</p> <p>14 A. These are two different streams</p> <p>15 or two different files usually.</p> <p>16 Q. Okay. And well let me ask you,</p> <p>17 are they – would you consider these to</p> <p>18 be streams or would you consider these</p> <p>19 to be files, or does it not matter</p> <p>20 whether you consider them to be files or</p> <p>21 streams?</p> <p>22 MR. YOUNG: Objection, form.</p> <p>23 A. When they are stored on the</p> <p>24 server, they are stored as a file. When</p> <p>25 the server starts to send them and</p>	<p>Page 113</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 stream them to the user or to the second</p> <p>3 system, for example, it becomes a</p> <p>4 stream.</p> <p>5 Q. Okay. So when they're stored on</p> <p>6 the server, each one is a separate file</p> <p>7 that is the same digital media content</p> <p>8 but at different quality levels?</p> <p>9 A. Yes, in this example there's an</p> <p>10 MP3 and another one at a different bit</p> <p>11 rate.</p> <p>12 Q. Okay. And then when the server</p> <p>13 transmits them to the portable device,</p> <p>14 then they are two different streams of</p> <p>15 the same media content?</p> <p>16 A. So as I mentioned in my</p> <p>17 declaration I believe, the content is</p> <p>18 the same but they are two different</p> <p>19 levels of quality.</p> <p>20 Q. Okay. But are they the same</p> <p>21 stream?</p> <p>22 MR. YOUNG: Objection, form.</p> <p>23 A. When you say a stream, you are</p> <p>24 taking a certain content or file and</p> <p>25 sending it to stream 1 or system 2. The</p>

<p>Page 114</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 second system is sending it. If you have</p> <p>3 a stream you are sending it to system 1,</p> <p>4 for example, as a second stream.</p> <p>5 Q. Got it. If you could turn to</p> <p>6 paragraph 28.</p> <p>7 A. Of the declaration?</p> <p>8 Q. Yes, of your declaration. You</p> <p>9 used the term CODEC. What is a CODEC?</p> <p>10 A. So this is -- whenever you have</p> <p>11 an encoder and it encodes, encoder takes</p> <p>12 the raw data and uses the compressed</p> <p>13 stream. The encoder takes the bit, the</p> <p>14 bits and then could use the data to be</p> <p>15 consumed, like to be displayed or played</p> <p>16 on a speaker for audio or just shown as</p> <p>17 text, for example.</p> <p>18 Now we refer to the CODEC as the</p> <p>19 name says, this whole bundle, MP1 CODEC,</p> <p>20 MP2 CODEC. Why? Because usually you</p> <p>21 really go to the tiny details of how we</p> <p>22 design these things.</p> <p>23 Any encoder will have a built-in</p> <p>24 encoder for compression purposes way</p> <p>25 beyond what you are talking about in</p>	<p>Page 115</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 here.</p> <p>3 So we refer to these as CODECs.</p> <p>4 So it refers to the encoder and decoder.</p> <p>5 And within the context to understand</p> <p>6 what you are talking about the decoder</p> <p>7 decodes it.</p> <p>8 MR. PONDER: I think this is</p> <p>9 probably a good place to take a</p> <p>10 break. Why don't we go off the</p> <p>11 record.</p> <p>12 (A recess was had.)</p> <p>13 MR. PONDER: Let's go back on the</p> <p>14 record.</p> <p>15 Q. Let's talk about these examples</p> <p>16 in paragraph 28 again. The files for</p> <p>17 each of the formats, would they be</p> <p>18 stored in binary format?</p> <p>19 MR. YOUNG: Objection, form.</p> <p>20 A. When you do compression, right,</p> <p>21 the output from the encoder, typically</p> <p>22 it's a bunch of bits. You have these</p> <p>23 bits basically saved on to the, you</p> <p>24 know, the memory.</p> <p>25 Q. Okay. So and that's true of</p>
<p>Page 116</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 digital media content that's stored on</p> <p>3 digital computers?</p> <p>4 A. If it's compressed, yes. The</p> <p>5 output of the compression is usually a</p> <p>6 bit, a bit, yes, has a number of bits,</p> <p>7 yes.</p> <p>8 Q. Okay. And what about information</p> <p>9 generally stored on a computer system,</p> <p>10 isn't all information stored on a</p> <p>11 computer system stored as bits in binary</p> <p>12 data?</p> <p>13 A. When you talk about the storage</p> <p>14 itself you have the bits, but what kind</p> <p>15 of format is a different story. But at</p> <p>16 the end of the day, the data is</p> <p>17 represented as bits.</p> <p>18 Q. How would a POSITA have known how</p> <p>19 to determine whether an encoding of a</p> <p>20 given piece of digital media content has</p> <p>21 a higher quality or a lower quality than</p> <p>22 another version of digital media</p> <p>23 content?</p> <p>24 A. In the context of what we are</p> <p>25 discussing in here, we are talking about</p>	<p>Page 117</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 streaming of compressed data, digital</p> <p>3 data, digital media. Then usually those</p> <p>4 compressed data, especially the media</p> <p>5 content like as we mentioned before,</p> <p>6 videos, images and so on, audio, they</p> <p>7 will have a bit rate associated with.</p> <p>8 So, for example, whenever I show</p> <p>9 in my classes this is a video compressed</p> <p>10 by this standard and then next to it</p> <p>11 will be the bit rate right as part of</p> <p>12 that bit rate is an indication usually</p> <p>13 of the quality in the general sense.</p> <p>14 Q. So for video, one way to compare</p> <p>15 the quality levels is to compare the</p> <p>16 encoding bit rates?</p> <p>17 A. That's one way, yes. So you have</p> <p>18 the bit rates, you have frame rates, you</p> <p>19 have quite a bit of other things.</p> <p>20 Right. You've the information on the</p> <p>21 video, you have the information how many</p> <p>22 channels you have, so you have quite a</p> <p>23 bit of things in hidden information that</p> <p>24 usually tells you about what the content</p> <p>25 is about. Usually those things are used</p>

<p>Page 118</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 for the quality.</p> <p>3 Q. So one of the ones you mentioned</p> <p>4 was frame rate. So is a higher frame</p> <p>5 rate higher quality or a lower frame</p> <p>6 rate higher quality?</p> <p>7 A. So you have to add context to</p> <p>8 what you mean by higher or lower.</p> <p>9 Usually if you look at the TV in</p> <p>10 general, you have 25 frames per second</p> <p>11 and now we have digital videos, usually</p> <p>12 the frames like 30 frames per second.</p> <p>13 So usually those are already kind of the</p> <p>14 typical frame rates that we associate</p> <p>15 with natural motion in the video.</p> <p>16 So if all videos basically will</p> <p>17 be required to have this kind of frame</p> <p>18 rate depends on the content. But</p> <p>19 usually the higher frame rate it</p> <p>20 indicates higher bit rate and also at</p> <p>21 the same time indicates higher quality</p> <p>22 for videos, in the general sense, yes.</p> <p>23 Q. How about resolution, how does</p> <p>24 resolution impact quality level?</p> <p>25 A. So obviously when we talk about</p>	<p>Page 119</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 resolution will mean you have more</p> <p>3 details being viewed and being</p> <p>4 displayed, for example, in terms of</p> <p>5 videos or even audio, right, you have</p> <p>6 more ability, you have more information</p> <p>7 to display.</p> <p>8 More resolution means you have</p> <p>9 better quality.</p> <p>10 Q. I think you mentioned channels of</p> <p>11 audio. How do channels of audio relate</p> <p>12 to quality?</p> <p>13 A. For some you have that example of</p> <p>14 when you have a surrounding system, for</p> <p>15 example, you have different channels to</p> <p>16 give you that kind of immersive kind of</p> <p>17 experience about the audio. So these</p> <p>18 are different channels.</p> <p>19 Q. So less channels of audio is</p> <p>20 lower quality than more channels of</p> <p>21 audio?</p> <p>22 A. Typically, typically.</p> <p>23 Q. Are you aware of where the patent</p> <p>24 explains how to determine the quality of</p> <p>25 digital media content?</p>
<p>Page 120</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 A. I think I refer to it in my</p> <p>3 declaration. There's a list of items,</p> <p>4 if that's what you're referring to.</p> <p>5 Q. I'm just asking you where the</p> <p>6 '992 patent describes determining the</p> <p>7 quality level of a piece of digital</p> <p>8 media content. So if you wish to look</p> <p>9 at your declaration to find where it is</p> <p>10 in the '992 patent, feel free.</p> <p>11 A. You said I can look at my</p> <p>12 declaration or not?</p> <p>13 Q. Yes, you can.</p> <p>14 A. Yes, I think you are referring to</p> <p>15 paragraph 87 in my declaration, page 55.</p> <p>16 And the footnote that says exhibit 2002</p> <p>17 as page 58.</p> <p>18 Q. Okay. So paragraph 87 is talking</p> <p>19 about the '992 patent at column 4,</p> <p>20 column 4 lines 31 through 41? Is that</p> <p>21 correct?</p> <p>22 A. Yes, that's what the reference is</p> <p>23 in that information.</p> <p>24 Q. So you would agree that what the</p> <p>25 patent here is describing are metrics</p>	<p>Page 121</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 for determining the quality of a media</p> <p>3 service, correct?</p> <p>4 A. Yes. So this is the quality</p> <p>5 determination that includes basically a</p> <p>6 number of things, yes.</p> <p>7 Q. Okay. But the '992 patent</p> <p>8 describes it as, this is column 4, line</p> <p>9 27, 28 where it says will increase the</p> <p>10 quality at which the current service</p> <p>11 being provided by the user, correct?</p> <p>12 A. Correct, yes.</p> <p>13 Q. Okay. So you would agree that</p> <p>14 the '992 patent is not describing these</p> <p>15 as metrics for determining the quality</p> <p>16 of digital media content, correct?</p> <p>17 MR. YOUNG: Objection, form.</p> <p>18 A. As I already mentioned in my</p> <p>19 declaration, the quality of service has</p> <p>20 two components, right, it has two</p> <p>21 elements under it. I think I mentioned</p> <p>22 that in the former paragraphs where</p> <p>23 there's a number of these quality</p> <p>24 metrics that have to do with the virtual</p> <p>25 connection, for example, for sure, and</p>

