

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22

UNITED STATES PATENT AND TRADEMARK OFFICE
PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD.	
and SAMSUNG ELECTRONICS AMERICA,	
INC.,	Case Nos.
Petitioners,	IPR2025-01187
v.	IPR2025-01188
HANNIBAL IP LLC,	IPR2025-01189
Patent Owner.	IPR2025-01190

DEPOSITION OF FRIEDHELM RODERMUND

DATE: Thursday, March 5, 2026

TIME: 9:12 a.m.

LOCATION: Finnegan, Henderson, Farabow, Garrett &
Dunner, LLP
901 New York Avenue Northwest
Washington, DC 20001

REPORTED BY: Kyle G. Jamolin

JOB NO.: 7915183

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22

A P P E A R A N C E S
ON BEHALF OF PETITIONERS SAMSUNG ELECTRONICS CO., LTD.
AND SAMSUNG ELECTRONICS AMERICA, INC. AND FRIEDHELM
RODERMUND:

TIMOTHY J. MAY, ESQUIRE
CHEN ZANG, PH.D., ESQUIRE
Finnegan, Henderson, Farabow, Garrett & Dunner,
LLP
901 New York Avenue Northwest
Washington, DC 20001
timothy.may@finnegan.com
chen.zang@finnegan.com
(202) 408-4447
(202) 408-4416

ON BEHALF OF PATENT OWNER HANNIBAL IP LLC:
JEFFREY M. SALTMAN, ESQUIRE
Cole Schotz P.C.
1875 K Street Northwest, Suite 475
Washington, DC 20006
jsaltman@coleschotz.com
(202) 304-1611

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22

I N D E X

EXAMINATION:	PAGE
By Mr. Saltman	10

E X H I B I T S

NO.	DESCRIPTION	PAGE
Exhibit 1	Declaration of Friedheim Rodermund in Support of Petitions for Inter Partes Review of U.S. Patent Nos. 11,057,896 and 11,641,661 (Samsung Exhibit 1026)	21
Exhibit 2	Declaration of Friedheim Rodermund in Support of Petitions for Inter Partes Review of U.S. Patent No. 11,272,535 (Samsung Exhibit 1029)	14
Exhibit 3	Declaration of Friedheim Rodermund in Support of Petition for Inter Partes Review of U.S. Patent Nos. 11,368,911 (Samsung Exhibit 1012)	16

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22

E X H I B I T S (Cont'd)

NO.	DESCRIPTION	PAGE
Exhibit 4	Supplementary Declaration of Friedheim Rodermund in Support of Petitions for Inter Partes Review of U.S. Patent Nos. 11,057,896 and 11,641,661 (Samsung Exhibit 1045)	22
Exhibit 5	3GPP Terms of Use, Accessed October 5, 2025 (Hannibal Exhibit 2004)	63
Exhibit 6	3GPP FTP Directory (www.3gpp.org/ftp)	70
Exhibit 7	3GPP FTP Specs Directory (www.3gpp.org/ftp/specs)	74
Exhibit 8	3GPP FTP Specs 2018-12 Directory (www.3gpp.org/ftp/specs/2018-12)	80
Exhibit 9	The Contents of this Folder is Available on Request to info@3gpp.org	82

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22

E X H I B I T S (Cont'd)

NO.	DESCRIPTION	PAGE
Exhibit 10	3GPP TSG RAN WG1 Meeting #94 Gothenburg, Sweden, August 20th- 24th 2018, R1-1808197; Source: ZTE; Title: Maintenance for Reference Signals and QCL (Samsung Exhibit 1011)	145
Exhibit 11	3GPP TSG RAN WG1 Meeting #94b Chengdu, China, October 8th-12th, 2018, R1-1810751; Source: Intel Corporation; Title: Remaining Issues on Beam Management (Samsung Exhibit 1006)	160
Exhibit 12	3GPP TS 38.214 V15.3.0 (2018-09) Technical Specification; 3rd Generation Partnership Project; Technical Specification Group Radio Access Network; NR; Physical Layer Procedures for Data (Release 15) (Samsung Exhibit 1012)	168

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22

E X H I B I T S (Cont'd)

NO.	DESCRIPTION	PAGE
Exhibit 13	Google Search: Physical Layer Procedures for Data	177
Exhibit 14	3GPP TS 38.321 V15.3.0 (2018-09) Technical Specification; 3rd Generation Partnership Project; Technical Specification Group Radio Access Network; NR; Medium Access Control (MAC) Protocol Specification (Release 15) (Samsung Exhibit 1007)	185
Exhibit 15	3GPP TSG-RAN WG1 #96 Athens, Greece, 25th February-1st March, 2019, R1-1903016; Source: Qualcomm Incorporated; Title: Potential Techniques for UE Power Saving (Samsung Exhibit 1008)	203

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22

E X H I B I T S (Cont'd)

NO.	DESCRIPTION	PAGE
Exhibit 16	3GPP TSG-RAN WG1 #96b Xi'an, China, 25th 8th-12th April, 2019, R1-1905031; Source: Qualcomm Incorporated; Title: PDCCH-based Power Saving Channel Design (Samsung Exhibit 1007)	211

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22

P R O C E E D I N G S

THE REPORTER: Good morning. My name is Kyle Jamolin and I am the reporter assigned by Veritext to take the record of this proceeding. We are now on the record at 9:12 a.m.

This is the deposition of Friedhelm Rodermund, taken in the matter of Samsung Electronics Company, Limited et alia vs. Hannibal IP LLC on March 5, 2026, at Finnegan, Henderson, Farabow, Garrett & Dunner, LLP, 901 New York Avenue Northwest, Washington, DC, 20001.

I am a notary authorized to take acknowledgements and administer oaths in the District of Columbia.

Additionally, absent an objection on the record before the witness is sworn, all parties and the witness understand and agree that any certified transcript produced from the recording of this proceeding:

- is intended for all uses permitted under applicable procedural and evidentiary rules and laws in the

1 same manner as a deposition recorded
2 by stenographic means; and
3 - shall constitute written stipulation
4 of such.

5 At this time, will everyone in
6 attendance please identify yourself for the record,
7 beginning from my right?

8 MR. SALTMAN: Sure. Jeff Saltman from
9 Cole Schotz P.C., on behalf of the patent owner,
10 Hannibal IP LLC.

11 MR. MAY: Tim May with Finnegan
12 Henderson, on behalf of the Samsung entities,
13 representing the witness.

14 MR. RODERMUND: Friedhelm Rodermund,
15 the witness.

16 THE REPORTER: Okay. And hearing no
17 objection, I will now swear on the witness.

18 Please raise your right hand.

19 //

20 //

21 //

22 //

1 WHEREUPON,
2 FRIEDHELM RODERMUND,
3 called as a witness and having been first duly sworn
4 to tell the truth, the whole truth, and nothing but
5 the truth, was examined and testified as follows:

6 THE REPORTER: Counsel, you may
7 proceed.

8 EXAMINATION

9 BY MR. SALTMAN:

10 Q Good morning, Mr. Rodermund.

11 A Good morning.

12 Q Could you please state your full name for
13 the record?

14 A My name is Friedhelm Rodermund.

15 Q And is it okay if I say Rodermund, or is
16 that -- is there a better way to pronounce your name?

17 A That's okay. That's fine.

18 Q Okay. I know it's Americanized. Are you
19 currently employed, Mr. Rodermund?

20 A I am employed by my own company.

21 Q And where do you work?

22 A I work in Koblenz, Germany.

1 Q Okay. And what is the name of the company
2 where you work?

3 A IOTECC, with double C.

4 Q Okay. And you've been deposed before?

5 A Yes, I have.

6 Q Okay. And I know you have, I'm just going
7 to go over some ground rules. You probably have heard
8 all these before, but just so we're all clear. Please
9 do your best to wait until I finish asking a question
10 before you answer, this will allow the court reporter
11 to easily understand us.

12 And I'll allow you to finish answering your
13 question if you allow me to finish asking my question.
14 Does that make sense?

15 A Yes.

16 Q If you don't understand any of my questions,
17 will you agree to let me know?

18 A Yes.

19 Q And if you do answer my question, I'll
20 assume you've understood it; is that fair?

21 A Fair.

22 Q If you need to take a break at any point,

1 just please let me know. I just ask that if there's a
2 pending question that you answer it; okay?

3 A Okay.

4 Q Your attorney may object from time to time.
5 Unless he instructs you not to answer a question, you
6 have to answer the question. Do you understand that?

7 A Yes.

8 Q Is there any reason you can't give truthful
9 and accurate testimony today?

10 A No reason.

11 Q And you submitted declarations in four
12 different IPR proceedings; right?

13 A Yes.

14 Q And those IPR proceedings end in the last
15 four digits, 1187, 1188, 1189, and 1190; is that
16 correct?

17 A Correct.

18 Q Okay. So when I refer to the IPRs,
19 generally I'll be referring to those four IPRs; is
20 that fair?

21 A Fair.

22 Q Okay. When were you first retained in the

1 IPRs?

2 A I can't recall which one. It was sometime
3 last year.

4 Q Okay. And your declarations -- I think your
5 first declarations were issued in July of 2025, so
6 does that give you a sense of how much before that you
7 probably would have been retained?

8 A I don't know exactly. It must have been a
9 couple of months before it.

10 Q Okay. And were you retained in all four
11 IPRs at the same time?

12 A I think so.

13 Q The declarations that you've submitted,
14 aside from Samsung's attorneys, did anyone else help
15 with drafting those declarations?

16 A Sorry, besides who?

17 Q Samsung's attorneys.

18 A Oh, okay. No, nobody else.

19 Q Okay. Did Samsung's attorneys draft any
20 part of your declarations?

21 A Well, I created the original drafts, and
22 then after that it was obviously a collaborative

1 effort with some comments.

2 Q So the original drafts were yours and then
3 Samsung's attorneys provided feedback to those drafts;
4 is that fair?

5 A That's fair.

6 Q And you've issued four declarations,
7 including your supplemental declaration; correct?

8 A That's correct.

9 Q And you have two of those in front of you,
10 and we're going to get the other two sometime soon; is
11 that your understanding as well?

12 A Okay.

13 Q Let's start with the first exhibit, which is
14 actually labeled as Exhibit 2. And that should be
15 your declaration in the 1188 IPR; is that fair?

16 (Exhibit 2 was marked for
17 identification.)

18 A That's right.

19 Q Okay. So -- and I know there's a lot of
20 pages, but does it look like a true and accurate copy
21 of your declaration in this IPR?

22 A May I have a quick look?

1 Q Sure.

2 A Well, I'm not able to confirm every single
3 of the 773 pages, but it looks like a true and correct
4 copy.

5 Q Okay. And if you could turn to page 68 of
6 Exhibit 2 -- that declaration.

7 A Sixty-eight?

8 Q Yeah, 68. Looks like on the last page
9 there.

10 A Oh, okay.

11 Q This declaration is dated July 10, 2025; is
12 that right?

13 A Yes.

14 Q And is that a copy of your signature?

15 A It is.

16 Q Okay. All right. If you could put that to
17 the side, we'll come back to it. If you could turn to
18 Exhibit 3 there. And Exhibit 3 --

19 THE REPORTER: You want to officially
20 enter --

21 MR. SALTMAN: Yes, please enter. Yes,
22 could you enter in.

1 BY MR. SALTMAN:

2 Q And Exhibit 3 is a copy of your declaration
3 in the 1189 IPR; is that correct?

4 (Exhibit 3 was marked for
5 identification.)

6 A It appears so. Yes.

7 Q Okay. And does it appear to be a true and
8 accurate copy of your declaration in that IPR?

9 A Yeah. Again, I can't confirm the 900 pages,
10 but it appears to be a correct copy.

11 Q And if you turn to page 105 of Exhibit 3?

12 A Yep.

13 Q And this declaration was dated July 1, 2025;
14 right?

15 A Yes.

16 Q And is that a copy of your signature on page
17 105?

18 A Yes, it is.

19 Q Okay. And again, you can put that to the
20 side, we'll come back to it. And you've issued two
21 other declarations in this case; right?

22 A I did.

1 Q Okay. And that's the original declaration
2 in the 1187 and 1190 IPRs -- it's one declaration in
3 those two IPRs; right?

4 A Yes.

5 Q Okay. And then you also issued a
6 supplemental declaration in those IPRs; correct?

7 A Yes.

8 Q And do these four declarations contain all
9 of your opinions in these IPRs?

10 A Excuse me, could you please repeat?

11 Q Sure. Do these four declarations contain
12 all the opinions in these IPRs? All of your opinions?

13 A I would say yes, so far it includes all my
14 opinions -- all the opinions I have provided in this
15 case.

16 Q And aside from typos, are you aware of any
17 mistakes or errors in your declarations that you've
18 noticed since they issued?

19 A I'm not aware of any mistakes right now.

20 Q Okay. And did you do everything you could
21 to make sure your declarations were accurate and
22 truthful?

1 A I did.

2 Q What did you do to prepare for today's
3 deposition? Just at a high level.

4 A I read through my declarations -- yes, that
5 was the main thing -- and I met with counsel.

6 Q Okay. When did you meet with counsel?

7 A Yesterday and the day before yesterday.

8 Q Okay, so over the last two days. How long,
9 in total, did you meet with counsel?

10 A Part of each day, so not full day.
11 Yesterday -- part of the day yesterday, and part of
12 the day on -- what was it -- Tuesday.

