

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

3 -----

4 GOOGLE LLC and LENOVO (UNITED STATES) INC.,

5 Petitioners,

6 v. IPR2025-00004

7 ERICSSON AB

8 -----

9 DEPOSITION OF ANTHONY J. WECHSELBERGER

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11 DATE: 5-29-25

12 TIME: 9:00 a.m. PT

13 LOCATION: VIA ZOOM

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1 P R O C E E D I N G S

2 ANTHONY J. WECHSELBERGER,

3 after having been first duly sworn,

4 was examined and testified as follows:

5 - - -

6 E X A M I N A T I O N

7 - - -

8 BY ATTORNEY NOROOZI:

9 Q. Good morning, Mr. Wechselberger.

10 A. Good morning.

11 Q. How did you prepare for the
12 deposition today?

13 A. About a month ago, maybe a little
14 less, I was informed of the institution
15 decision on the two patents.

16 And counsel -- I asked, and
17 counsel gave me permission to start ramping up
18 my learning curve, since I hadn't touched this
19 stuff in many months. So I started reading all
20 the documents and materials.

21 And most recently, I had three
22 or four telephone -- or Zoom sessions with
23 counsel to -- in the past several days to get
24 ready for today.

25 Q. Did you review any materials that

1 have not been submitted in the two proceedings?

2 A. No.

3 Q. Did you conduct any research outside
4 of the documents that have been submitted in
5 the two proceedings?

6 A. No.

7 Q. Mr. Wechselberger, you have submitted
8 your CV in the proceedings, and I don't believe
9 that it included an identification of past
10 legal matters in which you've served as an
11 expert.

12 Is that accurate?

13 A. I don't recall if -- if I was asked
14 to produce that or -- and if I was asked, I
15 would have. But if you have not seen it, then,
16 apparently I haven't been asked.

17 My experience in IPRs is, maybe
18 a third of them, I'm asked to provide legal
19 experiences. And maybe two-thirds to half,
20 they don't.

21 So -- and I don't remember if I
22 was asked or not on this case.

23 Q. You have -- you have served as an
24 expert in litigation matters in the past?

25 A. Yes.

1 Q. Always patent litigation?

2 A. No. I've done a couple of bench
3 trials where I was asked to review materials
4 and provide opinions for inappropriate use of
5 intellectual property.

6 So -- I would say 80 to
7 90 percent of it -- of my assistance to the
8 legal community has been with respect to patent
9 litigation.

10 Q. And have you served as an expert on
11 behalf of Google in the past?

12 A. I think I've worked on their behalf
13 maybe three times in the past.

14 Q. And what about on behalf of Lenovo?

15 ATTORNEY SARWAR: Objection as
16 to scope.

17 THE WITNESS: I think Lenovo --
18 when I first became associated with
19 this -- with this matter, it was on behalf
20 of Lenovo and Google, I believe. And I
21 was -- that was with respect to some ITC
22 matters.

23 And that was very early up
24 front, maybe six weeks of time I spent
25 looking at public domain documents

1 associated with adaptive bit rate
2 streaming systems that the accused
3 products were using, but that -- I didn't
4 provide any work product. But I think
5 Lenovo was part of that.

6 But then I got contacted by Wolf
7 Greenfield for the IPR matters, and all
8 that ITC interaction stopped. And
9 that's -- and other than this case, I
10 don't remember, in my background, doing
11 anything for Lenovo.

12 BY ATTORNEY NOROOZI:

13 Q. In your declaration, you say you're
14 being compensated at your standing consulting
15 rate.

16 What is that rate?

17 A. Well, today it's 475 an hour. I
18 don't remember -- since this was started a
19 little over a year ago, it was probably 450 an
20 hour then.

21 Q. You have not -- withdrawn.

22 In your CV, I didn't see any
23 experience from you teaching at a university or
24 some similar institution.

25 Is that fair?

1 A. That's fair. I've been a practicing
2 engineer my entire professional career.

3 Q. And you currently work at Entropy
4 Management Solutions?

5 A. That's my sole proprietorship.
6 That's just me.

7 Q. And is your work at Entropy
8 Management Solutions entirely directed to
9 expert consulting services and litigation, or
10 is that just part of what you do?

11 A. It's about 80 -- 75 to 80 percent of
12 what I do.

13 The other part is, as I've said,
14 a practicing system engineer unassociated with
15 any kind of litigation.

16 Q. Let me ask you about your declaration
17 in the -03 IPR which is directed to the
18 '178 patent.

19 Do you have that with you?

20 A. Yes, I have my declaration.

21 Q. So let's -- let's turn to --
22 withdrawn.

23 And you also have a copy of
24 Peterka with you?

25 A. Yes.

1 ATTORNEY NOROOZI: Peterka, for
2 the record, is Exhibit 1005 in the IPR
3 2025-3 proceeding.

4 BY ATTORNEY NOROOZI:

5 Q. So let's go to page 39 of your
6 declaration, please. And let me know when
7 you're there.

8 A. Page 39. I am there.

9 Q. So in your Ground 1, which starts at
10 page 39, you rely on Peterka alone; is that
11 right?

12 A. Yes. It's a single reference
13 obviousness ground.

14 Q. If you could look at Peterka at
15 paragraph 2, please.

16 A. Yes.

17 Q. You see that Peterka teaches this
18 invention relates generally to the area of
19 multicasting network?

20 A. I see that.

21 Q. What is a multicasting network?

22 A. Fundamentally, there are two kinds
23 of, well, transmission networks that are used
24 with the internet, unicast or multicast.

25 Multicast -- a unicast, as it

1 sounds like, is more peer-to-peer, one-to-one.
2 A multicast is a one-to-many type of a
3 broadcast.

4 Q. Can you elaborate on what the
5 difference means by sort of describing the --
6 the two different architectures in some more
7 detail?

8 A. Well, they're internet-based, as I
9 had said.

10 Multicast is kind of like a
11 broadcast network. Instead of over the air,
12 it's over the internet.

13 So the -- you have a singular
14 source of content that's going to be targeted
15 to specific recipients or clients.

16 Clients typically will request
17 access to a multicast stream and be given
18 permission or credentials. And then they --
19 it's said that they join the multicast
20 distribution process.

21 Q. And unicast?

22 A. Unicast is peer-to-peer -- that is,
23 one client, one server -- as opposed to one
24 server and many clients, the latter being
25 multicast.

1 Q. Well, just to unpack that.

2 You know, in, like, daily
3 experience, is Netflix multicast or unicast?

4 A. I don't know if Netflix actually
5 operates in a multicast environment, but it is
6 one -- it is certainly capable of doing
7 one-to-many or one-to-one.

8 Typically, if you're a multi --
9 if you're a Netflix user, you're allowed to --
10 to get access to a stream that's targeted to
11 you. But there's nothing that says it couldn't
12 be targeted to many too if it's a live event.

13 I don't know anything about
14 Netflix's technical business.

15 Q. Yeah. So --

16 ATTORNEY SARWAR: I apologize.

17 I was muted.

18 Objection as to scope regarding
19 the last question, just for the record.

20 BY ATTORNEY NOROOZI:

21 Q. So if I understood you correctly,
22 multicast is similar to a sort of traditional
23 TV broadcast where the server is putting out
24 the content and any one of multiple different
25 clients can sort of tune in to that ongoing

1 broadcast that's coming out of that server or
2 set of servers.

3 Is that fair?

4 A. That's fair.

5 Q. And then unicast would be a situation
6 where an individual client is getting specific
7 content that is directed to it per its request
8 that is not necessarily being broadcast, so to
9 speak, to other clients at the same time.

10 Fair?

11 A. Fair.

12 Q. In paragraph 75 of your
13 declaration -- withdrawn.

14 I'm going to just be asking
15 about your -03 IPR declaration, and I'm not
16 going to keep saying that until I change to
17 the -- to the other declaration.

18 So if you have any doubt, feel
19 free to ask me. But I'm not going to specify
20 it any more. I'm just going to say paragraph
21 numbers.

22 A. Understood. Thank you.

23 Q. Sure.

24 So in paragraph 75 of your
25 declaration, you say [as read]:

1 "In Peterka, clients
2 request access to media
3 content - e.g., under
4 Peterka's pay-by-time
5 distribution scheme."

6 Do you see that?

7 A. Yes.

8 Q. Do your opinions with respect to
9 Peterka rely on Peterka's pay-by-time
10 distribution scheme?

11 A. In part.

12 I also reference Peterka's
13 pay-by-quality feature as well within the
14 declaration overall. I'm not saying I do that
15 in paragraph 75, specifically.

16 Q. Okay. For purposes of your theory as
17 to Limitation 1A, to which server did Peterka's
18 clients make the so-called media playback
19 request?

