

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

FORD MOTOR COMPANY,

Petitioner,

v.

NEO WIRELESS LLC,

Patent Owner

IPR2023-00763

Patent 10,447,450 B2

VIDEOCONFERENCE DEPOSITION OF

TODOR COOKLEV, Ph.D.

TAKEN ON APRIL 23, 2025

Magna Job No.: 1315417

Reported by: Kimberly Crane, CSR No. 11594, RPR, CLR

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

3
4 FORD MOTOR COMPANY,
5 Petitioner,

6 v.

7 NEO WIRELESS LLC,
8 Patent Owner

9 -----
10 IPR2023-00763

11 Patent 10,447,450 B2
12 -----
13
14
15
16
17

18 REMOTE VIDEOCONFERENCE DEPOSITION OF
19 TODOR COOKLEV, Ph.D., who was, at the time of this
20 proceeding, located in Fort Wayne, Indiana, taken on
21 behalf of the Patent Owner, commencing at 9:03 a.m.
22 and ending at 11:30 a.m. (Pacific Time) on Wednesday,
23 April 23, 2025, before KIMBERLY CRANE, CSR NO. 11594,
24 in and for the State of California and Registered
25 Professional Reporter.

1 A P P E A R A N C E S

2 ON BEHALF OF THE PATENT OWNER:

3 LOWENSTEIN & WEATHERWAX, LLP

4 BY: PARHAM HENDIFAR, ESQ.

5 1016 Pico Boulevard

6 Santa Monica, California 90405

7 (310) 307-4514

8 hendifar@lowensteinweatherwax.com

9 (Via Videoconference)

10

ON BEHALF OF PETITIONER:

11

BROOKS KUSHMAN

12 BY: JOHN LeROY, ESQ.

13 150 West Second Street

14 Suite 400N

15 Royal Oak, Michigan 48067

16 (248) 226-2928

17 jleroy@brookskushman.com

18 (Via Videoconference)

19

20

21

22

23

24

25

1 I N D E X

2	EXAMINATION OF TODOR COOKLEV, Ph.D.	PAGE
3	BY MR. HENDIFAR	5, 59
4	BY MR. LEROY	53, 64

5

6 E X H I B I T S

7	EXHIBIT	DESCRIPTION	PAGE
8	Exhibit 1035	Web Archive Declaration of Mina Ching from InternetArchive.org	54
9			
10	Exhibit 1036	2006 ITU Seminar Index Source	58

11

12

13 PREVIOUSLY MARKED AND REFERENCED

14	EXHIBIT	DESCRIPTION	PAGE
15	Exhibit 1023	Soon Young Yoon Presentation, Introduction to WiBro Technology dated 9/10/2004	13
16			
17	Exhibit 1031	Second Declaration of Todor Cooklev, Ph.D.	8

18

19

20

21

22

23

24

25

1 WEDNESDAY, APRIL 23, 2025;

2 9:03 A.M.

3 -000-

4

5 THE COURT REPORTER: For the record, my name
6 is Kim Crane. I am a California certified shorthand
7 reporter. My CSR number 11594.

8

9 TODOR COOKLEV, Ph.D.,

10 called as a witness on behalf of the Patent Owner,
11 having been first duly sworn, testified as follows:

12

13 EXAMINATION

14 BY MR. HENDIFAR:

15 Q. Good morning, Doctor -- or good afternoon,
16 Dr. Cooklev.

17 A. Good morning.

18 Q. Thank you for your time today. So I will
19 not bore you. We had a first deposition in this IPR,
20 and by "this IPR" I refer to IPR 2023-00763.

21 Do you recall that deposition?

22 A. I do.

23 Q. Do you recall --

24 A. Not everything but -- not everything, but I
25 do recall that we -- that I was deposed.

1 Q. And do you recall that at the beginning of
2 that deposition I explained to you the rules and
3 procedures for an IPR deposition?

4 A. I do.

5 Q. Do you have any questions about the rules
6 and procedures of -- of an IPR deposition such as the
7 one today?

8 A. No.

9 Q. Are there any reasons why you may not be
10 able to provide your best testimony today?

11 A. No.

12 Q. Okay. What did you do to prepare for
13 today's deposition?

14 A. I reviewed the -- several documents. I
15 reviewed the second declaration that I submitted. I
16 also reviewed the deposition transcript of the -- my
17 first deposition in this IPR. And I reviewed the
18 patent owner response. I reviewed Park, the
19 U.S. patent application. Also I took a look at the
20 '450 patent.

21 Oh, yes. I reviewed -- I mean, obviously,
22 some docu- -- not at the same level of detail, but
23 also Exhibit 2027, which I think is a -- is a paper.
24 Also Exhibit 1023, which is a presentation. I think
25 a presentation by a person from Samsung on WiBro.

1 And I think that's about -- that that's -- I also
2 had -- I also had a couple of meetings with counsel.

3 Q. Thank you very much.

4 In preparation for today's deposition, did
5 you review any documents that are not of record in
6 this IPR?

7 A. I assume that the record includes all
8 documents cited so far.

9 Q. I withdraw my question. Let me be more
10 accurate. I appreciate that.

11 Did you review -- well, in preparation for
12 today's deposition, did you review any documents that
13 were not cited in either the first or the second
14 declaration you have submitted?

15 A. I don't think so. None come to my mind.
16 And just it's -- it's -- I mean, this is some
17 likelihood I've looked at something but I don't -- I
18 don't remember.

19 Q. Did you conduct a Google search?

20 A. No. Not -- at least not recently.

21 Q. You mentioned that in preparation for
22 today's deposition you also had one or more meetings
23 with counsel.

24 Did I understand that correctly?

25 A. Yes.

1 Q. How many hours approximately did you meet
2 with counsel in preparation for today's deposition?

3 A. Two and a half hours, approximately. Maybe
4 a few minutes more, but something like that.

5 Q. You have submitted a second declaration in
6 this IPR, correct?

7 A. Yes.

8 (Exhibit 1301 was previously marked and
9 identified for the record.)

10 BY MR. HENDIFAR:

11 Q. And that's Exhibit 1031. I can put it in
12 the Chatbox, or do you have access to a clean copy of
13 Exhibit 1031, your second declaration?

14 A. You know, I don't.

15 Q. I can put it --

16 A. They're relatively short. I -- I will
17 use -- I will use whatever you provide.

18 Q. Sure. Give me a moment, please.

19 So the reason I ask is during the course of
20 this deposition, if at any point you need to refer to
21 your declaration or any other document, let me know
22 and I would be happy to put it in the Chatbox for
23 you.

24 A. Okay. Thank you.

25 Q. Thank you.

1 So when I refer to your second declaration,
2 I will be referring to the Exhibit 1031 that is filed
3 in this matter as your second declaration.

4 Did you draft your second declaration?

5 A. I think, to a large extent, yes.

6 Q. Did you determine what specific arguments to
7 respond to from patent owner's response?

8 A. Excuse me. I did not understand.

9 Q. Did you -- well, the patent owner response
10 presented an area of arguments in this IPR, correct?

11 A. Yes.

12 Q. And you reviewed the patent owner response
13 and the cited exhibits, as you have testified,
14 correct?

15 A. Yes.

16 Q. Did you determine which specific arguments
17 raised by patent owner to respond to in your second
18 declaration?

19 A. I think -- I think I did, yes.

20 I mean, if the question is whether I did it,
21 I think I would answer in the affirmative, yes.

22 Q. And what criteria did you use to determine
23 which of patent owner's arguments to respond to and
24 which one not to respond to?

25 A. I can't say that -- I can't say that it was

1 ever my intention to respond to some and not respond
2 to other arguments. I reviewed the patent owner
3 response in -- when I was working on the declaration
4 before -- before there was a draft even. I reviewed
5 the patent owner response, and I think my intention
6 was, and I think is, to respond to all arguments
7 raised in the patent owner response that, in my
8 opinion, are misleading and that -- that requires
9 some -- that require a response.

10 So that was my -- my intention. If I have
11 not -- and I think I responded in -- I think I've
12 responded to essentially all of the arguments. Maybe
13 I did not quote every -- every statement that --
14 in -- in my declaration, but essentially, as far as
15 the arguments, I think I responded to essentially
16 all. And if I did not respond to an argument, I
17 mean, maybe we can talk about it.

18 But generally, it doesn't mean that I --
19 that I am in agreement with the sentence even if I
20 did not respond to a sentence. I mean, that's -- I'm
21 giving you a general idea of -- of the process.

22 Q. Thank you.

23 Sitting here now, are you aware of any
24 argument in the patent owner's response or supporting
25 exhibits that you disagree with but that you have not

1 addressed in your second declaration?

2 A. Well, it's a -- it's a -- to the extent this
3 is a little bit of an open-ended question, or it's
4 asking me based on my memory to just say, well, is
5 there, to the extent that I did not respond to
6 something in the patent, or the response doesn't mean
7 that I -- or am I aware of something, I think in --
8 in principal, or essentially, I'm not aware right
9 now.

10 But -- and again, even if the -- even if
11 there is something if I have missed to respond to a
12 detail, it doesn't mean that -- in general, it
13 doesn't mean that I agree. So it's a little
14 difficult for me to answer just to give a yes or no
15 to somewhat of an open-ended question.

16 Q. When you drafted your second declaration, it
17 was your intention to point out all of your
18 disagreements with patent owner's arguments, correct?

19 A. Generally, yes. To the extent that it's
20 appropriate, obviously, for a -- for a technical
21 expert to respond.

22 Q. Of course.

23 To your knowledge, you did your best to
24 present all of your opinions -- strike that.

25 So, to your knowledge, you did your best to

1 present all of your disagreements with the patent
2 owner arguments in your second declaration, correct?

3 A. It was not my intention to leave something
4 out. And in this sense, I think the patent owner
5 response repeats not just twice, it repeats at least
6 one argument a number of times. I may not have
7 responded to every instance when that argument was
8 repeated in the patent owner response.

9 And, I mean, that argument is the -- that
10 the fixed versus mobile, the argument that, according
11 to the patent owner response, Park does not apply to
12 mobile subscribers. And that's stated in a number of
13 times and maybe in a few different ways. I may not
14 have -- as I said, may not have responded to every
15 instance every time it's repeated, but I think I
16 have -- overall, I have provided the response to that
17 argument.

18 Q. Thank you.

19 In either of your declarations, you have not
20 proposed a construction for the term "mobile device";
21 is that right?

22 A. I don't think I proposed a construction.

23 Q. Is it, therefore, accurate to say that you
24 have applied the plain and ordinary meaning of
25 "mobile device" in your analysis?

1 A. In the context of the '450 patent, yes.

2 Q. You also rely on Exhibit 1023, as you
3 mentioned, correct?

4 A. I mean, overall, as far as the declaration,
5 yes, I did.

6 (Exhibit 1023 was previously marked and
7 identified.)

8 BY MR. HENDIFAR:

9 Q. And you testified that Exhibit 1023 was a
10 PowerPoint presentation by a Samsung employee.

11 Did I understand you correctly?

12 A. I think I've -- I think that's correct. And
13 I -- I think the number 1023 is correct as far as the
14 exhibit numbers.

15 Q. Did you personally attend the presentation
16 where Exhibit 1023 was presented?

17 A. No, I was not at that meeting in Korea.

18 Q. Are you aware of the purpose of that
19 presentation?

20 A. Well, it's a -- it's a technical meeting or
21 a conference sponsored by the International
22 Telecommunications Union. And from the program of
23 that meeting, we see several -- we see a number of
24 presentations on related topics. I think the -- the
25 purpose is to tell first the attendees and -- but

1 also to tell basically the whole world about WiBro.

2 Q. Was Samsung -- sorry. What -- strike that.

3 What was Samsung's role in developing WiBro?

4 A. So first I would say, obviously, it's been
5 many years since the days of WiBro. I think
6 Samsung's role was, in short, very substantial.
7 Again, I think very substantial is -- is accurate
8 that -- Samsung was more than just a leading company
9 behind WiBro. It would not have happened without
10 Samsung.

11 Q. How so?

12 A. And here, I am -- this is largely from my
13 knowledge around that time. I'm not sure that there
14 was another vendor of WiBro equipment. I think the
15 plans, at least plans -- and I haven't -- obviously
16 haven't followed how everything evolved, but the
17 plans were for Samsung to provide the equipment and
18 maybe Korea Telecom or -- as far as I remember, to
19 provide the service.

20 Q. Are you aware if at the presentation where
21 Samsung employees presented Exhibit 1023, any Samsung
22 products were also presented?

23 A. I am not -- if the question is if I am
24 aware, I am not aware of something like that.

25 Q. When was the WiBro standard finalized?

1 A. So here is what I think the -- a little more
2 complete answer is. You refer to WiBro as a
3 standard, and I think that is -- I actually think
4 that's accurate. We can refer to WiBro as a
5 standard.

6 And I think this question also is, if I may,
7 so it's a little bit related to a question that
8 perhaps I was asked last time if I have seen a draft
9 of WiBro, and I'm not sure that -- I am not sure that
10 there was a Korean document that is, like, formally
11 the WiBro standard. I'm not sure that there was.

12 And you asked me when was it finalized.
13 That was the question. I am not sure that it went --
14 it went through a formal process. As I -- I think
15 I've already testified that WiBro essentially took
16 draft 2.0 of 802.16e. And maybe that was the only
17 draft of WiBro.

18 So when I said I haven't seen a WiBro
19 standard, I haven't seen a Korean document, but maybe
20 draft 2.0 is the only -- again, the only document and
21 the only version of WiBro. So beyond that, I'm not
22 sure.

23 And there is -- if I can say, there is a
24 little bit of a technical reason why. As I said,
25 Samsung may have been and probably was the -- pretty

1 much the only vendor of WiBro equipment. And maybe
2 some companies, some other companies were involved
3 with certain -- well, they were contributing certain
4 technology, but overall Samsung was perhaps the only
5 company providing WiBro equipment.

6 And when you hear of one company with that
7 dominant market share, either dominant or perhaps
8 even the only company, then whatever interoperability
9 issues and -- Samsung could have resolved those on
10 their own and maybe a formal process where they
11 revise standards and -- revise the standard and --
12 and write out the documents and then test and so on,
13 a lot of that process, it's possible to simplify it.