13 Q So how many hours in total would you say,
14 between the two days?

15 A Maybe ten, maybe. Ten to twelve.

16 Q Ten to twelve hours?

17 A Roughly, yeah.

18 Q And aside from counsel, did you speak with
19 anyone else while -- sorry, going back to the
20 preparation of your declarations. Aside from counsel,
21 did you speak with anyone else while preparing your
22 declarations?

1 A No.

2 Q So did you speak with anyone from 3GPP, for
3 example, when preparing your declarations?

4 A I did not.

5 Q And did you speak with anyone from ETSI when
6 preparing your declarations?

7 A I did not.

8 Q Aside from your declarations, did you review
9 any other documents to prepare for today's deposition?

10 A I did review my -- my declarations and the
11 different appendixes and exhibits. That's it.

12 Q Okay. So as part of your preparation, you
13 didn't review any documents that haven't been provided
14 in these IPRs; right?

15 A I did not review any documents which have
16 not -- not been provided.

17 Q And we talked previously that you've been
18 deposed before. About how many times have you
19 testified at deposition?

20 MR. MAY: Objection, form.

21 THE WITNESS: I don't know the exact --
22 exact number.

1 BY MR. SALTMAN:

2 Q Do you have a rough estimate of how many
3 times you've been deposed?

4 A Around ten times.

5 Q You said ten times?

6 A Yeah.

7 Q And in IPRs, how many declarations have you
8 drafted?

9 A Again, I have never counted them.

10 Q Do you have a rough estimate?

11 MR. MAY: Objection, form.

12 THE WITNESS: No, I can't -- can't give
13 you a good estimate.

14 MR. SALTMAN: Okay. All right. Why
15 don't we go off the record.

16 THE REPORTER: The time is 9:26 a.m.
17 We are off the record.

18 (Off the record.)

19 THE REPORTER: We are back on the
20 record at 9:42 a.m.

21 MR. SALTMAN: All right.

22 //

1 BY MR. SALTMAN:

2 Q Welcome back, Mr. Rodermund. Let me hand
3 you what's been marked as Exhibit 1, which is a copy
4 of your declaration in the 1187 and 1190 IPRs. Do you
5 have that in front of you?

6 (Exhibit 1 was marked for
7 identification.)

8 A Yes.

9 Q Okay. And I understand it's 684 pages, but
10 based on a quick review, does this look like an
11 accurate copy of your declaration in those IPRs?

12 A Based on a quick review, it looks like an
13 accurate copy.

14 Q All right. And if you could turn to page
15 125 of your declaration? Should be the last page
16 probably of that.

17 A Yep.

18 Q And this declaration is dated July 18, 2025;
19 right?

20 A Yes.

21 Q And is that a copy of your signature there?

22 A It is.

1 Q Okay. You can put that to the side, that
2 we're going to use that one a little bit more than the
3 others.

4 A All right.

5 Q And then, I'm handing you what's been marked
6 as Exhibit 4. And Exhibit 4 is your supplemental
7 declaration in the 1187 and 1190 IPRs; do you see
8 that?

9 (Exhibit 4 was marked for
10 identification.)

11 A Yes.

12 Q Okay. And does it appear to be a correct
13 and accurate copy of your supplemental declaration?

14 A As far as I can tell, it looks like a
15 correct copy.

16 Q Okay. And if you turn to page 23 of the
17 supplemental declaration, it's dated February 6, 2026?

18 A It is.

19 Q And that's a copy of your signature there?

20 A It's a copy of my signature.

21 Q This is obviously a supplemental
22 declaration. What was the purpose of the supplemental

1 declaration?

2 MR. MAY: Objection, form.

3 THE WITNESS: So the original
4 declaration already provided the publication dates and
5 the authentication of the respective documents. The
6 supplementary declaration provided supplementary
7 information to support the opinions, which I already
8 wrote down in my opening declaration.

9 BY MR. SALTMAN:

10 Q And the supplemental information that is in
11 your supplementary declaration, was that information
12 available to you at the time you wrote your original
13 declaration?

14 A That was -- the information which is
15 included in the supplementary declaration covers
16 additional search functions for retrieving specific
17 documents of interest from 3GPP. And the search
18 functions, yes, they were already available at an
19 earlier stage.

20 Q So you could have discussed those search
21 functions in your original declaration if you'd wanted
22 to; correct?

1 A So the first declaration was complete, in a
2 sense that it provided the background of 3GPP,
3 including the document handling practices and
4 establishing the application dates. The supplementary
5 declaration adds on top of that a few aspects, such as
6 searching for documents.

7 Q Right. And so, if you wanted to talk about
8 that searchability function, you could have included
9 it in your original declaration; right?

10 A I could have included it if -- yeah, if
11 required.

12 Q Okay. All right. You can put that to the
13 side, and if you could bring up Exhibit 1, which is
14 your declaration in the 1187 and 1190 IPRs. And so,
15 I'm going to use Exhibit 1 as kind of the
16 background -- for background, and that sort of
17 information.

18 Obviously, is it fair to say that the
19 background information about 3GPP and your background
20 is the same across your three original declarations?

21 A That's fair.

22 Q Okay. Obviously if we go through anything

1 and something is different, in this declaration versus
2 others -- I don't think it will be -- but just please
3 let me know, just so we can deal with that.

4 All right. So if you could turn to Appendix
5 A, which is your CV, your curriculum vitae, and it
6 talks about your work at IOTECC. That's who you're
7 currently employed by; right?

8 A Yes.

9 Q And you've worked at IOTECC since January of
10 2015?

11 A That's correct.

12 Q What have your responsibilities been at
13 IOTECC?

14 A So IOTECC provides office consultancy
15 services around IoT, Internet of Things, standards,
16 technology, and patents. And, well, I'm the CEO of
17 the company, which is -- which I'm employed at. I
18 don't have employees in IOTECC, but I work with
19 external experts on these topics.

20 Q Do you just do consulting at IOTECC, or do
21 other types of work as well?

22 A I do consulting and I do, also when I'm

1 asked to, this kind of work, supporting litigations.

2 Q Okay. Aside from consulting and doing work
3 related to litigations, is there any other type of
4 work you do at IOTECC?

5 A Well, consultancy already spans a couple of
6 topics and that's the main focus of my work.

7 Q And while you've been at IOTECC, have you
8 done any consulting specifically for 3GPP?

9 A I have not done consultancy for 3GPP while
10 at IOTECC, but I have been obviously following 3GPP
11 activities.

12 Q And while you've been at IOTECC, have you
13 done any consulting for ETSI?

14 A No, I have not been doing consultancy for
15 ETSI, but I have been engaged in ETSI activities.

16 Q And while you've been at IOTECC, have you
17 participated in any 3GPP meetings?

18 A I have participated in 3GPP meetings.

19 Q About how many 3GPP meetings have you
20 attended?

21 MR. MAY: Objection, form.

22 THE WITNESS: I don't know the number.

1 I don't know.

2 BY MR. SALTMAN:

3 Q Do you have a rough estimate of how many
4 3GPP meetings you've attended as as you've worked at
5 IOTECC?

6 A I would have to check my notes for finding
7 out the number.

8 Q Okay. I know one of the meetings you
9 attended was the meeting in -- I believe it was
10 2018 -- in Gothenburg, Sweden. Do you recall that?

11 A I recall that meeting.

12 Q Okay. And I know at least one of the
13 documents you discussed relates to that meeting;
14 correct?

15 A That's correct.

16 Q Okay. Were there any other meetings that
17 you attended where documents that you discussed in
18 your declarations were presented or discussed?

19 MR. MAY: Objection, form.

20 THE WITNESS: I can't recall without
21 looking at my declarations, because there have been,
22 as you know, many documents which I was testifying

1 about. So I can't answer this question right now.

2 BY MR. SALTMAN:

3 Q Okay. Do you recall why you attended the
4 meeting in Gothenburg, Sweden?

5 A Well, I attend meetings, standardization
6 meetings, part of my job, part of my profession, also
7 to be able to offer specific consultancy services to
8 my clients. So I have to stay, obviously connected to
9 the latest developments which are happening in
10 standards development as 3GPP.

11 Q And you talked about keeping abreast of kind
12 of what's going on with 3GPP. Aside from attending
13 meetings, are there other ways in which you kept up to
14 date with what was going on with 3GPP?

15 A Certainly. So besides attending meetings,
16 3GPP meetings, other ways are attending, like, trade
17 fairs, which are offering -- or, which are showing
18 3GPP-compliant products, like network infrastructure
19 and devices.

20 But in addition, I also reuse the 3GPP
21 infrastructure, the 3GPP resources, for retrieving
22 documents and reviewing documents, reviewing meeting

1 reports, to see what are the latest developments.

2 Q And do you access those meeting reports
3 through the 3GPP FTP site?

4 A Not only via the FTP site, but also via the
5 3GPP portal, which allows you to search for specific
6 documents. And it's more, let's say, convenient way
7 of accessing the resources.

8 Q And do you review the meeting agendas for
9 every meeting that happens -- 3GPP meeting, or do you
10 just decide which ones are most relevant to you?

11 MR. MAY: Objection, form.

12 THE WITNESS: I review the agendas of
13 the meetings, which -- in which I'm particularly
14 interested, because you have, like, many, many
15 meetings each year, so you cannot follow all of them.
16 BY MR. SALTMAN:

17 Q Essentially, there are too many meetings --
18 too many 3GPP meetings to keep track of all of them;
19 right?

20 MR. MAY: Objection, form.

21 THE WITNESS: If you want to you can
22 keep track at a high level, but it would be difficult

1 to really look into the details of each meeting, what
2 has been discussed.

3 BY MR. SALTMAN:

4 Q And before working at IOTECC, you worked at
5 Friedhelm Rodermund Consulting; right?

6 A Yes.

7 Q For about two months?

8 A Yes.

9 Q And is that -- was the change from Friedhelm
10 Rodermund Consulting to IOTECC just a change of the
11 name? Were you doing similar work?

12 A So during the time at Friedhelm Rodermund
13 Consulting, I did have already clients doing
14 consultancy work, but I also needed this few months to
15 set up my company.

16 Q Okay. And before that you worked at
17 Vodafone for nine years, almost ten years. And I see
18 you held three titles there. You were a senior
19 standards strategist from 2011 to 2014. Do you see
20 that on page 2 of your CV?

21 A Yes.

22 Q What were -- well, under that job, the first

1 bullet point says "Representing Vodafone in various
2 standardization bodies"; do you see that?

3 A Yes.

4 Q Did you, during this time, represent
5 Vodafone at 3GPP?

6 A During that time I was mainly focusing on
7 our standards organizations, in particular the Open
8 Mobile Alliance, but there was a strong dependency on
9 3GPP standards from the IoT standards we built in the
10 Open Mobile Alliance. For example, lightweight
11 machine-to-machine, and OMA, O-M-A, device management,
12 there was a strong connection to 3GPP.

13 And one thing I did, I was building
14 particular organization layers, which were kind of
15 interfacing between the 3GPP connectivity and the
16 application for Internet of Things services.

17 So even though I was physically attending,
18 most of the time the Open Mobile Alliance meeting
19 during that period, I had to be very much familiar
20 with 3GPP technology and still follow it by
21 downloading, reviewing the latest standards, et
22 cetera.

1 Q While you were a senior standards strategist
2 at Vodafone, did you attend any 3GPP meetings?

3 A I'm not sure, actually --

4 Q And -- sorry, you go.

5 A Yeah. No, as I said earlier, 3GPP was not
6 my focus in regard of physically attending during the
7 time period, but I had to follow 3GPP.

8 Q All right. So it's fair to say that, while
9 you were a senior standards strategist you were
10 following 3GPP, but you were more focused in attending
11 meetings for the Open Mobile Alliance; right?

12 MR. MAY: Objection to form.

13 THE WITNESS: Yeah.

14 BY MR. SALTMAN:

15 Q Okay. And then, your prior role was a vice
16 chairman for the Open Mobile Alliance device
17 management. In that role from 2009 to 2010, did you
18 attend any 3GPP meetings?

19 A Yes, I did.

20 Q Okay. And I see the last bullet point says
21 "Delegate of 3GPPSA1, with responsibility for the
22 introduction of machine-type communications-related

1 service/network requirements." Do you see that?

2 A I see that.

3 Q What does it mean to be a delegate of
4 3GPPSA1?

5 A Delegates is the term used to, well,
6 describe individuals who are attending 3GPP meetings
7 or other standardization meetings on behalf of the
8 company. They are representing a company, so it's a
9 delegate, a meeting delegate.

10 And SA1 is the abbreviation for the 3GPP
11 working group, which deals with service definitions,
12 service requirements, defining service requirements,
13 which are then translated into technical
14 specifications by the other working groups.

15 Q Okay. And so, at this time was 3GPPSA1
16 working on, for example, LTE, or some standard like
17 that?

18 MR. MAY: Objection to form.

19 THE WITNESS: During the timeframe, the
20 main focus would've been LTE.

21 BY MR. SALTMAN:

22 Q Okay. And do you recall about how many 3GPP

1 meetings you attended in the 2009-2010 timeframe?