20 A. Well, in paragraph 75, I explain that
21 when -- Peterka states that [as read]:

22 "When the client
23 negotiates encryption keys
24 with the caching server, it
25 will start receiving segments

1 of selected 'content' from an
2 ongoing show/event."

3 Q. So to be clear, for your theory for
4 Limitation 1A, the media playback request that
5 you map onto in Peterka is a request that is
6 made to Peterka's caching server?

7 A. Well, Peterka also has a key
8 distribution server. So I'm just going to see
9 if I bring that into play here.

10 I'm going to reference the
11 Peterka patent to see if it helps.

12 So Figure 19 in Peterka shows
13 the overall system. And the description of
14 Figure 19 is back on page 11 of Peterka where
15 it's described that the overall system shows a
16 client server network comprised at least of one
17 client coupled with a -- to a server, such as
18 origin content processor 1904, via the network.

19 Figure 19 shows a caching
20 processor 1912 and an authorization center also
21 coupled to the network.

22 So the question again? Standing
23 question?

24 Q. Yeah. So for purposes of your theory
25 for Limitation 1A, what is the server or

1 servers to which the media playback request in
2 Peterka is made under your theory?

3 A. I think I would reference, again, the
4 same sentence in paragraph 75 that is a direct
5 cite from what Peterka discloses [as read]:

6 "When the client
7 negotiates encryption keys
8 with the caching server, it
9 will still start receiving
10 segments of content."

11 So the content -- the playback
12 request is going to the caching server.

13 Q. And then for purposes of your theory
14 for Limitation 1A, what is the server or
15 servers from which a playback request response
16 is received in Peterka?

17 A. I looked throughout that area if
18 Peterka made a distinction between the caching
19 server and another server.

20 But for purposes of Claim
21 Element 1A, Peterka just is disclosing that the
22 clients are negotiating for encryption keys
23 with the caching server. So it looks like
24 it -- in that case, it's the same server.

25 Q. So purposes of your theory for

1 Limitation 1A, it is the caching server that
2 receives a media playback request and also the
3 caching server that provides the playback
4 request response.

5 Fair?

6 ATTORNEY SARWAR: Objection
7 regarding scope.

8 THE WITNESS: Well, in more
9 detail -- I've actually found the
10 additional detail that I was looking for.
11 It's in respect to Element 1E, which is
12 issuing request to a license server.

13 And I explain at paragraph 119
14 in, you know, more detail a little bit
15 later on how the moving parts relate.

16 Peterka -- in paragraph 19,
17 Peterka discloses issuing the requests to
18 a, quote/unquote, key distribution server,
19 which the POSITA would understand to be a
20 license server.

21 So it appears that at least at
22 the point where I started using Peterka --
23 citing to Peterka for purposes of Claim
24 Element 1A, Peterka was not necessarily
25 distinguishing yet between content

1 sourcing servers and license servers,
2 because it simply said negotiating for
3 keys with the caching server.

4 But later on, we learned the
5 details about the existence of an actual
6 key distribution server.

7 BY ATTORNEY NOROOZI:

8 Q. For purposes of your theory for
9 Limitation 1A, you say, in paragraph 76, at the
10 beginning, that [as read]:

11 "Peterka's
12 client-initiated requests to
13 access media constitute the
14 recited 'initiating a media
15 playback request' of
16 Limitation 1A."

17 Is that right?

18 A. Yes.

19 Q. And this is under the pay-by-time
20 scheme, right?

21 A. Yes. I see in paragraph 75 and 76,
22 in both cases, I've cited to paragraphs
23 Peterka 80 through 82 and also 141 to 143.

24 And certainly within -- not
25 "certainly." But paragraph 80 and 82 do exist

1 under the pay-by-time subsection within the
2 Peterka disclosure.

3 I'm also looking at -- I cite to
4 paragraphs 141 to 143. I'm just trying to
5 discern if all aspects are under the
6 pay-by-time.

7 Because the basic fundamentals
8 of Peterka's key distribution are not tied
9 strictly to pay-by-time. So I don't know if
10 that's material to your question.

11 And in paragraph 77, I also
12 refer to Figure 7B, which is described at
13 paragraph 130. That is suggestive of an
14 example of pay-by-time because there's a free
15 preview period. And then after that time
16 period is expired, you go into a pay period.

17 But, certainly, the -- cutting
18 to the chase, the key distribution and delivery
19 request, as disclosed by Peterka under the pull
20 key model, support a key -- a pay-by-time
21 embodiment.

22 Q. In paragraph 77, you say [as read]:

23 "Peterka describes
24 subdividing a media stream
25 into segments and applying a

1 different content encryption
2 key to each segment."

3 Do you see that?

4 A. I do.

5 Q. In Peterka, there's only one content
6 encryption key for each segment.

7 Fair?

8 ATTORNEY SARWAR: Objection as
9 to form.

10 THE WITNESS: That's certainly
11 included in -- in the way Peterka
12 operates. I would have to do a detailed
13 examination to see if he discloses
14 distribution of keys that would rotate
15 within a segment.

16 There's no reason why you
17 couldn't do that. But, certainly, I've
18 called attention to that and to the
19 segment-based one-on-one key per segment
20 in paragraph 77.

21 BY ATTORNEY NOROOZI:

22 Q. Do you see that in Figure 7B, which
23 is on page 42 of your declaration, there is a
24 differently numbered content encryption key
25 associated with each segment that you've

1 colored in Peterka's Figure 7B?

2 A. I do see that.

3 Q. Are you aware of any teaching in
4 Peterka in which more than one content
5 encryption key is used for a single segment?

6 A. I don't recall -- as I just testified
7 earlier, I don't recall. He certainly
8 describes, as we see in paragraph 77, a
9 one-on-one relationship between a key for a
10 segment.

11 But as I said earlier, there's
12 no fundamental reason, as I think about your
13 question, that Peterka -- and by the way,
14 Peterka doesn't explain here how long a segment
15 is.

16 But assuming it's some duration
17 of seconds or something, there's no reason that
18 the keys couldn't be rotated within a segment.

19 The lifetime of a key under
20 Peterka is provided as part of the distributed
21 key information, and that lifetime -- I can
22 think of no technical reason why that has to be
23 exactly the same as a segment duration.

24 Q. In paragraph 86 of your declaration,
25 on page 47, you refer to the packaged content

1 encrypted by different ones of the content
2 encryption keys in Peterka.

3 Do you see that?

4 ATTORNEY SARWAR: Objection as
5 to form.

6 THE WITNESS: I see that.

7 BY ATTORNEY NOROOZI:

8 Q. And you see in paragraph 87 that you
9 say that content keys in Peterka are used to
10 encrypt the content itself and are used to
11 decrypt the content?

12 A. I see that.

13 Q. So if a content key was used to
14 encrypt the content in Peterka and the content
15 is provided in segments, then wouldn't there be
16 one key per segment -- one content key per
17 segment?

18 A. Well, Peterka discloses that's one
19 method that could be used, but there's no --
20 that's similar to the previous question.

21 There's no fundamental reason
22 why Peterka couldn't issue keys that have
23 lifetimes that were less than a content
24 segment, in which case you'd have to rotate
25 during the segment.

1 Q. Well, but in Peterka, the key that
2 it's provided for a segment is the same key
3 that was used to encrypt that segment, right?

4 A. If the key was used -- if a key was
5 used to encrypt an entire segment, then that
6 same key would necessarily be used to decrypt
7 that entire segment.

8 Q. And -- withdrawn.

9 Do you see that in Figure 7B of
10 Peterka the CKs appear to come in ECMs?

11 A. I do.

12 Q. And what does "CK" stand for?

13 A. Content key.

14 Q. And what is an ECM, as taught in
15 Peterka?

16 A. It stands for "entitlement control
17 message."

18 It's the container that keys are
19 distributed within.

20 Q. And then do you see that lower down
21 in Figure 7B there's a statement "EMM:[PK]"?

22 A. I do.

23 Q. And what is a PK?

24 A. Peterka provides definitions.

25 "PK" stands for "program key."

1 Q. And what is a program key in Peterka?

2 A. So I'm looking at Peterka,
3 paragraph 98.

4 Peterka states that [as read]:

5 "This key is valid for
6 one program epoch. It is used
7 to give access to an
8 individual program event
9 purchased using the
10 pay-per-view option. It's
11 similar to SK" -- which stands
12 for service key. "The PK can
13 also be encrypted by SK and
14 distributed to all clients who
15 possess the SK."

16 Q. And what is an "EMM" in Peterka?

17 A. The letters stand for "entitlement
18 management message."

19 Q. How is an EMM different than an ECM
20 in Peterka?

21 A. A person of ordinary skill in the
22 art -- these are terms of art that go back a
23 couple of decades, and they've been adopted by
24 the broadcast and internet industries.