14 So that is what I think about when was WiBro
15 finalized.

16 Q. How much of the details of the WiBro
17 standard is Samsung proprietary information?

18 MR. LeROY: I am sorry. I was on mute.
19 Objection to form.

20 THE WITNESS: It's a little bit misleading.
21 As I said, draft 2.0 of 802.16e -- proprietary
22 information, you said, Samsung proprietary
23 information. What is considered proprietary
24 information?

25 BY MR. HENDIFAR:

1 Q. Let me rephrase the question then.

2 You testified that you don't know, if I
3 understood you correctly, how the WiBro standard
4 developed beyond its template 802.16 draft 2.

5 Did I understand you correctly?

6 A. Pretty much. I -- I just didn't say
7 template. I mean, draft 2.0 was a reasonable draft.

8 Q. Okay. Why is it that you don't know how the
9 WiBro standard developed beyond the 802.16e draft 2?

10 MR. LeROY: Objection to form.

11 THE WITNESS: Well, why is it that I don't
12 know? I wasn't doing technology development
13 specifically focused on WiBro. I think that's a big
14 reason why. Maybe I could have found some more
15 details if I was more involved.

16 BY MR. HENDIFAR:

17 Q. You mentioned that there has been, quote,
18 many days since the days of WiBro. Is it the case
19 that WiBro is no longer in existence?

20 A. I think to the way that I understand the
21 question, first, I have not analyzed this question,
22 just to clarify. However, if I have to guess, I
23 would say it's probably no longer in existence.

24 Q. And do you have any estimate as to what year
25 approximately WiBro ceased to exist?

1 MR. LeROY: Objection to the form of the
2 question.

3 THE WITNESS: Excuse me?

4 BY MR. HENDIFAR:

5 Q. Sure. Do you have a year estimate --

6 A. Oh, a year.

7 Q. -- of approximately when WiBro ceased to
8 exist?

9 A. No, I don't.

10 Q. In connection with your reply declaration
11 for today's deposition, did you search in an attempt
12 to obtain a copy of the WiBro standard?

13 A. No, I did not do that.

14 Q. Why not?

15 A. Well, I think the documents that are part of
16 the record are sufficient for me to be able to
17 make -- to provide opinions, as I did in my second
18 declaration, for example.

19 Q. Do you know what changes the WiBro standard
20 made to the 802.16e draft 2?

21 A. So if -- I think the -- if I may say again,
22 the question to some extent can be misleading. And
23 maybe I can explain why. And perhaps even the
24 premise of the question, any changes -- I mean, I'm
25 not sure that it tried to make any changes. So, but

1 there is -- maybe draft 2.0 became the WiBro
2 standard, and that's it.

3 Q. Why does --

4 A. To the extent -- well, we -- I think saying
5 that draft 2.0 became the WiBro standard is -- I
6 think that is correct.

7 Now, to the extent -- so I -- sometimes it
8 becomes also clear that we have standards, but then
9 when it's the time for interoperability testing and
10 certification, then there is some additional work and
11 there are some -- and it could be some documents.
12 There could be some documents, how to resolve some
13 interoperability issues that may arise as a result of
14 implementation of a standard.

15 And to the extent -- so to the extent such
16 issues did arise when Samsung tried to implement
17 draft 2.0 -- and probably there were, there are
18 always some issues. To the extent they could have
19 figured that out on their own, they didn't need
20 multiple companies to be involved.

21 But as far as a standard, these issues are
22 often resolved separately from a standard. Many of
23 these issues, they -- it's very difficult to be
24 anticipated by the standard. So when the standard
25 gets written, it's very difficult to anticipate and

1 prevent all of the -- all of the issues in -- as I
2 said, as far as interoperability.

3 So to the extent these issues arise, they
4 could have figured them out. And so the draft 2.0
5 is -- I think it's appropriate to call that the WiBro
6 standard.

7 Q. So it's your testimony that the WiBro system
8 you have relied upon in your declarations was the
9 802.16e draft 2 standard with no modifications?

10 MR. LeROY: Objection to form.

11 THE WITNESS: I'm relying on Park, and Park
12 says its invention can be applied to WiBro. I think
13 that's what I base my declaration on.

14 BY MR. HENDIFAR:

15 Q. In your second declaration, you discuss
16 WiBro at length in multiple paragraphs; is that
17 correct?

18 A. Well, I mentioned WiBro, yes. I mentioned
19 WiBro.

20 Q. You also discuss WiBro in your first
21 declaration at length, correct?

22 A. I mean, it's -- I do mention WiBro, yes.

23 Q. Okay. When you refer to WiBro in your
24 second declaration, do you believe that that WiBro is
25 802.16e draft 2 standard with no modifications?

1 MR. LeROY: Objection. Form.

2 THE WITNESS: I don't think that was
3 necessary. When I mention WiBro in both
4 declarations, I'm relying on documents that are part
5 of the record. And first I'm relying on -- so I'm
6 relying on 1023 as a description of WiBro.

7 I think it's -- I am also relying on
8 Exhibit 2027, which is technical paper and is
9 consistent with -- it's consistent with what Park
10 says about WiBro and what -- consistent with 1023.
11 And -- and that's what I'm relying on. And I am also
12 relying on my knowledge.

13 But, as I said, it's undisputed, I think --
14 I think both parties agree that WiBro was a system
15 for mobile communications.

16 BY MR. HENDIFAR:

17 Q. Well, thank you for that explanation, but
18 that was not responsive to my question.

19 My question was, when you explain WiBro in
20 your two declarations, by WiBro do you believe that
21 that was the 802.16e draft 2 standard with no
22 modifications?

23 MR. LeROY: Objection to the form of the
24 question.

25 THE WITNESS: When I discussed WiBro --

1 BY MR. HENDIFAR:

2 Q. Let me strike that question. Let me
3 rephrase the question.

4 In your first declaration, you state:
5 "WiBro was a South Korean mobile wireless service
6 designed to provide wireless broadband access."

7 Do you have any knowledge as to whether
8 WiBro as a South Korean mobile wireless service made
9 any changes to the 802.16e draft 2 standard?

10 A. When WiBro -- do I have knowledge whether
11 WiBro made changes to draft 2.0? First, I think the
12 answer that I gave is, I think it is the truthful
13 answer that when I refer to WiBro in my declarations,
14 I refer to WiBro as discussed in these documents that
15 are part of the record. And I don't think I've
16 provided an opinion whether WiBro made changes to
17 draft 2.0.

18 Q. So are you done?

19 A. I'm essentially done. I don't think I've
20 provided an opinion -- I was trying to recall based
21 on my personal knowledge some issues with draft 2.0
22 that I heard. But no, I'm not aware that WiBro did
23 something to draft -- to change something in
24 draft 2.0.

25 Q. After -- I know you provided a response. I

1 just want to make sure the record is clear and I
2 understood you correctly.

3 So sitting here now, you do not know whether
4 WiBro, the South Korean mobile wireless service
5 designed to provide wireless broadband access to
6 devices, did, in fact, make changes -- whether or not
7 it, in fact, made changes to the IEEE 802.16 draft 2
8 standard, correct?

9 A. I think that's -- that is correct.

10 Q. You mentioned that -- and I am quoting
11 you -- that plans were for Samsung to provide
12 equipment for WiBro.

13 Do you recall that testimony?

14 A. Yes.

15 Q. And did those plans ever materialize?

16 A. It's my understanding that, to some extent,
17 yes.

18 Q. And when you say "to some extent," what
19 extent were they materialized?

20 A. Well, it's my understanding that Samsung did
21 provide some equipment. Some equipment was fielded.
22 And is it Korea Telecom that's -- it's probably KT or
23 Korea Telecom offered service.

24 Now, how successful, for how long, I don't
25 know. But at least -- there was at least one moment

1 in time in which WiBro equipment developed by Samsung
2 was fielded in Korea.

3 Q. And what does it mean to be fielded? I'm
4 sorry. I just -- I just don't know that terminology.

5 A. Yeah, I think companies -- that may be a
6 more business term. It means that equipment was
7 built and users -- customers used that service.
8 There was a moment in time where certain customers
9 used that service. I think there was one big
10 political event in Korea, there was some sort of Asia
11 Pacific summit, and at that meeting, they
12 demonstrated WiBro equipment or something like that.
13 I've forgotten exactly the timing of it.

14 Q. Do you have an estimate?

15 A. Other than around either 2005, 2006.

16 Q. In your second declaration you also rely
17 upon Exhibit 1034, a Hungarian publication.

18 Do you recall that?

19 A. I do.

20 Q. Who found Exhibit 1034?

21 A. Oh, Exhibit -- that's a -- that is a Google
22 search.

23 Q. Right, but who found it?

24 Let me strike that. I don't want to
25 infringe on the attorney-client privilege.

1 Did you find Exhibit 1034?

2 A. Did I? That's possible. I don't remember
3 at the moment.

4 Q. Do you know the language of Exhibit 1034?

5 A. No, I don't know Hungarian.

6 Q. Okay. So what is -- well, what is the basis
7 of your testimony about Exhibit 1034 if you don't
8 know Hungarian?

9 A. Well, Exhibit 1034 -- and thank you. I
10 had -- I just forgot to mention that earlier. Well,
11 it refers -- it refers to that presentation on WiBro.
12 And I think Exhibit 1034 is dated sometime in 2005.
13 Was it August 2005, something like that. So, and it
14 refers to the presentation, meaning that presentation
15 was on ITU's website well before Exhibit 1034 was
16 published.

17 Q. Okay. Let's unpack that.

18 Did you read the article in Exhibit 1034
19 that cites Exhibit 1023?

20 A. I read only a few sentences.

21 Q. In Hungarian?

22 A. No. I mean, I tried to look at the few
23 sentences. That was -- so I didn't quite read them
24 but looked at the few sentences.

25 Q. Let me rephrase that.

1 Did you have access to an English
2 translation of Exhibit 1034 when you drafted your
3 second declaration?

4 A. No, I didn't.

5 Q. And you don't speak Hungarian, correct?

6 A. I don't speak Hungarian.

7 Q. So I understand -- I'm sure you understand
8 my question, how did you read a few sentences of
9 Exhibit 1034 if you do not speak Hungarian and you
10 did not have access to an English translation of that
11 exhibit?

12 A. Well, the -- only those sentences that I
13 think -- I did a search on WiMAX or something like
14 that, and so I came up with a couple of sentences.
15 That was all.

16 Q. Did you translate any specific sentences in
17 Exhibit 1034 into English?

18 A. No, I didn't. I mean, there is -- it
19 highlighted what I was -- as I said, the word that I
20 was searching. I didn't think I needed that.

21 Q. Okay. So maybe I should clarify my
22 question. How do you know that Exhibit 1034, when it
23 cites Exhibit 1023, it doesn't say "we stole
24 Exhibit 1023 from some secret archive in Korea"?

25 A. How do I know that this did not happen?

1 Q. How do you know Exhibit 1034 doesn't say
2 that about Exhibit 1023?

3 A. Well, I don't speak Hungarian, but that's
4 not how -- that's not how articles are written.
5 It's -- I have -- many, many years ago, I mean,
6 I've -- and a few times, I've read a publication
7 called Proceedings of -- was it Proceedings of the
8 Hungarian Academy of Sciences? But that was in
9 English many years ago. So I have some idea how they
10 write in Hungary. They don't write like that.

11 Q. But my question is you don't know the
12 circumstances around which Exhibit 1034 is citing
13 Exhibit 1023 beyond the fact that it's just citing
14 it, correct?

15 A. Excuse me. I don't know what?

16 Q. Sure. You don't know the context in which
17 Exhibit 1034 is citing Exhibit 1023 beyond the fact
18 that it's citing it, correct?

19 A. Well, that's -- that's -- I think that's a
20 little too strong. I know the article discusses
21 WiMAX, or, in other words, 802.16, and that's why
22 it's citing 1023.

23 Q. Do you know the proposition for which
24 Exhibit 1034 cites Exhibit 1023?

25 A. The proposition? No, I think -- I think

1 the -- I mean, it's an article that discusses closely
2 related technology. And I think this is -- a person
3 of skill would understand, yes, it's citing 1023
4 because it's -- it is relevant, the author thought
5 it's relevant, and I think that's all I needed.

6 Q. Again, I don't believe you answered my
7 specific question.

8 Do you know the proposition for which
9 Exhibit 1034 cites Exhibit 1023?

10 A. I don't understand what you mean by
11 "proposition."

12 Q. Okay. What is the purpose of citing an
13 article like Exhibit 23 -- let me step -- let me step
14 back.

15 Do you know the purpose of making citations
16 in a scholarly article?

17 A. I think I do.

18 Q. What is your understanding of the purpose of
19 citing articles in a scholarly publication?

20 A. There are -- let's say there are a couple
21 different types of scholarly articles, and one type
22 of scholarly article is that -- an article that
23 presents a novel idea. So when you have a very
24 developed a novel idea, a novel system, and then
25 you -- knowing one cites previous systems of which

1 the novel system is an improvement. One cites
2 articles that provide background as far as the theory
3 of operation. One cites articles which illustrate
4 the application of the novel system. As an example,
5 why is the work that was done significant.

6 Q. I understood. Let me then ask my question
7 in the context you explained to me.

8 Do you know what statement Exhibit 1034 is
9 trying to support when it cites Exhibit 1023?

10 A. You know, sitting here right now, I don't.
11 Maybe we can take a look at Exhibit 1034.

12 Q. I don't speak --

13 A. Excuse me?

14 Q. I don't speak Hungarian. I'm sorry.

15 A. But I mentioned several reasons why it's --
16 why a paper could be citing another paper or
17 presentation. And -- but for -- for my purpose, my
18 purpose was to illustrate the availability of
19 Exhibit 1023 before the priority date of the '450
20 patent. And for that purpose, it doesn't matter
21 which one of these reasons was.

22 Q. Claim 7 of the '450 patent recites the
23 segment comprising N time-frequency resource units.

24 Are you familiar with that limitation?

25 A. I am, yes.

1 Q. Based on the plain and ordinary meaning of
2 the limitation N time-frequency resource units, does
3 the claim require a plural number of time-frequency
4 resource units?

5 A. Can I -- maybe you -- did you upload some
6 documents in the Chat?

7 Q. Of course. What would you like?

8 A. Since we are talking about Claim 7 of the
9 '450 patent, if -- if I may look at that.

10 Q. Of course. I put it in the Chat.

11 A. And yes, I am looking at Claim 7. So what
12 is the -- the question is about these N
13 time-frequency resource units?