2 A No, I can't -- can't recall how many
3 meetings I have attended.

4 Q Okay. And before that you were at Vodafone,
5 you were a project manager for mobile broadcast
6 standards; do you see that?

7 A Yes.

8 Q And you held that role from 2005 through
9 2008; right?

10 A Yes.

11 Q And what were your responsibilities as
12 Project Manager for Mobile Broadcast Standards?

13 A My responsibilities included defining
14 specific aspects of a broadcast standard, which again,
15 relied heavily on 3GPP standards for broadcasting. So
16 there's always a strong -- usually there's a strong
17 dependency from the service-layer definition to the
18 actual transmit-layer definition.

19 And 3GPP is more working on the transmit
20 side; sometimes we have also service-related aspects
21 which we are covering. So I had to be aware of 3GPP
22 standards, such as MBMS, to take into account and then

1 to enhance these standards by service-related
2 functions.

3 Q And while you were a project manager of
4 mobile broadcast standards at Vodafone, did you attend
5 any 3GPP meetings?

6 A I'm not sure.

7 Q And if you look at your responsibilities in
8 your CV, under Project Manager of Mobile Broadcast
9 Standards, it doesn't mention 3GPP; correct?

10 A It doesn't mention 3GPP meetings, but the CV
11 certainly does not mention every meeting I have
12 attended. Right.

13 Q And during your entire time at Vodafone,
14 were you responsible for uploading any documents to
15 the 3GPP FTP server?

16 MR. MAY: Objection to form.

17 THE WITNESS: Yes. I did that during
18 my time at Vodafone.

19 BY MR. SALTMAN:

20 Q And was that when you were the senior
21 standards strategist, or was that when you were the
22 vice chairman -- strike that.

1 During your time at Vodafone, when would you
2 have uploaded documents to the 3GPP FTP server?

3 A I can't recall, because it's many years we
4 are now talking about, exactly how many times I did
5 that, and -- at least one instance, or at least one
6 time period I recall, was when I was contributing to
7 the machine-type communication standard in 3GPPSA1.
8 That's -- at least during that time period, I have
9 uploaded documents.

10 Q And going back to your time at IOTECC, have
11 you uploaded any documents to the 3GPP FTP server
12 during your -- while you've worked at IOTECC?

13 A I have attended a couple of meetings and I
14 have downloaded many, many documents, but I have not,
15 I believe, uploaded -- I can't recall, at least, an
16 upload of a document.

17 Q Okay. So it's fair to say, the last time
18 you remember uploading documents to the 3G FTP server
19 was sometime when you were at Vodafone, so sometime
20 2014 or earlier?

21 MR. MAY: Objection to the form.

22 THE WITNESS: I'm not absolutely sure

1 if I have uploaded something also during my time at
2 IOTECC, given IOTECC now exists more than ten years,
3 and I have attended several meetings.

4 BY MR. SALTMAN:

5 Q But you don't recall ever having uploaded a
6 3GPP document to the FTP server during your time at
7 IOTECC; right?

8 A As I sit here today, I'm unable to confirm
9 this without checking my notes of this timeframe.

10 Q All right. And then, before Vodafone you
11 worked at ETSI, which stands for the European
12 Telecommunications Standards Institute. What is ETSI,
13 at a high level?

14 A Well, ETSI is a European standards
15 organization, which is developing telecommunication
16 standards for various fields. And it has developed
17 standards which are not only used in Europe, but they
18 are used all over the world. And ETSI is also one of
19 the founding partners of the Third Generation
20 Partnership Project.

21 Q And that's 3GPP; right?

22 A Yes.

1 Q Okay. And you talked about 3GPP delegates
2 before. Would you consider those -- strike that.

3 Would you consider 3GPP delegates to be
4 extremely knowledgeable when it comes to
5 telecommunication standards and technology?

6 MR. MAY: Objection to form.

7 THE WITNESS: It's difficult to
8 characterize all 3GPP delegates by the same
9 attributes. Obviously -- obviously if a delegate
10 wants to achieve something for 3GPP, she or he has to
11 be knowledgeable about the subject matters.

12 BY MR. SALTMAN:

13 Q Okay. In your experience, are the 3GPP
14 delegates generally more senior engineers?

15 MR. MAY: Objection to form.

16 THE WITNESS: I think there's a mixture
17 of senior delegates -- senior engineers; occasionally
18 you might also have junior engineers. It depends on
19 the companies and the resources provided by the
20 individual companies.

21 BY MR. SALTMAN:

22 Q And are 3GPP delegates some of the most

1 knowledgeable people in the world when it comes to
2 telecommunication standards and technology?

3 MR. MAY: Objection to form.

4 THE WITNESS: There are certainly many
5 knowledgeable people at 3GPP, to evolve and -- and
6 enhance the standard -- standard. But again, it's a
7 mixture of -- of different skill sets and different --
8 different levels of expertise, which you can find in
9 3GPP.

10 BY MR. SALTMAN:

11 Q And in your experience, do 3GPP delegates
12 often know how to navigate through the 3GPP website
13 and FTP server to locate documents?

14 A Yes, indeed, that's a precondition to
15 successfully work in 3GPP. You have to be able to
16 navigate through the server, the portal, to find
17 documents.

18 Q When you were at Vodafone, did you talk with
19 engineers there about 3GPP?

20 A Well, I talked with my colleagues at
21 Vodafone about 3GPP, certainly.

22 Q And did you ever explain to any of those

1 engineers at Vodafone how to find documents on the
2 3GPP website and FTP server?

3 A I can't recall whether I explained it to
4 some person who might be -- have been new to 3GPP.
5 But the usage of the portal, server, it's kind of
6 self -- self-explanatory, so it's not -- not hard to
7 find things you're looking for.

8 Q And when you were at Vodafone, when you were
9 talking to non-3GPP delegates who worked there, did
10 you ever help them navigate through the 3GPP website
11 to find any documents?

12 A I can't recall a specific instance, but if,
13 for example, a colleague was looking for specific
14 information about the current status of a specific
15 3GPP work item, I -- I would've helped him.

16 Q And do you recall any colleagues coming to
17 you needing help to find any 3GPP documents when you
18 were at Vodafone?

19 A I -- I think that -- that may have happened.

20 Q It may have happened?

21 A Yeah.

22 Q Was that a -- that regularly happened, or

1 was it kind of a -- strike that.

2 Did that happen often, or not?

3 MR. MAY: Objection to form.

4 THE WITNESS: I would not say often.

5 It might have happened sometimes.

6 BY MR. SALTMAN:

7 Q And when that would occur, you would assist
8 the engineer with helping to locate the document on
9 the 3GPP FTP server or website; right.

10 MR. MAY: Objection to form.

11 THE WITNESS: If a colleague who is not
12 personally involved in 3GPP would need, for example, a
13 latest specification for specific functionality, well,
14 I might have just sent it to this person.

15 BY MR. SALTMAN:

16 Q All right. So your responsibilities at
17 ETSI, you were secretary for three different areas.
18 Could you just describe, at a high level, what your
19 responsibilities were when you were at ETSI?

20 A Yeah. When I was at ETSI, I was taking care
21 of the day-to-day operations of the working groups I
22 was responsible for, which included the organization

1 of meetings, the handling of the -- our documents,
2 including the so-called TDocs.

3 I was editor of several specifications of
4 several standards developed by my working groups.
5 Given that I was working at the time when 3GPP was
6 just created, was new, I was also responsible for
7 implementing the 3GPP processes and working procedures
8 in 3GPP.

9 Q All right. You talked about helping to
10 implement the 3GPP processes. What processes are you
11 talking about?

12 A The document handling process for remitting,
13 the change success process to make changes to approve
14 specifications, the work item process, the work plan
15 process. We had -- we had a -- we had a work plan to
16 develop specific functions in a specific time period.
17 The release management process. These are examples,
18 there -- there were more.

19 Q And you talked about a document handling
20 process. Can you explain what you meant by that?

21 A So you, on a higher level, distinguish
22 between two types of -- of key document types --

1 two -- two key documents. One is the technical
2 specifications, which are the output of the work of
3 3GPP working groups. And then, you have the so-called
4 TDocs, temporary documents, and the TDocs are
5 basically the contributions to the meeting where
6 members submit their proposals.

7 So with -- with two categories of
8 documents -- but there are, of course, also
9 subcategories. You have many types of TDocs. And the
10 TDoc handling process is one of the important
11 processes in 3GPP -- specifically in handling process
12 as well.

13 Q And does that relate to, just for example,
14 putting the TDocs and specifications on the 3GPP FTP
15 server?

16 MR. MAY: Objection to the form.

17 THE WITNESS: That's -- that's part of
18 your process.

19 BY MR. SALTMAN:

20 Q Okay. Was the 3GPP website, as a whole,
21 created when you were at ETSI?

22 A It was created when I was at ETSI.

1 Q And were you involved in the creation of the
2 3GPP website?

3 A It's likely I would have made suggestions to
4 it.

5 Q Okay. And do you recall anything specific
6 about your involvement with the 3GPP website?

7 A It's 25 years ago. I don't recall anything
8 specific right now.

9 Q I know, it's hard to remember what I had for
10 breakfast yesterday, so I appreciate not remembering
11 25 years ago. And was the 3GPP FTP server created
12 while you were at ETSI?

13 A Yes.

14 Q And were you involved in the creation of the
15 3GPP FTP server?

16 A I was.

17 Q And what was your involvement?

18 A I was responsible for setting up the area
19 for my specific working groups, setting up the
20 different folders, structure. That was one of my
21 responsibilities.

22 Q And were you responsible for any of the

1 functionalities on the FTP server, or -- strike that.

2 Were you responsible for suggesting or
3 implementing any of the functionalities on the 3GPP
4 FTP server?

5 MR. MAY: Objection to form.

6 THE WITNESS: I was not, like,
7 developing the IT core or the underlying IT
8 infrastructure, it was done by the IT department, but
9 I was, as one of the responsible persons for using the
10 FTP server, I was responsible for setting up specific
11 areas of it and also working together with the rest of
12 the team towards finding a harmonized approach across
13 the different working groups of 3GPP, so that we
14 structure was kind of identical.

15 BY MR. SALTMAN:

16 Q Now the 3GPP FTP server doesn't have a
17 searching functionality; right?

18 MR. MAY: Objection to form.

19 THE WITNESS: You can search also
20 through the 3GPP server documents.

21 BY MR. SALTMAN:

22 Q Through the portal, you can; right?

1 A You can search also through the FTP server,
2 with limitations.

3 Q Okay. So is there a dialogue box, for
4 example, where you could search for terms, or titles,
5 or anything like that, through the FTP server?

6 MR. MAY: Objection to form.

7 THE WITNESS: You can search according
8 to the TDoc number. If you want to search according
9 to document title, you will use the -- I -- you
10 have -- have many different ways of doing that. One
11 very popular way is using the 3GPP portal for this.
12 BY MR. SALTMAN:

13 Q So when you were implementing the 3GPP FTP
14 server, was there any discussion of providing a more
15 robust searchability function?

16 MR. MAY: Objection to form.

17 THE WITNESS: So when I was 3GPP
18 secretary, during the timeframe, we started with the
19 3GPP server, but we also started -- started to develop
20 additional tools to make the searching capabilities
21 easier, more complete.

22 BY MR. SALTMAN:

1 Q And what --

2 A And also to automate specific functions.

3 Q Okay. And what searchability functions were
4 you trying to implement on the FTP server back in that
5 time?

6 A On the FTP server itself -- the FTP server,
7 during that time it was not the -- the additional
8 tools, like the portal, have not been developed in the
9 early 2000s; the portal was established in 2015. We
10 had some earlier tools which became part of the true
11 portal, but the complete functionality was launched
12 twenty -- 2015.

13 Q Right. And so, when I'm talking about --
14 I'm trying to differentiate the FTP server from the
15 portal. So I'm just -- I'm trying to -- question's
16 about the FTP server, and I understand the portal's
17 got certain functionalities. But were there any --
18 when you were at ETSI, were there any discussions of
19 providing a more robust searchability function for the
20 FTP server itself?

21 MR. MAY: Objection to form.

22 THE WITNESS: I can't recall that, but

1 I think also the distinction you just suggested is
2 maybe a bit difficult because they are now combined,
3 right, the portal and the FTP server. They are like
4 one big machine. The FTP server is connected --
5 attached to the portal, and you can update the FTP
6 server via the portal and the other way around.

7 BY MR. SALTMAN:

8 Q But if you go to the FTP website, for
9 example, it has different functionalities and a
10 different look than the portal website; right?

11 MR. MAY: Objection to form.

12 THE WITNESS: It has a different look.
13 Yes.

14 BY MR. SALTMAN:

15 Q And it has different functionalities;
16 correct?

17 A Yes.

18 Q You can put the CV to the side. Have you
19 ever heard of the term person of ordinary skill in the
20 art?

21 A I have heard of this term.

22 Q And what is your general understanding of

1 that term?