25 And Peterka provides some

1 background on that in paragraph 104; gives
2 example uses, including a Table Number 1 where
3 he shows all kinds of variations of different
4 keys and how you can distribute the keys.

5 That's a lot of moving parts
6 that -- that actually fall out of scope for my
7 observations on Peterka.

8 And the reason I say that is --
9 to get around to answer your question, Peterka
10 tells us there's a lot of variations and
11 differences between the two.

12 But importantly -- and I'm going
13 to a particular paragraph in my declaration.
14 Yes, I found it.

15 So paragraph 51, where I explain
16 that [as read]:

17 "Peterka teaches that
18 each key, along with
19 information about the key, is
20 distributed to a client device
21 in an entitlement control
22 message."

23 So that's the basic delivery
24 mechanism for content keys that we've been
25 talking about.

1 But it goes on to say [as read]:
2 "or an entitlement
3 management message."

4 And I cite to where Peterka
5 teaches these things.

6 And I make the point that
7 [as read]:

8 "While Peterka teaches
9 generally that EMMs and ECMs
10 perform different types of
11 messaging, Peterka also
12 discloses they can perform
13 similar messaging."

14 And I cite to where these
15 other -- these similar messaging episodes or
16 examples exist.

17 And thus -- and thus, I guess,
18 the point is that he uses them sometimes
19 interchangeably.

20 So the answer to your question
21 depends on context when you ask what the
22 difference is.

23 104 -- paragraph 104 shows
24 exemplary differences, but there are other
25 places in the specification that show they can

1 both deliver content keys, which is why, in
2 various places in my declaration, you'll find
3 me saying something is being delivered or a key
4 is delivered by an EMC/EMM or ECM or EMM.

5 Because in cases where Peterka
6 doesn't disclose necessarily a difference
7 between them and uses them interchangeably, I'm
8 only recognizing that.

9 Long story short is that for my
10 purposes of my invalidity analysis, I don't
11 distinguish between them.

12 Q. Okay. So going to paragraph 79, you
13 say that [as read]:

14 "Figure 7B shows two
15 content keys CK0 and CK1
16 distributed in separate ECMs
17 for each request received."

18 Right?

19 A. Correct.

20 Q. And so what you're saying is that in
21 Peterka two separate requests are made. And
22 for each of those two requests, one ECM is
23 sent. And one of the two ECMs has CK0, and the
24 other of the two ECMs has CK1.

25 Is that all right?

1 A. No.

2 ATTORNEY SARWAR: Objection as
3 to form.

4 THE WITNESS: What I'm
5 demonstrating here is it says, for each
6 request, Figure 7B shows two content keys,
7 CK0 and CK1, distributed in separate ECMS
8 for each singular request received during
9 the free preview period.

10 I believe your question suggests
11 that it takes two requests to get those.
12 But, no, each request from a client
13 results in receiving, according to
14 Figure 7B, two ECMS and thus two content
15 keys.

16 BY ATTORNEY NOROOZI:

17 Q. Are the two ECMS provided at the same
18 time or at different times?

19 ATTORNEY SARWAR: Objection as
20 to scope.

21 THE WITNESS: Well, they're
22 received one after the other from a single
23 request.

24 BY ATTORNEY NOROOZI:

25 Q. What is a multicast message?

1 A. Related to an earlier discussion we
2 had about multicast -- multicasting,
3 multicasting is comprised of a series of
4 concatenated multicast messages.

5 So you can -- as an implementer,
6 you can choose to implement multicast messages
7 to be short or long or very long. It's really
8 up to the designer.

9 But it's the -- it's a result of
10 the packetization that -- that happens when you
11 follow the multicast protocol.

12 Q. So the multicast messages are like
13 the actual payload content that is being
14 streamed from the server in a broadcast-type
15 format?

16 A. That's fair. And it's often called a
17 packet.

18 Q. In Peterka, do the multicast messages
19 go chronologically, one segment at a time?

20 ATTORNEY SARWAR: Objection as
21 to form.

22 THE WITNESS: Well, you're
23 mixing apples and oranges in the question
24 because there's no direct relationship
25 between a multicast message or packet and

1 a -- and a segment of programming content.

2 They're both conceptually
3 concatenated series of packets. You can
4 think about segments one after another as
5 well as multicast messaging as being one
6 after another.

7 The multicast packet or
8 messaging is -- is what carries the
9 content segments, if you will. But it may
10 take multiple multicast packets to carry a
11 program segment if the program segment is
12 long, for example.

13 BY ATTORNEY NOROOZI:

14 Q. What defines a segment in Peterka?

15 A. Peterka doesn't definitively
16 constrain or limit, as I -- as I -- as I
17 recollect. You can see that in Figure 7B there
18 on page 42 of my declaration.

19 The colors blue, red, and yellow
20 are exemplary of segments. And you can see
21 there are different lengths.

22 So you could have -- as an
23 implementer, you can choose to have segments
24 that are all the same size, or you may choose
25 to consider them different sizes.

1 Q. But what in Peterka makes one segment
2 versus another segment?

3 How is a segment defined as its
4 own segment as opposed to just being the same
5 as any other segment?

6 ATTORNEY SARWAR: Objection as
7 to form.

8 THE WITNESS: Let me see if he
9 provides any color to that.

10 I'm not seeing any constraint
11 disclosed in Peterka that responds to your
12 question.

13 BY ATTORNEY NOROOZI:

14 Q. Do you see, on paragraph 80, Peterka
15 says [as read]:

16 "For a quasi-PBT
17 approach, a caching server may
18 divide the content into pay
19 segments and assign segment
20 keys to them"?

21 A. I see that.

22 Q. What do you understand that to mean?

23 A. In conjunction with the following
24 sentence, it says [as read]:

25 "All consumer computers

1 will negotiate a key for each
2 segment."

3 This is an example of one
4 encryption -- one encryption and decryption key
5 per segment of content.

6 Q. And so what do you understand all
7 that to mean?

8 A. That the -- since this is part of the
9 pay-by-time or PBT approach, that content --
10 that a consumer would be purchasing access to
11 segments of content, that they pay for -- for
12 the number of -- for each segment or a number
13 of segments that they -- that they consume.

14 And that in terms of key
15 management, that Peterka is disclosing here
16 that each segment that a consumer pays for and
17 consumes or gets access to would have its own
18 specific encryption and decryption key.

19 Q. Is it fair to say that in Peterka
20 segments are purchasable units of content,
21 whether defined by time or otherwise?

22 ATTORNEY SARWAR: Objection as
23 to scope.

24 THE WITNESS: It's certain --
25 the pay-by-time feature certainly operates

1 that way.

2 BY ATTORNEY NOROOZI:

3 Q. Do you see at paragraph 99 that
4 Peterka says [as read]:

5 "A program segment key is
6 used to divide a single
7 program event or an entire
8 service into purchasable
9 segments"?

10 A. I do see that.

11 Q. Does that confirm for you that in
12 Peterka "segments" refer to purchasable units
13 of content?

14 A. Under the pay-by-time embodiment or
15 feature, yes, that's what Peterka teaches.

16 But if you're not operating in a
17 pay-by-time, then it may be that the entire
18 program is available for free or for purchase.

19 In fact, it even says that this
20 key -- under paragraph 99 [as read]:

21 "This key is used to
22 divide a single program event
23 or an entire service into
24 purchasable segments."

25 So one key could be used for the

1 whole thing.

2 ATTORNEY NOROOZI: Let's take a
3 break.

4 - - -

5 (Whereupon, a short recess was
6 taken.)

7 - - -

8 BY ATTORNEY NOROOZI:

9 Q. Mr. Wechselberger, turning to
10 Limitation 1B on page 45 of your declaration?

11 A. Okay.

12 Q. What do you understand "parsing" to
13 mean, as used in Limitation 1B?

14 A. As I explain in paragraph 83, at the
15 bottom [as read]:

16 "A POSITA would have
17 recognized that the client
18 parses the ECMs or EMMs to
19 distinguish among data
20 included in the response."

21 So I've used the synonym
22 "distinguish" here to describe what I think the
23 word "parsing" means in that element.

24 Q. Can you explain, from the sort of
25 computer science and data processing

1 standpoint, how parsing is achieved in a -- in
2 a system such as the one recited by
3 Limitation 1B?

4 A. Sure. I've personally been involved
5 in designing systems that do just that, using
6 EMMs and ECMs.

7 They typically contain a number
8 of data fields. And an ECM and EMM is a
9 message, a message container, I called it
10 earlier.

11 So having received the device --
12 having received the container, just beginning
13 payload and an end, to access and use the
14 information contained within the -- carried by
15 the container, you have to somehow take it
16 apart. And -- and in order to, in this case,
17 access specific keys, you have to distinguish
18 the key from other information that might be
19 there.