<p>Page 122</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 then the second part or the second</p> <p>3 quality metrics group is about the</p> <p>4 quality of the information in the</p> <p>5 digital media content. And these are</p> <p>6 listed at several of them. But they</p> <p>7 encapsulate basically the quality of the</p> <p>8 network connection as well as the</p> <p>9 quality of the media content.</p> <p>10 Q. Now the categorization you</p> <p>11 mentioned in the two groups, you'd agree</p> <p>12 that the '992 patent does not teach that</p> <p>13 concept, correct?</p> <p>14 MR. YOUNG: Objection, form.</p> <p>15 A. I think if a POSITA reads the</p> <p>16 patent and reads the context of this, I</p> <p>17 think I go through clarification about</p> <p>18 each one of these, it will understand</p> <p>19 basically that some of them have to deal</p> <p>20 with the quality of the network</p> <p>21 connection and some of them deal with</p> <p>22 the quality of the information or the</p> <p>23 digital media content.</p> <p>24 Q. And you'd agree that the '992</p> <p>25 patent expressly says that it's not</p>	<p>Page 123</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 limited to these metrics?</p> <p>3 MR. YOUNG: Objection, form.</p> <p>4 A. I'm not sure if that's what it</p> <p>5 says in front of my head.</p> <p>6 Q. Okay. Well take a look at column</p> <p>7 4, line 39 to 41, where it says the</p> <p>8 scope of the various -- I'm sorry. The</p> <p>9 scope of various aspects of the present</p> <p>10 invention should not be limited by</p> <p>11 characteristics of one or more</p> <p>12 identified quality service metric.</p> <p>13 A. Yes, I see that.</p> <p>14 Q. So do you understand that to be</p> <p>15 saying here are some examples of quality</p> <p>16 service metrics, but the '992 patent</p> <p>17 isn't limited to the identified quality</p> <p>18 service metrics?</p> <p>19 A. If you'll refer to this sentence,</p> <p>20 that's more or less what it's saying.</p> <p>21 Q. Take a look at column 12 starting</p> <p>22 at line 43.</p> <p>23 A. I'm there now, column 12, line</p> <p>24 43.</p> <p>25 Q. Column 12, could you just read to</p>
<p>Page 124</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 yourself silently so the court reporter</p> <p>3 doesn't have to take it down column 12,</p> <p>4 lines 43 to 49. Begins with, "As an</p> <p>5 example."</p> <p>6 A. Okay, I just finished reading.</p> <p>7 Q. What would a POSITA have</p> <p>8 understood this portion of the '992</p> <p>9 patent to be teaching as to determining</p> <p>10 a quality level?</p> <p>11 A. Yes, so in here as we read the</p> <p>12 same lines we have been discussing, that</p> <p>13 the second system specifically is saying</p> <p>14 it's information encoding a lower loss</p> <p>15 or lossless encoding, meaning that you</p> <p>16 have, as I mentioned before, when you</p> <p>17 have a lossy compression, more loss</p> <p>18 meaning that you have a better</p> <p>19 compression but at the same time the</p> <p>20 price or the cost is loss in the</p> <p>21 quality. And that's what this is</p> <p>22 referring to. In this case it's another</p> <p>23 way to say it's lower loss meaning</p> <p>24 higher quality. And if the second</p> <p>25 system have access to such information</p>	<p>Page 125</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 but the first system doesn't really have</p> <p>3 access to such, such thing.</p> <p>4 Q. Does the '992 patent teach or</p> <p>5 disclose how to quantify the quality</p> <p>6 level that is actually calculated or</p> <p>7 turn it into a number or some other</p> <p>8 objective metric?</p> <p>9 A. A POSITA when reading about this</p> <p>10 back in the day, the year 2003 and</p> <p>11 talking about these components of</p> <p>12 compression, coding, streaming, digital</p> <p>13 media content, then there is the whole</p> <p>14 context of bit rate, lossy and so on,</p> <p>15 all kind of the description of the</p> <p>16 quality.</p> <p>17 I don't recall having very</p> <p>18 specific numbers in the patent about</p> <p>19 quality. I think a POSITA will</p> <p>20 understand what it means for a video or</p> <p>21 an image to be higher quality than</p> <p>22 another one.</p> <p>23 Q. Does the '992 patent teach how to</p> <p>24 quantify or calculate the quality of the</p> <p>25 digital media service?</p>

<p style="text-align: right;">Page 126</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 A. I'm sorry, isn't this the same</p> <p>3 question I just answered or this is</p> <p>4 different?</p> <p>5 Q. The previous question I asked you</p> <p>6 about quality of media content. And in</p> <p>7 this question I'm asking does it teach</p> <p>8 how to calculate or objectively</p> <p>9 determine the quality of the digital</p> <p>10 media service?</p> <p>11 A. So if we look at the examples of</p> <p>12 the quality metrics that are listed,</p> <p>13 that I list in paragraph 87 of my</p> <p>14 declaration, I think I have a</p> <p>15 description of what they refer to. Then</p> <p>16 you have kind of examples in here of</p> <p>17 what determines the quality of the</p> <p>18 network as well as the quality of the</p> <p>19 information itself. So does it</p> <p>20 quantify, like give numbers? I don't</p> <p>21 recall seeing that in the patent, but I</p> <p>22 might be mistaken.</p> <p>23 Q. How does the '992 patent teach --</p> <p>24 strike that.</p> <p>25 How does the '992 patent disclose</p>	<p style="text-align: right;">Page 127</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 calculating a network bandwidth between</p> <p>3 the portable device and the server?</p> <p>4 A. I don't remember exactly where I</p> <p>5 discussed that. We may have to look at</p> <p>6 the patent.</p> <p>7 Q. Feel free to look at your</p> <p>8 declaration. I'm not sure, I don't</p> <p>9 think that you've discussed it. That's</p> <p>10 why I'm trying to understand if you</p> <p>11 think there is a teaching or disclosure</p> <p>12 anywhere in the '992 patent on this</p> <p>13 point?</p> <p>14 A. I don't recall there was very</p> <p>15 specific declarations of how as part of</p> <p>16 the communication between system 1 and</p> <p>17 system 2 to determine that bandwidth.</p> <p>18 The technique itself of how to determine</p> <p>19 that one, I don't recall having read</p> <p>20 that in the patent.</p> <p>21 Q. Would a POSITA have known in 2003</p> <p>22 how to calculate bandwidth between</p> <p>23 portable device and the server?</p> <p>24 A. Yes, we have protocols basically</p> <p>25 of communication for them to exchange</p>
<p style="text-align: right;">Page 128</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 this information. I think one of the</p> <p>3 key things in here what I refer to as</p> <p>4 handshaking and I remember they also</p> <p>5 refer to it as handshaking between</p> <p>6 system 1 and system 2 will be</p> <p>7 communicated with each other. And that</p> <p>8 is where they kind of have a, have a,</p> <p>9 you know, a mechanism to do that. At</p> <p>10 the time we had some international</p> <p>11 protocols doing such.</p> <p>12 Q. Okay. So how would the server</p> <p>13 know what the bandwidth is between it</p> <p>14 and the portable device?</p> <p>15 A. That is not really mentioned</p> <p>16 specifically in the patent. Are you</p> <p>17 asking the general question?</p> <p>18 Q. Yes, I'm asking as a general</p> <p>19 question how would a POSITA know to</p> <p>20 determine the bandwidth between the</p> <p>21 portable device and the second system?</p> <p>22 A. The number of techniques. There</p> <p>23 are some, depends on what kind of</p> <p>24 network you are on. There are certain</p> <p>25 kind of ping like just to kind of have</p>	<p style="text-align: right;">Page 129</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 that information regularly to have the</p> <p>3 end to end bandwidth information</p> <p>4 available or in the server itself to try</p> <p>5 to kind of have a, have a definition of</p> <p>6 some kind of a ping thing or protocol in</p> <p>7 the server.</p> <p>8 Q. How would you do it with a ping?</p> <p>9 Like how would that work?</p> <p>10 A. You look at certain servers in</p> <p>11 the network, usually they have that</p> <p>12 information. And just basically you can</p> <p>13 ask for that information from the server</p> <p>14 as an example. That's just one example.</p> <p>15 But usually that information is</p> <p>16 available if you know the address of the</p> <p>17 other entity.</p> <p>18 Q. Okay. Are there any protocols</p> <p>19 that you can remember that provided for</p> <p>20 a ping that would tell you the bandwidth</p> <p>21 between the two systems?</p> <p>22 A. You had the RTP protocols, the</p> <p>23 RTP protocols, for example. All of</p> <p>24 those especially were available at the</p> <p>25 time to get that information.</p>