2 MR. MAY: Objection to form.

3 THE WITNESS: Well, I can't recall
4 the -- how it is defined. I don't have a good
5 definition right now.

6 BY MR. SALTMAN:

7 Q Okay. And is it okay if I refer to that
8 concept as a POSITA?

9 A Yes.

10 Q Just make it a little faster to say it. The
11 concept of a POSITA is not discussed in your
12 declarations; is it?

13 A I can't recall whether I have discussed it.

14 Q So you don't know one way or the other
15 whether your declarations discuss a POSITA, or what a
16 POSITA might know; right?

17 MR. MAY: Objection to form.

18 THE WITNESS: I can't recall having
19 included a definition of a POSITA in my declarations.

20 BY MR. SALTMAN:

21 Q Now, do you know whether a POSITA in these
22 IPRs would be a 3GPP delegate?

1 A A 3GPP delegate, according to my view, would
2 be a POSITA, but there can also be other POSITAs.

3 Q Okay. So a 3GPP delegate would be a POSITA,
4 but there could be -- there are POSITAs that are not
5 3GPP delegates; is that fair?

6 MR. MAY: Objection to form.

7 THE WITNESS: Not every POSITA would
8 have to be a 3GPP delegate.

9 BY MR. SALTMAN:

10 Q Do you know whether a POSITA would -- strike
11 that.

12 Do you know whether the definition of a
13 POSITA in these IPRs include any knowledge of the 3GPP
14 website?

15 MR. MAY: Objection to form,
16 foundation.

17 THE WITNESS: As I said, I don't have a
18 definition for a POSITA in my head now.

19 BY MR. SALTMAN:

20 Q When you drafted your declarations, did you
21 know what the definition of a POSITA was in these
22 IPRs?

1 A I did not look at the definition. I have a
2 kind of understanding of a POSITA, where being, like
3 what the term says, like, people which is having
4 ordinary skills in -- in a specific art.

5 Q So is it fair to say for these IPRs, you
6 didn't know what the specific definition of a POSITA
7 was, you just had a general idea of what a POSITA
8 would be?

9 MR. MAY: Objection to form,
10 foundation.

11 THE WITNESS: I had a general
12 understanding of what a POSITA would be, and what, in
13 this case, a 3GPP delegate, what -- well, as -- as you
14 said before, a 3GPP delegate could be a part of the
15 POSITA definition here.

16 BY MR. SALTMAN:

17 Q So for your definition of POSITA, did you
18 include that the POSITA would be a 3GPP delegate?

19 MR. MAY: Objection to form,
20 foundation.

21 THE WITNESS: As I mentioned earlier, I
22 did not assume that a -- a POSITA has to be a 3GPP

1 delegate, but it could be a 3GPP delegate.

2 BY MR. SALTMAN:

3 Q In your declarations you didn't -- you --
4 sorry, strike that.

5 In your declarations, you discussed, like.
6 the TDocs numbering system, for example; right?

7 A I did discuss the TDoc numbering system.

8 Q But in your declarations you didn't discuss
9 whether a POSITA would have knowledge of 3GPP'S
10 numbering system; right?

11 A I did not specifically refer to a POSITA in
12 that context.

13 Q For the purposes of your analysis, did you
14 assume that a POSITA would have knowledge of how 3GPP
15 numbers its documents?

16 MR. MAY: Objection, foundation.

17 THE WITNESS: No. So a person which
18 was looking for specific information on 3GPP
19 developments would not necessarily have to know the
20 numbering system to start with; could also find
21 specific information without knowing anything about
22 the numbering system.

1 BY MR. SALTMAN:

2 Q For your analysis, did you assume that a
3 POSITA would have knowledge of 3GPP standards and
4 technology?

5 MR. MAY: Objection, foundation.

6 THE WITNESS: A POSITA would not
7 necessarily have to have knowledge about the
8 technology. A POSITA could also be an engineer who is
9 just -- who has knowledge about telecommunications,
10 but is new to the 3GPP standards and wants to learn
11 about developments by accessing 3GPP documents.

12 BY MR. SALTMAN:

13 Q You understand that there are four patents
14 across these IPRs; right?

15 A I understand.

16 Q Did you review the patents, as part of your
17 work on these IPRs?

18 A I did not.

19 Q So you don't know what problem the patents
20 were trying to solve that existed in the prior art?

21 A I did not look into the technical details of
22 these patents.

1 Q Right. So you didn't analyze what a POSITA
2 would be -- the problem a POSITA would be trying to
3 solve when you conducted your analysis; right?

4 A No. My analysis was about explaining how --
5 how any person, including a POSITA, would be able to
6 retrieve specific documents which cover specific
7 technical areas, to explain how straightforward it was
8 and still is to retrieve such information.

9 Q Your declarations talk about a number of
10 3GPP documents, TDocs, and specifications; right?

11 A Right.

12 Q Did you find those documents on your own, or
13 were they provided to you?

14 A The documents were provided to me.

15 Q So after you were provided with them, did
16 you then determine whether they were on the 3GPP FTP
17 server?

18 A I downloaded my own copy of all documents
19 and compared them with the documents given to me.

20 Q And once you had the documents, you then
21 determined how you could search for them on the 3GPP
22 portal; right?

1 A I did not have to specifically determine how
2 to search for them, because I knew how to search for
3 any document.

4 Q So when crafting your search terms, you
5 didn't rely on what was in the document itself to
6 craft those terms?

7 MR. MAY: Objection, foundation.

8 BY MR. SALTMAN:

9 Q Strike that. In your supplemental
10 declaration you have certain search terms you ran on
11 the 3GPP portal; correct?

12 A I have.

13 Q And in your original declarations for
14 certain of the documents you crafted Google searches;
15 correct?

16 MR. MAY: Objection, foundation.

17 THE WITNESS: Google searches are used
18 as an example only for the technical specifications,
19 not for the TDocs.

20 BY MR. SALTMAN:

21 Q Right. And in crafting the search terms for
22 the 3GPP portal, did you use the documents you had to

1 help craft those search terms?

2 A Yes. I -- the aim was to demonstrate that,
3 for the given documents, it was easy for any delegate
4 or any person to find these documents via the portal.

5 Q All right. And so, you used the document to
6 craft search terms to then find the document; is that
7 fair?

8 MR. MAY: Objection to form.

9 THE WITNESS: We -- the goal was to
10 demonstrate for these specific documents that it was
11 easy to find them, so I had to obviously look for the
12 topic which was covered by this document and the
13 search term was reflecting the key -- key topics of
14 this document.

15 BY MR. SALTMAN:

16 Q And similarly for the Google searches, you
17 looked at the document, saw what the key topic that it
18 was discussing is, and then based your search term on
19 that topic; right?

20 A So --

21 MR. MAY: Objection, form.

22 THE WITNESS: -- we have to distinguish

1 between TDocs and technical specifications. And for
2 the technical specifications, I used the Google search
3 as one way to show how to -- how anybody would be able
4 to find these specifications. I did not use the
5 Google search for the TDocs.

6 BY MR. SALTMAN:

7 Q Right. And so, for those specifications,
8 you looked at what the document -- the key topic of
9 the document, and then crafted a Google search based
10 on that topic; right?

11 MR. MAY: Objection, form.

12 THE WITNESS: Right.

13 BY MR. SALTMAN:

14 Q And so, when you were doing the searches,
15 you had the benefit of knowing what specific document
16 you were looking for; right?

17 MR. MAY: Objection, form.

18 THE WITNESS: I don't quite agree. I
19 put myself into a position of somebody who was
20 interested in a specific topic or functional area, and
21 then this person would have found these documents
22 related to this particular technical area by using

1 search -- but I would not have to have known what was
2 written on the documents before.

3 'Cause I was putting myself into the
4 role of somebody who was looking, for example, for
5 radio resource control specification, and used for
6 this a Google search, as an example.

7 BY MR. SALTMAN:

8 Q And as part of your analysis, you didn't put
9 yourself in the shoes of someone who was trying to
10 solve a specific problem in the prior art; right?

11 MR. MAY: Objection, form.

12 THE WITNESS: It's very similar; right?
13 I did put myself into the shoes of somebody who was
14 looking for something specific. If I look for
15 specific prior -- prior art, when I would have done --
16 or this person would do a similar approach, would also
17 use specific keywords, so it's basically the same
18 behavior.

19 BY MR. SALTMAN:

20 Q We talked about earlier that you don't know
21 what problem, in the prior art, the patents were
22 trying to solve; right?

1 A I have not looked into the technical details
2 of the patents.

3 Q And so, you didn't base your searches on
4 what those patents were trying to solve in the prior
5 art; correct?

6 A I did not base my searches specifically on
7 the prior art-related problems, but I demonstrated
8 that the technical area, which is obviously related to
9 the prior art problems -- that it was easy to find
10 related documents.

11 Q Right. So, but you didn't look at what the
12 problem in the prior art the patents we're trying to
13 solve and then craft searches based on that problem;
14 right?

15 A I did not have to do this, because I already
16 had related documents.

17 Q Yeah. So you didn't have to do that because
18 you had the documents already in hand; right?

19 MR. MAY: Objection to form.

20 THE WITNESS: Yes.

21 MR. SALTMAN: All right. Now, we've
22 been going about an hour. I don't know if you want to

1 take a break, because I'm going to switch to
2 something, or if you want to keep going? It's up to
3 you.

4 MR. MAY: You want to take a quick
5 break?

6 THE WITNESS: Yeah.

7 MR. MAY: Okay.

8 MR. SALTMAN: Okay.

9 THE REPORTER: All right. The time is
10 10:38 a.m. We are off the record.

11 (Off the record.)

12 THE REPORTER: We are back on the
13 record at 10:48 a.m.

14 MR. SALTMAN: Mr. May, would you like
15 to introduce your colleague?

16 MR. MAY: My colleague, Chen Zang,
17 joined the deposition room. He's my colleague here at
18 Finnegan Henderson, on behalf of the Samsung entities
19 again, and representing the witness. I will still be
20 making the objections.

21 MR. SALTMAN: Okay.

22 MR. MAY: Thank you.

1 BY MR. SALTMAN:

2 Q Welcome back, Mr. Rodermund. Did you
3 discuss the substance of your testimony with counsel
4 during the break?

5 A I did not.

6 Q Okay. In your declarations, you relied on
7 information on the 3GPP website to determine if a
8 document was available to the public; right?

9 A Not only the website, but also other
10 information.

11 Q One of the sources you relied on was the
12 3GPP website; right?

13 A I mainly relied on the FTP server, which is
14 also available via the website.

15 Q Right. So when I say "website," I'm --
16 so -- I'll strike that. Let me just ask -- I'll ask
17 the full question.

18 As part of your declarations, you relied on
19 information from the 3GPP website and FTP server to
20 determine if a document was available to the public;
21 right?

22 A And from the 3GPP portal, which again is a

1 different way of accessing documents.

2 Q Right. And is that all part of what you
3 would call the 3GPP website, or are those distinct?

4 A Those are distinct.

5 Q Okay.

6 A I would call the website and the portal,
7 they are distinct means for accessing information,
8 although they are also connected. So we have some
9 links from the website to the portal.

10 Q And does ETSI manage the 3GPP website?

11 A Yes.

12 Q And does ETSI manage the 3GPP FTP server?

13 A Yes, it does.

14 Q And does ETSI manage the 3GPP portal?

15 A It does.

16 Q And so, you relied on the accuracy and
17 reliability of the 3GPP website and FTP server and
18 portal in coming to your conclusions; right?

19 A I relied on the -- or I used the information
20 provided by these tools. Yes.

21 Q All right. I'm going to hand you what's
22 been marked as Exhibit 5. And Exhibit 5 is -- it says

1 at the top "3GPP terms of use." Do you see that, Mr.
2 Rodermund?

3 (Exhibit 5 was marked for
4 identification.)

5 A I see that exhibit.

6 Q And have you seen this document before?

7 A I might have seen it. I can't recall
8 specifically.

9 Q Do you know whether these terms of use, or
10 similar terms of use, were on the 3GPP website when
11 you worked at ETSI?

12 MR. MAY: Objection to form.

13 THE WITNESS: I can't recall if this
14 terms of use have been available at that time when I
15 was working with ETSI.

16 BY MR. SALTMAN:

17 Q So you don't know when the terms of use were
18 added to the 3GPP website; right?

19 A I don't know.

20 Q Okay. If you turn to page 3, there's
21 something towards the top of the page that says
22 "Disclaimer"; do you see that?

1 A I see that.

2 Q And then the second paragraph down says
3 "ETSI makes no representations or warranties as to the
4 accuracy, reliability, or completeness of any
5 information incorporated thereto and contained on the
6 3GPP website." Do you see that?

7 A I see that.

8 Q Did you consider this statement before you
9 came to your opinions in these IPRs?

10 A I did not specifically consider this
11 statement, but given my, like, 25 years of experience
12 with the tools of 3GPP and ETSI, and also given that
13 the analysis provided the results, not only by one
14 means, but by several means, like, FTP server today,
15 FTP server, the historic version of it, then another
16 piece was the last modified date. And sometimes we
17 also email distributions of specific -- specific
18 documents.

19 So all this -- and also the discussion of
20 specific meetings of TDocs; right? So all these
21 several different pieces of information added up and
22 were in line with each other, so it made it clear that

1 the information was correct and accurate.