20 And that's why I chose the word
21 "distinguish."

22 And that's, indeed, what the
23 '178 patent describes by using the word
24 "parsing." Because, in this case, the response
25 contains information: content encryption keys,

1 key identifiers, content encryption key
2 expiration times.

3 Those are all different
4 parameters, and you need to distinguish between
5 them in order to put them to use.

6 Q. Once a system has parsed out
7 information like the content encryption key
8 identifier or the content encryption key
9 expiration time, is it then aware of the sort
10 of substance of that information?

11 ATTORNEY SARWAR: Objection as
12 to form.

13 THE WITNESS: If the system is
14 going to be operable in a useful way, I
15 would answer that question yes.

16 I mean, there's no sense in
17 parsing or distinguishing the data if
18 you're not going to -- I forget the exact
19 word you used -- but if you're not going
20 to be aware of it.

21 BY ATTORNEY NOROOZI:

22 Q. In Peterka's system, once the ECMs or
23 EMMs have been parsed to distinguish, for
24 example, the content encryption key expiration
25 times, does Peterka's system, at that point,

1 know what the content key expiration times are
2 for each key?

3 ATTORNEY SARWAR: Objection as
4 to form.

5 THE WITNESS: Yes, it will.
6 Because Peterka explains that that
7 information is part of what's delivered in
8 the ECM, along with the key.

9 BY ATTORNEY NOROOZI:

10 Q. Now, starting on page 46 of your
11 declaration and paragraph 86, you start to
12 discuss content encryption keys, right?

13 A. I do, yes.

14 Q. And in paragraph 87, you refer to
15 Peterka's content keys or CKs as the content
16 encryption keys of your theory.

17 Fair?

18 A. Fair.

19 Q. Peterka teaches other types of keys,
20 such as segment keys and program segment keys,
21 for example, right?

22 A. Yes. I point it out -- I think it
23 was paragraph 104 that contains the tables with
24 a whole bunch of different kinds of keys. It
25 was paragraph 104 of Peterka.

1 Q. So if you look at paragraphs 95
2 through 103, you will see that Peterka
3 identifies a number of different kinds of keys.

4 Do you see that?

5 A. I do.

6 Q. Only Peterka's content keys are the
7 content encryption keys of your theory.

8 Fair?

9 ATTORNEY SARWAR: Objection.

10 Form.

11 THE WITNESS: Repeat the
12 question, please.

13 BY ATTORNEY NOROOZI:

14 Q. Only Peterka's content keys are the
15 content encryption keys of your theory, right?

16 ATTORNEY SARWAR: Objection.

17 Form.

18 THE WITNESS: That's correct.
19 That was sufficient to support my opinions
20 of invalidity.

21 BY ATTORNEY NOROOZI:

22 Q. In paragraph 91, you're discussing
23 content encryption key identifiers, as -- as
24 you believe they're taught in Peterka, right?

25 A. Correct.

1 Q. You refer to the sequence number or
2 time stamp that is provided in an ECM or EMM,
3 correct?

4 A. Correct.

5 Q. You don't identify a teaching in
6 Peterka in which a sequence number or a time
7 stamp is ascribed to a particular content key,
8 right?

9 ATTORNEY SARWAR: Objection.
10 Form.

11 THE WITNESS: Explain what you
12 mean by "ascribed to," quote/unquote.

13 BY ATTORNEY NOROOZI:

14 Q. For example, you don't identify any
15 sort of data field in Peterka that ties a
16 particular sequence number or a particular time
17 stamp to a particular key, right?

18 A. Well, the fact that there's a unique
19 time stamp or sequence number tied to the ECM
20 or EMM and there's only one key carried by that
21 ECM or EMM, as I say at the end of paragraph 91
22 [as read]:

23 "The sequence number or
24 time stamp each constitute a
25 unique content key identifier

1 because it can be used to
2 uniquely identify the key that
3 was in the ECM or EMM."

4 Q. You see you say it can be used to
5 uniquely identify the key?

6 A. I do.

7 Q. Do you have any evidence from Peterka
8 that Peterka actually uses a sequence number or
9 a time stamp to uniquely identify any key?

10 A. Well, a person of ordinary skill
11 reading Peterka would understand that keys need
12 to be identified somehow.

13 And Peterka discloses enough
14 information that a POSITA would understand that
15 that could be done using the ECM's sequence
16 number or time stamp or the CK0, CK1, or CK2
17 identifiers that Peterka teaches about in
18 Figure 7B.

19 Ultimately and importantly, the
20 POSITA would understand that since multiple
21 keys are delivered for each program segment
22 request and in that multiple keys are delivered
23 in at least two ECMs, when those ECMs are
24 parsed or the information is distinguished so
25 it could be used, the ECMs, they're gone at

1 that point. All you're left with is the data
2 that was there. And if you've got two keys
3 there, you're going to need to identify them to
4 know which key to use when.

5 And anybody who has worked with
6 crypto-based content information distribution
7 systems, that's fundamental. We all understand
8 that.

9 So, yes, you have to have a key
10 identifier or Peterka's fundamentally broken.
11 And he gives us lots of information to
12 understand, if you want to implement his
13 system, what you could use as a key identifier.

14 Q. In paragraph 97, you cite to Peterka
15 at paragraphs 106 and 105 with respect to key
16 expiration times.

17 Do you see that?

18 A. I do.

19 Q. In Peterka, how is the expiration
20 time of a key decided?

21 ATTORNEY SARWAR: Objection.
22 Form.

23 THE WITNESS: I don't recall if
24 Peterka actually discloses how it's
25 decided.

1 It's -- it certainly discloses
2 that it -- it's a parameter that exists
3 and is carried by the ECM or EMM. And he
4 describes that it's a period or a duration
5 that the key is valid.

6 But I don't think that he
7 discloses anything in particular about
8 what -- about how that's decided.

9 And, you know, it's intuitive.
10 And, certainly, in the embodiment where
11 there's one key per program segment, the
12 key lifetime would be equivalent to the
13 time duration of that segment, for
14 example.

15 BY ATTORNEY NOROOZI:

16 Q. In Peterka, each ECM containing a key
17 and associated information is sent at a
18 different time, right?

19 A. That question took a while to come
20 out.

21 Could you read it back to me all
22 at once, please?

23 Q. In Peterka, each ECM containing a key
24 and associated information is sent at a
25 different time, right?

1 A. Well, just thinking about the physics
2 of the situation, you can't send them at the
3 same time because you've only got one delivery
4 channel.

5 So as I said earlier, they're
6 sent one after the other from a single request.
7 And so depending on how tightly you're
8 decomposing finite time instances, you could
9 say they're sent together or you could say one
10 after the other.

11 But they're going to be at least
12 separated in time by how long it takes to
13 transmit these two message containers.

14 Q. So I want to get kind of a
15 conceptional understanding at a high level for
16 a moment.

17 I believe you're saying that in
18 Peterka a client makes a media content request
19 and, in response, gets a series of ECMs over
20 time, each of which contains a key and
21 associated expiration times, right?

22 A. Agreed.

23 Q. In that scenario, the client already
24 has the next key before the current key
25 expires, right?

1 A. That's -- yes, that's the rationale
2 for sending more than one key. Precisely that.

3 Q. And the client is not making a
4 request for the next key beyond the initial
5 request that was just made for the media
6 content in the beginning, right?

7 A. Break the question down. I didn't
8 understand it.

9 Q. Since the client in Peterka receives
10 multiple ECMs with multiple keys and responds
11 to its request for media, the client in
12 Peterka, in that scenario, is not making a
13 further request for a next key based on the
14 expiration time of the current key, right?

15 ATTORNEY SARWAR: Objection as
16 to form.

17 THE WITNESS: Peterka tells us
18 enough about the key expiration times,
19 that we understand that the client device
20 monitors time as it evolves with an eye on
21 knowing when that key lifespan is going to
22 approach zero.

23 We know that that client has to
24 request a key before it drops to zero. If
25 it's -- you know, if -- at any point in

1 time, when the system is operated
2 correctly, it will have that next key
3 already because it got it from its
4 previous request.

5 So maybe the best way to look at
6 that is in that color-coding that I've
7 associated with Figure 7B that we looked
8 at earlier. You can see that there's a
9 series of requests that have occurred and
10 a series of responses that are always
11 delivering the current and the next key
12 such that you never run into a situation
13 where the client is starved for having
14 access to the -- to the current and next
15 valid key, I think is the best way to
16 answer your question.