<p>Page 130</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 Q. Are you familiar with the term SD</p> <p>3 as that term is applied to video?</p> <p>4 A. I'm sorry, SD, as in Sam.</p> <p>5 Q. Sam-delta, yes.</p> <p>6 A. Standard definition; is that what</p> <p>7 you're referring to.</p> <p>8 Q. Standard definition.</p> <p>9 A. Yes, of videos.</p> <p>10 Q. Yes. And what does standard</p> <p>11 definition for video mean?</p> <p>12 A. It's basically the resolution.</p> <p>13 You have, so you have the high</p> <p>14 definition and you have the SD, the</p> <p>15 standard definition. And basically it's</p> <p>16 the high definition you have more, more</p> <p>17 rows, more columns to see more details</p> <p>18 in the video on the frame, and the</p> <p>19 standard definition is lower number of</p> <p>20 pixels you have.</p> <p>21 Q. And high definition, is that also</p> <p>22 referred to as HD?</p> <p>23 A. Correct, yes.</p> <p>24 Q. Okay. And did I understand you</p> <p>25 to say that HD is at a higher quality</p>	<p>Page 131</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 level than SD?</p> <p>3 A. In the general sense, usually,</p> <p>4 yes, you have more pixels there.</p> <p>5 Q. Assume I have a piece of media</p> <p>6 content and I have encoded it into one</p> <p>7 format that provides video and audio of</p> <p>8 the media content and then I encode the</p> <p>9 same video into a format that only</p> <p>10 provides the audio, it doesn't include</p> <p>11 the video. Would the audio-video</p> <p>12 encoding be at a higher quality level</p> <p>13 than the audio-only encoding in that</p> <p>14 example?</p> <p>15 A. I recall that in the patent. I</p> <p>16 think I mentioned that in my</p> <p>17 declaration, in the '992 patent where it</p> <p>18 says, same column, column number 4,</p> <p>19 lines 31 to 33, in one of the examples</p> <p>20 with the quality metrics it lists the</p> <p>21 variety of information that give you</p> <p>22 access to the number of information</p> <p>23 options available to our user. And I</p> <p>24 think the example you mentioned would</p> <p>25 fall under this metric.</p>
<p>Page 132</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 Q. So applying that metric, would</p> <p>3 the version of the digital media content</p> <p>4 that has audio and video, would that be</p> <p>5 considered higher quality than the</p> <p>6 version of digital media content that</p> <p>7 only provides the audio?</p> <p>8 A. In the general sense for a POSITA</p> <p>9 you will have access to more audio and</p> <p>10 visual representation of the</p> <p>11 information, the content, that will be,</p> <p>12 give you more, more, you know, insights</p> <p>13 into the information than just audio.</p> <p>14 It -- it provides better quality as a</p> <p>15 service.</p> <p>16 Q. How about just comparing video</p> <p>17 versus audio, if I provide media content</p> <p>18 in a video only format and I also</p> <p>19 provide it in a format that's audio</p> <p>20 only, is one higher quality than the</p> <p>21 other?</p> <p>22 A. Video only versus audio only?</p> <p>23 Q. Yes.</p> <p>24 A. It depends on what kind of. Like</p> <p>25 if you look at what kind of a media</p>	<p>Page 133</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 content you are referring to. We have</p> <p>3 to look at, for example, if you have,</p> <p>4 you know, like just a movie with a</p> <p>5 certain action happening in the scene,</p> <p>6 then maybe the visual has more</p> <p>7 information to the user. But if you are</p> <p>8 looking at music, like classic music,</p> <p>9 for example, audio is everywhere. So it</p> <p>10 is really difficult to judge which one</p> <p>11 is without having the context of the</p> <p>12 media itself what's being played, the</p> <p>13 video or the audio. Very tough to</p> <p>14 answer that without knowing more.</p> <p>15 Q. Well what about if we use the</p> <p>16 amount of information as the criteria</p> <p>17 for determining quality, isn't that one</p> <p>18 way to determine quality?</p> <p>19 MR. YOUNG: Objection, form.</p> <p>20 A. Can I ask what you mean by amount</p> <p>21 of information?</p> <p>22 Q. Sure. If you have two different</p> <p>23 versions of digital media content and</p> <p>24 one provides more information than the</p> <p>25 other, I thought you said that that</p>

<p>Page 134</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 generally indicates that the version</p> <p>3 that has more information is considered</p> <p>4 to be higher quality; is that correct?</p> <p>5 A. That was in the specific question</p> <p>6 that you are asking about having video</p> <p>7 and audio at the same time or only video</p> <p>8 without audio, right? I think in that</p> <p>9 case, yes, it makes sense when you have</p> <p>10 video you have the audio component to</p> <p>11 it. In the general sense if you're</p> <p>12 watching a movie that will add more</p> <p>13 quality to the experience, yes.</p> <p>14 Q. Sure. I was actually kind of</p> <p>15 referring back to the much earlier</p> <p>16 question when we were talking about</p> <p>17 lossy compression and you had mentioned</p> <p>18 that when you compress information using</p> <p>19 a lossy encoder, you lose some</p> <p>20 information, and when you -- is that</p> <p>21 part, did I get that part correct so</p> <p>22 far?</p> <p>23 A. Yes, the general sense in</p> <p>24 compression when you have compressed</p> <p>25 certain media at the lower bit rate,</p>	<p>Page 135</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 that means you are adding more loss to</p> <p>3 that signal which means you are losing</p> <p>4 part of the quality. In the compression</p> <p>5 context, yes.</p> <p>6 Q. Okay. So if -- would the video</p> <p>7 component of a digital media, digital</p> <p>8 media content contain more information</p> <p>9 than the audio component of digital</p> <p>10 media content generally?</p> <p>11 A. When you say more information,</p> <p>12 are you looking at the file size or bit</p> <p>13 stream or are you looking at information</p> <p>14 in terms of information that is being</p> <p>15 accessed by the --</p> <p>16 Q. Let's go with file size. So</p> <p>17 would video information associated with</p> <p>18 media content take up more, be a larger</p> <p>19 file than the audio associated with the</p> <p>20 media content?</p> <p>21 A. In the general sense, yes, audio</p> <p>22 are compared to images. Video are the</p> <p>23 most because there's a lot of data</p> <p>24 there, many, many pixels and many</p> <p>25 frames.</p>
<p>Page 136</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 Q. And is the reason for that</p> <p>3 because video data contains more</p> <p>4 information?</p> <p>5 A. Again I want to be careful about</p> <p>6 what you mean by information. But</p> <p>7 usually you have the structure of the</p> <p>8 video, the structural information into</p> <p>9 pixels and frames, and then you have</p> <p>10 multiple frames because you have frame</p> <p>11 rate. And you have 30 frames per</p> <p>12 second. So in one second you have 30</p> <p>13 frames and then let's say for sake of</p> <p>14 example 1,000 by 1,000 pixels you have 1</p> <p>15 million pixels. You have 1 million</p> <p>16 times 30 in one second, so you have</p> <p>17 quite a bit of data there to convey.</p> <p>18 These are usually very expensive because</p> <p>19 of that.</p> <p>20 Q. So you pointed out that criteria</p> <p>21 that talked about information that is</p> <p>22 accessible from one source that's not</p> <p>23 accessible from another source. Let me</p> <p>24 ask you about that. You remember that</p> <p>25 criteria?</p>	<p>Page 137</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 A. I think that was the one that you</p> <p>3 referred to in column 9, right? Is it</p> <p>4 9?</p> <p>5 Q. I was thinking column 4. The</p> <p>6 number of information consumption</p> <p>7 options available and variety of</p> <p>8 information that may be accessed.</p> <p>9 A. I think that is it, yes.</p> <p>10 Q. So let's assume that the second</p> <p>11 system has more versions of the digital</p> <p>12 media content on it than is available on</p> <p>13 the portable device. In that instance</p> <p>14 does the second system provide higher</p> <p>15 quality, applying that metric?</p> <p>16 MR. YOUNG: Objection, form.</p> <p>17 A. What -- to be more specific, what</p> <p>18 the second system can offer compared to</p> <p>19 the previous server, if the previous</p> <p>20 server has only one modality but this</p> <p>21 one has much more variety, then it can</p> <p>22 offer. That doesn't mean that the</p> <p>23 system will start streaming from this</p> <p>24 system. But yes, the second system will</p> <p>25 provide variety. Means there are more</p>