14 Q. Okay. So the question is, based on its
15 plain and ordinary meaning, does the limitation N
16 time-frequency resource units require a plural number
17 of time-frequency resource units?

18 A. I don't think so. I think as far as the --
19 the term "N time-frequency resource units," plural in
20 the sense of excluding one, excluding and equal to
21 one, I think a person of skill, when they read this,
22 they would include one. They would understand, well,
23 N could be 1. And in that case, you have one
24 time-frequency resource unit.

25 Q. When the limitation in Claim 7 says: "The

1 segment comprising N time-frequency resource units,"
2 what other elements can be contained in the segment
3 in addition to the time-frequency resource units?

4 MR. LeROY: Object to form.

5 THE WITNESS: Well, this is saying a segment
6 comprising N time-frequency resource units, and in
7 comprising, I think, is used in patent language to
8 denote that -- to mean that there could be other
9 things that are not mentioned. That's generally as
10 far as comprising. I don't see the claim
11 specifically mentioning something else.

12 BY MR. HENDIFAR:

13 Q. Right. But my question was -- and I agree
14 with you. My question was, as a technology expert,
15 obviously, as an expert in this field, are you able
16 to provide examples of elements other than the
17 N time-frequency resource units that might be
18 contained in a claim segment?

19 MR. LeROY: Objection to form.

20 THE WITNESS: Well, in the context of a
21 system. Not in the context of a patent, but in the
22 context of a given system, again, there may be
23 something. And I -- but I have not analyzed the
24 specific -- a concrete system just from Claim 7. The
25 Claim 7 doesn't say.

1 BY MR. HENDIFAR:

2 Q. Would -- could -- let me strike that.

3 Could a segment comprising N time-frequency
4 resource units also contain a portion for, for
5 example, control information?

6 A. I mean, I -- it's -- I think it requires a
7 more thorough analysis. It's -- I don't think I've
8 opined or -- I haven't made that analysis. So I'd
9 say I don't know.

10 Q. Claim 7 recites: "Receive a signal
11 containing information from the base station over a
12 segment of time-frequency resource."

13 Do you see that?

14 A. Yes.

15 Q. Other than the actual information data --
16 data that the user is going to receive, what other
17 information may be contained in the received segment
18 of time-frequency resource?

19 MR. LeROY: Objection to the form of the
20 question.

21 THE WITNESS: So other than information from
22 the base station?

23 BY MR. HENDIFAR:

24 Q. Maybe my question wasn't clear. The user
25 receives certain actual data such as a text message

1 or an email, so I don't know what the technical term
2 for the data is. Maybe you can guide me so I can use
3 the right terminology.

4 Payload, is that the right terminology?

5 A. Payload can be used.

6 Q. Do you have a preference?

7 A. User data -- user data is sometimes used.
8 Payload is used. Information is, I think, more
9 general.

10 Q. I see. So if I use "user data" to refer to
11 the actual data such as a text message, for instance,
12 intended for the user, so my question is, in Claim 7,
13 when the claim says: "Receive a signal containing
14 information from the base station over a segment of
15 time-frequency resource," other than user data, what
16 other information may be contained in the segment of
17 time-frequency resource received by the user?

18 MR. LeROY: Objection to the form of the
19 question.

20 THE WITNESS: And for the record, I am
21 looking at the specification now. If I may say that
22 what information other than user data could be here?
23 And if -- it seems to me is a question, if I may
24 said -- say then, that it's related to infringement.
25 And I really haven't -- I really haven't analyzed and

1 performed analysis to say, well, what information
2 other than user data. I -- I don't think I have
3 analyzed this.

4 MR. LeROY: And, Parham, I'm sorry. I
5 intended to object to the form of this last question.
6 I am sorry. I forgot if I captured the objection or
7 not.

8 BY MR. HENDIFAR:

9 Q. Dr. Cooklev, you recall you mentioned
10 information is broader than user data?

11 A. Yes.

12 Q. Can you give me examples of information --

13 A. Well, at least in some contexts it's broader
14 than user data.

15 Q. In the context of the '450 patent, do you
16 believe information is broader than user data?

17 MR. LeROY: Objection to the form of the
18 question.

19 THE WITNESS: I think quick analysis in the
20 sense you're asking me to provide an opinion that at
21 least I don't recall providing in the declaration.
22 It seems to me that -- here that information is
23 broader than user data.

24 BY MR. HENDIFAR:

25 Q. In your second declaration, you state: "I

1 construct examples of N equal 16 and N equal 3 that
2 achieve the same benefits."

3 Do you recall such statement?

4 A. Yes.

5 Q. What do you mean by "the same benefits"?

6 A. I mean, there were two benefits that I think
7 Dr. Albert tried to identify. That is what I meant
8 by same benefits.

9 Q. And would you be able to summarize those two
10 benefits that you believe Mr. Albert tried to explain
11 in his declaration?

12 A. Summarize.

13 Q. Or estimate.

14 A. Yes, I can -- I can talk about that.
15 It's -- it's -- I would ask for my declaration.

16 Q. Sure. I can put it in the Chatbox, not a
17 problem.

18 I have put Exhibit 1031 in the Chatbox.

19 And I was specifically reading from --
20 excuse me -- the last sentence in paragraph 35 of
21 your second declaration.

22 A. Yes. And I'm reviewing right now, I am
23 reviewing the preceding paragraph, 34. I will get to
24 35.

25 So, according to Dr. Albert, limiting N may

1 further reduce overhead by linking the segment size
2 to the modulation scheme. So that's -- that is the
3 first alleged benefit.

4 Second, limiting N may remedy the prior
5 art's irregular arrangement of segments.

6 And first, I know that the claim doesn't
7 include any benefits, so no benefits are part of the
8 claim. Now, first, as I note in my paragraph 34,
9 Dr. Albert doesn't explain well why. Why by limiting
10 N to 2, 4, or 8 may further reduce overhead by
11 linking the segment size to the modulation scheme,
12 that -- Dr. Albert doesn't explain that.

13 But I think -- I think this is incorrect,
14 that if you -- N is -- N is an integer and N would be
15 conveyed or communicated using a certain number of
16 bits. So N equal to 8 would require -- will require
17 4 bits. Because I think 3, if we include N equal to
18 0, with 3 bits the value 0 through 7 would be
19 communicated. And if we -- if we don't include 0,
20 and go from 1 through 8, then 3 bits would be
21 required.

22 And so if we reserve and not -- if the '450
23 patent reserves 3 bits to communicate N, then it's
24 not just 2, 4, or 8, it's -- it's all these -- all
25 the numbers from 1 through 8 can be communicated with

1 3 bits.

2 Q. Well --

3 A. It would be the same.

4 Q. Let me -- let me stop you there because I
5 want to make sure I understand your point.

6 If N is limited to 1, 2, 4, and 8, couldn't
7 that be communicated by just 2 bits since the options
8 are only four options?

9 A. Well, there are three options, right? 2, 4,
10 or 8, the three options.

11 Q. Even with 1, assuming even --

12 A. With 1. Okay.

13 Q. With or without, three or four options,
14 couldn't that be communicated with just 2 bits?

15 A. I think that's possible, yes. That is
16 possible. We can -- we can shave one bit off the
17 overhead. That's a good suggestion.

18 Q. I will patent that.

19 A. So we can -- we can use 2 bits. We can use
20 2 bits, but now is it -- you're saying do we include
21 1? We don't include 1?

22 Q. Well, that wouldn't matter because 2 bits
23 can cover three or four options.

24 A. Well, 2 bits covers exactly four options.

25 Q. Right. So even if your options are three or

1 four, you still have 2 bits, so I don't think it
2 matters.

3 A. Correct. That's correct. You still have 2
4 bits. And -- one second. So...

5 Q. I don't want to deviate from my original
6 question. The question was do you see the last
7 sentence in paragraph 35 where you say: "I construct
8 examples for N equal 16 and N equal 3 that achieve
9 the same benefit."

10 A. Yes.

11 Q. Okay. My confusion is, if you're able to
12 achieve the same benefits, there should be some
13 benefits for N equals 2, 4, and 8 that you're
14 replicating with other values of N.

15 Am I misunderstanding that?

16 A. Yes.

17 Q. I'm misunderstanding that?

18 A. No, no. You are not misunderstanding that
19 in the sense, the same benefits -- all right. Let's
20 take N equal to 3 and the first alleged benefit
21 linking the segment size to the modulation scheme.
22 Well, N equal to 3 does provide this benefit. It
23 links the segment size to the modulation scheme.

24 Q. With a different --

25 A. And the second alleged benefit, limiting N

1 to 3 says also remedies the prior art's irregular
2 arrangement of segments. So N equal to 3 achieves
3 both of these benefits.

4 Q. What do you mean by irregular -- I'm sorry.
5 What do you mean by regular arrangement of segments?

6 A. Well, I'm quoting here Dr. Albert.

7 Q. Right. And what do you understand that
8 sentence to mean?

9 A. Well, he's referring to the figures in Park.

10 Q. Do you understand what it means for segments
11 to have a regular arrangement?

12 A. And just different shapes in the time
13 frequency plane.

14 Q. As opposed to?

15 A. As opposed to having the same shape.

16 Q. Now, how did you come up with N equal 3 as
17 an example that you used? Why didn't you use a
18 different number N ?

19 A. How did I come up with N equal to 3?

20 Q. Right. And why did you choose N equals 3 as
21 opposed to, for example, 5?

22 A. I'll just -- I think if I -- if I work, I
23 think I can probably construct an example with N
24 equal to 5. I just wanted one number that is between
25 2 and 8.

1 Q. When you say you had to work to construct an
2 example, does that mean you have to construct a
3 modulation rate that would allow you to achieve the
4 same benefits with N equals 5?

5 A. No. I -- modulation what?

6 Q. Sure. So when you say -- let me strike
7 that.

8 The patent chooses N equals 2, 4, and 8
9 based on this given modulation scheme and modulation
10 rate that it has chosen. And then you have come up
11 with different modulation rate -- or coding rates, I
12 apologize. And then based on the different coding
13 rates that you have chosen, you have come up with
14 different Ns that can achieve the same benefits.

15 Do I understand, basically, your
16 paragraphs 35 to 38 correctly?

17 MR. LeROY: Objection to the form of the
18 question.

19 THE WITNESS: I would say no.

20 BY MR. HENDIFAR:

21 Q. Okay. Well, how -- could you please correct
22 where I am wrong.

23 MR. LeROY: Same objection.

24 THE WITNESS: You said that -- it was a
25 little bit long question, but you said the patent

1 comes up with certain modulation rate.

2 BY MR. HENDIFAR:

3 Q. Let me -- let me -- then maybe I --

4 A. Then you're coming up with a different
5 modulation rate.

6 Q. Okay.

7 A. And I think that's incorrect. The
8 modulation values that that construct, 16 and 3, they
9 are constructed exactly as the '450 patent is
10 teaching in connection with its Table 1. So the '450
11 patent doesn't -- you said construct or use a
12 modulation rate. No, it doesn't. It says -- so now
13 I'm...

14 Q. Maybe I can clarify my question.

15 A. So you gave me the patent and I was looking
16 at the patent. So Column 6, around Line 31: "For
17 example, Table 1 below sets representative modulation
18 and forward-error correction coding schemes that may
19 be used for voice packet streams under various
20 channel conditions."

21 And, I mean, then all of -- then it
22 continues below the table and explains that. And so
23 the -- so it lists two modulation schemes, 16QAM and
24 QPSK, and three coding rates.

25 Q. What does coding rate mean? I'm sorry. I

1 just don't want to get lost in your explanation.

2 A. Yes. What -- so the question is what is a
3 coding rate?

4 Q. Right.

5 A. I do understand what coding rate is. First
6 you say I'm not -- I'm not here giving a definition
7 of a coding rate. But as a general idea, coding rate
8 is the ratio of information bits divided by code word
9 length. Or code word length is equal to the number
10 of coded bits. So alternatively you can say the
11 ratio of -- or the ratio between the number of
12 uncoded bits to the number of coded bits.

13 Q. So if a coding rate is one-half and I am
14 transmitting 10 bits, that means that only 5 of those
15 bits have information?

16 A. Correct.

17 Q. And what happens to the other 5?

18 A. They would be called parity bits in some
19 contexts. That is why you have a code and you have a
20 code word.

21 Q. So in paragraph 38 of your declaration you
22 have used a coding rate of one-third, correct?

23 A. That's correct.

24 Q. Okay. Is there any constraints on the
25 length of the code words, such as they have to be in

1 multiples of two or some other constraint?

2 A. The code word length?

3 Q. Right.

4 A. No.

5 Q. Because, for example, if my code word is
6 64 bits, you couldn't use a coding rate of one-third,
7 correct?

8 A. That's correct.

9 Q. So in the example you have in
10 paragraph 38 --

11 A. That is -- one clarification. So with a
12 coding rate of one-third, yes, you would not obtain,
13 obviously, a code word length 64. It's the other way
14 around. But if you -- if you for some reason want to
15 transmit 64 bits and your code word length is 63
16 bits, which you would obtain with a rate one-third
17 code, I mean, one can add an extra bit right there.

18 Q. Right.

19 And so in paragraph --

20 A. So --

21 Q. I'm sorry. I didn't mean to interrupt.

22 A. So that's usually -- so that's not -- that's
23 usually not a significant problem.

24 Q. Right. So I'm just here to try to
25 understand. So in paragraph 38 of your declaration,

1 the way you have achieved the same benefits of the
2 patent with N equals 3 is by choosing a coding rate
3 of one-third.

4 Did I understand you correctly?

5 A. Yes.

6 Q. And then if you have different coding rates,
7 then there would be different values of N that would
8 achieve the same benefits, correct?

9 A. Excuse me?

10 Q. And if there are different values for the
11 coding rate, then different values of N would achieve
12 the same benefits as the patent, correct?

13 A. Well, N is the result. And we see in
14 Table 1, N is the result of choosing coding rate and
15 modulation scheme. So it's a result of choosing both
16 of these.

17 Q. Got it. Okay.

18 A. And also, just to -- which I have kept for
19 to make a comparison with Table 1, it's, as I state
20 in paragraph 37, 160 information bits. So that's
21 the -- that's the example in Table 1.