17 And to maintain a clean record,
18 I'll punctuate that last answer by just
19 looking at paragraph 97, where, in fact, I
20 said in a short series of words what I
21 explained [as read]:

22 "Under the pull model,
23 each client keeps tracks of
24 the keys and their expiration
25 times and actively requests

1 new keys before the current
2 keys expire."

3 BY ATTORNEY NOROOZI:

4 Q. Yeah. And that's what I want to
5 understand better.

6 Because if multiple ECMs are
7 sent in response to the initial media playback
8 request, then the client already has the next
9 set of keys, so then why would it actively
10 request new keys that it already has?

11 That's what I'm trying to
12 understand.

13 ATTORNEY SARWAR: Objection as
14 to form.

15 THE WITNESS: So I think I can
16 better answer -- if you're still -- if my
17 previous answer wasn't sufficient.

18 I have a handy picture
19 associated with Claim 6, which is on
20 page 94, showing that series of
21 segments -- program segments playing out
22 over time -- 1, 2, 3, 4 -- and the current
23 content keys associated therewith -- CK1,
24 2, 3, 4 -- explaining in paragraph 143
25 that the client acquires CK2 during

1 Segment 1. It has to ask for that key,
2 and it will get CK1 and CK2.

3 And then -- oh, yeah. There's
4 that same quotation [as read]:

5 "A client 'actively
6 requests new keys before the
7 current keys expire.' A
8 client later acquires CK3
9 during Segment 2. This is
10 after CK1 but before CK2
11 expires."

12 So you can see an ongoing
13 process where the client takes care of
14 itself by actively requesting new keys
15 before the current keys expires.

16 That way it always has, staged
17 and ready to go, the new key or following
18 key when any given key expires.

19 BY ATTORNEY NOROOZI:

20 Q. So when Peterka does the request for
21 media, you get a response that provides one key
22 or multiple successive keys?

23 A. Peterka teaches --

24 ATTORNEY SARWAR: Objection as
25 to form.

1 THE WITNESS: Peterka teaches
2 that it always received two keys, current
3 and next.

4 BY ATTORNEY NOROOZI:

5 Q. What are manifest files?

6 A. Manifest files become the -- that
7 term has become a term of art in more modern
8 streaming systems that have built-in
9 flexibility for various ways of manipulating
10 and delivering the streams.

11 Manifest file is a way to
12 inform, in a general sense, in a client server
13 situation -- which would include the
14 multi-class environment we're talking about --
15 is a way for the content sources -- source or
16 sources -- excuse me -- to provide the client
17 devices with information they need to know how
18 to properly decode and present the information.

19 Typical motivations for
20 delivering manifest files are for providing
21 content at different quality levels or encoding
22 levels or at different bit rates. And these
23 types of features have become commonplace in
24 modern systems.

25 And so the manifest file concept

1 has become the understood go-to way, if you
2 will, to provide clients with critical
3 information.

4 In the Peterka case, we know
5 that either the server or the client can
6 request or command that content streams of
7 different bit rates can happen. That's one of
8 the ways that Peterka implements the
9 pay-by-quality higher bit stream. Higher bit
10 rate can give you a higher quality, for
11 example.

12 So we know that Peterka has
13 these moving parts and these variable
14 capability. And a manifest file would be the
15 first thing a person of ordinary skill in the
16 art would think about in Peterka to allow this
17 client or the server to do what Peterka
18 expressly disclosed it can do.

19 Q. Is it known -- withdrawn.

20 Was it known at the time of
21 Peterka to be able to deliver variable bit rate
22 content without the use of manifest files?

23 A. I don't know how you can do that.

24 Now, there's various kinds of
25 manifest files. Some complex, some very

1 simple.

2 But if the bit rate or the
3 quality level is going to change, that
4 information needs to be provided to the client,
5 especially true where the client is the
6 motivator for asking for that to happen. The
7 server has to respond somehow.

8 And the manifest file is the
9 term of art that people understand -- persons
10 of ordinary skill in the art would understand
11 is the way you provide those kinds of features.

12 Q. Are manifest files packaged within
13 the content that is sent to the client itself,
14 or are they separate and distinct from the
15 content?

16 A. They can -- conceptually, you can
17 implement systems in both fashions, depending
18 on the kind of network or environment you're
19 in.

20 Most likely, in a broadcast or
21 multicast-type environment where you have one
22 delivery channel, it's going to be, you know,
23 embedded with the content.

24 Q. In Peterka, what is the content
25 delivery server that is required by

1 Limitation 1C?

2 A. I think I answered that or respond to
3 that in paragraph 102 of my declaration
4 [as read]:

5 "Peterka discloses a
6 client device retrieving
7 content from a content
8 delivery server (for example,
9 origin server 108, content
10 exchange 116, or a caching
11 server)."

12 A direct citation from Peterka
13 then follows [as read]:

14 "A particular client
15 computer 112 is shown
16 interacting with the active
17 directory 104 to select a
18 content object" -- that's
19 content or segment, if you
20 will -- "for downloading. The
21 origin servers 108 determine
22 the preferred source to direct
23 the client computers in order
24 to download content objects.
25 That source can be origin

1 process 108 itself or one of
2 the content exchanges 116."

3 Q. In Peterka, what is the server or
4 what are the servers that send the ECMs and/or
5 EMMs to the client?

6 ATTORNEY SARWAR: Objection as
7 to form.

8 THE WITNESS: The answer to that
9 can be found under my discussion of Claim
10 Element 1E.

11 In particular, that section
12 discusses how Peterka discloses issuing
13 requests to a key distribution server.

14 That's in paragraph 119.

15 BY ATTORNEY NOROOZI:

16 Q. So to be clear, in Peterka, the ECM
17 or EMM containing the content key and the
18 expiration times comes from the key
19 distribution server to the client?

20 A. Yes.

21 Q. Do you have -- withdrawn.

22 And in paragraph 119 of your
23 declaration, you cite to Peterka at
24 paragraph 110 in support of that position?

25 A. Yes.

1 Q. In Peterka -- withdrawn.

2 Going back to Limitation 1C, on
3 page 56 of your declaration, where do you
4 explain what aspect of Peterka teaches,
5 quote/unquote, retrieving the content of the
6 manifest files as required by Limitation 1C?

7 A. So paragraph 102 covers the
8 retrieving content aspect of your question.

9 Q. Well, let me just interject if I
10 could.

11 What aspect of paragraph 102
12 relates to the actual act of retrieving itself
13 rather than just obtaining?

14 ATTORNEY SARWAR: Objection as
15 to form.

16 THE WITNESS: Well, we've
17 established so far that clients request
18 access to content segments. That would
19 be -- the request is the first part of --
20 results in the client retrieving. You can
21 almost say they're synonymous.

22 If a client requests access to a
23 content segment, it's going out and
24 retrieving that. It's the server's job to
25 respond to the request, allowing the

1 content to retrieve or access the content.

2 BY ATTORNEY NOROOZI:

3 Q. Turning to Limitation 1D on page 67
4 of your declaration.

5 A. Okay. I'm there.

6 Q. Okay. For purposes of your opinion,
7 what is a content encryption key rotation
8 boundary, as recited in Limitation 1D?

9 A. Well, I actually began to address how
10 that should be understood by citing to the '178
11 specification itself, stating that [as read]:

12 "The '178 specification
13 indicates that for a series of
14 media segments that encrypted
15 by successive encryption keys,
16 'key rotation boundaries'
17 occur when a new key is
18 required to decrypt a
19 segment."

20 Exactly the same thing happens
21 in Peterka. Between segments, we've
22 established that at least Peterka teaches that
23 segments can be encrypted using different
24 content keys -- content keys.

25 At the segment boundaries, keys

1 have changed. And so that would be a key -- in
2 the '178 patent, that's called a key rotation.

3 So Petr Peterka, Mr. Peterka,
4 does the same thing.

5 Q. So let me disaggregate, though, your
6 opinions about Peterka and your opinions about
7 the meaning of the claim terms.

8 Fair enough?

9 A. Okay.

10 Q. Yeah. So for purposes of
11 Limitation 1D, you understand "content
12 encryption key rotation boundary" to mean the
13 place at which a new key is required to decrypt
14 a segment regardless of whether the key change
15 is due to normal period-based key expiration or
16 due to some other reason, as you say in
17 paragraph 111.

18 Fair?

19 ATTORNEY SARWAR: Objection to
20 form.

21 THE WITNESS: Fair.

22 BY ATTORNEY NOROOZI:

23 Q. So the boundary is the place in time
24 at which one key needs to be changed for
25 another key.

1 Fair?

2 ATTORNEY SARWAR: Objection to
3 form.

4 THE WITNESS: Fair.

5 BY ATTORNEY NOROOZI:

6 Q. What is your understanding of the
7 words "between periods of use of different
8 content encryption keys," as recited in
9 Limitation 1D?