2 Q And all that information you said came from
3 the 3GPP website or the FTP server or the portal;
4 right?

5 A Yes. But we were -- it was different
6 locations of information, different documents, like
7 meeting reports, like FTP timestamps, like historic
8 FTP timestamps, which was not directly the FTP
9 website, but it was a historic version of it. So
10 different pieces of information which all add up and
11 represented a consistent result of my analysis.

12 Q All right. My question was just a little
13 simpler, that all that information came from the 3GPP
14 website, including the FTP server and the 3GPP portal;
15 right?

16 MR. MAY: Objection to form.

17 THE WITNESS: And not only the portal,
18 the FTP server, also additional source of information
19 was the email repository and the metadata of a
20 document, which is actually not coming from the
21 website. It's a document which was provided by the
22 contributing company.

1 BY MR. SALTMAN:

2 Q Right. We talked about the email exploder,
3 those came from the 3GPP FTP server or portal; right?

4 MR. MAY: Objection, form.

5 THE WITNESS: No, that's not the server
6 or portal; it's a different tool which is called
7 Listserv. It's hosted by the ETSI infrastructure.

8 BY MR. SALTMAN:

9 Q So the email exploders also came through the
10 3GPP infrastructure; right?

11 MR. MAY: Objection to form,
12 foundation.

13 THE WITNESS: They are -- they are part
14 of the infrastructure.

15 BY MR. SALTMAN:

16 Q And have you seen these terms of use -- had
17 you seen them since you issued your declarations?

18 A I can't recall having seen the terms of use
19 recently.

20 Q All right. I want to go through how to
21 access the 3GPP server. Is there a way to access the
22 3GPP server through -- strike that.

1 Is there a way to access the 3GPP FTP server
2 through the 3GPP website?

3 A There is ways.

4 Q Okay.

5 A Yes, several ways.

6 Q So if we go to Exhibit 1, which is the
7 declaration in the 1187, 1190 IPRs.

8 A So we're --

9 Q Put that to the side, yeah.

10 A -- done with 5; right?

11 Q So I just need the declaration itself. You
12 don't need the appendices for --

13 A Okay.

14 Q And if you go to page 19 of that
15 declaration. And I'm not sure what page, page 19 at
16 the bottom, like of the actual portion --

17 A Nineteen?

18 Q Yeah. It should be a screenshot, okay. Now
19 is this screenshot from the 3GPP website itself?

20 A This screenshot is from the website.

21 Q Okay. And then, if you were looking for the
22 documents that you talk about in your declarations,

1 would you go down to 38 series there at the bottom?

2 MR. MAY: Objection to form.

3 THE WITNESS: Your question, you were
4 referring to documents I refer to in my declaration,
5 which are these two categories, TDocs and
6 specifications.

7 BY MR. SALTMAN:

8 Q Right.

9 A So on this page I could search for
10 specifications, but not for TDocs.

11 Q Not for TDocs. Okay.

12 THE REPORTER: Mr. Saltman?

13 MR. SALTMAN: Yeah?

14 THE REPORTER: I noticed that you're
15 putting your hand up --

16 MR. SALTMAN: Over there. Okay.

17 THE REPORTER: Yeah.

18 MR. SALTMAN: All right, I will stop.
19 I will try to stop. Thank you.

20 BY MR. SALTMAN:

21 Q So in paragraph 51 on page 21 you talked
22 about the 5G NR specifications; right?

1 A Yes.

2 Q And at the last sentence, you talked about
3 "Excluding withdrawn specifications, the 5G NR
4 standard consists of more than 140 specifications."
5 Do you see that?

6 A I see that.

7 Q And each of those specifications may have
8 numerous versions of each of them; right?

9 A Each specifications may have several
10 versions.

11 Q Okay. And then, each of those
12 specifications can either be a few pages, or
13 potentially could be hundreds of pages; correct?

14 A Or even more than one thousand pages.

15 Q And then, the 5G standard itself can be tens
16 of thousands of pages; right?

17 A Yes.

18 Q And in your declarations, you don't discuss
19 how a POSITA would navigate to the FTP server from the
20 3GPP website; right?

21 MR. MAY: Objection to form.

22 THE WITNESS: I do have an explanation

1 about how a POSITA navigates from the website to the
2 portal, and the portal uses the underlying FTP folders
3 to store the specifications. That is on page 90, and
4 you have the website on page 20.

5 You come to the portal by clicking on
6 the website link, and where you can download specific
7 specifications which are in the end stored on the FTP
8 website -- which are stored on -- on the FTP server.
9 That's what I wanted to say.

10 BY MR. SALTMAN:

11 Q Right. All right. Let's go to the next
12 exhibit. Showing you what's been marked as Exhibit 6.
13 And do you have Exhibit 6 in front of you, Mr.
14 Rodermund?

15 (Exhibit 6 was marked for
16 identification.)

17 A I have.

18 Q And does this look like -- you can see at
19 the top, the website is www.3gpp.org/ftp; see that?

20 A I see that.

21 Q And so is this the FTP server for 3GPP?

22 MR. MAY: Objection to form.

1 THE WITNESS: It looks like it.

2 BY MR. SALTMAN:

3 Q Okay. And now, this is what the FTP server
4 looks like today. Did it have a different
5 organization back in 2018, 2019?

6 A The organization would've been the same. So
7 it's possible that there might have been one of the
8 folders, which are not the key folders, that that
9 might have been added or deleted. But the key folders
10 which comprise the specifications, the specs folder,
11 and the folders for the individual technical
12 specification groups, CN, CT, et cetera. So these
13 are -- have to be identical 2018, today.

14 Q Okay. And if a 3GPP delegate was looking
15 for a TDoc through the FTP server, would they click on
16 the TDoc list default folder that's listed there?

17 MR. MAY: Objection to form.

18 THE WITNESS: Not necessarily. So if a
19 person was looking for a specific TDoc, then usually
20 the person would have a specific interest, right, and
21 then it would look into a specific TSG/working group
22 folder to find information and look at the individual

1 document lists in these folders. But nobody would do
2 it that way usually, because you have the portal,
3 which makes it much easier to find information.

4 BY MR. SALTMAN:

5 Q All right. And then, to find specifications
6 through the FTP server, would a user potentially click
7 on the specs folder?

8 A That would be --

9 MR. MAY: Objection to the form.

10 THE WITNESS: That would be -- give the
11 access to the different specifications.

12 BY MR. SALTMAN:

13 Q Okay. All right, so --

14 A May I add again, also for specifications,
15 it's possible to find them via the FTP server, but you
16 have also a specific specification search tool as part
17 of the portal, which makes it much easier to retrieve
18 the specifications you are looking for.

19 Q And in your original declaration, did you
20 discuss doing searches through the 3GPP portal?

21 A I mentioned the 3GPP portal as a -- a tool
22 being available, and I mentioned it also in the

1 context of specification search that, for example, via
2 the website -- the website for 3GPP leads you into the
3 portal to find specific specifications. So I
4 discussed the portal.

5 Q Right. And did you specifically discuss the
6 searchability function of the 3GPP portal in your
7 original declarations?

8 MR. MAY: Objection to form.

9 THE WITNESS: I believe I added
10 additional example or information about the search
11 functions in my supplementary declaration.

12 BY MR. SALTMAN:

13 Q Right. And yeah, I understand you talked
14 about it in your supplemental declaration. But in
15 your original declarations, did you discuss the
16 searchability function of the 3GPP portal?

17 A I can't recall if I mentioned the
18 searchability function, but I did not explain it with
19 an example as I did in my supplementary declaration.

20 Q Okay. All right. I'm going to hand you
21 what's been marked as Exhibit 7. And do you have
22 Exhibit 7 in front of you, Mr. Rodermund?

1 (Exhibit 7 was marked for
2 identification.)

3 A I have.

4 Q All right. And you can see at the top it
5 says "www.3gpp.org/ftp/specs"; do you see that?

6 A I see that.

7 Q All right. And you understand that this is
8 the specs folder we were looking at earlier on the FTP
9 server?

10 A I do.

11 Q Okay. And it has a series of folders that
12 are sorted by date; do you see that?

13 A I see that.

14 Q And is it your understanding that the 3G FTP
15 server for specifications has had a similar structure
16 since at least 2018?

17 A That's my understanding. Obviously there
18 have been a few old folders added since then.

19 Q And there's no specific search functionality
20 on this 3gpp.org/ftp/specs website; right?

21 MR. MAY: Objection to form,
22 foundation.

1 THE WITNESS: You have the possibility
2 to do a string search and search for a specific year,
3 month folder. If you want to have a richer search
4 functionality, you would go to the portal.

5 BY MR. SALTMAN:

6 Q Right. And how would you search by year on
7 this website?

8 A Just by Control F, by looking for the string
9 and adding the year.

10 Q Right. Aside from a Control F search, is
11 there any other searchability that is on the FTP
12 server specs website?

13 A The FTP server website is used by
14 experienced people who know, for example, that in the
15 archive folder you will find all the versions of the
16 different specifications, and if you go there it's
17 easy to find what you're looking for.

18 But if you are really searching for specific
19 keywords of titles, spec numbers, then the people use
20 the portal for that purpose.

21 Q Okay. And if, for example, a POSITA didn't
22 know the date of what they were looking for, they

1 could have to click through a lot of these folders to
2 find what they were looking for?

3 THE WITNESS: Oh, as I mentioned -- I'm
4 sorry.

5 MR. MAY: Objection to form.

6 THE WITNESS: As I mentioned earlier,
7 the specifications were all stored in the archive
8 folder and that's an easy way to find specification.
9 For the year and month folder, these represent the
10 snapshots which are taken at each plenary meeting four
11 times a year. You have, in these folders, stored the
12 result of a specific plenary meeting four times a
13 year.

14 But you usually wouldn't look into
15 these folder to search for a specification, because
16 it's easier to find them either via the archive
17 folder, or as most people would do, use the portal to
18 find a specification.

19 BY MR. SALTMAN:

20 Q And you talked about -- strike that.

21 If you turn to paragraph 55 of Exhibit 1,
22 your declaration. It's on page 22.

1 A All right. So paragraph 51.

2 Q Yeah, paragraph 55, page 22. And in this
3 paragraph, you talked about the snapshot you just
4 referenced. And you said, "For instance, the 2018-12
5 snapshot contains a snapshot of numerous
6 specifications after the December 2018 3GPP plenary
7 meetings." Do you see that?

8 A I see that.

9 Q Okay. And on the next page, on page 23, you
10 have a screenshot. And does that screenshot
11 correspond to what we just looked at, or at least part
12 of what we just looked at, in Exhibit 7?

13 A Yes. The screenshot in my declaration is an
14 extract of this folder.

15 Q And you can see at the bottom there it
16 says -- and in your declaration it says 120 items, but
17 there are 132 items in Exhibit 7. Do you know why
18 there's that difference? Does it have to do with the
19 timing issue?

20 A Yes, I know.

21 Q Okay. And in Exhibit 7 there are -- in the,
22 you know, middle column there, it has dates and times;

1 do you see that?

2 A [No audible response.]

3 Q See it says "Sort by date/D-E-S-C," so it
4 has dates and times underneath that?

5 A Yes.

6 Q Okay. Do you know how those dates and times
7 are created?

8 A They reflect the latest file -- latest time,
9 later time this folder was updated.

10 Q And do you know what computer program
11 creates those dates and times?

12 MR. MAY: Objection to form.

13 THE WITNESS: It's a FTP server
14 software which is responsible for this -- which is
15 providing this.

16 BY MR. SALTMAN:

17 Q And do you know whether the FTP server
18 software has changed since you left ETSI in 2004?

19 A I don't know if the software has changed. I
20 can't recall any announcement about this.

21 Q On page 4, it has the 2018-12 folder -- oh,
22 sorry, going back to Exhibit 7. On page 4 -- I don't

1 know, about seven down from the top, or six down from
2 the top -- it has the 2018-12 folder; do you see that?

3 A Yeah.

4 Q Okay. And that's the one we looked at -- I
5 think it was paragraph 55 -- you referenced the
6 2018-12 folder; right?

7 A Sorry, where did I reference it?

8 Q Sorry. Paragraph 55 of your declaration.

9 A Yes.

10 Q When you were preparing your declarations,
11 did you actually go into the 2018-12 folder?

12 A No, I did not, because I downloaded the
13 copies of the relevant specifications from the archive
14 folder.

15 Q Okay. And do you know what -- when you
16 click on this folder, do you know what -- is it just a
17 list of different documents from this timeframe? Or
18 what -- strike that.

19 Do you know what you find when you click on
20 this folder?

21 A So this is the -- one of the many snapshot
22 photos, which should include the specifications which

1 were resolved of the December 2018 3GPP plenary
2 meetings.

3 Q Okay, so you'll get a snapshot? So it
4 should have a number of different documents in that
5 folder; is that fair?

6 A Yes.

7 Q Handing you what's been marked as Exhibit 8,
8 and you can see at the top it says
9 "www.3gpp.org/ftp/specs/2018-12." You see that?

10 (Exhibit 8 was marked for
11 identification.)