22 So in addition to modulation and coding, to
23 make a comparison with the values in Table 1, I think
24 it's -- as it says in lines 46, 47: "As illustrated
25 in Table 1, 80 raw modulation symbols are needed to

1 transmit 160 information bits." So that is the
2 example.

3 All of these -- all of the entries in
4 Table 1 are for 160 information bits. And my two
5 examples where N is 3 and 16, I keep those the same,
6 160 information bits.

7 Q. Got it.

8 So depending on the number of information
9 bits, the modulation scheme, and the coding rates,
10 different values of N achieve the same benefits that
11 the patent explain; is that accurate?

12 A. And I would say almost maybe. Not quite.
13 First you said achieves the benefits, but the patent
14 doesn't claim any benefits.

15 Q. Let me correct my question. Thank you.

16 Depending on the number of information bits,
17 the modulation scheme, and the coding rate, then the
18 specific values of N would achieve the benefits that
19 Mr. Albert explains the patent achieves; is that
20 accurate?

21 MR. LeROY: Objection to form.

22 THE WITNESS: Yes, in the sense that there
23 is nothing that -- Dr. Albert didn't show anything
24 which would be understood to achieve these alleged
25 benefits only for 2, 4, or 8. So first -- and as I

1 even state, these benefits are -- I state at the
2 bottom of paragraph 34 that these are not real
3 benefits. I state that they appear to be made up,
4 because linking the segment size to the modulation
5 scheme, I mean, this is -- why is the coding rate
6 omitted there?

7 It's -- and also, why even -- why is this a
8 benefit? It has not been explained. And why is the
9 coding omitted?

10 And clearly, any other value, N equal to 3
11 also links the segment size to the modulation scheme.
12 And if we include the coding rate, it links the
13 segment size to the coding, to the modulation scheme
14 and the coding rate.

15 So second -- the second alleged benefit,
16 that limiting N may remedy the prior art's irregular
17 arrangement of segments. But, I mean, if N is an
18 integer value, it also does this. N equal to 3 means
19 it's not irregular arrangement, it's regular. It's
20 you just have three time-frequency resource units.

21 So there is nothing that says, well, only 2,
22 4, or 8 establishes these two things.

23 Q. Well, thank you for that but you answered a
24 different question. I didn't ask if only 2, 4, and 8
25 can accomplish this. My question was -- actually was

1 trying to be accommodating to your view.

2 The question is, is it, therefore, accurate
3 to state that depending on the information bits, the
4 coding rate and the modulation scheme, specific and
5 different numbers of N could achieve what Mr. Albert
6 explains in his view are the benefits of the '450
7 patent?

8 A. But I apologize, but maybe now it became a
9 longer question. To the extent the question is
10 asking whether other values of N achieve the
11 second -- achieve the same alleged benefits --

12 Q. That's not the question. The question
13 really is what values of N achieve the same benefits
14 depend on the number of information bits, coding
15 rate, and the modulation scheme, correct?

16 A. Well, N depends on -- if we look at Table 1,
17 Table 1, it has six columns. It has six columns.
18 The first column is an index. Okay. So we can --
19 for a second we can ignore that.

20 Then we have three columns which are in --
21 which are the parameters. It's modulation scheme, we
22 can call it modulation order, the second is coding
23 rate, and the third is the number of information
24 bits.

25 The fifth column is the raw symbols or the

1 number of raw symbols. But that is obtained from the
2 other -- from the other columns. So it's not
3 independent. And the last column is the number of
4 units. It's also obtained from -- it's obtained from
5 the first three columns, modulation or the coding
6 rate, the number of information bits. So that is how
7 N is obtained.

8 Q. Right. N is the last column, correct?

9 A. Yes.

10 Q. And the value of N depends on the
11 modulation, coding rate, and information bits
12 columns, correct?

13 A. Yes.

14 Q. So depending on what the modulation, the
15 coding rate, and what the information bit values are,
16 then different and specific values of N would achieve
17 the results that Mr. Albert says are the benefits of
18 the '450 patent, correct?

19 A. Well, as far as -- as far as the two alleged
20 benefits, they can be achieved by any integer value
21 event.

22 Q. Let me then ask you this. In Table 1, if we
23 keep the modulation and the coding rate and
24 information bits exactly as they appear in Table 1 of
25 the '450 patent, would an N value of 13 achieve the

1 same benefits that Mr. Albert believes the '450
2 patent achieves?

3 A. So what is the task? If we keep the
4 modulation order, you said the same?

5 Q. Yes.

6 A. Okay. I will comment on this, but this
7 is -- so we keep the modulation order the same. We
8 keep the coding rate the same.

9 Q. Right.

10 A. And we keep the information bits the same.

11 Q. Right. If we keep the modulation order, the
12 coding rate, and the information bits exactly the
13 same as shown in Table 1 of the '450 patent, would N
14 equal 13 achieve the benefit that Mr. Albert ascribes
15 to the '450 patent?

16 MR. LeROY: Objection to the form of the
17 question.

18 THE WITNESS: Well, I was -- and if I may
19 say, Counsel, it's just the wrong question. The
20 question is, if I may say, it's a flawed question for
21 me to even consider answering it.

22 BY MR. HENDIFAR:

23 Q. Okay. Would you please elaborate why?

24 A. Because in Table 1, there are two modulation
25 schemes listed. There is 16QAM and QPSK, so it's not

1 just one. I mean, and just above Table 1 it says
2 these are representative modulation and coding
3 schemes. So a person of skill would not understand
4 that Table 1 is limited just to these two, but there
5 are two. So in the question you said we keep that,
6 so I am not sure what you mean.

7 When we get to coding rate, there are three
8 coding rates listed in Table 1: One-half,
9 one-fourth, and one-eighth. And I understand these
10 are representative coding rates. So you said keep
11 that, but I'm not sure what you mean.

12 And you also said N is 13. And now, how --
13 I mean, so in the premise of the question, it means
14 it's possible to get N 13 and somehow keep the
15 modulation scheme and coding rate. And, of course,
16 it -- the number of information bits.

17 And so I don't think this is being shown to
18 be -- it's not that difficult exercise. I don't
19 think it's been shown to be possible and for me to
20 consider, well, does this result in keeping the same
21 benefits.

22 Q. So I go back to my original question, which
23 I am trying to get an answer to. Is it fair to say
24 that, depending on the modulation, the coding rate,
25 and the information bits, different values of N would

1 achieve the benefits that Mr. Albert believes the
2 '450 patent achieves; is that accurate?

3 MR. LeROY: Objection to form.

4 THE WITNESS: Yeah, I think there are two
5 parts maybe in this question that I'll -- I'll try to
6 unpack. The first part is that N depends on
7 modulation or the coding rate and number of
8 information bits. That's what --

9 BY MR. HENDIFAR:

10 Q. Is that true? It does? Is that a true
11 statement, it does?

12 A. Yes, it does.

13 And -- and, well, it's -- this is a little
14 bit -- it says -- line 49, 50, same column, it says:
15 "The resource utilized by this highest MCS is called
16 a basic resource unit."

17 That's why in my declaration I think in -- I
18 state -- for example, in paragraph 38, I say:
19 "Assuming the same basic resource unit as in Table 1.
20 And also QPSK, which is a modulation scheme that also
21 appears in Table 1."

22 So because N is an integer number, you have
23 also -- you have to have also this basic resource
24 unit with the understanding that the resource
25 utilized by the highest MCS. And in this example,

1 the highest MCS, that's the first one, so you have 80
2 raw symbols. That's the basic resource unit.

3 Which this basic resource unit is not shown
4 in Table 1, but the text below says, well, that's --
5 you need that understanding, and then you get N equal
6 to 1 for the first modulation and coding combination
7 here. So that's what completely N depends on.

8 And so if you change -- you change these
9 three columns, and also the basic resource unit, I
10 mean, in general, that could also be changed. It
11 says 80 raw symbols in this example. Then the
12 resource utilized by other MCS -- and that's
13 modulation coding scheme -- is simply an integer
14 multiple of the basic unit.

15 So in the -- so everything that I am saying
16 here is how a person of skill will have understood
17 the '450 patent. And the patent says: "For example,
18 four units are required to transmit the same number
19 of information bits using QPSK modulation with
20 rate-1/4 coding," which is the third row.

21 So that's how -- that's how N is determined.
22 And so as long as N is an integer, it will achieve
23 the same two alleged benefits of Dr. Albert.

24 MR. HENDIFAR: Okay. We have no further
25 questions.

1 MR. LeROY: Okay. I have just a couple of
2 follow-up questions.

3

4 EXAMINATION

5 BY MR. LeROY:

6 Q. Dr. Cooklev, are you okay to go for a few
7 minutes?

8 A. I'm fine either right now or after a break.

9 Q. Earlier today counsel asked whether you
10 were -- whether you personally attended the meeting
11 in Korea where Exhibit 1023 was presented.

12 Do you recall that?

13 A. Yes.

14 Q. Okay. And I believe you testified that you
15 were not physically present at that meeting; is that
16 right?

17 A. Yes.

18 Q. Since the time you submitted your second
19 declaration in this matter, have you been in receipt,
20 have you come into receipt of additional information
21 concerning Exhibit 1023 and the extent to which it
22 was made publicly available at or about the time of
23 the conference?

24 MR. HENDIFAR: We object to this as to
25 scope, and obviously untimely at this point.

1 THE WITNESS: Yes. I think the answer is
2 yes. And I -- as I explain in my declaration, I
3 think this is in Section B, regarding Exhibit 1023.
4 In paragraph 17 in my declaration -- one second.

5 I also -- in paragraph 17 I describe that
6 Exhibit 1034 confirms but that 1023 was available
7 publicly. But also I looked at the Wayback Machine
8 to -- and I tried to see. I understand the Wayback
9 Machines culls, I think is the terms, Web pages just
10 to portray it -- the state of the Internet at the
11 given point in time and that is also -- that show
12 that, yes, Exhibit 1023 was posted on the ITU's
13 website sometime around that meeting.

14 BY MR. LeROY:

15 Q. Dr. Cooklev, I am going to upload a couple
16 of things in the Chat here.

17 MR. HENDIFAR: We object to all of -- is
18 that already filed exhibits or are they new
19 documents?

20 MR. LeROY: Here, I will post them. And
21 Parham, I will take them one at a time and you can
22 state your objections.

23 (Exhibit 1035 was marked for
24 identification.)

25 ///

1 BY MR. LeROY:

2 Q. Dr. Cooklev, can you -- are you able to see
3 Exhibit 1035 in the Chat window?

4 A. Yes. And 1036.

5 Q. Yes. Can you do us a favor and --

6 MR. HENDIFAR: I see -- I'm sorry. I don't
7 see Exhibit 1036.

8 Oh, I see.

9 So we object to Exhibit 1036. No notice was
10 provided to us in advance as required by regulations
11 for Petitioners on redirect to provide exhibits. And
12 it's untimely.

13 BY MR. LeROY:

14 Q. Dr. Cooklev, are you able to open
15 Exhibit 1035?

16 A. Yes.

17 Q. And do you recognize Exhibit 1035?

18 A. Yes.

19 Q. Can you tell us --

20 A. Yes, I do. This is --

21 MR. HENDIFAR: We object to Exhibit 1035 and
22 the testimony relating to it both as violating the
23 regulations because Petitioner did not provide any
24 notice of these exhibits in advance of the deposition
25 as required. And also because they are untimely.

1 And to the extent you're relying on the truth of
2 what's stated there as hearsay and unauthenticated.

3 MR. LeROY: Okay. Parham, I understand
4 that's your objection, and I have no problem with you
5 making it. And you can have your objection
6 maintained for this questioning.

7 THE WITNESS: Yeah, I recognize --
8 Exhibit 1035 is a declaration from the Internet
9 Archive from a person associated with the Internet
10 Archive, or the Wayback Machine then I think is also
11 known. And it just -- it just confirms that, yes, if
12 one uses the Wayback Machine, they will see exactly
13 this. It confirms that this -- for example, as of
14 October 1, 2004, the program of this, I think it's
15 called the Seminar here, the program was there with
16 the links of all presentations in the -- in PDF
17 format was available as of October 2004, which is
18 about the year before the priority date.

19 BY MR. LeROY:

20 Q. And Dr. Cooklev, are you referring to
21 Exhibit A to Exhibit 1035?

22 A. That's correct.

23 Q. And in that program that is presented in
24 Exhibit A, which row is the -- is Exhibit 1023?

25 MR. HENDIFAR: The same objections are going

1 to apply to all of the line of questioning on this
2 exhibit.

3 THE WITNESS: It's a little more convenient
4 if I count from the bottom.

5 BY MR. LeROY:

6 Q. Okay.

7 A. If we count from the bottom, it's the fifth
8 row from the bottom or the fourth PDF link from the
9 bottom.

10 Q. And would you mind reading into the record
11 just the title of the link?

12 A. The title is "Introduction of WiBro
13 Technology." And the author is Soon Young Yoon from
14 Samsung Electronics.

15 Q. And do you see to the right of the title
16 there is an icon?

17 A. Yes.

18 Q. What do you understand that represents?

19 A. To me, that icon represents that the
20 presentation in PDF format -- that is actually
21 Exhibit 1023 -- it was available on ITU's website by
22 October of 2004.

23 Q. Did you undertake an investigation of the
24 HTML page source for this page?

25 A. I did. And this is -- if we look at "view

1 source."

2 Q. Well, I think that's Exhibit 1036. Can you
3 open that up and tell me if that's --

4 A. Yes, that's correct.

5 MR. HENDIFAR: Same objection to
6 Exhibit 1036. No notice was provided in advance of
7 the deposition, and it's timely and beyond scope, and
8 all questions emanating from Exhibit 1036.

9 (Exhibit 1036 was previously marked and
10 identified for the record.)

11 BY MR. LeROY:

12 Q. Dr. Cooklev, I have shared Exhibit 1036.
13 Can you tell us what this is and where it came from?

14 A. Yes. So if one goes to Exhibit A, if -- as
15 the -- so the Wayback Machine, if one goes to the ITU
16 site, that is shown in Exhibit A of Exhibit 1035.
17 And then if one selects "View Source" just to view
18 the script, which I think is in XML format, if I'm
19 not mistaken, so if one looks at -- if one just right
20 clicks, I think, and selects from the menu the "View
21 Source," then they get -- they would get
22 Exhibit 1036, which is the XML of that page.