10 A. Those are a lot of words which simply
11 mean the period when key N is being used versus
12 the period after that when key N2 is used.

13 Those are periods of different
14 content encryption -- periods of use of
15 different content encryption keys.

16 Q. Okay. So I want to make sure I
17 really understand your interpretation of the
18 "between periods of use" language of
19 Limitation 1D.

20 So could you give me an example
21 of what it means, in your opinion, based on the
22 figure that you've drawn for Claim 6 on
23 page 94? Or is that not possible?

24 ATTORNEY SARWAR: Objection as
25 to form.

1 THE WITNESS: I think it's
2 possible.

3 If you could repeat the question
4 again.

5 BY ATTORNEY NOROOZI:

6 Q. Yeah.

7 Using the figure that you have
8 created on page 94 of your declaration, could
9 you explain to me how you understand the
10 language "between periods of use," as recited
11 in Limitation 1D?

12 A. Segment 1 is a period of use of
13 Content Key CK1. Segment 2 is a period of use
14 of Content Key CK2, et cetera.

15 Q. And then so what would be between
16 periods of use?

17 A. Well, that phrase you asked about
18 doesn't exist in isolation.

19 Claim 1D says [as read]:

20 "Detecting content
21 encryption key rotation
22 boundaries between periods of
23 use of different content
24 encryption keys."

25 So the boundary in the figure is

1 the vertical red line.

2 "Between periods of different
3 use" is -- are the periods that I just pointed
4 out earlier, Segment 1 and Segment 2.

5 Q. So if I'm understanding correctly,
6 you understand Limitation 1D to mean that the
7 content encryption key rotation boundaries
8 themselves define the periods of use of
9 different content encryption keys.

10 Fair?

11 ATTORNEY SARWAR: Objection as
12 to form.

13 THE WITNESS: Ask the question
14 again, please.

15 BY ATTORNEY NOROOZI:

16 Q. Sure.

17 Do you understand Limitation 1D
18 to mean that it is the content encryption key
19 rotation boundaries that define the periods of
20 use of different content encryption keys?

21 ATTORNEY SARWAR: Same
22 objection. Form.

23 THE WITNESS: I'm not
24 understanding the question.

25 1D is very simple. There's a

1 rotation boundary that exists between
2 segments when different keys are used.

3 And all 1D is asking for -- all
4 1D requires is that you find out where
5 that rotation is between two segments.

6 BY ATTORNEY NOROOZI:

7 Q. Well, but key rotation boundaries for
8 purposes of Claim 1 don't have to be at segment
9 boundaries, right?

10 A. I'll agree with that.

11 Q. So "between periods of use of
12 different content encryption keys" in Claim 1D
13 is referring to the rotation boundaries of the
14 content keys.

15 Fair?

16 A. It's referring to one -- one key is
17 rotated to the next key, and that's called a
18 boundary.

19 Q. Now, what is your understanding --
20 withdrawn.

21 Have you -- have you come across
22 the concept of detecting or detection in your
23 work in the field of encryption and decryption
24 prior to this matter?

25 A. Yes.

1 Q. What is your general understanding of
2 what "detecting" means in the context of
3 encryption and decryption systems?

4 A. As it pertains to key rotation?

5 Q. No. Just -- well, withdrawn.

6 Do you think that there's a
7 different meaning for the term "detecting" when
8 it applies to key rotation than when it applies
9 in other contexts in encryption and decryption
10 system?

11 ATTORNEY SARWAR: Objection as
12 to form and scope.

13 THE WITNESS: Well, I think the
14 question -- that hypothetical question
15 serves no purpose here because, outside of
16 a specific context, I don't really have a
17 strong -- any opinion of what "detection"
18 or "detecting" might mean.

19 And you just said it's with
20 respect to general crypto distribution
21 systems. I don't know what that -- I
22 don't know what the question means.

23 BY ATTORNEY NOROOZI:

24 Q. Okay. So you don't have a
25 generalized understanding of the term

1 "detecting," as it's used, let's say, in the
2 field of computer science, without seeing it
3 used in a particular context?

4 A. I think that's fair. The word is
5 very broad and lacking context. More
6 definitively than in just computer science
7 doesn't really narrow the context usefully.

8 Q. And with respect to your time-based
9 theory, can you explain how you understand the
10 detecting requirement of Limitation 1D to be
11 met in the context of time-based rotation
12 boundaries?

13 ATTORNEY SARWAR: Objection as
14 to form.

15 THE WITNESS: What do you mean
16 by "time-based"?

17 BY ATTORNEY NOROOZI:

18 Q. So what I really should say is
19 timer-based or expiration-time-based.

20 Does that clarify?

21 A. Yeah. And so, for example, you're
22 referring to Peterka's -- I assume you're
23 referring to Peterka's expiration times that
24 are delivered in ECMs as time-based?

25 Q. For example, yes.

1 So you have a theory that those
2 expiration times map onto the detecting
3 requirement of Limitation 1D.

4 And I'm asking if you can
5 articulate for me what is the relationship
6 between those expiration times and detecting,
7 as that term is required under 1D.

8 A. Sure.

9 ATTORNEY SARWAR: Objection to
10 the form.

11 THE WITNESS: I discuss that
12 beginning of paragraph 112 in my
13 declaration [as read]:

14 "Peterka discloses a pull
15 model for key distribution, in
16 which 'each client keeps track
17 of the keys and their
18 expiration times and actively
19 requests new keys before the
20 current keys expire.'"

21 I go on at the top of page 71
22 [as read]:

23 "Peterka clients 'can
24 monitor'" -- oh.

25 "Peterka discloses that

1 clients 'can monitor,' for
2 example, 'the expiration time
3 of the program segment key and
4 send an individual key update
5 request before the key
6 expires.'"

7 So Peterka is disclosing here
8 content devices configured to detect by
9 monitoring upcoming content key rotation
10 boundaries. And since those boundaries
11 exist between periods of use of different
12 keys, then Peterka reads on the claim
13 element.

14 BY ATTORNEY NOROOZI:

15 Q. What is the aspect of Peterka's
16 teaching that you contend constitutes
17 detection?

18 A. Monitoring the expiration time of the
19 program segment key.

20 Q. So the act of monitoring is what
21 constitutes detection for purposes of your
22 theory?

23 A. Sure. The '178 patent uses "detect"
24 or "detection" in checking for that function.
25 And in my opinion, the monitoring process that

1 Peterka talks about is included in checking or
2 detecting.

3 Q. Is monitoring, in your opinion,
4 different than checking?

5 A. No, at least not in Peterka context.

6 Again, everything is in context
7 here.

8 Q. In paragraph 113, you say [as read]:

9 "These detected
10 boundaries are boundaries that
11 occur between periods of use
12 of different content
13 encryption keys, as claimed,
14 because the different content
15 encryption keys are used to
16 encrypt different media
17 segments."

18 What does that mean?

19 A. It means what it says.

20 It means that there are periods
21 of use of different content encryption keys in
22 Peterka that are associated with segments --
23 contiguous segments using different content
24 keys.

25 And the point between where one

1 key is used and the new -- and the following
2 key is used is a boundary, as claimed. And
3 those are detected in Peterka by virtue of what
4 Peterka discloses about monitoring the
5 expiration time of the key.

6 ATTORNEY NOROOZI: Let's take a
7 break.

8 - - -

9 (Whereupon, a short recess was
10 taken.)

11 - - -

12 BY ATTORNEY NOROOZI:

13 Q. Mr. Wechselberger, for purposes of
14 Limitation 1E, issuing requests, what is it in
15 Peterka that you contend constitutes issuing
16 the requests recited in 1E?

17 A. Okay. I just got to 1E.

18 What was the question again,
19 please?

20 Q. What is it in Peterka that you
21 contend constitutes issuing requests, as
22 required under 1E?

23 A. As I explain at the top of page 81
24 [as read]:

25 "Under the pull model,

1 each client keeps track of the
2 keys and their expiration
3 times and actively requests
4 new keys before the current
5 keys expire so as to avoid
6 service interruptions."

7 Also in 119, paragraph, citing
8 from Peterka -- Peterka's paragraph 110
9 [as read]:

10 "Under a pull key
11 distribution model, each
12 client requests" -- there's
13 that word again -- "a new key
14 and is individually responded
15 to by the key distribution
16 server."

17 Q. Is the request that you're relying on
18 for 1E the same as or different than the
19 request that you're relying on for 1A?

20 A. I would say it can be the same
21 request, but the claim doesn't actually require
22 it to be the same.

23 Q. Well, I'm talking about for purposes
24 of what you rely on in Peterka.

25 Do you rely on the same request

1 in Peterka to meet 1A and 1E, or do you rely on
2 different requests?