<p>Page 138</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 options, better quality, according to</p> <p>3 these terms.</p> <p>4 Q. Is there a relationship between</p> <p>5 bandwidth and quality of media content?</p> <p>6 MR. YOUNG: Objection, form.</p> <p>7 A. Now when we talk about the</p> <p>8 quality of service, right, that has two</p> <p>9 components. It has the quality that has</p> <p>10 to do with a network like the bandwidth</p> <p>11 as an example, then the second one is</p> <p>12 the quality of the contents. If both of</p> <p>13 these are there, then yes, we will</p> <p>14 provide a better quality of service.</p> <p>15 They are two different things in here.</p> <p>16 Quality of content is different from the</p> <p>17 bandwidth.</p> <p>18 Q. Okay. Is bandwidth relevant or</p> <p>19 does bandwidth have a relationship to</p> <p>20 delivering the digital media content at</p> <p>21 the higher quality level to the user?</p> <p>22 A. As mentioned in the '992 patent,</p> <p>23 basically it's determining that the</p> <p>24 second system is available and</p> <p>25 characterized by a communication</p>	<p>Page 139</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 bandwidth that's high enough to provide</p> <p>3 the higher quality digital media. So in</p> <p>4 the context of this patent is a</p> <p>5 condition.</p> <p>6 Q. Is it true that high quality</p> <p>7 media content usually contains a larger</p> <p>8 amount of information?</p> <p>9 A. And when you say information, are</p> <p>10 you talking about the file size or the</p> <p>11 encoded bits?</p> <p>12 Q. I was kind of thinking of both.</p> <p>13 If you think your answer changes</p> <p>14 depending on whether you are referring</p> <p>15 to file size or bits, then let's break</p> <p>16 it up. Let me ask it again.</p> <p>17 Is it true that higher quality</p> <p>18 media content usually is encoded at a</p> <p>19 higher bit rate.</p> <p>20 A. That's one aspect. As we</p> <p>21 discussed earlier when you have a video</p> <p>22 without audio or with audio, even if you</p> <p>23 have the same bit rate for the video but</p> <p>24 one without audio, one with audio, then</p> <p>25 that also limits the quality.</p>
<p>Page 140</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 So that's why in my declaration,</p> <p>3 paragraph 88, I talk about quality</p> <p>4 metrics 1, 4, 5 and 6, and these refer</p> <p>5 to audio-video quality, number of</p> <p>6 information, conception options</p> <p>7 available to our user, variety of</p> <p>8 information that may be accessed, and</p> <p>9 then quality of information that may be</p> <p>10 accessed.</p> <p>11 So out of those contribute to</p> <p>12 quality of the service, the digital</p> <p>13 media, sorry, the information.</p> <p>14 So to answer your question, it</p> <p>15 really depends, right. As we just</p> <p>16 discussed minutes ago about a audio</p> <p>17 without the video -- video with audio,</p> <p>18 video without the audio.</p> <p>19 Q. Is it generally true that a</p> <p>20 higher quality encoding of digital media</p> <p>21 content will have a larger file size?</p> <p>22 A. Everything else is the same,</p> <p>23 meaning that you are not really taking</p> <p>24 out any content like audio from a video,</p> <p>25 for example, or channels, using the same</p>	<p>Page 141</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 channels or everything is the same, you</p> <p>3 are comparing apples to apples, then</p> <p>4 when you are lowering the bit rate for</p> <p>5 the encoder then you will generate a</p> <p>6 file size smaller.</p> <p>7 Q. If you were streaming video over</p> <p>8 a network connection and the network</p> <p>9 slows down, can that lead to a</p> <p>10 degradation of the quality of the</p> <p>11 content delivered to the user?</p> <p>12 MR. YOUNG: Objection, form.</p> <p>13 A. Now you are streaming certain</p> <p>14 video, say, at certain rate and then few</p> <p>15 minutes later you get some congestion in</p> <p>16 the network and that congestion means</p> <p>17 that you will start to lose certain</p> <p>18 packets in the middle of that streaming.</p> <p>19 Then now what you can deliver to the</p> <p>20 user of that video, the quality will,</p> <p>21 will be affected for sure because you</p> <p>22 lost, you lost for the quality of</p> <p>23 service there got affected but the</p> <p>24 quality of the content itself hasn't</p> <p>25 really been affected. But the quality</p>

<p>Page 142</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 of the service has been affected because</p> <p>3 of the network issue are.</p> <p>4 And that leads me back again to</p> <p>5 what I was mentioning about the service</p> <p>6 quality metric that I mention in</p> <p>7 paragraph 55 of my declaration, that I</p> <p>8 think is one of the inventive part of</p> <p>9 this patent, two components. There is</p> <p>10 the quality of the network and the</p> <p>11 second one is the quality of the</p> <p>12 contents. And both of them build up to</p> <p>13 the quality of service according to this</p> <p>14 patent.</p> <p>15 MR. PONDER: I'm trying to find a</p> <p>16 small segment of questioning here.</p> <p>17 Looking what I have, I think it would</p> <p>18 probably just make more sense to go</p> <p>19 ahead and take the lunch break even</p> <p>20 though we've only been on the record</p> <p>21 for about 50 minutes if that's okay</p> <p>22 with you guys.</p> <p>23 THE WITNESS: Fine.</p> <p>24 MR. YOUNG: Yes, that's fine.</p> <p>25 MR. PONDER: Okay, let's take 50</p>	<p>Page 143</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 minutes and we'll be back at 50 after</p> <p>3 the hour.</p> <p>4 MR. YOUNG: 50 after the hour,</p> <p>5 okay.</p> <p>6 MR. PONDER: A just make it easy,</p> <p>7 just the hour.</p> <p>8 MR. YOUNG: Okay. So you want to</p> <p>9 be back, it's -- so, Ghassan, should</p> <p>10 be roughly 2 o'clock your time, so we</p> <p>11 will be back at 3; is that what</p> <p>12 you're saying?</p> <p>13 THE WITNESS: That's my</p> <p>14 understanding, yes.</p> <p>15 MR. PONDER: Thank you.</p> <p>16 MR. YOUNG: Thanks everyone.</p> <p>17 (Luncheon recess at 1:57 p.m.)</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>
<p>Page 144</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 A F T E R N O O N S E S S I O N</p> <p>3 (3:02 p.m.)</p> <p>4 GHASSAN ALREGIB, resumed, having</p> <p>5 been previously duly sworn, was</p> <p>6 examined and testified further, as</p> <p>7 follows:</p> <p>8 CONTINUED EXAMINATION</p> <p>9 BY MR. PONDER:</p> <p>10 Q. Can you turn to paragraph 50 of</p> <p>11 your declaration.</p> <p>12 A. I'm there.</p> <p>13 Q. Okay. Do you see in the first</p> <p>14 sentence where you say "Only one</p> <p>15 paragraph discusses switching</p> <p>16 communication networks?</p> <p>17 A. Yes.</p> <p>18 Q. Which paragraph were you</p> <p>19 referring to?</p> <p>20 A. What it says there is 74, right?</p> <p>21 Q. I'm sorry, I didn't catch your</p> <p>22 answer?</p> <p>23 A. Yes, I'm looking at what they</p> <p>24 have in the fourth line in paragraph 50,</p> <p>25 it says paragraph 74. I'll go to</p>	<p>Page 145</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 paragraph 74.</p> <p>3 Q. Okay. So paragraph 74 is the</p> <p>4 only paragraph in Barnes that you</p> <p>5 believe teaches or discusses the</p> <p>6 switching aspect, correct?</p> <p>7 A. That's what I said in my</p> <p>8 declaration, yes.</p> <p>9 Q. Okay. Would you turn to the</p> <p>10 Barnes reference, exhibit 1004.</p> <p>11 (Exhibit 1004, US Patent</p> <p>12 Application Publication Barnes, JR.</p> <p>13 was marked for identification.)</p> <p>14 A. I have it in front of me.</p> <p>15 Q. And would you look at paragraph</p> <p>16 40.</p> <p>17 A. I'm there.</p> <p>18 Q. And do you see that it says, it</p> <p>19 refers to MPEG-4? And was MPEG-4 --</p> <p>20 sorry. Let me ask the question again.</p> <p>21 Do you see where patent refers to</p> <p>22 MPEG-4?</p> <p>23 A. Yes, in paragraph 40.</p> <p>24 Q. Okay. And would you agree that</p> <p>25 that was a well-known video encoding</p>