23 And then in Exhibit 1036, in line 274 is we
24 see the link to the presentation introduction -- the
25 presentation that is introduction to WiBro that I

1 mentioned. So that is what is highlighted in
2 Exhibit 1036.

3 So this confirms that the link leading to
4 the PDF with the presentation that is Exhibit 1023
5 was on ITU's website by October of 2004. I mean,
6 it's -- this is a separate proof -- I think earlier
7 we discussed Exhibit 1034. That is -- that proves
8 that Exhibit 1023 was on the website before the
9 priority date. This is an independent proof, a
10 separate proof that it was available as of October of
11 2004.

12 Q. Who created Exhibit 1036?

13 A. I did.

14 MR. LeROY: Thank you, Dr. Cooklev. I don't
15 have any further questions.

16 MR. HENDIFAR: Okay. I have just a couple
17 of quick questions.

18

19 EXAMINATION (RESUMED)

20 BY MR. HENDIFAR:

21 Q. Dr. Cooklev, when did you create
22 Exhibit 1036?

23 A. I created -- I think at the top there is a
24 date and time of -- at the top it says April 22,
25 11:13 a.m.

1 Q. That is yesterday, correct?

2 A. That is yesterday, that is correct.

3 Q. And when did you first see Exhibit 1035?

4 A. Exhibit 1035, I don't remember when I saw
5 Exhibit 1035.

6 Q. Exhibit 1035 is a declaration signed on
7 April 14th, correct?

8 A. Yes.

9 Q. So you have seen it -- well, had you seen
10 Exhibit 1035 prior to today's deposition?

11 A. Yes.

12 Q. And had you seen Exhibit 1035 sometime in
13 the last week, approximately?

14 A. Yes.

15 Q. At the beginning of the deposition, do you
16 recall that I asked you if you had reviewed any
17 documents that are not cited in your declarations in
18 connection with preparing for today's deposition? Do
19 you recall that question?

20 A. Now I do, yes.

21 Q. And do you recall that you testified you had
22 not reviewed any documents not cited in your
23 declarations?

24 A. I think I may have said that, yes.

25 Q. And that is not true, correct?

1 MR. LeROY: Objection. Form.

2 THE WITNESS: Well, I considered these --
3 first, Exhibit 1036 is just the -- if you viewed
4 the -- since they have exhibit numbers, it's -- I did
5 not intend to give an incorrect answer. Now,
6 sometimes it's difficult for me to remember which
7 documents, are they part, they are not part. I --
8 when I gave the answer, I believed that that's a --
9 that these documents would be considered part of the
10 record.

11 BY MR. HENDIFAR:

12 Q. My question was -- and the record is clear,
13 the question was had you reviewed any documents not
14 cited in your declaration and you testified that you
15 had not.

16 Is Exhibit 1035 cited in any of your
17 declarations?

18 A. Clarify, no, it's not cited.

19 Q. Is Exhibit 1036 cited in any of your
20 declarations?

21 A. It is not cited.

22 Q. So your earlier testimony today that you had
23 not reviewed any documents not cited in your
24 declarations was not correct, correct?

25 A. In the sense they are not -- I agree they

1 are not cited. I -- again, I say it wasn't my
2 intention to -- not to give an accurate answer. But
3 sometimes to questions that are open-ended in the
4 sense I may not understand them the way you would
5 understand them. Or may not -- like potentially
6 documents that are not cited is -- is -- requires me
7 to have a very accurate memory and to --

8 Q. You created Exhibit 1036 last night, didn't
9 you?

10 A. No. It's yesterday.

11 Q. Right.

12 So the timing was not that far off; it was
13 yesterday, correct?

14 A. That's correct.

15 Q. And do you recall that you also testified
16 earlier that in connection with preparing for today's
17 deposition, you had not performed any online
18 searches?

19 A. Yes. I did say that, yes.

20 Q. That was also inaccurate, correct?

21 A. That was --

22 MR. LeROY: On that -- objection to the form
23 of the question.

24 THE WITNESS: Well, in connection with the
25 preparation for the deposition, I didn't perform. So

1 these document are not as a result of a search.

2 BY MR. HENDIFAR:

3 Q. How did -- so you're saying you found
4 Exhibits 1036 not through an online search?

5 A. I mean, I -- I described how I got 1036.
6 It's not an online search.

7 Q. Okay.

8 A. It's -- it's you go to -- Exhibit 1036 is
9 just viewing the source, which I think produces XML
10 format of 1035.

11 Q. And you do that by going online and going to
12 that website and finding that source code, correct?

13 MR. LeROY: Objection to the form of the
14 questions.

15 THE WITNESS: It requires to go to the
16 Wayback Machine and requires to -- I described how I
17 did it. But that's not a search.

18 BY MR. HENDIFAR:

19 Q. How do you find a specific website on the
20 Wayback Machine?

21 MR. LeROY: Objection to the form of the
22 question.

23 THE WITNESS: If you -- if you have --

24 BY MR. HENDIFAR:

25 Q. Let me make it easier for you. Isn't it

1 true that in order to find a website on the Wayback
2 Machine, you go to the Wayback Machine website and
3 there is a search bar where you type in the website
4 and you click "search"?

5 A. Well, I think you can do it like that. But
6 it's -- it's -- I think you can -- I mean, some of
7 these things I think we tend to do without even
8 thinking. Maybe I just entered even the -- without a
9 search, maybe I entered the URL without even the
10 search.

11 Q. It's a very long URL, no? I am looking at
12 it.

13 Other than Exhibits 1035 and 1036,
14 subsequent to submission of your declaration, have
15 you reviewed any other documents not cited in your
16 declaration in connection with this matter?

17 A. I don't think so. It's not -- again, I
18 don't intend to give a -- here an incomplete answer.
19 I don't think so.

20 MR. HENDIFAR: Okay. We have no further
21 questions.

22

23 EXAMINATION (RESUMED)

24 BY MR. LeROY:

25 Q. Okay. Dr. Cooklev, the program, the ITU

1 program that was the focus of Attachment A to
2 Exhibit 1035, isn't it correct that program was of
3 record and a focus of your secondary declaration?

4 A. Yes.

5 Q. And the domain that you provided the source
6 code for, I believe you testified the source of that
7 domain was the Internet Archive declaration; is that
8 correct?

9 A. Yes.

10 Q. And thus you didn't need to do -- to search
11 for it because it was given to you by the
12 declaration; is that correct?

13 A. Yes.

14 Q. And the date, as I believe was indicated, of
15 the Internet Archive declaration was fairly recent,
16 certainly well after your -- after your secondary
17 declaration; is that correct?

18 A. Yes. The date is April of this year.

19 Q. Thank you.

20 MR. LeROY: No further questions.

21 MR. HENDIFAR: Okay. Thank you very much,
22 Dr. Cooklev.

23 THE WITNESS: Well, thank you.

24 MR. LeROY: Thank you. Thank you, Kim.

25 THE COURT REPORTER: John, do you want a

1 copy of the transcript?

2 MR. LeROY: Yes, please.

3 THE COURT REPORTER: And for the witness to
4 read and sign, how should I handle that?

5 MR. LeROY: Well, you can send that to us
6 and we'll have him read and sign it.

7 (The deposition was concluded at 11:30 a.m.)

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

REPORTER'S CERTIFICATION

I, KIMBERLY CRANE, CSR, RPR, reporter in
and for the State of California do hereby certify:

That the proceeding took place before me at
the time and place herein set forth; that the
testimony and proceedings were accurately reported
stenographically by me during the proceeding.

I further certify that I am not related to
any of the parties to this action by blood or
marriage and that I am not interested in the outcome
of this matter, financially or otherwise.

IN WITNESS THEREOF, I have hereunto set my
hand this 24th day of April, 2025.

Kimberly Crane
KIMBERLY CRANE, CSR NO. 11594, RPR

1 CERTIFICATE OF WITNESS

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

I declare under penalty of perjury that I have read the entire transcript of my deposition taken in the above-captioned matter or the same has been read to me, and the same is true and accurate, save and except for changes and/or corrections, if any, as indicated by me on the DEPOSITION ERRATA SHEET hereof, with the understanding that I offer these changes as if still under oath.

Signed on the _____ day of _____,
20____.

TODOR COOKLEV, Ph.D.

1 DEPOSITION ERRATA SHEET

2 MAGNA JOB NO.: 1315417

3 CASE CAPTION: FORD MOTOR CO. VS. NEO WIRELESS LLC

4 Page No. ____ Line No. ____ Change to: _____

5 _____

6 Reason for Change: _____

7 Page No. ____ Line No. ____ Change to: _____

8 _____

9 Reason for Change: _____

10 Page No. ____ Line No. ____ Change to: _____

11 _____

12 Reason for Change: _____

13 Page No. ____ Line No. ____ Change to: _____

14 _____

15 Reason for Change: _____

16 Page No. ____ Line No. ____ Change to: _____

17 _____

18 Reason for Change: _____

19 Page No. ____ Line No. ____ Change to: _____

20 _____

21 Page No. ____ Line No. ____ Change to: _____

22 _____

23 Reason for Change: _____

24 Page No. ____ Line No. ____ Change to: _____

25 SIGNATURE: _____ DATE: _____



Magna Key Contacts



Schedule a Deposition:

Scheduling@MagnaLS.com | 866-624-6221

Order a Transcript:

CustomerService@MagnaLS.com | 866-624-6221

General Billing Inquiries:

ARTeam@MagnaLS.com | 866-624-6221

Scheduling Operations Manager:

Patricia Gondor (E: PGondor@MagnaLS.com | C: 215-221-9566)

Customer Care:

Cari Hartley (E: CHartley@MagnaLS.com | C: 843-814-0841)

Director of Production Services:

Ron Hickman (E: RHickman@MagnaLS.com | C: 215-982-0810)

National Director of Discovery Support Services:

Carmella Mazza (E: CMazza@MagnaLS.com | C: 856-495-1920)

Billing Manager:

Maria Capetola (E: MCapetola@MagnaLS.com | C: 215-292-9603)

Director of Sales Operations:

Kristina Moukina (E: KMoukina@MagnaLS.com | C: 215-796-5028)

A			
a.m	addressed	19:24	ascribes
2:21,22 5:2 59:25	11:1	apologize	49:14
66:7	advance	40:12 47:8	Asia
able	55:10,24 58:6	APPEAL	24:10
6:10 18:16 31:15	affirmative	1:2 2:2	asked
35:9 38:11 55:2,14	9:21	appear	15:8,12 53:9 60:16
above-captioned	afternoon	46:3 48:24	asking
68:5	5:15	appears	11:4 34:20 47:10
Academy	ago	51:21	associated
27:8	27:5,9	application	56:9
access	agree	6:19 29:4	assume
8:12 22:6 23:5 26:1	11:13 21:14 31:13	applied	7:7
26:10	61:25	12:24 20:12	assuming
accommodating	agreement	apply	37:11 51:19
47:1	10:19	12:11 57:1	Attachment
accomplish	Albert	appreciate	65:1
46:25	35:7,10,25 36:9,12	7:10	attempt
accurate	39:6 45:19,23 47:5	appropriate	18:11
7:10 12:23 14:7 15:4	48:17 49:1,14 51:1	11:20 20:5	attend
45:11,20 47:2 51:2	52:23	approximately	13:15
62:2,7 68:6	alleged	8:1,3 17:25 18:7	attended
accurately	36:3 38:20,25 45:24	60:13	53:10
67:8	46:15 47:11 48:19	April	attendees
achieve	52:23	1:18 2:23 5:1 59:24	13:25
35:2 38:8,12 40:3,14	allow	60:7 65:18 67:17	attorney-client
44:8,11 45:10,18,24	40:3	archive	24:25
47:5,10,11,13 48:16	alternatively	4:8 26:24 56:9,10	August
48:25 49:14 51:1	42:10	65:7,15	25:13
52:22	analysis	area	author
achieved	12:25 32:7,8 34:1,19	9:10	28:4 57:13
44:1 48:20	analyzed	argument	availability
achieves	17:21 31:23 33:25	10:16,24 12:6,7,9,10	29:18
39:2 45:13,19 49:2	34:3	12:17	available
51:2	and/or	arguments	53:22 54:6 56:17
action	68:7	9:6,10,16,23 10:2,6	57:21 59:10
67:12	answer	10:12,15 11:18 12:2	aware
actual	9:21 11:14 15:2	arrangement	10:23 11:7,8 13:18
32:15,25 33:11	22:12,13 50:23 54:1	36:5 39:2,5,11 46:17	14:20,24,24 22:22
add	61:5,8 62:2 64:18	46:19	
43:17	answered	art's	
addition	28:6 46:23	36:5 39:1 46:16	B
31:3 44:22	answering	article	4:6 54:3
additional	49:21	25:18 27:20 28:1,13	B2
19:10 53:20	anticipate	28:16,22,22	1:11 2:11
	19:25	articles	back
	anticipated	27:4 28:19,21 29:2,3	28:14 50:22

background 29:2 bar 64:3 base 20:13 32:11,22 33:14 based 11:4 22:20 30:1,14 40:9,12 basic 51:16,19,23 52:2,3,9 52:14 basically 14:1 40:15 basis 25:6 beginning 6:1 60:15 behalf 2:21 3:2,7 5:10 believe 20:24 21:20 28:6 34:16 35:10 53:14 65:6,14 believed 61:8 believes 49:1 51:1 benefit 36:3 38:9,20,22,25 46:8,15 49:14 benefits 35:2,5,6,8,10 36:7,7 38:12,13,19 39:3 40:4,14 44:1,8,12 45:10,13,14,18,25 46:1,3 47:6,11,13 48:17,20 49:1 50:21 51:1 52:23 best 6:10 11:23,25 beyond 15:21 17:4,9 27:13 27:17 58:7 big 17:13 24:9	bit 11:3 15:7,24 16:20 37:16 40:25 43:17 48:15 51:14 bits 36:16,17,18,20,23 37:1,7,14,19,20,22 37:24 38:1,4 42:8 42:10,12,12,14,15 42:18 43:6,15,16 44:20 45:1,4,6,9,16 47:3,14,24 48:6,11 48:24 49:10,12 50:16,25 51:8 52:19 blood 67:12 BOARD 1:2 2:2 bore 5:19 bottom 46:2 57:4,7,8,9 Boulevard 3:4 break 53:8 broadband 22:6 23:5 broader 34:10,13,16,23 BROOKS 3:8 built 24:7 business 24:6 C C 3:1 California 2:24 3:4 5:6 67:4 call 20:5 47:22 called 5:10 27:7 42:18	51:15 56:15 CAPTION 69:3 captured 34:6 case 17:18 30:23 69:3 ceased 17:25 18:7 certain 16:3,3 24:8 32:25 36:15 41:1 certainly 65:16 CERTIFICATE 68:1 certification 19:10 67:1 certified 5:6 certify 67:4,11 change 22:23 52:8,8 69:4,6,7 69:9,10,12,13,15,16 69:18,19,21,23,24 changed 52:10 changes 18:19,24,25 22:9,11 22:16 23:6,7 68:7 68:10 channel 41:20 Chat 30:6,10 54:16 55:3 Chatbox 8:12,22 35:16,18 Ching 4:8 choose 39:20 chooses 40:8 choosing 44:2,14,15	chosen 40:10,13 circumstances 27:12 citations 28:15 cited 7:8,13 9:13 60:17,22 61:14,16,18,19,21 61:23 62:1,6 64:15 cites 25:19 26:23 27:24 28:9,25 29:1,3,9 citing 27:12,13,17,18,22 28:3,12,19 29:16 claim 29:22 30:3,8,11,25 31:10,18,24,25 32:10 33:12,13 36:6 36:8 45:14 clarification 43:11 clarify 17:22 26:21 41:14 61:18 clean 8:12 clear 19:8 23:1 32:24 61:12 clearly 46:10 click 64:4 clicks 58:20 closely 28:1 CLR 1:25 code 42:8,9,19,20,25 43:2 43:5,13,15,17 63:12 65:6 coded
---	--	--	--