3 A. To the extent they're what Peterka
4 discloses -- well, first and fundamentally, I
5 rely on what Peterka discloses.

6 And with respect to 1A, Peterka,
7 under the pay-by-time embodiment, states that
8 [as read]:

9 "When the client
10 negotiates encryption keys
11 with the caching server, it
12 will start receiving segments
13 of content from an ongoing
14 show."

15 But it's negotiating with a --
16 it says [as read]:

17 "negotiates encryption
18 keys with the caching server."

19 More specifically, by the time
20 we get to Element 1E, which specifically
21 requires that the request go to a -- request go
22 to a license server, Peterka also discloses
23 that, although he calls it a key distribution
24 server.

25 So both elements are met by

1 Peterka, and I'm relying on what he discloses.

2 So you can imagine Peterka doing
3 that with the same request or different
4 requests.

5 Q. The caching server in Peterka is
6 different than the key distribution server,
7 right?

8 A. I don't specifically remember those
9 kinds of details. Let me see.

10 So the caching server -- I'm
11 looking at the description about that in
12 Figure 19 on page 11 of Peterka [as read]:

13 "The caching server
14 processor 1912 can be utilized
15 in this multicast environment
16 to store copy of the program
17 content that originated on the
18 origin content server."

19 So the caching server certainly
20 is a source of the content itself.

21 So as to the -- your question in
22 the key distribution server, that may well be
23 part of the caching server.

24 Let me look at what Peterka
25 tells us about that.

1 Certainly different -- your --
2 specific to your question, there is a key --
3 Peterka explicitly discloses that it's the key
4 distribution server that the clients issued
5 repeated requests to.

6 And so that function is
7 certainly different than the caching server
8 which distributes content. But he's a little
9 blurry as to whether those need to be distinct
10 or different.

11 Certainly, the functionalities
12 that are described in Peterka are different.
13 Whether the actual embodiments of the computers
14 that do it are physically different, I don't
15 necessarily find where that's disclosed.

16 Q. Let me turn to your Ground 2 based on
17 Peterka and Suzuki, which starts at page 104.

18 A. I'm there.

19 Q. In paragraph 160, you seem to say
20 that for Claim 1 the only aspect of Ground 2
21 that is different than Ground 1 is what you
22 rely on for the key identifiers in Element 1B.

23 Fair?

24 ATTORNEY SARWAR: Objection as
25 to form.

1 THE WITNESS: Well, the sentence
2 opens with [as read]:

3 "To the extent encryption
4 key 'identifier's recited in
5 Element 1B or the timing
6 requirements for
7 'prefetching.'"

8 BY ATTORNEY NOROOZI:

9 Q. But that's for Claims 4 to 6, right?

10 A. Okay. What was the question --
11 excuse me. What was the question again?

12 Q. Yeah. So just for Claim 1, the only
13 difference in your theory between Ground 1 and
14 Ground 2 relates to what you rely on for key
15 identifiers, right?

16 A. Yes. I believe that's correct.

17 Q. And then turning to Ground 3, on
18 page 117, you rely on Peterka and Bocharov
19 simply with respect to the manifest files
20 requirement of limitation of Claim 1, right?

21 ATTORNEY SARWAR: Objection as
22 to form.

23 ATTORNEY NOROOZI: Withdrawn.

24 BY ATTORNEY NOROOZI:

25 Q. I recognize you rely on

1 Peterka-Bocharov in Ground 3 for various
2 claims.

3 With respect to Claim 1
4 specifically, you're relying on the combination
5 of Peterka and Bocharov for the manifest files
6 requirement of Claim 1, right?

7 A. Yes.

8 Q. And then in Ground 4, you modify your
9 Peterka-Suzuki combination from Ground 2 to
10 further include the manifest files teaching of
11 Bocharov with respect to Claim 1, right?

12 ATTORNEY SARWAR: Objection as
13 to form.

14 THE WITNESS: Repeat the
15 question, please.

16 BY ATTORNEY NOROOZI:

17 Q. In Ground 4, you further modify your
18 Peterka-Suzuki combination from Ground 2 to
19 further rely on the manifest files teachings of
20 Bocharov, right?

21 A. Correct.

22 ATTORNEY SARWAR: Same
23 objection.

24 ATTORNEY NOROOZI: Why don't we
25 take a lunch break. I know it's only been

1 about half an hour, but I think we all
2 will need a lunch break at some point.

3 Are you comfortable with that?

4 THE WITNESS: Yes, the witness
5 is.

6 - - -

7 (Whereupon, a lunch recess was
8 taken.)

9 - - -

10 BY ATTORNEY NOROOZI:

11 Q. Mr. Wechselberger, in Peterka, the
12 ECM and EMM messages themselves don't contain
13 the payload content, so to speak, like the
14 media content, right?

15 A. Correct.

16 Q. In Peterka, the ECM and/or EMM
17 messages come separately from the content
18 itself, right?

19 ATTORNEY SARWAR: Objection as
20 to form.

21 THE WITNESS: They're part of
22 the same information data stream that's
23 delivering the content segments, but
24 they're a distinctly different type of
25 packet than the content segments.

1 But they can be -- point is,
2 they're all embedded in the data stream,
3 but they -- they're not considered part of
4 the multicast packet that's delivering the
5 content segments.

6 Although they can be packaged
7 into a different multicast packet, as
8 disclosed by Peterka. They can be
9 collected and put into a multicast packet
10 of their own for purposes of delivery.

11 BY ATTORNEY NOROOZI:

12 Q. What do you mean "they can be
13 collected and put into a multicast packet of
14 their own"?

15 Are you referring to the ECM and
16 EMM messages?

17 A. Yes.

18 Q. But they would still then --
19 withdrawn.

20 But the ECM and EMM messages,
21 even in that scenario, would still be separate
22 from the content payload itself, right?

23 ATTORNEY SARWAR: Objection as
24 to form.

25 THE WITNESS: I think your

1 answer -- I think I agree with your
2 question -- or with the way you placed
3 your question.

4 The ECM, entitlement management
5 message, is its own message. A multicast
6 packet that carries content is itself its
7 own message, its own packet.

8 ATTORNEY NOROOZI: Okay. No
9 further questions at this time.

10 ATTORNEY SARWAR: Can I take,
11 say, 15 minutes or so to review my notes
12 before we come back on the record?

13 ATTORNEY NOROOZI: Sure.

14 ATTORNEY SARWAR: All right.
15 Thanks, guys.

16 - - -

17 (Whereupon, a short recess was
18 taken.)

19 - - -

20 ATTORNEY SARWAR: I have a short
21 redirect.

22 - - -

23 E X A M I N A T I O N

24 - - -

25

1 BY ATTORNEY SARWAR:

2 Q. Good afternoon, Mr. Wechselberger.

3 A. Good afternoon.

4 Q. All right. Do you recall being asked
5 about servers in the context of Limitation 1A?

6 A. Yes.

7 Q. Can we turn to page 39 of your
8 declaration.

9 ATTORNEY NOROOZI: Objection.

10 Form.

11 Can we clarify? Are you talking
12 about the -- yeah, you're talking about
13 the -03 proceeding, right?

14 ATTORNEY SARWAR: Yes.

15 ATTORNEY NOROOZI: Okay.

16 ATTORNEY SARWAR: That's right.
17 The declaration that we're talking about
18 is the one that we've been discussing
19 today.

20 ATTORNEY NOROOZI: Understood.

21 ATTORNEY SARWAR: Exhibit 1003
22 from the -003 proceeding?

23 THE WITNESS: I'm on page 39.

24 BY ATTORNEY SARWAR:

25 Q. Okay. Thank you.

1 Does Limitation 1A recite any
2 particular server to which a media playback
3 request is sent?

4 A. No, it does not.

5 Q. Does Limitation 1A recite any
6 particular server from which a media
7 playback -- sorry -- playback request response
8 is received?

9 A. No, it does not.

10 Q. In your opinion, does Claim 1 require
11 the media playback request in Limitation 1A to
12 be the same requests that are recited in
13 Limitation 1E?

14 A. No. And I believe I testified to
15 that effect at one instant in time earlier.

16 But to clarify, there doesn't
17 need to be a match between those two.

18 Q. Do you recall being asked about
19 paragraph 86 of your declaration?

20 A. That's the paragraph that begins the
21 discussion about content encryption keys?

22 Yes, I recall being asked about
23 that.

24 Q. Can we turn to page 47, which is
25 the -- which sort of has the tail end of

1 paragraph 86.

2 A. I'm looking at it, yes.

3 Q. All right. Do you recall being
4 told -- told, in paragraph 86 of your
5 declaration, on page 47, you refer to package
6 content encrypted by different ones of the
7 content encryption keys in Peterka?