12 A I see that.

13 Q And that's the folder we were just talking
14 about; correct?

15 A That's correct.

16 Q Okay. Do you have any idea why it just has
17 a readme.htm file in this folder?

18 A Yes, I have.

19 Q Okay. And why does it have that?

20 A Because sometime 3GPP started replacing the
21 snapshots by README files. I can't recall the exact
22 wording, but I believe they're referring in the README

1 file to a -- a different location where to find the
2 specifications.

3 They -- and -- and by the time -- after the
4 meeting, 2018-12, December, by that time the
5 specifications might have been included in this folder
6 and then removed at a later point in time. I -- might
7 also be for storage reasons, because these
8 specifications comprise a lot of storage.

9 If you have to have them, like, every three
10 months, a new set of specifications, then server gets
11 filled -- filled up with thousands of big documents.
12 But I recall that after some time these specifications
13 were replaced by a README file, which included a
14 reference to where to find the documents.

15 Q Okay. And so, do you know when that
16 replacement happened? When the documents themselves
17 were replaced with this README file?

18 A I -- I don't know, and also it's not
19 interesting to -- to people who want to search for
20 specifications, because they can find the
21 specifications either in the archive or via the
22 portal.

1 Q Okay. And so, it could have been that in
2 2018 -- in December of 2018, this is what the folder
3 looked like; correct?

4 MR. MAY: Objection to form.

5 THE WITNESS: I have not checked the
6 historic records of this folder in 2018, and I don't
7 know by when this README file was put there.

8 BY MR. SALTMAN:

9 Q Okay. And your understanding is that if you
10 click on the README file, it directs you on where you
11 can find these specifications?

12 A I believe so. I have opened such README
13 file a long time ago, but I believe there was a
14 reference. But I am not sure, and for me, this would
15 also not be needed because as the other delegates, I
16 would be able to find specifications anyhow.

17 Q Handing you what's been marked as Exhibit 9.
18 And you see at the top it says "The contents of this
19 folder is available on request to info@3gpp.org"; do
20 you see that?

21 (Exhibit 9 was marked for
22 identification.)

1 A I see that.

2 Q And is there any -- do you have any reason
3 to disagree that this is what happens when you -- this
4 is what you get when you click on the README file?

5 A I have no reason to -- to doubt that this is
6 what you see when you open the README file.

7 Q So to get access to this specifications
8 folder, you have to email info@3gpp.org; correct?

9 MR. MAY: Objection to form.

10 THE WITNESS: So if you want to have
11 this specific snapshot folder, you may ask
12 info@3gpp.org, but it's much easier to get information
13 via portal.

14 BY MR. SALTMAN:

15 Q And do you know who at -- do you know who
16 receives the info@3gpp.org email?

17 A Well, this usually goes to the Mobile
18 Competence Center, which is part of ETSI, which is
19 managing the 3GPP day-to-day work.

20 Q And do you know whether 3GPP gives access to
21 anyone who asks to access these specifications?

22 A I don't know how 3GPP handles these

1 requests, but I would be surprised if -- if there were
2 many requests because the information is available in
3 the other folders or via the portal.

4 Q All right, you can put that to the side.

5 And if you turn back to Exhibit 1, which is your
6 declaration, if you go to page 24, paragraph 58. And
7 in paragraph 58 you discussed the 3GPP portal;
8 correct?

9 A Yes.

10 Q And then, at the top of page 25, you say
11 "Anyone interested in a particular 3GPP specification
12 could search the 3GPP portal to find and download the
13 latest version of a technical specification, using the
14 3GPP portal in substantially the same manner as they
15 would today." Do you see that?

16 A Yes, I see that.

17 Q So when talking in your original
18 declarations, when talking about the 3GPP portal, you
19 talk about searching that portal to find a particular
20 specification; right?

21 A That's what I do in this paragraphs.

22 Q Right. And in your original declarations,

1 you don't talk about any specific searches or any
2 details of the searchability function in the 3GPP
3 portal; correct?

4 MR. MAY: Objection, form.

5 THE WITNESS: Could you please clarify
6 the question?

7 BY MR. SALTMAN:

8 Q Sure. In your original declaration, you
9 don't give any details on the searchability function
10 on the 3GPP portal; correct?

11 MR. MAY: Objection to form.

12 THE WITNESS: But in this paragraph I
13 provide the screenshot which shows you some of the
14 detail of the search function -- some of the fields
15 you can search with, for example.

16 BY MR. SALTMAN:

17 Q Well, one of those search functions that you
18 can do is the title specification number; right? You
19 see that?

20 A Yes.

21 Q And so, you'd have to know what the
22 title/specification number was in order to do the

1 search; correct?

2 MR. MAY: Objection to form,
3 foundation.

4 THE WITNESS: So this search function,
5 it enables you to find specific specifications based
6 on title, specification number, so it kind of assumes
7 that you already know, to some extent, what you're
8 looking for.

9 If you have -- let's say, as a new
10 starter in 3GPP, you don't know about the
11 specification numbers, numbering scheme about which
12 technical aspects are explained and specified, and
13 which technical specification, when you usually go
14 first via the website, which I also explained in my
15 declaration, I have a different specification series
16 with the different technology areas of a different
17 series, and that leads you to specific specification
18 numbers.

19 BY MR. SALTMAN:

20 Q Okay.

21 A And that's -- that's -- just to complete
22 that, and this is then linked to the portal, so you

1 end up in the portal where you can find a
2 specification.

3 Q Right. And the search functionality on
4 the -- on -- strike that.

5 In your original declaration, you don't
6 discuss that you can -- you don't -- you -- strike
7 that.

8 In your original declaration you provide a
9 screenshot, but you don't discuss how a search is done
10 on the 3GPP portal; correct?

11 A I have to just -- to reread the paragraph --

12 Q Sure.

13 A -- what I described to you. So I do not
14 provide a specific example, in addition to providing a
15 general explanation and a screenshot of the portal.

16 Q All right. Let's go to your supplemental
17 declaration, which is Exhibit 4. Now, in your
18 supplemental declaration you do provide examples of
19 searching the 3GPP website; right?

20 A Yes, I do.

21 Q Okay. And your supplemental declaration
22 only applies to the -- you've only issued the

1 supplemental declaration in the 1187 and 1190 IPRs;
2 correct?

3 A Correct.

4 Q So if you turn to paragraphs 7 through 9,
5 it's on page 3. In paragraph 7 you said "In my
6 opinion, and as explained below, a person could
7 readily search, find, and access 3GPP documents
8 related to specific matters, such as by using the 3GPP
9 portal, located at portal.3gpp.org, including at all
10 times throughout 2018." Do you see that?

11 A I see that.

12 Q And when summarizing this opinion, you don't
13 mention a person of ordinary skill in the art;
14 correct?

15 A I don't specifically mention a POSITA.

16 Q Okay. And do you understand that, in your
17 supplemental declaration you don't discuss a person of
18 ordinary skill in the art at all; right?

19 MR. MAY: Objection to form.

20 THE WITNESS: I can't -- I don't know
21 if I mentioned a POSITA in my supplementary
22 declaration.

1 BY MR. SALTMAN:

2 Q Do you recall discussing a POSITA in your
3 supplemental declaration?

4 A I don't recall discussing a POSITA. I don't
5 recall having a definition included.

6 Q If you go back to paragraph 8, another
7 opinion is that delegates attending a 3GPP meeting, at
8 any time in 2018, prepared for that meeting by
9 reviewing the meeting's agenda and downloading the
10 TDocs that 3GPP made available for that meeting on the
11 3GPP FTP server, and that delegates continued to do
12 this, reviewing and downloading, while at the meeting.
13 Do you see that?

14 A I see that.

15 Q All right. So your opinion in paragraph 8
16 relates to 3GPP delegates specifically; correct?

17 A My opinion here relates to 3GPP delegates
18 specifically, but the availability of documents, of
19 course, is also possible by anybody from the public.

20 Q Right. And when you talk about
21 availability, are you just saying that the documents
22 are online and anyone who wants to access them can get

1 access to them?

2 A Not only that they are online, but also that
3 they are searchable and that the portal offers various
4 ways to find the specific documents.

5 Q Okay. And you turn to paragraph 14, your
6 first sentence -- the first sentence there says "There
7 are several ways to search for, locate, and access
8 3GPP documents, including TDocs." Do you see that?

9 A I see that.

10 Q And then, at the bottom of the page you say
11 you discuss three ways. The first is the respective
12 meetings agenda and document list, circulated before
13 such a meeting; second is the respective meetings
14 report, circulated within the next business day after
15 such a meeting; and the third is the 3GPP portal tool;
16 right?

17 A Yes, these are examples.

18 Q Well, those are the only -- those are the
19 three examples you discussed in your supplemental
20 declaration; right?

21 A I discussed these examples, but there are
22 also other means. Yes.

1 Q Okay. And the first listed is the
2 respective meetings agenda and document list,
3 circulated before such a meeting. Are the meeting
4 agenda and document lists circulated to 3GPP
5 delegates?

6 A They are made available to everyone and
7 announced specifically to these people who are
8 subscribed to the email -- respective email exploders.

9 Q Okay. So when you say the respective
10 meetings agenda and document lists are circulated,
11 you're referring to the email exploders?

12 A Well, it's circulated in a means that they
13 are available, of course, for anyone, but people who
14 are subscribed to the email exploders, they are
15 alerted about their availability at a specific point
16 in time.

17 Q And then, Number 2 is the respective
18 meeting's report, circulated within the next business
19 days after such a meeting. Who is the meeting's
20 report circulated to?

21 A Again, the meeting report is made available
22 to anyone and -- and can be accessed by anyone, but

1 people who are subscribed to the email exploders, they
2 get the notification about the availability of the
3 meeting report.

4 Q And when you used the word circulated in
5 this paragraph, does that mean sent out to people, or
6 did you mean something else by that?

7 A No, I did not mean specifically sent out to
8 people. I meant that the document list or the meeting
9 report was made available, and that it was --
10 availability was also announced to people interested
11 in these working groups activities.

12 Q You referenced earlier that the 3GPP portal
13 was established in 2015; right?

14 A The portal, as such, was established in
15 2015; there have been some of the functions available
16 earlier before that.

17 Q And do you know why 3GPP established the
18 portal in 2015?

19 MR. MAY: Objection to form.

20 THE WITNESS: The goal was to create
21 what they call at the time an ultimate tool, which
22 combines the different databases for 3GPP, was using

1 ads on top, various effective and easy to use search
2 functions, in addition also to make the work and the
3 handling of specific document types more consistent
4 across the different 3GPP working groups.

5 BY MR. SALTMAN:

6 Q All right. And then, so when -- if you turn
7 to page 7 of your supplemental declaration, once a
8 user is at the 3GPP portal they can click on the TDocs
9 tab as you've done here; right?

10 A They can, yes.

11 Q And it's kind of hard to read, but in that
12 dialog box below TDocs, it says "TDoc number, title,
13 contact, source." Do you see that?

14 A Yes.

15 Q All right. So a person going onto the
16 website could search the TDoc number by -- strike
17 that.

18 A person going on the 3GPP portal could
19 search for a TDoc by its number; right?

20 A For example.

21 Q Right. And a person going on the 3GPP
22 portal could search for a TDoc by its title; correct?

1 A Correct. But it's not required to enter the
2 whole title, you can also use just fractions of it or
3 keywords.

4 Q And it says "Contact." What does contact
5 mean in this context?

6 A For each document submitted by a company,
7 you usually have a contact person, which normally is
8 the author or one of the authors of the document.

9 Q Okay. So if a person knew who authored the
10 document, they could search by that person's name?

11 A That's also possible.

12 Q And then, it says "Source." What does
13 source mean?

14 A Source is the individual company who has
15 submitted the document.

16 Q Okay. And what if you wanted to search by
17 what's in the -- not in the title, but in the body of
18 the document. Can you do a search based on what's in
19 the body of the document, if it's not in the title?

20 A Well, you can also do that and it's also
21 done often by delegates, but the portal offers you to
22 search through the records of the -- basically we talk

1 about lists, and the title usually reflects the
2 technical area which is covered by a document.

3 One way of doing a search through the whole
4 document is to do it locally, because that's what most
5 delegates do. They copy the meeting folders on their
6 hard drive, and then it's easy to search it via Apple
7 Finder, MacBook Finder, or Internet Explorer.

8 Q But if you didn't know what meeting it
9 related to, and if you didn't know what words were in
10 the title, how could you locate a document through the
11 3GPP portal?

12 MR. MAY: Objection to form.

13 THE WITNESS: No, but if you -- if you
14 are interested in a specific subject -- for example,
15 quality of service, QOS -- it's likely that this is
16 reflected in the title or any other technical keyword,
17 right, so the title reflects what this document
18 represents.

19 BY MR. SALTMAN:

20 Q Right. So you would have to have, at least
21 in your search, part of the title -- strike that.

22 If you didn't know the TDoc number or the

1 source or the author, you would have to search with
2 words that are contained within the title of the
3 document you're searching for?

4 MR. MAY: Objection to form,
5 foundation.

6 THE WITNESS: You would -- you would
7 enter the technology area as keywords in the search
8 field, and then you would receive a list of documents,
9 which -- which covers these T -- which -- with
10 keywords by its -- its title.