42:10,12 coding 40:11,12 41:18,24,25 42:3,5,7,7,13,22 43:6,12 44:2,6,11 44:14,22 45:9,17 46:5,9,12,13,14 47:4,14,22 48:5,11 48:15,23 49:8,12 50:2,7,8,10,15,24 51:7 52:6,13,20 column 41:16 47:18,25 48:3 48:8 51:14 columns 47:17,17,20 48:2,5 48:12 52:9 combination 52:6 come 7:15 39:16,19 40:10 40:13 53:20 comes 41:1 coming 41:4 commencing 2:21 comment 49:6 communicate 36:23 communicated 36:15,19,25 37:7,14 communications 21:15 companies 16:2,2 19:20 24:5 company 1:4 2:4 14:8 16:5,6,8 comparison 44:19,23 complete 15:2 completely 52:7	comprising 29:23 31:1,6,7,10 32:3 concerning 53:21 concluded 66:7 concrete 31:24 conditions 41:20 conduct 7:19 conference 13:21 53:23 confirms 54:6 56:11,13 59:3 confusion 38:11 connection 18:10 41:10 60:18 62:16,24 64:16 consider 49:21 50:20 considered 16:23 61:2,9 consistent 21:9,9,10 constraint 43:1 constraints 42:24 construct 35:1 38:7 39:23 40:1 40:2 41:8,11 constructed 41:9 construction 12:20,22 contain 32:4 contained 31:2,18 32:17 33:16 containing 32:11 33:13 context	13:1 27:16 29:7 31:20,21,22 34:15 contexts 34:13 42:19 continues 41:22 contributing 16:3 control 32:5 convenient 57:3 conveyed 36:15 Cooklev 1:17 2:19 4:2,17 5:9 5:16 34:9 53:6 54:15 55:2,14 56:20 58:12 59:14,21 64:25 65:22 68:17 copy 8:12 18:12 66:1 correct 8:6 9:10,14 11:18 12:2 13:3,12,13 19:6 20:17,21 23:8 23:9 26:5 27:14,18 38:3,3 40:21 42:16 42:22,23 43:7,8 44:8,12 45:15 47:15 48:8,12,18 56:22 58:4 60:1,2,7,25 61:24,24 62:13,14 62:20 63:12 65:2,8 65:12,17 correction 41:18 corrections 68:7 correctly 7:24 13:11 17:3,5 23:2 40:16 44:4 counsel 7:2,23 8:2 49:19 53:9 count 57:4,7	couple 7:2 26:14 28:20 53:1 54:15 59:16 course 8:19 11:22 30:7,10 50:15 COURT 5:5 65:25 66:3 cover 37:23 covers 37:24 Crane 1:25 2:23 5:6 67:3,22 create 59:21 created 59:12,23 62:8 criteria 9:22 CSR 1:25 2:23 5:7 67:3,22 culls 54:9 customers 24:7,8
D			
D 4:1 data 32:15,16,25 33:2,7,7 33:10,11,15,22 34:2 34:10,14,16,23 date 29:19 56:18 59:9,24 65:14,18 69:25 dated 4:16 25:12 day 67:17 68:12 days 14:5 17:18,18 declaration 4:8,17 6:15 7:14 8:5 8:13,21 9:1,3,4,18			

8:13,21 9:1,3,4,18 10:3,14 11:1,16 12:2 13:4 18:10,18 20:13,15,21,24 22:4 24:16 26:3 34:21,25 35:11,15,21 42:21 43:25 51:17 53:19 54:2,4 56:8 60:6 61:14 64:14,16 65:3 65:7,12,15,17	designed 22:6 23:5 detail 6:22 11:12 details 16:16 17:15 determine 9:6,16,22 determined 52:21 developed 17:4,9 24:1 28:24 developing 14:3 development 17:12 deviate 38:5 device 12:20,25 devices 23:6 different 12:13 28:21 38:24 39:12,18 40:11,12 40:14 41:4 44:6,7 44:10,11 45:10 46:24 47:5 48:16 50:25 difficult 11:14 19:23,25 50:18 61:6 disagree 10:25 disagreements 11:18 12:1 discuss 20:15,20 discussed 21:25 22:14 59:7 discusses 27:20 28:1 divided 42:8 Doctor 5:15	docu- 6:22 document 8:21 15:10,19,20 63:1 documents 6:14 7:5,8,12 16:12 18:15 19:11,12 21:4 22:14 30:6 54:19 60:17,22 61:7,9,13 61:23 62:6 64:15 doing 17:12 domain 65:5,7 dominant 16:7,7 Dr 5:16 34:9 35:7,25 36:9,12 39:6 45:23 52:23 53:6 54:15 55:2,14 56:20 58:12 59:14,21 64:25 65:22 draft 9:4 10:4 15:8,16,17 15:20 16:21 17:4,7 17:7,9 18:20 19:1,5 19:17 20:4,9,25 21:21 22:9,11,17,21 22:23,24 23:7 drafted 11:16 26:2 duly 5:11	24:15 53:8 elaborate 49:23 Electronics 57:14 elements 31:2,16 email 33:1 emanating 58:8 employee 13:10 employees 14:21 English 26:1,10,17 27:9 entered 64:8,9 entire 68:4 entries 45:3 equal 30:20 35:1,1 36:16 36:17 38:8,8,20,22 39:2,16,19,24 42:9 46:10,18 49:14 52:5 equals 38:13 39:20 40:4,8 44:2 equipment 14:14,17 16:1,5 23:12,21,21 24:1,6 24:12 ERRATA 68:8 69:1 ESQ 3:3,9 essentially 10:12,14,15 11:8 15:15 22:19 establishes 46:22 estimate 17:24 18:5 24:14
---	--	--	---

35:13 event 24:10 48:21 evolved 14:16 exactly 24:13 37:24 41:9 48:24 49:12 56:12 EXAMINATION 4:2 5:13 53:4 59:19 64:23 example 18:18 29:4 32:5 39:17,21,23 40:2 41:17 43:5,9 44:21 45:2 51:18,25 52:11 52:17 56:13 examples 31:16 34:12 35:1 38:8 45:5 excluding 30:20,20 excuse 9:8 18:3 27:15 29:13 35:20 44:9 exercise 50:18 exhibit 4:7,8,10,14,15,17 6:23,24 8:8,11,13 9:2 13:2,6,9,14,16 14:21 21:8 24:17,20 24:21 25:1,4,7,9,12 25:15,18,19 26:2,9 26:11,17,22,23,24 27:1,2,12,13,17,17 27:24,24 28:9,9,13 29:8,9,11,19 35:18 53:11,21 54:3,6,12 54:23 55:3,7,9,15 55:17,21 56:8,21,21 56:24,24 57:2,21 58:2,6,8,9,12,14,16 58:16,22,23 59:2,4 59:7,8,12,22 60:3,4 60:5,6,10,12 61:3,4	61:16,19 62:8 63:8 65:2 exhibits 9:13 10:25 54:18 55:11,24 63:4 64:13 exist 17:25 18:8 existence 17:19,23 expert 11:21 31:14,15 explain 18:23 21:19 35:10 36:9,12 45:11 54:2 explained 6:2 29:7 46:8 explains 41:22 45:19 47:6 explanation 21:17 42:1 extent 9:5 11:2,5,19 18:22 19:4,7,15,15,18 20:3 23:16,18,19 47:9 53:21 56:1 extra 43:17	fielded 23:21 24:2,3 fifth 47:25 57:7 figured 19:19 20:4 figures 39:9 filed 9:2 54:18 finalized 14:25 15:12 16:15 financially 67:14 find 25:1 63:19 64:1 finding 63:12 fine 53:8 first 5:11,19 6:17 7:13 13:25 14:4 17:21 20:20 21:5 22:4,11 36:3,6,8 38:20 42:5 45:13,25 47:18 48:5 51:6 52:1,6 60:3 61:3 fixed 12:10 flawed 49:20 focus 65:1,3 focused 17:13 follow-up 53:2 followed 14:16 follows 5:11 FORD 1:4 2:4 69:3 forgot 25:10 34:6	forgotten 24:13 form 16:19 17:10 18:1 20:10 21:1,23 31:4 31:19 32:19 33:18 34:5,17 40:17 45:21 49:16 51:3 61:1 62:22 63:13,21 formal 15:14 16:10 formally 15:10 format 56:17 57:20 58:18 63:10 Fort 2:20 forth 67:7 forward-error 41:18 found 17:14 24:20,23 63:3 four 37:8,13,23,24 38:1 52:18 fourth 57:8 frequency 39:13 further 36:1,10 52:24 59:15 64:20 65:20 67:11
F			
fact 23:6,7 27:13,17 fair 50:23 fairly 65:15 familiar 29:24 far 7:8 10:14 13:4,13 14:18 19:21 20:2 29:2 30:18 31:10 48:19,19 62:12 favor 55:5 field 31:15			
G			
			general 10:21 11:12 33:9 42:7 52:10 generally 10:18 11:19 31:9 give 8:18 11:14 34:12 61:5 62:2 64:18 given 31:22 40:9 54:11

65:11 giving 10:21 42:6 go 36:20 50:22 53:6 63:8,15 64:2 goes 58:14,15 going 32:16 54:15 56:25 63:11,11 good 5:15,15,17 37:17 Google 7:19 24:21 guess 17:22 guide 33:2	18:4 20:14 21:16 22:1 31:12 32:1,23 34:8,24 40:20 41:2 49:22 51:9 52:24 53:24 54:17 55:6,21 56:25 58:5 59:16,20 61:11 63:2,18,24 64:20 65:21 hendifar@lowenst... 3:5 hereof 68:9 hereunto 67:16 highest 51:15,25 52:1 highlighted 26:19 59:1 hours 8:1,3 HTML 57:24 Hungarian 24:17 25:5,8,21 26:5 26:6,9 27:3,8 29:14 Hungary 27:10	illustrated 44:24 implement 19:16 implementation 19:14 improvement 29:1 inaccurate 62:20 include 30:22 36:7,17,19 37:20,21 46:12 includes 7:7 incomplete 64:18 incorrect 36:13 41:7 61:5 independent 48:3 59:9 index 4:10 47:18 Indiana 2:20 indicated 65:14 68:8 information 16:17,22,23,24 32:5 32:11,15,17,21 33:8 33:14,16,22 34:1,10 34:12,16,22 42:8,15 44:20 45:1,4,6,8,16 47:3,14,23 48:6,11 48:15,24 49:10,12 50:16,25 51:8 52:19 53:20 infringe 24:25 infringement 33:24 instance 12:7,15 33:11 integer 36:14 46:18 48:20 51:22 52:13,22	intend 61:5 64:18 intended 33:12 34:5 intention 10:1,5,10 11:17 12:3 62:2 interested 67:13 International 13:21 Internet 54:10 56:8,9 65:7,15 InternetArchive.org 4:9 interoperability 16:8 19:9,13 20:2 interrupt 43:21 introduction 4:15 57:12 58:24,25 invention 20:12 investigation 57:23 involved 16:2 17:15 19:20 IPR 5:19,20,20 6:3,6,17 7:6 8:6 9:10 IPR2023-00763 1:10 2:10 irregular 36:5 39:1,4 46:16,19 issues 16:9 19:13,16,18,21 19:23 20:1,3 22:21 ITU 4:10 58:15 64:25 ITU's 25:15 54:12 57:21 59:5
H H 4:6 half 8:3 hand 67:17 handle 66:4 happen 26:25 happened 14:9 happens 42:17 happy 8:22 hear 16:6 heard 22:22 hearsay 56:2 HENDIFAR 3:3 4:3 5:14 8:10 13:8 16:25 17:16	I icon 57:16,19 idea 10:21 27:9 28:23,24 42:7 identification 54:24 identified 8:9 13:7 58:10 identify 35:7 IEEE 23:7 ignore 47:19 illustrate 29:3,18		J jleroy@brookskus... 3:11