<p>Page 146</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 standard at the time?</p> <p>3 A. So MPEG-4 was a standard. It</p> <p>4 didn't really catch up popularity</p> <p>5 compared to MPEG-1 and MPEG-2 but was a</p> <p>6 standard, yes.</p> <p>7 Q. Okay. How about do you see where</p> <p>8 it refers to Indeo?</p> <p>9 A. In paragraph 40.</p> <p>10 Q. In paragraph 40, answer maybe</p> <p>11 four lines from the bottom of the</p> <p>12 paragraph.</p> <p>13 A. Yes, I see that.</p> <p>14 Q. Can you tell us what Indeo refers</p> <p>15 to in paragraph 40 of the Barnes</p> <p>16 reference?</p> <p>17 A. I believe it was some kind of</p> <p>18 just a software environment similar to,</p> <p>19 you know, competing with Windows and</p> <p>20 QuickTime at the time.</p> <p>21 Q. Do you agree with Barnes that</p> <p>22 RealPlayer Media Player could be used to</p> <p>23 play WAV.AVI, .MOV, .MPEG, .MP3 files?</p> <p>24 A. I can't tell you specifically if</p> <p>25 it can play, but the general sense is</p>	<p>Page 147</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 that that player basically is equipped</p> <p>3 to decode and play, you know, the most</p> <p>4 common formats and these are very common</p> <p>5 formats.</p> <p>6 Q. And was RealPlayer Media Player</p> <p>7 capable of playing back streaming video</p> <p>8 from another system?</p> <p>9 A. Yes, back in the days RealPlayer</p> <p>10 was kind of a player doing that.</p> <p>11 Q. You can put that exhibit to the</p> <p>12 side.</p> <p>13 (Exhibit 1005, Shaw Reference was</p> <p>14 marked for identification.)</p> <p>15 Q. Turn to exhibit 1005. This is</p> <p>16 the Shaw reference.</p> <p>17 A. I have it.</p> <p>18 Q. Could you look at figure 2.</p> <p>19 A. Could you repeat that?</p> <p>20 Q. Could you take a look at figure</p> <p>21 2.</p> <p>22 A. Figure 2, okay. Yes, I'm there.</p> <p>23 Q. What is a set reflector?</p> <p>24 A. So as the name implies, the</p> <p>25 reflector basically is kind of a</p>
<p>Page 148</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 repeater. It takes basically kind of</p> <p>3 whatever input to it and then repeat it</p> <p>4 on the output as it is.</p> <p>5 Q. And why is it referred to as a</p> <p>6 set reflector? What does the word set</p> <p>7 in the name indicate?</p> <p>8 A. I don't recall exactly the</p> <p>9 specifics from the patent, but I imagine</p> <p>10 it's specific kind of it's job. It's</p> <p>11 all what it's doing, just repeating the</p> <p>12 signal from the input into the output.</p> <p>13 So it's just being set to do that.</p> <p>14 Q. And do you see where it says the</p> <p>15 video 200 and entry point 202?</p> <p>16 A. On the same figure, 202?</p> <p>17 Q. Yes, in figure 2.</p> <p>18 A. Yes, entry point 202.</p> <p>19 Q. What does the video and the entry</p> <p>20 point do?</p> <p>21 A. Basically you have the coder</p> <p>22 there, that's basically what the video</p> <p>23 is, and then the video content basically</p> <p>24 is being stored or there's a cable to</p> <p>25 this entry point server or machine.</p>	<p>Page 149</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 Kind of it implies that this entry point</p> <p>3 or I understand from entry point that</p> <p>4 that's where the video basically first</p> <p>5 get into the network. This is the entry</p> <p>6 point for that video to be in the</p> <p>7 network.</p> <p>8 Q. Where would you find the encoder</p> <p>9 in this system?</p> <p>10 A. Depending what kind of camcorder,</p> <p>11 if you look at back in the day we had</p> <p>12 camcorders could produce and digitize</p> <p>13 encoded stream or could be done at that</p> <p>14 entry point. But I think one of them is</p> <p>15 the entry point for data.</p> <p>16 Q. Would you agree that the Shaw</p> <p>17 reference teaches implementing its</p> <p>18 teachings in a media player?</p> <p>19 MR. YOUNG: Objection, form.</p> <p>20 A. Not necessarily. I don't recall</p> <p>21 exactly if it does exclude anything else</p> <p>22 from here. At least in figure 2 you</p> <p>23 have the media being sent.</p> <p>24 (Reporter clarification.)</p> <p>25 A. I'll repeat that. I cannot</p>

<p>Page 150</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 remember from the top of my head if it</p> <p>3 includes anything else. Because I think</p> <p>4 it included like it's more -- what I</p> <p>5 remember basically what this whole Shaw</p> <p>6 patent was about is basically how do</p> <p>7 you, with a camera basically how you do</p> <p>8 that, the switching, and that's</p> <p>9 basically kind of the main thing, but</p> <p>10 that's specific only for media. I'm not</p> <p>11 too sure if it includes anything else</p> <p>12 other than web content and streaming</p> <p>13 media and such applications within the</p> <p>14 browser.</p> <p>15 And one of the main merits of the</p> <p>16 patent.</p> <p>17 Q. Putting figure 2 aside, do you</p> <p>18 agree that Shaw contains teachings of</p> <p>19 implementing its methodology in existing</p> <p>20 media players such as the RealPlayer?</p> <p>21 A. Not necessarily as in that media</p> <p>22 player. It's more before a kind of</p> <p>23 switching mechanism is the main kind of</p> <p>24 contribution here.</p> <p>25 Q. Okay. Well does Shaw teach</p>	<p>Page 151</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 implementing the switching mechanism,</p> <p>3 applying switching mechanism to existing</p> <p>4 media players such as the RealPlayer?</p> <p>5 A. Are you asking if the teaching in</p> <p>6 Shaw reference, that's S-H-A-W, is</p> <p>7 particularly for the RealPlayer? Is</p> <p>8 that the question?</p> <p>9 Q. Is that one example? Yes, if</p> <p>10 that's one example, yes.</p> <p>11 A. I recall they mentioned</p> <p>12 RealPlayer in the context of the patent</p> <p>13 itself. I think that's fair. It can be</p> <p>14 one example.</p> <p>15 Q. Okay. And so Shaw teaches you</p> <p>16 can take the switching mechanism that</p> <p>17 they suggest and implement it in an</p> <p>18 existing media player such as the</p> <p>19 RealPlayer; is that your understanding?</p> <p>20 A. I think if I recall correctly</p> <p>21 from the top of my head, let me say this</p> <p>22 correctly as I understand from the</p> <p>23 patent. What this patent is teaching</p> <p>24 about if you have a certain kind of</p> <p>25 video and now you want to come up with</p>
<p>Page 152</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 inventive way in here, how you can do</p> <p>3 the switching to another source, another</p> <p>4 server that can provide a better</p> <p>5 communication without having the user</p> <p>6 noticing any difference.</p> <p>7 Now for this technology to be</p> <p>8 deployed or implemented into whatever</p> <p>9 software you have on the user's machine,</p> <p>10 I think that's kind of used some</p> <p>11 examples there. But that I think could</p> <p>12 be. But I think the technology itself</p> <p>13 was switching to a server that provides</p> <p>14 the same theme but a better connection,</p> <p>15 a better connection. Whether it</p> <p>16 implemented the software or not I think</p> <p>17 it's an example but I'm not really sure</p> <p>18 if that's what they are claiming</p> <p>19 specifically.</p> <p>20 Q. Is it your opinion that Shaw</p> <p>21 doesn't contain any teaching of encoding</p> <p>22 source media into multiple formats at</p> <p>23 different quality levels?</p> <p>24 MR. YOUNG: Objection, form.</p> <p>25 A. Yes, from my reading from this</p>	<p>Page 153</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 reference which is exhibit 1005, it's</p> <p>3 all about the communication, the</p> <p>4 connection quality, the network quality.</p> <p>5 The innovation there in that patent is</p> <p>6 about how can you maintain the same</p> <p>7 level of quality that you give to the</p> <p>8 user while you are switching. And</p> <p>9 that's why they go into details about</p> <p>10 how do you switch to the buffering and</p> <p>11 synchronization limit to it without</p> <p>12 having the user notice any difference in</p> <p>13 the quality.</p> <p>14 And that, that basically context</p> <p>15 that's what this refers to, without the</p> <p>16 user noticing, without the user</p> <p>17 basically noticing any difference to the</p> <p>18 quality because they are streaming the</p> <p>19 same thing from a different source.</p> <p>20 Q. And it's your opinion that Shaw</p> <p>21 is not concerned with obtaining better</p> <p>22 quality streams for the client?</p> <p>23 A. So they care about delivering</p> <p>24 quality of service to the user. But</p> <p>25 what they take into account is the</p>

<p>Page 154</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 quality of the network. The quality of</p> <p>3 they are delivering video to a user and</p> <p>4 they notice basically the quality is</p> <p>5 dropping that communication link, they</p> <p>6 find another source to obtain the same</p> <p>7 stream at the same quality level and</p> <p>8 they deliver, they use that as the</p> <p>9 source. And in the transition from</p> <p>10 source number one to source number two,</p> <p>11 they are going into length about detail</p> <p>12 how that buffering and synchronization</p> <p>13 so that the user will not have an</p> <p>14 interruption, will not observe any</p> <p>15 difference, so it's very seamless to the</p> <p>16 user, the transition from server one to</p> <p>17 server two, source one to source two.</p> <p>18 Q. Is it your opinion that's Shaw's</p> <p>19 only concern with reducing latency</p> <p>20 between the server and the client?</p> <p>21 MR. YOUNG: Objection, form.</p> <p>22 A. Shaw is about delivering the same</p> <p>23 media content at the same quality level</p> <p>24 using another source of the quality if</p> <p>25 the network drops, if the connection</p>	<p>Page 155</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 drops.</p> <p>3 Now the details of what they are</p> <p>4 talking about how to select that server,</p> <p>5 the best server to do this job to be the</p> <p>6 second source, then they talk about</p> <p>7 basically that criteria for the best</p> <p>8 server to pick from is the one with the</p> <p>9 least delay. Because that's why they</p> <p>10 send the ping and then look at the</p> <p>11 minimum delay. And then they use that</p> <p>12 as the second source. But once they use</p> <p>13 the second source it's the same, same,</p> <p>14 same content and the same quality level</p> <p>15 being delivered to the user. That's why</p> <p>16 they mentioned the user will be -- will</p> <p>17 not have -- will not notice this</p> <p>18 transition.</p> <p>19 Q. Is it your opinion that the</p> <p>20 quality of the connection between the</p> <p>21 server and the client has no impact on</p> <p>22 the quality of the content received at</p> <p>23 the client?</p> <p>24 MR. YOUNG: Objection, form.</p> <p>25 A. I think correctly in Shaw, at</p>
<p>Page 156</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 1005, they talk about the thinning.</p> <p>3 Like, for example, they observed there's</p> <p>4 a reduction in the quality of the stream</p> <p>5 because of the congestion server one way</p> <p>6 start some thinning, dropping some</p> <p>7 frames. And that has to do with the</p> <p>8 network quality, with the link quality.</p> <p>9 And that's basically when, in Shaw</p> <p>10 basically the system was taught to look</p> <p>11 for an alternative source for the same,</p> <p>12 same content and the same quality level,</p> <p>13 they want to pick the second server or</p> <p>14 second source to do that.</p> <p>15 So that's basically kind of an</p> <p>16 example we have in that patent.</p> <p>17 Q. Okay. So are you saying that</p> <p>18 when there's thinning occurring you</p> <p>19 agree that the content received at the</p> <p>20 client is of lower quality than what was</p> <p>21 being sent by the server?</p> <p>22 MR. YOUNG: Objection, form.</p> <p>23 A. The quality of service, as we</p> <p>24 mentioned earlier in the deposition,</p> <p>25 when you talk about the quality of the</p>	<p>Page 157</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 service there are two components. There</p> <p>3 is the quality of the network itself,</p> <p>4 and there is the quality of the content</p> <p>5 itself. When you have a network</p> <p>6 basically having congestion and then in</p> <p>7 this specific example the server start</p> <p>8 to do some thinning, which means</p> <p>9 dropping some packets or some frames due</p> <p>10 to congestion in the network, then that</p> <p>11 will have an impact on the quality of</p> <p>12 the service being delivered to the user</p> <p>13 for sure. But the source of it is the</p> <p>14 network connection quality, not the</p> <p>15 content quality.</p> <p>16 Q. But I asked you about the quality</p> <p>17 of the content at the receiving end of</p> <p>18 the client. I'm not asking you about</p> <p>19 the quality of service. So let me try</p> <p>20 asking it differently.</p> <p>21 When the server is thinning the</p> <p>22 stream, do you agree that the content</p> <p>23 that is received at the client is of</p> <p>24 lower quality because it is missing</p> <p>25 frames?</p>