11 BY MR. SALTMAN:

12 Q Yeah. So the results are based on what's in
13 the title, right, if you're only searching -- strike
14 that.

15 In your example, the results are based on
16 the search you do for what's in the documents title;
17 correct?

18 MR. MAY: Objection to form,
19 foundation.

20 THE WITNESS: For this tool, yes, but
21 there are obviously other ways to search for the whole
22 body of a document.

1 BY MR. SALTMAN:

2 Q And one example you give of that in your
3 declarations, is using a Google search that's for
4 specifications; right?

5 A I gave a Google -- I gave an example. I
6 gave an Google search example for searching for
7 technical specifications.

8 Q Right. Are there any other examples you
9 gave in your declarations of searches, aside from the
10 Google search and using the 3GPP portal?

11 MR. MAY: Objection to form.

12 THE WITNESS: Well, I mentioned to you
13 three examples, and the portal is just one of them. I
14 also mentioned the other example, one of the other
15 three examples -- no, one of the three examples was
16 the search via the document list.

17 So if you go to a specific meeting, you
18 will have access to the document list. And you can
19 not only search the document list via the portal, you
20 can also download the document list as an Excel file
21 and that gives you additional search capabilities.

22 It not only includes string search, but

1 you also can -- can filter for specific agenda items
2 or specific authors or other -- other metadata. So
3 that provides you with very rich search functionality
4 just by having an Excel spreadsheet.

5 BY MR. SALTMAN:

6 Q And the document list is provided along with
7 the meeting report; right?

8 A No. The document list is already provided,
9 prior to the meeting.

10 Q Okay. And you would have to know what
11 meeting you were interested in to be able to figure
12 out what document list to look at; right?

13 A Yeah, the document list is always tied to a
14 specific meeting, and you have to -- well, if you want
15 to go to a specific meeting, then you already know
16 where you want to go and then you take a document list
17 of that specific meeting.

18 Or if you want to know what happened at a
19 specific meeting, then you can also find that out via
20 the meeting report, which includes the document list.

21 Q All right. If you turn to page 8 of your
22 supplemental declaration. And here you talk about the

1 TDoc R1-1808197; it's also called ZTE. Do you see
2 that?

3 A I see that.

4 Q Okay. And just quickly, if you go back to
5 Exhibit 1, your original declaration. And if you go
6 to the first page, you can see the first bullet point
7 has that TDoc and it's -- it should be Exhibit 1011,
8 right, not 1006?

9 A I see that.

10 Q Okay. I just want to -- because I'm going
11 to refer to it as 1011, because that's the correct --
12 so when I refer to it as Exhibit 1011, I just want to
13 make sure we're talking about the same thing.

14 A Yes.

15 Q And then, you'll see the next document is
16 the opposite, it should have been 1006 but I think
17 it's 1011.

18 A Oh, I see.

19 Q All right. So going back to your
20 supplemental declaration in paragraph 23, you
21 discussed doing a search string that is, quote
22 unquote, "Maintenance for reference signals and QCL";

1 you see that?

2 A I see that.

3 Q Now, how did you come up with that search
4 string?

5 A I believe in this case I simply used the
6 document title.

7 Q Okay. So your understanding is that
8 "Maintenance for reference signals and QCL" is the
9 title of Exhibit 1011?

10 A May I just cross check, if my --

11 Q Sure, yeah. If you go to where we just were
12 actually, on page 1 of your --

13 A I am.

14 Q -- declaration, it has the title.

15 A Yes.

16 Q All right. So it's fair to say that you had
17 this document, you looked at the title, and then used
18 that title to do a search on the 3GPP portal?

19 A I did. It would also be possible to do it
20 otherwise. For simplicity of the example, I used to
21 title.

22 Q Okay. And you say that, at the bottom of

1 the page of page 8 of your supplemental declaration,
2 that "It was common practice for delegates to enter
3 into the 3GPP portal, the phrases or topics included
4 in a meeting's draft agenda, allowing the delegate to
5 then access the TDocs on the 3GPP server that relate
6 to that phrase or topic." Do you see that?

7 A Yes.

8 Q Okay. And so, right here you're discussing
9 that delegates who receive the draft agenda would then
10 do searches based on some of the topics in that draft
11 agenda to look for relevant TDocs; is that fair?

12 A That's one example which I'm discussing
13 here, but there are also other ways of accessing the
14 information.

15 Q And in this paragraph, you don't discuss
16 whether a -- strike that.

17 You don't discuss a POSITA at all in
18 paragraph 23; correct?

19 MR. MAY: Objection to form and
20 foundation.

21 THE WITNESS: I -- I do not
22 specifically mention the term POSITA.

1 BY MR. SALTMAN:

2 Q And you said, "In my opinion, it was common
3 practice for delegates to do this." You didn't
4 provide any opinion on what the practice was for
5 non-3GPP delegates; right?

6 A But I provided you just an example. So for
7 non-3GPP delegates, the way to search for documents,
8 or the tools to search for documents, would be also
9 available in a similar manner.

10 Q Well, here you have an opinion, said it was
11 a common practice for delegates. You didn't provide
12 an opinion in your declarations of what was common
13 practice for non-3GPP delegates; correct?

14 A I did not specifically mention non-3GPP
15 delegates, yes.

16 Q And as part of your work, you didn't speak
17 with any engineers or non-3GPP delegates about how
18 they located documents on the 3GPP server or portal;
19 right?

20 MR. MAY: Objection to the form.

21 THE WITNESS: Could you please clarify,
22 as part of my work in this case --

1 BY MR. SALTMAN:

2 Q Sure.

3 A -- or as part of my general --

4 Q As part of your work in this case?

5 A I did not talk to non-3GPP delegates or
6 delegates about the how to access documents, because
7 I'm familiar with it myself.

8 Q In trying to locate Exhibit 1011, did you
9 run any other searches, aside from its exact title, to
10 locate the document?

11 MR. MAY: Objection to form.

12 THE WITNESS: Yes, I did.

13 BY MR. SALTMAN:

14 Q Okay. What other search terms did you run
15 to try to locate Exhibit 1011?

16 A I can't recall exactly, but at least I run a
17 search for reference signals and QCL.

18 Q You don't discuss -- in your supplemental
19 declaration, you don't discuss running any other
20 searches, aside from the maintenance for reference
21 signals and QCL search; correct?

22 A So there are many ways to form this search

1 and I -- I thought it -- it was not helpful to have,
2 like, so many examples here, so I constrained myself
3 to one example.

4 Q All right. So in your declaration, you just
5 provided the one example of searching for the title on
6 the 3GPP portal; correct?

7 MR. MAY: Objection to form.

8 THE WITNESS: I provided only one
9 example. Yes.

10 BY MR. SALTMAN:

11 Q In paragraph 25, you referenced that
12 delegates attending the meeting would also have
13 received a document list, circulated before the RAN1
14 Meeting Number 94 in Gothenburg, Sweden, and listing
15 the document for potential discussion at that meeting;
16 do you see that?

17 A I see that.

18 Q Now, in this paragraph you just discussed
19 that delegates would receive the document list;
20 correct?

21 A Yes. Receiving in a way that they -- the
22 document list is announced to them and made available.

1 And this was announced to them, I believe around six
2 weeks prior to the meeting.

3 Q You don't, in paragraph 25, discuss that
4 non-3GPP delegates would receive the document list for
5 the meeting in Gothenburg, Sweden; right?

6 A I don't specifically discuss it here, but
7 may be important to know that also non-3GPP delegates,
8 anybody, can subscribe to the 3GPP email exploders and
9 would've received this notification about the agenda
10 and the document list.

11 Q Right. But you don't discuss that in your
12 supplemental declaration; do you?

13 A I don't discuss it specifically in this
14 paragraph.

15 MR. MAY: Can we just go off the record
16 for a second?

17 THE REPORTER: The time is eleven --
18 sorry. The time is 11:56 a.m. We are off the record.
19 (Off the record.)

20 THE REPORTER: We are back on the
21 record at 12:34 p.m.

22 //

1 BY MR. SALTMAN:

2 Q Welcome back, Mr. Rodermund. During the
3 break did you discuss the substance of your testimony
4 with your counsel?

5 A I did not.

6 Q Okay. Turning back to your supplemental
7 declaration, which is Exhibit 4, and if you turn to
8 page 10. And I'm in paragraph 25 once you're there.
9 You there?

10 A Yeah.

11 Q Okay. In the first sentence you say
12 "Delegates attending the meeting would also receive a
13 document list circulated before the RAN1 Meeting
14 Number 94 in Gothenburg, Sweden and listing the
15 document for potential discussion at that meeting."
16 Do you see that?

17 A Yes.

18 Q Okay. So here you're saying that the
19 delegates that would be attending the meeting would
20 receive the document list ahead of that meeting;
21 right?

22 A Yes. They would receive the notification

1 about the -- sorry -- availability of a document list.

2 Q And in your declarations, you didn't provide
3 any opinion about non-3GPP delegates receiving the
4 document list, related to the Gothenburg, Sweden
5 meeting, for example?

6 A I did not explain in my report, but the
7 non-3GPP people, as I explained earlier, would be able
8 to receive the same information as delegates.

9 Q And that's if they signed up for that list
10 server you talked about?

11 A That's the email exploder.

12 Q But in your declarations, just to be clear,
13 you didn't provide that opinion; correct?

14 A I did not provide this opinion in this
15 paragraph. I'm not sure, or I would have to check,
16 whether I provided a general statement that the
17 documents were available to the public, because that's
18 what I explained, at least in my opening declaration.

19 Q And you explained that with respect to the
20 document list, specifically?

21 A I explained in my opening declaration that
22 any document was publicly available; that also would

1 include the document list.

2 Q And I'm not talking about publicly available
3 necessarily, I'm talking about people who would
4 receive the document list. And so your understanding
5 is that you provided an opinion that non-3GPP
6 delegates would receive a copy of the document list?

7 MR. MAY: Objection to the form.

8 THE WITNESS: No, I did not say they
9 receive a copy. I said they receive the same
10 notification that the document list was available via
11 the email list, if -- if they are subscribed.

12 BY MR. SALTMAN:

13 Q Okay. And how does a person subscribe to
14 the email exploder?

15 A Via list.etsi.org, you can select a specific
16 email exploder you are interested in, and then you
17 have to enter your email address to subscribe.

18 Q And you don't have an opinion that a POSITA
19 would be subscribed to the email exploder list;
20 correct?

21 MR. MAY: Objection to form.

22 THE WITNESS: A POSITA may have

1 subscribed or may not. So it's not a requirement to
2 follow the work, but it makes things easier to follow
3 the work of 3GPP if you are subscribed.

4 BY MR. SALTMAN:

5 Q Right, and my question's a little narrow.
6 You don't have -- you didn't put forth an opinion that
7 a POSITA would necessarily be subscribed to the email
8 exploder list; correct?

9 MR. MAY: Objection to form,
10 foundation.

11 THE WITNESS: Yeah, apologies. I'm not
12 a native English speaker, it's not my actual language,
13 so I -- I haven't played too much with term POSITA
14 before. I did not provide an opinion here.

15 BY MR. SALTMAN:

16 Q Okay. So in paragraph 26, you discussed
17 that the document list circulated in advance of
18 Meeting Number 94 indexed each TDoc based on the
19 corresponding agenda item from that meeting's agenda.
20 In a typical meeting, how many agenda items are there?

21 MR. MAY: Objection to form.

22 THE WITNESS: It's not possible to

1 answer this in a generic way, because the number of
2 agenda items may vary between working groups and
3 between different meetings.

4 BY MR. SALTMAN:

5 Q All right. And obviously, to do a search
6 based on the document list, you have to actually have
7 the document list; right?

8 A No. So the document list is also reflected
9 as a -- by the web tool, which is called the 3GPP
10 portal. So we have it as a website also, and it
11 includes the same information as the physically
12 downloaded Excel sheet. So you don't have to have the
13 Excel sheet to have the same information, you can also
14 just look at the portal website.

15 Q Right. And as we talked about, those are
16 the searches we talked about earlier that you could do
17 on the 3GPP portal for the TDoc number, the source,
18 the author, or the title; right?

19 A Or the technical subject, which might be
20 just a fraction of a title.

21 Q Yeah. The title, either in whole or in
22 part; correct?

1 A Yes.

2 Q All right. Starting in paragraph 29 -- or
3 in paragraph 28, you talk about the search for TDoc
4 R1-1810751, which is also called Intel. And I know,
5 we talked about earlier, this should be Exhibit 1006;
6 right?

7 A Yeah.

8 Q Okay. So I'll refer to it as Exhibit 1,006,
9 so we're just on the same page. In your declaration,
10 on the top of page 12 -- strike that.

11 In your declaration, what search did you do
12 in the 3GPP portal to locate Exhibit 1,006?

13 A Here -- as I mentioned here, there are
14 multiple ways available -- or would've been also in
15 2018, multiple ways available to search for and access
16 the document in question. Again, could enter -- enter
17 the agenda item, as an example here, which would
18 filter down the number of documents to the specific
19 agenda item.

20 But I also gave an example of how you can
21 search for a document of which you already know the
22 specific TDoc number, because as I explained it is

1 just much easier and straightforward to find the
2 document via portal than looking just at the FTP
3 server.

4 So you have the TDoc number entered here and
5 then you get the result -- resulting document, which
6 you then can just download by clicking on the TDoc
7 number because there's a link behind it.