Job 1:24 69:2	9:5	38:23 46:11,12 56:16	56:6
John 3:9 65:25	largely 14:12	listed 49:25 50:8	making 28:15 56:5
	leading 14:8 59:3	lists 41:23	marked 4:13 8:8 13:6 54:23
K	leave 12:3	little 11:3,13 15:1,7,24	58:9
keep 45:5 48:23 49:3,7,8	length 20:16,21 42:9,9,25	16:20 27:20 40:25	market 16:7
49:10,11 50:5,10,14	43:2,13,15	51:13 57:3	marriage 67:13
keeping 50:20	LeROY 3:9 4:4 16:18 17:10	LLC 1:7 2:7 69:3	materialize 23:15
kept 44:18	18:1 20:10 21:1,23	LLP 3:3	materialized 23:19
Kim 5:6 65:24	31:4,19 32:19 33:18	located 2:20	matter 9:3 29:20 37:22
Kimberly 1:25 2:23 67:3,22	34:4,17 40:17,23	long 23:24 40:25 52:22	53:19 64:16 67:14
know 8:14,21 17:2,8,12	45:21 49:16 51:3	64:11	68:5
18:19 22:25 23:3,25	53:1,5 54:14,20	longer 17:19,23 47:9	matters 38:2
24:4 25:4,5,8 26:22	55:1,13 56:3,19	look 6:19 25:22 29:11	MCS 51:15,25 52:1,12
26:25 27:1,11,15,16	57:5 58:11 59:14	30:9 47:16 57:25	mean 6:21 7:16 9:20 10:17
27:20,23 28:8,15	61:1 62:22 63:13,21	looked 7:17 25:24 54:7	10:18,20 11:6,12,13
29:8,10 32:9 33:1	64:24 65:20,24 66:2	looking 30:11 33:21 41:15	12:9 13:4 17:7
36:6	66:5	64:11	18:24 20:22 24:3
knowing 28:25	let's 25:17 28:20 38:19	looks 58:19	25:22 26:18 27:5
knowledge 11:23,25 14:13 21:12	level 6:22	lost 42:1	28:1,10 31:8 32:6
22:7,10,21	likelihood 7:17	lot 16:13	35:5,6 39:4,5,8 40:2
known 56:11	limitation 29:24 30:2,15,25	LOWENSTEIN 3:3	41:21,25 43:17,21
Korea 13:17 14:18 23:22,23	limited 37:6 50:4		46:5,17 50:1,6,11
24:2,10 26:24 53:11	limiting 35:25 36:4,9 38:25	M	50:13 52:10 59:5
Korean 15:10,19 22:5,8 23:4	46:16	Machine 54:7 56:10,12 58:15	63:16,20 64:2,2
KT 23:22	line 41:16 51:14 57:1	Machines 54:9	meaning 12:24 25:14 30:1,15
KUSHMAN 3:8	58:23 69:4,7,10,13	Magna 1:24 69:2	means 24:6 39:10 42:14
	69:16,19,21,24	maintained	46:18 50:13
L	lines 44:24		meant 35:7
language 25:4 31:7	link 57:8,11 58:24 59:3		meet 8:1
large	linking 36:1,11 38:21 46:4		meeting 13:17,20,23 24:11
	links		53:10,15 54:13

meetings 7:2,22	50:2,15,24 51:7,20 52:6,13,19	54:18	obviously 6:21 11:20 14:4,15 31:15 43:13 53:25
memory 11:4 62:7	moment 8:18 23:25 24:8 25:3	night 62:8	October 56:14,17 57:22 59:5 59:10
mention 20:22 21:3 25:10	Monica 3:4	note 36:8	offer 68:9
mentioned 7:21 13:3 17:17 20:18,18 23:10 29:15 31:9 34:9 59:1	morning 5:15,17	notice 55:9,24 58:6	offered 23:23
mentioning 31:11	MOTOR 1:4 2:4 69:3	novel 28:23,24,24 29:1,4	OFFICE 1:1 2:1
menu 58:20	multiple 19:20 20:16 52:14	Ns 40:14	Oh 6:21 18:6 24:21 55:8
message 32:25 33:11	multiples 43:1	number 5:7 12:6,12 13:13,23 30:3,16 36:15 39:18 39:24 42:9,11,12 45:8,16 47:14,23 48:1,3,6 50:16 51:7 51:22 52:18	okay 6:12 8:24 17:8 20:23 25:6,17 26:21 28:12 30:14 37:12 38:11 40:21 41:6 42:24 44:17 47:18 49:6,23 52:24 53:1,6,14 56:3 57:6 59:16 63:7 64:20,25 65:21
Michigan 3:10	N	numbers 13:14 36:25 47:5 61:4	
Mina 4:8	N 3:1 4:1 29:23 30:2,12 30:15,19,23 31:1,6 31:17 32:3 35:1,1 35:25 36:4,10,14,14 36:14,16,17,23 37:6 38:8,8,13,14,20,22 38:25 39:2,16,18,19 39:20,23 40:4,8 44:2,7,11,13,14 45:5,10,18 46:10,16 46:17,18 47:5,10,13 47:16 48:7,8,10,16 48:25 49:13 50:12 50:14,25 51:6,22 52:5,7,21,22	O	
mind 7:15 57:10		O0O- 5:3	omitted 46:6,9
minutes 8:4 53:7		Oak 3:10	one-eighth 50:9
misleading 10:8 16:20 18:22		oath 68:10	one-fourth 50:9
missed 11:11		object 31:4 34:5 53:24 54:17 55:9,21	one-half 42:13 50:8
mistaken 58:19		objection 16:19 17:10 18:1 20:10 21:1,23 31:19 32:19 33:18 34:6,17 40:17,23 45:21 49:16 51:3 56:4,5 58:5 61:1 62:22 63:13,21	one-third 42:22 43:6,12,16 44:3
misunderstanding 38:15,17,18	name 5:5		online 62:17 63:4,6,11
mobile 12:10,12,20,25 21:15 22:5,8 23:4	necessary 21:3		open 55:14 58:3
modifications 20:9,25 21:22	need 8:20 19:19 52:5 65:10		open-ended 11:3,15 62:3
modulation 36:2,11 38:21,23 40:3,5,9,9,11 41:1,5 41:8,12,17,23 44:15 44:22,25 45:9,17 46:4,11,13 47:4,15 47:21,22 48:5,11,14 48:23 49:4,7,11,24	needed 26:20 28:5 44:25	objections 54:22 56:25	operation 29:3
	NEO 1:7 2:7 69:3	obtain 18:12 43:12,16	opined 32:8
	new	obtained 48:1,4,4,7	opinion 10:8 22:16,20 34:20

opinions 11:24 18:17 opposed 39:14,15,21 options 37:7,8,9,10,13,23,24 37:25 order 47:22 49:4,7,11 64:1 ordinary 12:24 30:1,15 original 38:5 50:22 outcome 67:13 overall 12:16 13:4 16:4 overhead 36:1,10 37:17 owner 1:8 2:8,21 3:2 5:10 6:18 9:9,12,17 10:2 10:5,7 12:2,4,8,11 owner's 9:7,23 10:24 11:18	paragraphs 20:16 40:16 parameters 47:21 Parham 3:3 34:4 54:21 56:3 parity 42:18 Park 6:18 12:11 20:11,11 21:9 39:9 part 18:15 21:4 22:15 36:7 51:6 61:7,7,9 parties 21:14 67:12 parts 51:5 patent 1:1,2,8,11 2:1,2,8,11 2:21 3:2 5:10 6:18 6:19,20 9:7,9,12,17 9:23 10:2,5,7,24 11:6,18 12:1,4,8,11 13:1 29:20,22 30:9 31:7,21 34:15 36:23 37:18 40:8,25 41:9 41:11,15,16 44:2,12 45:11,13,19 47:7 48:18,25 49:2,13,15 51:2 52:17,17 Payload 33:4,5,8 PDF 56:16 57:8,20 59:4 penalty 68:3 perform 62:25 performed 34:1 62:17 perjury 68:3 person 6:25 28:2 30:21 50:3 52:16 56:9	personal 22:21 personally 13:15 53:10 Petitioner 1:5 2:5 3:7 55:23 Petitioners 55:11 Ph.D 1:17 2:19 4:2,17 5:9 68:17 physically 53:15 Pico 3:4 place 67:6,7 plain 12:24 30:1,15 plane 39:13 plans 14:15,15,17 23:11,15 please 8:18 40:21 49:23 66:2 plural 30:3,16,19 point 8:20 11:17 37:5 53:25 54:11 political 24:10 portion 32:4 portray 54:10 possible 16:13 25:2 37:15,16 50:14,19 post 54:20 posted 54:12 potentially 62:5	PowerPoint 13:10 preceding 35:23 preference 33:6 premise 18:24 50:13 preparation 7:4,11,21 8:2 62:25 prepare 6:12 preparing 60:18 62:16 present 11:24 12:1 53:15 presentation 4:15 6:24,25 13:10 13:15,19 14:20 25:11,14,14 29:17 57:20 58:24,25 59:4 presentations 13:24 56:16 presented 9:10 13:16 14:21,22 53:11 56:23 presents 28:23 pretty 15:25 17:6 prevent 20:1 previous 28:25 previously 4:13 8:8 13:6 58:9 principal 11:8 prior 36:4 39:1 46:16 60:10 priority 29:19 56:18 59:9 privilege 24:25 probably
---	---	---	--

P

P
3:1,1
Pacific
2:22 24:11
packet
41:19
page
4:2,7,14 57:24,24
58:22 69:4,7,10,13
69:16,19,21,24
pages
54:9
paper
6:23 21:8 29:16,16
paragraph
35:20,23 36:8 38:7
42:21 43:10,19,25
44:20 46:2 51:18
54:4,5

15:25 17:23 19:17 23:22 39:23	published 25:16	R 3:1	receipt 53:19,20
problem 35:17 43:23 56:4	purpose 13:18,25 28:12,15,18 29:17,18,20	raised 9:17 10:7	receive 32:10,16 33:13
procedures 6:3,6	put 8:11,15,22 30:10 35:16,18	rate 40:3,10,11 41:1,5,12 41:25 42:3,5,7,13 42:22 43:6,12,16 44:2,11,14 45:17 46:5,12,14 47:4,15 47:23 48:6,11,15,23 49:8,12 50:7,15,24 51:7	received 32:17 33:17
proceeding 2:20 67:6,9	Q	rate-1/4 52:20	receives 32:25
proceedings 27:7,7 67:8	QPSK 41:24 49:25 51:20 52:19	rates 40:11,13 41:24 44:6 45:9 50:8,10	recites 29:22 32:10
process 10:21 15:14 16:10,13	question 7:9 9:20 11:3,15 14:23 15:6,7,13 17:1,21,21 18:2,22 18:24 21:18,19,24 22:2,3 26:8,22 27:11 28:7 29:6 30:12,14 31:13,14 32:20,24 33:12,19 33:23 34:5,18 38:6 38:6 40:18,25 41:14 42:2 45:15 46:24,25 47:2,9,9,12,12 49:17,19,20,20 50:5 50:13,22 51:5 60:19 61:12,13 62:23 63:22	ratio 42:8,11,11	recognize 55:17 56:7
produces 63:9	questioning 56:6 57:1	raw 44:25 47:25 48:1 52:2,11	record 5:5 7:5,7 8:9 18:16 21:5 22:15 23:1 33:20 57:10 58:10 61:10,12 65:3
products 14:22	questions 6:5 52:25 53:2 58:8 59:15,17 62:3 63:14 64:21 65:20	read 25:18,20,23 26:8 27:6 30:21 66:4,6 68:4,6	redirect 55:11
Professional 2:25	quick 34:19 59:17	reading 35:19 57:10	reduce 36:1,10
program 13:22 56:14,15,23 64:25 65:1,2	quote 10:13 17:17	real 46:2	refer 5:20 8:20 9:1 15:2,4 20:23 22:13,14 33:10
proof 59:6,9,10	quoting 23:10 39:6	really 33:25,25 47:13	REFERENCED 4:13
proposed 12:20,22	R	reason 8:19 15:24 17:14 43:14 69:6,9,12,15 69:18,23	referring 9:2 39:9 56:20
proposition 27:23,25 28:8,11		reasonable 17:7	refers 25:11,11,14
proprietary 16:17,21,22,23		reasons 6:9 29:15,21	regarding 54:3
proves 59:7		recall 5:21,23,25 6:1 22:20 23:13 24:18 34:9,21 35:3 53:12 60:16,19 60:21 62:15	Registered 2:24
provide 6:10 8:17 14:17,19 18:17 22:6 23:5,11 23:21 29:2 31:16 34:20 38:22 55:11 55:23			regular 39:5,11 46:19
provided 12:16 22:16,20,25 55:10 58:6 65:5			regulations 55:10,23
providing 16:5 34:21			related 13:24 15:7 28:2 33:24 67:11
publication 24:17 27:6 28:19			relating 55:22
publicly 53:22 54:7			relatively 8:16

relevant 28:4,5	63:16	11:8 12:21 24:23	46:5,11,13 47:4,15
relied 20:8	reserve 36:22	29:10 31:13 33:3,4	47:21 50:15 51:20
rely 13:2 24:16	reserves 36:23	35:22 37:9,25 38:19	52:13
relying 20:11 21:4,5,6,7,11	resolve 19:12	39:7,20 42:4 43:3	schemes 41:18,23 49:25 50:3
21:12 56:1	resolved 16:9 19:22	43:17,18,24 48:8	scholarly 28:16,19,21,22
remedies 39:1	resource 29:23 30:2,4,13,16	49:9,11 53:8,16	Sciences 27:8
remedy 36:4 46:16	30:17,19,24 31:1,3	57:15 58:19 62:11	scope 53:25 58:7
remember 7:18 14:18 25:2 60:4	31:6,17 32:4,12,18	role 14:3,6	script 58:18
61:6	33:15,17 46:20	row 52:20 56:24 57:8	search 7:19 18:11 24:22
REMOTE 2:18	51:15,16,19,23,24	Royal 3:10	26:13 63:1,4,6,17
repeated 12:8,15	52:2,3,9,12	RPR 1:25 67:3,22	64:3,4,9,10 65:10
repeats 12:5,5	respond 9:7,17,23,24 10:1,1,6	rules 6:2,5	searches 62:18
rephrase 17:1 22:3 25:25	10:16,20 11:5,11,21	S	searching 26:20
replicating 38:14	responded 10:11,12,15 12:7,14	S 3:1 4:6	second 3:9 4:17 6:15 7:13
reply 18:10	response 6:18 9:7,9,12 10:3,5	Samsung 6:25 13:10 14:2,8,10	8:5,13 9:1,3,4,17
reported 1:25 67:8	10:7,9,24 11:6 12:5	14:17,21,21 15:25	11:1,16 12:2 18:17
reporter 2:25 5:5,7 65:25 66:3	12:8,11,16 22:25	16:4,9,17,22 19:16	20:15,24 24:16 26:3
67:3	responsive 21:18	23:11,20 24:1 57:14	34:25 35:21 36:4
REPORTER'S 67:1	result 19:13 44:13,14,15	Samsung's 14:3,6	38:4,25 46:15,15
representative 41:17 50:2,10	50:20 63:1	Santa 3:4	47:11,19,22 53:18
represents 57:18,19	results 48:17	save 68:7	54:4
require 10:9 30:3,16 36:16	RESUMED 59:19 64:23	saw 60:4	secondary 65:3,16
36:16	review 7:5,11,12	saying 19:4 31:5 37:20	secret 26:24
required 36:21 52:18 55:10,25	reviewed 6:14,15,16,17,18,21	52:15 63:3	Section 54:3
requires 10:8 32:6 62:6 63:15	9:12 10:2,4 60:16	says 20:12 21:10 30:25	see 13:23,23 31:10 32:13
	60:22 61:13,23	33:13 39:1 41:12	33:10 38:6 44:13
	64:15	44:24 46:21 48:17	54:8 55:2,6,7,8
	reviewing 35:22,23	50:1 51:14,14 52:4	56:12 57:15 58:24
	revise 16:11,11	52:11,17 59:24	60:3
	right	scheme 36:2,11 38:21,23	seen 15:8,18,19 60:9,9,12
		40:9 44:15 45:9,17	segment 29:23 31:1,2,5,18