<p style="text-align: right;">Page 158</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 A. So you have to be more specific</p> <p>3 about what the quality you are referring</p> <p>4 to. There is a quality if you take it</p> <p>5 at a frame level, then the quality is</p> <p>6 basically frame by frame is the same.</p> <p>7 But now there are drops in the frame,</p> <p>8 right, that impact the quality of the</p> <p>9 service, right.</p> <p>10 Q. No. Go ahead.</p> <p>11 A. Right?</p> <p>12 Q. No, no. I'm asking about the</p> <p>13 quality of the content. So the content</p> <p>14 at the server has a set of frames of a</p> <p>15 given quality level, correct?</p> <p>16 A. Correct.</p> <p>17 Q. Okay. Now the server starts</p> <p>18 sending them but it's thinning the data,</p> <p>19 so that means on the client side you</p> <p>20 receive some frames but not all frames,</p> <p>21 correct?</p> <p>22 A. Yes. If thinning happens, yes.</p> <p>23 Q. So for the frames that are</p> <p>24 received, the frames that are received</p> <p>25 at the client are the same quality level</p>	<p style="text-align: right;">Page 159</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 as the frames on the server, correct?</p> <p>3 A. Okay.</p> <p>4 Q. Okay. So if you're playing back</p> <p>5 the video and you're missing frames,</p> <p>6 wouldn't the user perceive that the</p> <p>7 quality of the content they're viewing</p> <p>8 is lower than they would have if they</p> <p>9 receive the non-thinned version of the</p> <p>10 content?</p> <p>11 A. Yes. So when we usually look at</p> <p>12 the video and we plot what the quality</p> <p>13 is, right, usually we'll plot it on to</p> <p>14 an X-Y plot and on the X axis we will</p> <p>15 have the frame number and then on the Y</p> <p>16 plot we have some kind of quality</p> <p>17 metric, some kind of quality.</p> <p>18 And now basically I can look at</p> <p>19 this, if we look at frame by frame</p> <p>20 because that's how, how you view the</p> <p>21 quality of the video.</p> <p>22 Now what happens there, you will</p> <p>23 have good quality for the video</p> <p>24 delivered for the frame, but for the</p> <p>25 frame not delivered basically you don't</p>
<p style="text-align: right;">Page 160</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 really have any reference to it because</p> <p>3 they were not delivered.</p> <p>4 So the service now is impacted,</p> <p>5 not the content itself. Yes, the</p> <p>6 content was cut in the middle because of</p> <p>7 the thinning, but the cause of the</p> <p>8 service is the issue here not really the</p> <p>9 content quality.</p> <p>10 Q. Well let's assume you have the</p> <p>11 original source and that's a video and</p> <p>12 that has a certain quality level and has</p> <p>13 a certain number of frames, correct?</p> <p>14 A. Yes, and each frame has certain</p> <p>15 quality level, yes.</p> <p>16 Q. Okay. Now we transmitted it.</p> <p>17 It's being thinned and it's being stored</p> <p>18 as a file on the client. Do you</p> <p>19 understand that so far?</p> <p>20 A. Yes.</p> <p>21 Q. If I compare the file that is</p> <p>22 stored at the client with the file that</p> <p>23 is stored on the server, are they of the</p> <p>24 same level of quality?</p> <p>25 A. When you look at the frames that</p>	<p style="text-align: right;">Page 161</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 were delivered, they have the same</p> <p>3 quality. Those that were dropped</p> <p>4 basically there's no reference to they</p> <p>5 were not even sent in that file to the</p> <p>6 client because that thinning happened.</p> <p>7 Yes, so basically you have no, they're</p> <p>8 not there.</p> <p>9 Q. Yes. And the file size of the</p> <p>10 thinned, the thinned version that's</p> <p>11 stored on the client, that's going to be</p> <p>12 smaller than the non-thinned version</p> <p>13 stored at the server, correct?</p> <p>14 A. Yes. I mean that's typical of</p> <p>15 the thinning outcome.</p> <p>16 Q. How much time have you spent</p> <p>17 reviewing the Shaw reference?</p> <p>18 A. I mean between the patent and</p> <p>19 these two references, I spent majority</p> <p>20 of my time. I can't give you a number,</p> <p>21 but I read the whole thing.</p> <p>22 Q. Is it your opinion that a content</p> <p>23 delivery network is not concerned with</p> <p>24 providing quality of the service?</p> <p>25 MR. YOUNG: Objection, form.</p>

<p style="text-align: right;">Page 162</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 A. So content delivery network, at</p> <p>3 the time of this patent basically it was</p> <p>4 known for that, it's the whole purpose</p> <p>5 of that content delivery network to have</p> <p>6 these regional servers to bring the</p> <p>7 servers closer to the user, to the</p> <p>8 client, the viewer in order to provide a</p> <p>9 better quality of service.</p> <p>10 But if you think about it, it's</p> <p>11 really a network solution, to bring the</p> <p>12 servers closer to where the viewers are,</p> <p>13 where the clients are, where the users</p> <p>14 are.</p> <p>15 It does provide quality of</p> <p>16 service but using the network – using</p> <p>17 the CDN, the content delivery network</p> <p>18 map.</p> <p>19 Q. Dr. AlRegib, since we came back</p> <p>20 from lunch I note it's harder to hear</p> <p>21 you. I don't know if you moved the</p> <p>22 microphone. I don't know if you can</p> <p>23 position it differently.</p> <p>24 MR. YOUNG: Ghassan, if you can</p> <p>25 move the microphone to your right I</p>	<p style="text-align: right;">Page 163</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 think you'll be more directly in</p> <p>3 front of it. I think the problem is</p> <p>4 when you're looking to your right</p> <p>5 you're speaking away from the</p> <p>6 microphone and when you talk into the</p> <p>7 microphone it's very, very clear.</p> <p>8 THE WITNESS: Is it better now?</p> <p>9 MR. PONDER: That's fine. When</p> <p>10 you're facing the microphone we can</p> <p>11 hear you. It seems to be</p> <p>12 directional.</p> <p>13 THE WITNESS: Thank you.</p> <p>14 Q. So is it your opinion that in</p> <p>15 2003 content delivery networks were not</p> <p>16 commonly used to distribute media</p> <p>17 content at more than one level of</p> <p>18 quality?</p> <p>19 MR. YOUNG: Objection, form.</p> <p>20 A. I mean that's hard to say. I</p> <p>21 mean it's – you have different videos</p> <p>22 and different, different, you know,</p> <p>23 rates at different places. So I</p> <p>24 mentioned you will have different</p> <p>25 quality levels. But the main, the main</p>
<p style="text-align: right;">Page 164</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 innovation, the CDN network brought to</p> <p>3 the table especially is this regional</p> <p>4 kind of far more servers where you bring</p> <p>5 the content source closer to the client,</p> <p>6 to the user, to the viewer. Now yes, it</p> <p>7 may be different, different users will</p> <p>8 have different quality levels.</p> <p>9 Q. Do you know one way or another</p> <p>10 whether content delivery networks in</p> <p>11 2003 were used to distribute media</p> <p>12 content at multiple quality levels, the</p> <p>13 same media content at multiple quality</p> <p>14 levels?</p> <p>15 MR. YOUNG: Objection, form.</p> <p>16 A. Yes, they will have, they will</p> <p>17 have different content at different bit</p> <p>18 rates, at different bit rates. But the</p> <p>19 main, the main contribution of these</p> <p>20 networks and what this is very well</p> <p>21 known for is to bring servers closer to</p> <p>22 the viewers, to campuses and something</p> <p>23 like that. So there's minimizing</p> <p>24 basically going all the way back to a</p> <p>25 server very far off and that's basically</p>	<p style="text-align: right;">Page 165</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 just bringing server closer to the</p> <p>3 client. So that provides a better</p> <p>4 quality of service.</p> <p>5 Q. Could you turn to paragraph 32 of</p> <p>6 your declaration.</p> <p>7 A. If you don't mind I just want to</p> <p>8 check the WiFi on my laptop just to make</p> <p>9 sure.</p> <p>10 MR. PONDER: Sure, go ahead.</p> <p>11 A. Just want to make sure I'm on the</p> <p>12 right WiFi network. 32, yes, I'm there.</p> <p>13 Paragraph 32 in my declaration.</p> <p>14 Q. Is – you identify a portion of</p> <p>15 the patent here that describes the</p> <p>16 determining step; is that correct?</p> <p>17 A. In paragraph 32?</p> <p>18 Q. Yes.</p> <p>19 A. In reference to figure number 4.</p> <p>20 Q. Yes. Are there other portions of</p> <p>21 the '992 patent that describe how this</p> <p>22 determination is performed or is this</p> <p>23 the only portion that you're aware of?</p> <p>24 MR. YOUNG: Objection, form.</p> <p>25 A. In the general sense, this is</p>