8 ATTORNEY NOROOZI: Objection.
9 Form.

10 THE WITNESS: I remembered that
11 there was a discussion about that
12 particular citation and whether it was
13 suggested or not that it was applied to
14 Peterka. My declaration makes it clear
15 that it does not.

16 It identifies that as coming
17 from the '178 patent. At the bottom of
18 page 46 begins the entire citation, and
19 it's -- it's coming from the '178 patent.

20 BY ATTORNEY SARWAR:

21 Q. Okay. So "different ones of the
22 content encryption keys," that language is not
23 from Peterka, right?

24 A. Correct.

25 Q. In the context of paragraph 79 of

1 your declaration -- and that's on -- it starts
2 on page 42.

3 A. I'm there.

4 Q. And regarding Peterka Figure 7B, do
5 you recall being asked whether ECMs are
6 provided at the same time or different times?

7 A. Yes.

8 Q. Do you recall testifying that they
9 are received one after another in response to a
10 single request?

11 A. Yes. That's what -- that was my
12 testimony.

13 Q. Is it your opinion that different
14 parts of a single response can be provided at
15 different times?

16 ATTORNEY NOROOZI: Objection.
17 Leading.

18 THE WITNESS: Repeat the
19 question, please.

20 BY ATTORNEY SARWAR:

21 Q. Is it your opinion that different
22 parts of a single response can be provided at
23 different times?

24 ATTORNEY NOROOZI: Objection.
25 Leading.

1 THE WITNESS: Well, yes. And we
2 actually touched upon this line of
3 questioning a couple times in separate
4 periods earlier today.

5 In the first time, I talked
6 about describing an ECM coming one after
7 another. And then in the second period, I
8 remember saying you couldn't -- literally,
9 the physics of the matter didn't let you
10 deliver them at the same instant in time;
11 you've got to have time for the first one
12 to come in and the second one to come in.

13 I didn't really understand what
14 the question was getting at. But, anyway,
15 I -- I -- that's what I testified about
16 earlier.

17 BY ATTORNEY SARWAR:

18 Q. Okay. Can you turn to paragraph 81,
19 starting on page 44.

20 A. I'm there.

21 Q. Do you see here your statement
22 regarding packaging multiple ECMs or EMMs into
23 a single combined multicast message?

24 A. Yes. That's another way that Peterka
25 suggests is a more efficient way of

1 distributing the information.

2 Q. In that scenario, the combined
3 message, are the multiple ECMs or EMMs in the
4 message provided at the same time or different
5 times?

6 A. Well, they're in the same message, so
7 they're provided at the same time within that
8 multicast message.

9 Q. Okay. And in that scenario, would
10 each ECM containing a key and associated --
11 scratch that. I'm going to try again.

12 In that scenario, would each ECM
13 containing a key and associated information be
14 sent at the same time or different times?

15 A. Well, the same time. It's the same
16 message.

17 Q. Okay. Do you recall being asked
18 about why a client would ask for a key that it
19 already has?

20 A. Yes.

21 Q. And do you recall testifying that
22 Peterka teaches that it always receives two
23 keys, current and next?

24 ATTORNEY NOROOZI: Objection.

25 Leading.

1 THE WITNESS: I think I said
2 something to that effect, yes.

3 BY ATTORNEY SARWAR:

4 Q. Do you recall whether you discuss the
5 concept of current and next keys in your
6 declaration?

7 A. I'm sure I did multiple times.

8 Q. Okay. Let's turn, as an example, to
9 paragraph 52, starting on page 26. And that
10 paragraph goes on to page 27 as well.

11 A. Okay. Let me quickly review.

12 Okay.

13 Q. On page 27, do you see there it says
14 a -- there's a parenthetical that says
15 [as read]:

16 "e.g., for the current
17 and next media segment"?

18 A. Yeah. Second line, I see that.

19 Q. What's the significance of the "e.g."
20 in that parenthetical?

21 A. Well, that just means "for example,"
22 the current and next media segment. But it's
23 not limiting.

24 Q. Do you recall whether or not Peterka
25 ever suggests a client acquiring keys for

1 multiple future media segments instead of just
2 one?

3 A. Ground 5 brings in two later
4 references that teach different ways of
5 assigning key identifiers, for example,
6 Peterka 308, I recall, for multiple media
7 segments.

8 I've already forgotten the
9 question, but I'm going to go to Ground 5.

10 Q. Well, let's turn to paragraph 209.

11 A. Okay. I'm there.

12 Q. Starting on page 135.

13 A. I'm there.

14 Q. All right. Do you see that it says
15 there "multiple future segments"?

16 A. Oh, in paragraph 209 [as read]:

17 "Peterka teaches a
18 'signaling method to indicate
19 the implementation of a new
20 key,' suggesting a client
21 acquiring keys for multiple
22 future segments and selecting
23 the correct key from among
24 multiple keys in its
25 possession using multi-bit

1 signals embedded in streaming
2 media packets."

3 Q. Okay. Can you --

4 A. Yes.

5 Q. -- explain what you mean by -- oh,
6 sorry. I didn't mean to interrupt you.

7 A. Oh, that's fine. Thank you. I'm
8 done.

9 Q. Can you explain what you mean by
10 "multiple future segments" there?

11 A. Yeah. Beginning four lines down, I
12 cite from Peterka paragraph 117 where it's
13 disclosed [as read]:

14 "If a single bit is
15 used..."

16 And then Peterka goes on to
17 embellish what the single bit could happen.

18 But the point I'm making in --
19 by bolding and underlining the word "if" single
20 bit is used, it also suggests using more than a
21 single bit.

22 Single bit tells you to use
23 kaarb or one or two or the current or the next.
24 But if you have a multiple-bit code in there,
25 you have the ability to point to any number of

1 keys.

2 A 4-bit code, for example, could
3 allow you to point to any of one of 16 keys.
4 So I'm making the point that Peterka suggests
5 that more than a single bit can be used, and
6 you can do fancier things with it.

7 ATTORNEY SARWAR: No further
8 questions from me.

9 - - -

10 E X A M I N A T I O N

11 - - -

12 BY ATTORNEY NOROOZI:

13 Q. Mr. Wechselberger, did you discuss
14 any of your anticipated redirect testimony with
15 counsel prior to the beginning of the
16 testimony?

17 ATTORNEY SARWAR: I'll just --
18 before you answer, I'll caution the
19 witness not to delve into any privileged
20 communications.

21 But you can answer.

22 THE WITNESS: We had a brief
23 phone call where Mr. Sarwar indicated that
24 he had three or four, I think you guys
25 call them, modules to -- and be ready to

1 respond to those during redirect.

2 BY ATTORNEY NOROOZI:

3 Q. And did the two of you go into the
4 substance of what those questions would be?

5 A. We discussed them generally.

6 Q. A single bit can only identify two
7 options.

8 Fair?

9 A. Let's see what Peterka says about
10 that.

11 Q. Well, I just want to be clear. I'm
12 asking about the concept of a single bit.

13 A. I hear the question.

14 Yeah, Peterka discloses pretty
15 much exactly what I just said.

16 As an example -- this is Peterka
17 [as read]:

18 "If a single bit is used,
19 one could be used to indicate
20 the current content key
21 already in use, whereas zero
22 could be used to indicate that
23 the new content key should be
24 used."

25 Q. So do you agree that a single bit can

1 only identify one of two options?

2 A. In the concept of that specific
3 Peterka disclosure, he's telling us what to do
4 with the single bit, the current key or the
5 next key.

6 Q. So I just want to make sure, for the
7 record, that there's no ambiguity.

8 You agree that in Peterka a
9 teaching with respect to a single bit can only
10 identify one of two possible options.

11 Fair?

12 A. As Peterka teaches it, that's fair.

13 ATTORNEY NOROOZI: No further
14 questions.

15 THE COURT REPORTER: Mr. Sarwar,
16 you would like an immediate rough draft
17 and then regular two-week final?

18 ATTORNEY SARWAR: Yes.

19

20 - - -

21 (Whereupon, the deposition
22 was concluded at 4:05 p.m.)

23 - - -

24

25

1 CERTIFICATE

2 I HEREBY CERTIFY that the
3 proceedings, evidence and objections are
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6 deposition of ANTHONY J. WECHSELBERGER taken
7 on 5/29/25 and that this is a true and
8 correct transcript of same.

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14 Jennifer Miller, RMR, CCR, CRR
15 and Notary Public
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CASE: GOOGLE LLC and LENOVO INC. vs. ERICSSON AB
DATE: MAY 29, 2025
WITNESS: ANTHONY J. WECHSELBERGER REF: 10779

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ANTHONY J. WECHSELBERGER

Subscribed and sworn to before me
this ____ day of _____, 20__.

Notary Public

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