32:3,12,17 33:14,16 36:1,11 38:21,23 46:4,11,13 segments 36:5 39:2,5,10 46:17 selects 58:17,20 Seminar 4:10 56:15 send 66:5 sense 12:4 30:20 34:20 38:19 45:22 61:25 62:4 sentence 10:19,20 35:20 38:7 39:8 sentences 25:20,23,24 26:8,12 26:14,16 separate 59:6,10 separately 19:22 service 14:19 22:5,8 23:4,23 24:7,9 set 67:7,16 sets 41:17 shape 39:15 shapes 39:12 share 16:7 shared 58:12 shave 37:16 SHEET 68:9 69:1 short 8:16 14:6	shorthand 5:6 show 45:23 54:11 shown 49:13 50:17,19 52:3 58:16 sign 66:4,6 signal 32:10 33:13 SIGNATURE 69:25 signed 60:6 68:12 significant 29:5 43:23 simplify 16:13 simply 52:13 site 58:16 sitting 10:23 23:3 29:10 six 47:17,17 size 36:1,11 38:21,23 46:4,11,13 skill 28:3 30:21 50:3 52:16 somewhat 11:15 Soon 4:15 57:13 sorry 14:2 16:18 24:4 29:14 34:4,6 39:4 41:25 43:21 55:6 sort 24:10 source 4:10 57:24 58:1,17 58:21 63:9,12 65:5	65:6 South 22:5,8 23:4 speak 26:5,6,9 27:3 29:12 29:14 specific 9:6,16 26:16 28:7 31:24 45:18 47:4 48:16 63:19 specifically 17:13 31:11 35:19 specification 33:21 sponsored 13:21 standard 14:25 15:3,5,11,19 16:11,17 17:3,9 18:12,19 19:2,5,14 19:21,22,24,24 20:6 20:9,25 21:21 22:9 23:8 standards 16:11 19:8 state 2:24 22:4 34:25 44:19 46:1,1,3 47:3 51:18 54:10,22 67:4 stated 12:12 56:2 statement 10:13 29:8 35:3 51:11 STATES 1:1 2:1 station 32:11,22 33:14 stenographically 67:9 step 28:13,13 stole 26:23 stop 37:4	streams 41:19 Street 3:9 strike 11:24 14:2 22:2 24:24 32:2 40:6 strong 27:20 submission 64:14 submitted 6:15 7:14 8:5 53:18 subscribers 12:12 subsequent 64:14 substantial 14:6,7 successful 23:24 sufficient 18:16 suggestion 37:17 Suite 3:10 summarize 35:9,12 summit 24:11 support 29:9 supporting 10:24 sure 8:18 14:13 15:9,9,11 15:13,22 18:5,25 23:1 26:7 27:16 35:16 37:5 40:6 50:6,11 sworn 5:11 symbols 44:25 47:25 48:1 52:2,11
--	---	---	--

system 20:7 21:14 28:24 29:1,4 31:21,22,24	33:1	34:2,19 35:6 36:13 36:13,17 37:15 38:1 39:22,23 41:7 44:23 50:17,19 51:4,17 54:1,3,9 56:10,14 58:2,18,20 59:6,23 60:24 63:9 64:5,6,7 64:17,19	Todor 1:17 2:19 4:2,17 5:9 68:17
systems 28:25	terminology 24:4 33:3,4	third 47:23 52:20	top 59:23,24
T	terms 54:9	thorough 32:7	topics 13:24
T	test 16:12	thought 28:4	TRADEMARK 1:1 2:1
4:6	testified 5:11 9:13 13:9 15:15 17:2 53:14 60:21 61:14 62:15 65:6	three 37:9,10,13,23,25 41:24 46:20 47:20 48:5 50:7 52:9	transcript 6:16 66:1 68:4
table 41:10,17,22 44:14,19 44:21,23,25 45:4 47:16,17 48:22,24 49:13,24 50:1,4,8 51:19,21 52:4	testimony 6:10 20:7 23:13 25:7 55:22 61:22 67:8	time 2:19,22 5:18 12:15 14:13 15:8 19:9 24:1,8 39:12 53:18 53:22 54:11,21 59:24 67:7	translate 26:16
take 29:11 38:20 54:21	testing 19:9	time-frequency 29:23 30:2,3,13,16 30:17,19,24 31:1,3 31:6,17 32:3,12,18 33:15,17 46:20	translation 26:2,10
taken 1:18 2:20 68:5	text 32:25 33:11 52:4	timely 58:7	transmit 43:15 45:1 52:18
talk 10:17 35:14	thank 5:18 7:3 8:24,25 10:22 12:18 21:17 25:9 45:15 46:23 59:14 65:19,21,23 65:24,24	times 12:6,13 27:6	transmitting 42:14
talking 30:8	theory 29:2	timing 24:13 62:12	TRIAL 1:2 2:2
task 49:3	THEREOF 67:16	title 57:11,12,15	tried 18:25 19:16 25:22 35:7,10 54:8
teaching 41:10	things 31:9 46:22 54:16 64:7	today 5:18 6:7,10 53:9 61:22	true 51:10,10 60:25 64:1 68:6
technical 11:20 13:20 15:24 21:8 33:1	think 6:23,24 7:1,15 9:5,19 9:19,21 10:5,6,11 10:11,15 11:7 12:4 12:15,22 13:12,12 13:13,24 14:5,7,14 15:1,3,3,6,14 16:14 17:13,20 18:15,21 19:4,6 20:5,12 21:2 21:7,13,14 22:11,12 22:15,19 23:9 24:5 24:9 25:12 26:13,20 27:19,25,25 28:2,5 28:17 30:18,18,21 31:7 32:6,7 33:8	today's 6:13 7:4,12,22 8:2 18:11 60:10,18 62:16	truth 56:1
technology 4:15 16:4 17:12 28:2 31:14 57:13			truthful 22:12
Telecom 14:18 23:22,23			try 43:24 51:5
Telecommunications 13:22			trying 22:20 29:9 47:1 50:23
tell 13:25 14:1 55:19 58:3,13			twice 12:5
template 17:4,7			two 8:3 21:20 35:6,9 41:23 43:1 45:4 46:22 48:19 49:24 50:4,5 51:4 52:23
tend 64:7			type 28:21 64:3
term 12:20 24:6 30:19			types

28:21	64:9,11	violating	14:14,25 15:2,4,9
U	use	55:22	15:11,15,17,18,21
U.S	8:17,17 9:22 33:2,10	voice	16:1,5,14,16 17:3,9
6:19	37:19,19 39:17	41:19	17:13,18,19,25 18:7
unauthenticated	41:11 43:6	VS	18:12,19 19:1,5
56:2	user	69:3	20:5,7,12,16,18,19
uncoded	32:16,24 33:7,7,10	W	20:20,22,23,24 21:3
42:12	33:12,15,17,22 34:2	want	21:6,10,14,19,20,25
understand	34:10,14,16,23	23:1 24:24 37:5 38:5	22:5,8,10,11,13,14
7:24 9:8 13:11 17:5	users	42:1 43:14 65:25	22:16,22 23:4,12
17:20 26:7,7 28:3	24:7	wanted	24:1,12 25:11 57:12
28:10 30:22 37:5	uses	39:24	58:25
39:7,10 40:15 42:5	56:12	wasn't	WiMAX
43:25 44:4 50:3,9	usually	17:12 32:24 62:1	26:13 27:21
54:8 56:3 57:18	43:22,23	way	window
62:4,5	utilized	17:20 43:13 44:1	55:3
understanding	51:15,25 52:12	62:4	wireless
23:16,20 28:18 51:24	V	Wayback	1:7 2:7 22:5,6,8 23:4
52:5 68:9	v	54:7,8 56:10,12	23:5 69:3
understood	1:6 2:6	58:15 63:16,20 64:1	withdraw
17:3 23:2 29:6 45:24	value	64:2	7:9
52:16	36:18 46:10,18 48:10	Wayne	witness
undertake	48:20,25	2:20	5:10 16:20 17:11
57:23	values	ways	18:3 20:11 21:2,25
undisputed	38:14 41:8 44:7,10	12:13	31:5,20 32:21 33:20
21:13	44:11,23 45:10,18	we'll	34:19 40:19,24
Union	47:10,13 48:15,16	66:6	45:22 49:18 51:4
13:22	50:25	WEATHERWAX	54:1 56:7 57:3 61:2
unit	various	3:3	62:24 63:15,23
30:24 51:16,19,24	41:19	Web	65:23 66:3 67:16
52:2,3,9,14	vendor	4:8 54:9	68:1
UNITED	14:14 16:1	website	word
1:1 2:1	version	25:15 54:13 57:21	26:19 42:8,9,20 43:2
units	15:21	59:5,8 63:12,19	43:5,13,15
29:23 30:2,4,13,16	versus	64:1,2,3	words
30:17,19 31:1,3,6	12:10	Wednesday	27:21 42:25
31:17 32:4 46:20	Videoconference	2:22 5:1	work
48:4 52:18	1:16 2:18 3:6,12	week	19:10 29:5 39:22
unpack	view	60:13	40:1
25:17 51:6	47:1,6 57:25 58:17	went	working
untimely	58:17,20	15:13,14	10:3
53:25 55:12,25	viewed	West	world
upload	61:3	3:9	14:1
30:5 54:15	viewing	WiBro	wouldn't
URL	63:9	4:15 6:25 14:1,3,5,9	37:22
			write

16:12 27:10,10 written 19:25 27:4 wrong 40:22 49:19	1:11 2:11 1016 3:4 1023 4:15 6:24 13:2,6,9,13 13:16 14:21 21:6,10 25:19 26:23,24 27:2 27:13,17,22,24 28:3 28:9 29:9,19 53:11 53:21 54:3,6,12 56:24 57:21 59:4,8	150 3:9 16 35:1 38:8 41:8 45:5 160 44:20 45:1,4,6 16QAM 41:23 49:25 17 54:4,5	24th 67:17 274 58:23
X	X 4:1,6 XML 58:18,22 63:9	2	3
Yeah 24:5 51:4 56:7 year 17:24 18:5,6 56:18 65:18 years 14:5 27:5,9 yesterday 60:1,2 62:10,13 Yoon 4:15 57:13 Young 4:15 57:13	1031 4:17 8:11,13 9:2 35:18 1034 24:17,20 25:1,4,7,9 25:12,15,18 26:2,9 26:17,22 27:1,12,17 27:24 28:9 29:8,11 54:6 59:7 1035 4:8 54:23 55:3,15,17 55:21 56:8,21 58:16 60:3,4,5,6,10,12 61:16 63:10 64:13 65:2 1036 4:10 55:4,7,9 58:2,6 58:8,9,12,22,23 59:2,12,22 61:3,19 62:8 63:4,5,8 64:13 11:13 59:25 11:30 2:22 66:7 11594 1:25 2:23 5:7 67:22 13 4:15 48:25 49:14 50:12,14 1301 8:8 1315417 1:24 69:2 14th 60:7	2 17:4,9 18:20 20:9,25 21:21 22:9 23:7 36:10,24 37:6,7,9 37:14,19,20,22,24 38:1,3,13 39:25 40:8 45:25 46:21,24 2.0 15:16,20 16:21 17:7 19:1,5,17 20:4 22:11,17,21,24 20 68:13 2004 56:14,17 57:22 59:5 59:11 2005 24:15 25:12,13 2006 4:10 24:15 2023-00763 5:20 2025 1:18 2:23 5:1 67:17 2027 6:23 21:8 22 59:24 226-2928 3:11 23 1:18 2:23 5:1 28:13 248 3:11	3 35:1 36:17,18,20,23 37:1 38:8,20,22 39:1,2,16,19,20 41:8 44:2 45:5 46:10,18 307-4514 3:5 31 41:16 310 3:5 34 35:23 36:8 46:2 35 35:20,24 38:7 40:16 37 44:20 38 40:16 42:21 43:10,25 51:18
Y			4
0 36:18,18,19			4 36:10,17,24 37:6,9 38:13 40:8 45:25 46:22,24 400N 3:10 450 6:20 13:1 29:19,22 30:9 34:15 36:22 41:9,10 47:6 48:18 48:25 49:1,13,15 51:2 52:17 46 44:24 47 44:24 48067
1 30:23 36:20,25 37:6 37:11,12,21,21 41:10,17 44:14,19 44:21,23,25 45:4 47:16,17 48:22,24 49:13,24 50:1,4,8 51:19,21 52:4,6 56:14 10 42:14 10,447,450			

3:10	22:9		
49			
51:14	9		
5	9/10/2004		
	4:16		
5	9:03		
4:3 39:21,24 40:4	2:21 5:2		
42:14,17	90405		
50	3:4		
51:14			
53			
4:4			
54			
4:8			
58			
4:10			
59			
4:3			
6			
6			
41:16			
63			
43:15			
64			
4:4 43:6,13,15			
7			
7			
29:22 30:8,11,25			
31:24,25 32:10			
33:12 36:18			
8			
8			
4:17 36:10,16,20,24			
36:25 37:6,10 38:13			
39:25 40:8 45:25			
46:22,24			
80			
44:25 52:1,11			
802.16			
17:4 23:7 27:21			
802.16e			
15:16 16:21 17:9			
18:20 20:9,25 21:21			