<p>Page 166</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 basically the step in the system where</p> <p>3 they determine basically for this</p> <p>4 determination. Are you referring to</p> <p>5 patent '992 or –</p> <p>6 Q. Yes, this is the portion of your</p> <p>7 report that I believe is where you are</p> <p>8 identifying the portions of the '992</p> <p>9 patent that disclose how to perform the</p> <p>10 determination. And what I'm trying to</p> <p>11 understand is, you cited figure 4 and</p> <p>12 the accompanying text in column 21. And</p> <p>13 I was just wondering is that the only</p> <p>14 example that you're aware of or are</p> <p>15 there other examples that you can point</p> <p>16 me to where you can say these teachings</p> <p>17 relating to the determination are</p> <p>18 present in the '992?</p> <p>19 MR. YOUNG: Objection, form.</p> <p>20 A. I mean the specific locations</p> <p>21 basically of that, I mean I cannot. I</p> <p>22 have to look more careful than to just</p> <p>23 give them out. But in general I can</p> <p>24 tell you basically that kind of</p> <p>25 determination of the quality and the</p>	<p>Page 167</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 content is really kind of within the</p> <p>3 context of the entire patent. That's</p> <p>4 the whole inventive part of this patent,</p> <p>5 the determination to provide a higher</p> <p>6 quality.</p> <p>7 Q. Is it your opinion that these</p> <p>8 quality control modules that are</p> <p>9 described in figure 4 and the</p> <p>10 accompanying text are the structure that</p> <p>11 the '992 patent describes for performing</p> <p>12 the determination limitation?</p> <p>13 A. That's the purpose of the quality</p> <p>14 control module. That's the purpose of</p> <p>15 what it is doing, is making the</p> <p>16 determination. That's my understanding.</p> <p>17 Q. Do you believe that claim 1</p> <p>18 requires using quality control modules</p> <p>19 to perform the method claimed by claim</p> <p>20 1?</p> <p>21 MR. YOUNG: Objection, form.</p> <p>22 A. When I read that claim 1, then I</p> <p>23 look at going from a current quality</p> <p>24 level to a user later on to say</p> <p>25 determining a network connection with</p>
<p>Page 168</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 the second system is available, all the</p> <p>3 way to say and provide the digital media</p> <p>4 content to the user at a quality level</p> <p>5 higher than the current quality level.</p> <p>6 And then even in the using limitation</p> <p>7 and the second delivery, delivery</p> <p>8 limitation, the higher quality level,</p> <p>9 the higher quality level, that's</p> <p>10 basically the determination step that's</p> <p>11 happening using this higher quality</p> <p>12 level.</p> <p>13 I think it uses that</p> <p>14 determination.</p> <p>15 Q. If you could turn to paragraph</p> <p>16 34. Just read to yourself the first</p> <p>17 sentence.</p> <p>18 A. Yes, the first three lines, I</p> <p>19 read them.</p> <p>20 Q. So is this first sentence</p> <p>21 describing what you believe the method</p> <p>22 claim 1 requires in determining whether</p> <p>23 providing the content from the second</p> <p>24 system to the user will deliver the</p> <p>25 digital media content at the higher</p>	<p>Page 169</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 quality content to the user?</p> <p>3 A. Yes, what I'm talking about in</p> <p>4 this sentence in here is something I</p> <p>5 refer to earlier in the deposition, in</p> <p>6 that basically kind of, you know,</p> <p>7 handshaking between the two systems is</p> <p>8 system 1 want to make sure that when it</p> <p>9 obtains this content at the higher</p> <p>10 quality level, it will be able to be</p> <p>11 consumed by the user. And I believe</p> <p>12 that basically is part of, is at the</p> <p>13 core of this patent in here.</p> <p>14 If you have a higher quality that</p> <p>15 cannot be used because of a limitation</p> <p>16 in the – in the user's machine, then</p> <p>17 that's basically not a good use of</p> <p>18 resources.</p> <p>19 Q. Can you turn to paragraph 97 of</p> <p>20 your declaration.</p> <p>21 A. I'm there.</p> <p>22 Q. Do you see in the second</p> <p>23 sentence, the portion I want to ask you</p> <p>24 about is the last part where it says as</p> <p>25 the challenged claims require,</p>

<p>Page 170</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 determining the network connection,</p> <p>3 quote, is high enough to provide the</p> <p>4 digital media content to the user at a</p> <p>5 quality level higher than the current</p> <p>6 quality level, close quote.</p> <p>7 Do you see that?</p> <p>8 A. Yes, I do.</p> <p>9 Q. And you cite exhibit 1001 which</p> <p>10 is the '992 patent at column 26, line 35</p> <p>11 to 37. Do you see that?</p> <p>12 A. Yes.</p> <p>13 Q. Can you tell me where in the '992</p> <p>14 patent the determining concept is</p> <p>15 disclosed, how it is actually performed?</p> <p>16 A. Are you talking about the</p> <p>17 handshaking that happens between system</p> <p>18 1 and system 2?</p> <p>19 Q. That's the same portion, the</p> <p>20 handshaking?</p> <p>21 A. I'm trying to get clarification</p> <p>22 of the question. Because I'm citing in</p> <p>23 here column 26 to 37. Are you asking to</p> <p>24 locate that or are you asking for</p> <p>25 something different?</p>	<p>Page 171</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 Q. Okay. So I believe that's the</p> <p>3 claim, the claim language, that's the</p> <p>4 claim limitation.</p> <p>5 A. Yes.</p> <p>6 Q. And so what I'm asking is can you</p> <p>7 identify which portions of the '992</p> <p>8 patent describe how you actually do that</p> <p>9 step?</p> <p>10 A. I have to look into the patent to</p> <p>11 give you the answer.</p> <p>12 Q. Okay, go ahead.</p> <p>13 A. I can't locate it off the top of</p> <p>14 my head. But what I was talking</p> <p>15 basically about that kind of</p> <p>16 communication, the difference between</p> <p>17 system 1 and system 2. I have to find</p> <p>18 that. Paragraph 14 – sorry, column 14,</p> <p>19 for example, as an example. The second</p> <p>20 paragraph, as an example. But</p> <p>21 throughout the whole patent there is</p> <p>22 that kind of handshaking between the two</p> <p>23 systems where they make sure basically</p> <p>24 that whatever higher quality is being</p> <p>25 used and delivered to the user.</p>
<p>Page 172</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 Q. So when you refer to the second</p> <p>3 paragraph, are you referring to column</p> <p>4 14, starting at line 12, 11 or 12?</p> <p>5 A. Yes.</p> <p>6 Q. Okay. Thank you. Are you aware</p> <p>7 that the district court has found that</p> <p>8 the '992 patent is invalid for – under</p> <p>9 35 USC Section 101?</p> <p>10 A. The legal side of it, basically</p> <p>11 I've been focusing only on the decision.</p> <p>12 The legal side of it I don't think I'm</p> <p>13 aware of that.</p> <p>14 Q. Okay. But you were, when you</p> <p>15 prepared this declaration, were you</p> <p>16 aware of the fact that the district</p> <p>17 judge had found that the claims of the</p> <p>18 '992 patent are invalid?</p> <p>19 A. Beyond the decision of the board?</p> <p>20 Q. So this wasn't a decision of the</p> <p>21 board. This is exhibit 2004.</p> <p>22 (Exhibit 2004, Order Re Netflix</p> <p>23 Motion to Dismiss was marked for</p> <p>24 identification.)</p> <p>25 Q. Do you have exhibit 2004?</p>	<p>Page 173</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 A. Yes.</p> <p>3 Q. So were you aware of this order</p> <p>4 when you wrote your declaration?</p> <p>5 A. I mean quite frankly, when I look</p> <p>6 at this reference, I just look at the</p> <p>7 '992 part of it. The decision, I went</p> <p>8 through it but I didn't really focus on</p> <p>9 it. I just focus on the technical</p> <p>10 argument that we have on the '992 within</p> <p>11 that document, and there are kind of two</p> <p>12 pages there, one page and a half.</p> <p>13 Q. What was your understanding of</p> <p>14 what the court found with respect to the</p> <p>15 '992 patent?</p> <p>16 MR. YOUNG: Objection, form.</p> <p>17 A. In the decision by the board or</p> <p>18 in 2004?</p> <p>19 Q. In 2004.</p> <p>20 A. I have to go back and look at it.</p> <p>21 I can't remember off the top of my head.</p> <p>22 Q. Is there any reason why you don't</p> <p>23 discuss the judge's findings in your</p> <p>24 declaration?</p> <p>25 A. Because my expertise are on the</p>

<p>Page 174</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 technical side of it, not on the legal</p> <p>3 side of it. So I think I can't really</p> <p>4 add any value there. But technical side</p> <p>5 is why I'm here.</p> <p>6 Q. So in forming your opinions, the</p> <p>7 fact that the judge found the claims</p> <p>8 were invalid didn't impact your analysis</p> <p>9 one way or another?</p> <p>10 MR. YOUNG: Objection, form.</p> <p>11 A. When I look at this basically I</p> <p>12 look at it within, as I mentioned, in</p> <p>13 detail the patent, '992 patent, the</p> <p>14 petition and the two references there</p> <p>15 and the response and the decision by the</p> <p>16 board. Those are the ones kind of I</p> <p>17 used kind of to build my, you know,</p> <p>18 careful consideration. But the legal</p> <p>19 side of it basically I don't really kind</p> <p>20 of, not my, you know, expertise if you</p> <p>21 like.</p> <p>22 Q. Okay. Are you offering an</p> <p>23 opinion that the '992 patent is not</p> <p>24 invalid?</p> <p>25 MR. YOUNG: Objection, form.</p>	<p>Page 175</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 A. What we are doing here, we are</p> <p>3 looking at basically the petition that</p> <p>4 was submitted and citing these two</p> <p>5 references and then bringing basically</p> <p>6 kind of my expertise to explain why I</p> <p>7 believe this patent basically have</p> <p>8 inventive components and quality that</p> <p>9 are really different from the two</p> <p>10 references that are in the petition.</p> <p>11 Q. Okay. So from your standpoint,</p> <p>12 it doesn't put any doubt in your mind</p> <p>13 about whether you've reached the correct</p> <p>14 conclusion on all these claims, the fact</p> <p>15 that the claims were found invalid by a</p> <p>16 judge?</p> <p>17 MR. YOUNG: Objection, form.</p> <p>18 A. My -- when I look at something</p> <p>19 like this I look at it purely from a</p> <p>20 technical point of view. That's what my</p> <p>21 training, my expertise have been all</p> <p>22 about. I limit my opinion to my</p> <p>23 technical understanding of this patent.</p> <p>24 MR. PONDER: Let's take a ten</p> <p>25 minute break.</p>
<p>Page 176</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 (A recess was had.)</p> <p>3 Q. Dr. AlRegib, could you turn to</p> <p>4 paragraph 112 of your declaration.</p> <p>5 A. Yes, I'm there now.</p> <p>6 Q. Is paragraphs 112, and paragraphs</p> <p>7 112 and 113 your opinions regarding the</p> <p>8 combination of Barnes and Shaw?</p> <p>9 A. Yes, that's what the title of</p> <p>10 that section is, the combination of</p> <p>11 Barnes and Shaw.</p> <p>12 Q. And you seem to be citing Dr.</p> <p>13 Myler's deposition testimony with the</p> <p>14 citation to exhibit 2003. Do you agree?</p> <p>15 A. Yes, that's 2003.</p> <p>16 Q. So your response that's in</p> <p>17 paragraph 113, is that a response to Dr.</p> <p>18 Myler's testimony on motivation to</p> <p>19 combine?</p> <p>20 A. I'm sorry, can you repeat the</p> <p>21 question? I'm not clear what you're</p> <p>22 asking for.</p> <p>23 Q. Sure. It appears that in</p> <p>24 paragraph 113 you're offering a response</p> <p>25 to Dr. Myler and I'm just wondering is</p>	<p>Page 177</p> <p>1 GHASSAN ALREGIB - 12/1/21</p> <p>2 this a response to the portions of the</p> <p>3 testimony that you're citing in</p> <p>4 paragraph 112?</p> <p>5 A. I believe. That's basically what</p> <p>6 I'm citing there is 42-47.</p> <p>7 Q. Is there any reason why you</p> <p>8 didn't cite anything from his</p> <p>9 declaration?</p> <p>10 MR. YOUNG: Objection, form.</p> <p>11 A. I mean for the argument I'm</p> <p>12 making here, it's much clearer from his</p> <p>13 deposition, Dr. Myler's deposition.</p> <p>14 Q. Thank you.</p> <p>15 MR. PONDER: We pass the witness.</p> <p>16 MR. YOUNG: Thank you. I don't</p> <p>17 have any questions for Dr. AlRegib.</p> <p>18 (Continued on next page for</p> <p>19 purpose of jurat.</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>

<div>Page 178</div> <div>1 GHASSAN ALREGIB - 12/1/21</div> <div>2 //</div> <div>3 MR. PONDER: All right. I think</div> <div>4 we can go off the record then.</div> <div>5 (Time noted:3:57 p.m.)</div> <div>6 _____</div> <div>7 GHASSAN ALREGIB</div> <div>8</div> <div>9 _____</div> <div>10 Subscribed and sworn to</div> <div>11 before me this _____</div> <div>12 day of _____, 2021.</div> <div>13</div> <div>14 _____</div> <div>15 Notary Public</div> <div>16</div> <div>17</div> <div>18</div> <div>19</div> <div>20</div> <div>21</div> <div>22</div> <div>23</div> <div>24</div> <div>25</div>	<div>Page 179</div> <div>1</div> <div>2</div> <div>3</div> <div>4 E X H I B I T S</div> <div>5 NUMBER DESCRIPTION PAGE</div> <div>6 EXHIBIT 1010 Materials Considered 9</div> <div>7 EXHIBIT 1001 US Patent 8,270,992 47</div> <div>8 EXHIBIT 1004 US Patent Application 145</div> <div>9 Publication Barnes, JR.</div> <div>10 EXHIBIT 1005 Shaw Reference 147</div> <div>11 EXHIBIT 2004 Order Re Netflix Motion 172</div> <div>12 to Dismiss</div> <div>13</div> <div>14</div> <div>15 PREVIOUSLY MARKED EXHIBITS</div> <div>16 NONE</div> <div>17</div> <div>18</div> <div>19</div> <div>20</div> <div>21</div> <div>22</div> <div>23</div> <div>24</div> <div>25</div>
<div>Page 180</div> <div>1</div> <div>2 I N D E X</div> <div>3</div> <div>4</div> <div>5 EXAMINATION BY PAGE</div> <div>6</div> <div>7 PONDER 4</div> <div>8</div> <div>9 REQUESTS</div> <div>10 Page Line</div> <div>11 NONE</div> <div>12</div> <div>13</div> <div>14</div> <div>15</div> <div>16</div> <div>17</div> <div>18</div> <div>19</div> <div>20</div> <div>21</div> <div>22</div> <div>23</div> <div>24</div> <div>25</div>	<div>Page 181</div> <div>1</div> <div>2 CERTIFICATION</div> <div>3 STATE OF NEW YORK)</div> <div>4 : ss.</div> <div>5 COUNTY OF NEW YORK)</div> <div>6 I, MARK RICHMAN, Certified Shorthand</div> <div>7 Reporter, Certified Court Reporter,</div> <div>8 Registered Professional Reporter and Notary</div> <div>9 Public for and within the State of New York,</div> <div>10 do hereby certify:</div> <div>11 That the witness whose testimony is</div> <div>12 herein set forth, was duly sworn by me; and</div> <div>13 that the within transcript is a true record</div> <div>14 of the testimony given by said witness.</div> <div>15 I further certify that I am not related</div> <div>16 to any of the parties to this action by</div> <div>17 blood or marriage, and that I am in no way</div> <div>18 interested in the outcome of this matter.</div> <div>19 IN WITNESS WHEREOF, I have hereunto set</div> <div>20 my hand this 7th day of December, 2021.</div> <div>21 _____</div> <div>22 MARK RICHMAN, CSR, CRR, RPR, CM</div> <div>23 * * *</div> <div>24</div> <div>25</div>

1
2 ERRATA SHEET
3 CASE NAME:
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4 WITNESS' NAME:
5 PAGE/LINE(S)/ CHANGE REASON

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19
20 GHASSAN ALREGIB

21 SUBSCRIBED AND SWORN TO
22 BEFORE ME THIS DAY
23 OF , 2021.

24 NOTARY PUBLIC
25 MY COMMISSION EXPIRES

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Job No. 201930

Re: Remote Deposition of Ghassan AlRegib
Date: 12/01/2021
Case No.: IPR2021-00303
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ACKNOWLEDGMENT OF DEPONENT

I, Ghassan AlRegib, do hereby acknowledge that I have read and examined the foregoing testimony, and the same is a true, correct and complete transcription of the testimony given by me and any corrections appear on the attached Errata sheet signed by me.

12/22/2021
Date


Signature

Job No. 201930

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Page	Line	Correction/Change and Reason
23	12	Change "QA" to "QoS"
25	3	Change both instances of "termination" to "determination"
28	21-22	Change "of the locations" to "allocation"
33	3	Change "that too much on" to "that information from"
46	17	Change "I" to "it"
53	20	Change "medium" to "media"
54	22	Change "page" to "payload"
70	5	Change "app" to "QP"
70	9	Change "scheme" to "stream"
78	15	Change "MP" to "MPEG"
114	19	Change "MP1" to "MPEG1"
114	20	Change "MP2" to "MPEG2"
123	5	Change "in front of" to "from the top of"
137	24	Change "system" to "server"
166	22	Change "careful" to "carefully"
175	7	Change "have" to "has"