8 Q All right. So one way you could search in
9 the 3GPP portal, discussed here, is if you know the
10 actual TDoc number you're searching for; right?

11 A Yeah, that's -- that's an example. But if
12 you don't know it, you are -- are able to find it by
13 the means we discussed.

14 Q And then in paragraph 31, you talked about
15 using the agenda item to help locate the document;
16 right?

17 A Yes, works in a similar -- similar fashion.
18 The agenda item, we have the -- sorry -- the physical
19 Excel spreadsheet representing the agenda has the
20 same, let's say indexes -- like, the documents are
21 indexed on the portal and on the agenda, which is
22 downloaded on the -- sorry -- on the document list

1 which is downloaded, by metadata -- the different
2 metadata, such as source, TDoc number, status, and
3 other metadata.

4 And this is identical, both on the portal
5 and on the physical agenda. The physical -- physical
6 document list, the Excel sheet -- the Excel
7 spreadsheet -- also allows you additionally to -- to
8 filter for our specific agenda items.

9 Q All right. So to know what agenda item you
10 want to search for, you'd have to have a copy of the
11 meeting agenda; right?

12 A Ideally, yes. So a copy of the meeting
13 agenda is shared a few weeks in advance to the
14 meeting.

15 Q And so, then once you have access to the
16 meeting agenda, you say "Here's the agenda item I'm in
17 interested in," and you can search the document list
18 or the portal for that agenda item; right?

19 A That's possible.

20 Q Okay. So as a predicate to doing that type
21 of search, you need to have access to the actual
22 meeting agenda; right?

1 A If you want to perform a search according to
2 the agenda item, then you would need to have an access
3 to the agenda.

4 Q And in your declaration, you don't discuss
5 doing a search for the title of Exhibit 1006; right?

6 MR. MAY: Objection to the form.

7 THE WITNESS: Well, I discussed here to
8 insert the language of the meeting agenda item --

9 BY MR. SALTMAN:

10 Q Right.

11 A -- in the search string area.

12 Q But my question was, with respect to Exhibit
13 1,006, you don't discuss using how you would use the
14 title of that document to search the 3GPP portal;
15 right?

16 MR. MAY: Objection to the form.

17 THE WITNESS: I did not specifically
18 discuss how to use the title. Of course, I wanted to
19 show additional example here in a slightly -- slightly
20 different way, just to explain the capabilities of the
21 portal.

22 //

1 BY MR. SALTMAN:

2 Q Does the -- because we talked about --
3 strike that.

4 For the 3GPP portal, we talked about the
5 various things you could search for, the TDoc number,
6 the title, the author, and the source. Does the
7 agenda item correspond to the title in some way?

8 A It may. Yeah, it may. For example -- I
9 guess I can recall that for the 1011 exhibit, the ZTE,
10 right, that the agenda item, I included the quasi co-
11 location -- as an abbreviation, QCL -- which is also
12 part of the actual document title.

13 I believe it was also the case for the
14 interdocument Exhibit one-oh-oh -- 1006, that there
15 was a agenda item called Beam Management, which is
16 also part of the title of the interdocument.

17 Q Yeah, Remaining issues for Beam Management
18 is the title.

19 A Yeah.

20 Q If the agenda item doesn't contain any
21 similar language -- of the same language that's in the
22 title, would you still be able to find it through the

1 3GPP portal?

2 A To find what? We -- sorry.

3 Q Sure. So you have a document, it's got a
4 title, and there's an agenda item where that document
5 relates to, but the agenda item doesn't include any of
6 the same words that are in the title. If you search
7 that agenda item, would you be able to locate that
8 document on the 3GPP portal?

9 MR. MAY: Objection to the form?

10 THE WITNESS: Yes. You could use the
11 agenda item number, and then you would find the
12 allocated documents -- the documents allocated to this
13 agenda item number.

14 BY MR. SALTMAN:

15 Q Okay. And even though when we talked about
16 the 3GPP portal, agenda item wasn't one of the search
17 criteria, your contention is that you could use the
18 agenda item to do that search on the 3GPP portal?

19 MR. MAY: Objection to the form.

20 THE WITNESS: Yes, you can -- you can
21 do, but it would be useful if you also specify the
22 meeting you're looking at. Because you're looking at

1 specific agenda, you know the meeting which you're
2 looking at, and then you look for only the agenda of
3 this meeting. Otherwise it will show you all agenda
4 items from different meetings.

5 BY MR. SALTMAN:

6 Q All right. So you need to know what meeting
7 you're talking about and what the agenda item is, and
8 then you could do that search?

9 MR. MAY: Objection to form.

10 THE WITNESS: Yes. But you need -- you
11 know what meeting you're talking about because you are
12 interested in the agenda of a specific meeting, so we
13 have this information.

14 THE REPORTER: Mr. Rodermund, you're
15 coming off a little quiet. If you could speak -- if
16 you could just speak up -- because your mic is in a
17 good location, it's close, but just speak up.

18 THE WITNESS: Okay.

19 THE REPORTER: Thank you.

20 MR. MAY: I'm not sure if that happened
21 because we may have been speaking at the same time.

22 MR. SALTMAN: Yeah, I'll try to avoid

1 that, if you'll do the same. I apologize if we're
2 speaking over each other.

3 BY MR. SALTMAN:

4 Q All right. If you could turn to the bottom
5 of page 14, paragraph 38, of your supplemental report.
6 And here you say you don't have enough time to review
7 every single document published on the 3GPP FTP server
8 in the same level of detail, which is why you rely on
9 some of the things we've discussed, like the meeting
10 agenda and the document list; right?

11 A I see that.

12 Q And for the meeting in Gothenburg, Sweden,
13 you received the agenda and the document list since
14 you were a delegate; right?

15 A I received the notification to the -- for
16 the agenda and for the document list, because I was
17 subscribed to the email reflector.

18 Q In your declarations, you don't discuss how
19 a delegate would search for a specific meeting agenda;
20 do you?

21 MR. MAY: Objection to form.

22 THE WITNESS: Can you clarify what you

1 mean by a specific meeting agenda?

2 BY MR. SALTMAN:

3 Q Sure. So let's say I don't know what
4 specific meeting I want an agenda for, but I want
5 to -- I want -- strike that.

6 Let's say you don't know what meeting you're
7 interested in, but you're interested in a general
8 topic that may have come up at one meeting. You don't
9 discuss how to search the 3GPP website or portal for
10 that meeting agenda; do you?

11 A I don't -- or I have not covered the search
12 for specific agendas in my report.

13 Q Okay. Starting in paragraph 40, you talk
14 about the publication of technical specifications in
15 2018. How often are technical specifications
16 published -- or were -- how -- strike that.

17 In 2018, how often were technical
18 specifications published? Is it quarterly, or some
19 other timeframe?

20 A So usually you have four 3GPP plenary
21 meetings per year, and that means you have the
22 different technical specifications groups, which are

1 the plenaries, the RAN, CT, and SA, meeting together
2 in one place four times a year.

3 And they agree the results of the working
4 group meetings -- or sometimes they don't -- but most
5 of the time they agree the results of the working
6 group meetings.

7 And shortly after the end of the plenary
8 meeting, after the agreements have been made, a couple
9 of days or weeks after that, the technical
10 specifications will have been updated and published on
11 the 3GPP website.

12 Q And are those specifications, can they be
13 found on the main 3GPP website, or is it on the FTP
14 server and the portal, like we've talked about?

15 A Well, it can be found everywhere on these
16 different tools or locations.

17 Q Okay. And when you say "everywhere," do you
18 include the main -- like, if I went on the main 3GPP
19 website, could I find each specification release?
20 Just on that website, without having to go to the
21 portal or the FTP server?

22 A Yes. So the underlying database is the same

1 for the different means of access. So we have the FTP
2 server, where everything is stored, which can be
3 accessed via the website, cannot be accessed via the
4 portal.

5 Q Right, okay. So I was trying to see if
6 there was, like, an announcement on the main 3GPP
7 website, or something that said, "We published the
8 specification, here's a link to it," or something like
9 that. Is that something that 3GPP does?

10 MR. MAY: Objection to the form.

11 THE WITNESS: I have recollection that
12 this has happened, some instances. I can't tell that
13 they do it, like, every quarter; most likely not. But
14 I have seen it on occasions.

15 BY MR. SALTMAN:

16 Q And you haven't provided any information
17 about whether that was done for any of the
18 specifications you discussed in your declarations;
19 right?

20 A Let me think. No, I think I have not
21 provided this in the context of the specifications in
22 this case.

1 Q Okay. If you turn to page 16, at the very
2 top, you're talking about the Version 15 release of 5G
3 was functionally frozen on March 22, 2019. What does
4 that mean to be functionally frozen?

5 A So that means that the release, which
6 consists of a set of specifications, is functionally
7 stable, and frozen means that no new functionality
8 should be added after this date, and that only
9 corrections are still allowed. Because it takes some
10 time to sort out some facts of a specification and the
11 correction process still takes a couple of months.

12 But functionally frozen means that from this
13 point in time onwards, no features should be added.
14 Sometimes there are exceptions, but usually the
15 specifications are stable by that time.

16 Q All right. You can put Exhibit 4 to the
17 side.

18 THE REPORTER: Can we stop for a
19 second?

20 MR. SALTMAN: Sure. Just go --

21 THE REPORTER: No, not off the record.
22 Hold on.

1 (Discussion held off the record.)

2 BY MR. SALTMAN:

3 Q Okay. All right. If you could grab Exhibit
4 1, which you probably have there as the declaration in
5 the 1187 and 1190 IPRs. And we're going to go through
6 a little bit of background stuff that we haven't
7 touched on yet.

8 So if you go to page 1, in paragraph 2 you
9 say "I have been asked to provide my opinions
10 regarding the authenticity and dates of public
11 accessibility of the following 3GPP documents"; right?

12 A I see -- I see that.

13 Q And you've got similar language in your
14 other declarations; right?

15 A Yes.

16 Q What is your understanding of what it means
17 for a document to be authentic?

18 A So my understanding is that, to validate the
19 authenticity of a document, we have to show that the
20 document is actually what it -- how to say -- as I
21 mentioned, I'm not an English native speaker -- what
22 it says, or what it claims to be.

1 Q All right.

2 A That's my understanding.

3 Q I think we use the fancy word "purports to
4 be," but yes, claims to be is exactly right. And
5 then, you also talk about the dates of public
6 accessibility of the documents. What is your
7 understanding of what it means for a document to be
8 publicly accessible?

9 A So accessible means that the document is at
10 a location where other people can fetch the document,
11 can download it in this case. But additionally it's
12 also possible to not only download it, but also to
13 find the document.

14 Q And the way you'd find the document was some
15 of the ways we've discussed, through the 3GPP portal,
16 as an example; right?

17 A The portal is one example, yes.

18 Q All right. In paragraph 3, and at the first
19 sentence you say "As an ETSI project manager and
20 secretary, from June" -- are you there? Sorry. In
21 paragraph 3 on page 4, you wrote "As an ETSI project
22 manager and secretary, from June 1998 to December

1 2004, I have personal knowledge of 3GPP'S standard
2 business and records keeping practices"; you see that?

3 A I see that.

4 Q All right. So your personal knowledge,
5 regarding 3GPP'S business and record keeping
6 practices, is based on your time that you worked at
7 ETSI in 1998 to 2004?

8 A No, that's not correct. So my personal
9 knowledge is based on the time where I gained this
10 personal knowledge in a specific role being one of the
11 3GPP officials. Plus, after I left ETSI as a 3GPP
12 official, I was following 3GPP since when, including
13 attending some of the meetings.

14 So my personal knowledge is based on 26
15 years of experience being active in 3GPP.

16 Q And you said 26 years of experience. We
17 talked about earlier, there are times during that
18 26-year period where you weren't involved with 3GPP;
19 right?

20 A Oh, I was involved, but there were times
21 where I was not officially representing a company in
22 3GPP as a physical attending delegate. But I was

1 still following -- or I was still following the
2 progress and the development of specific standards.

3 Q And since you left Vodafone in 2014, how
4 often do you go to 3GPP meetings?

5 A I haven't -- I haven't counted the number of
6 meetings, but. I don't -- I don't know.

7 Q Do you go to more than one a year?

8 A In average, that's difficult to count
9 actually. So I -- I had periods where I was
10 attending, again, a couple of meetings in one year,
11 and then I had periods where I was attending no
12 year -- no -- no meeting, 'cause I didn't have time or
13 other reasons.

14 Q Right. When was the last 3GPP meeting you
15 attended?

16 A To think. I think in December -- December
17 to fall 2023.

18 Q Okay. All right. So --

19 A Two years.

20 Q -- a little over two years ago?

21 A Yeah.

22 Q All right. And if you turn to page 9, at

1 the very top you say "I continue to closely follow the
2 maintenance of the ETSI IPR policy as a delegate of
3 the ETSI IPR special committee." Do you see that?

4 A I see that.

5 Q IPR stands for intellectual property rights
6 in this case; right?

7 A It does.

8 Q Okay. And what are your responsibilities as
9 a delegate for the ETSI IPR special committee?

10 A Delegate means that I'm following the
11 discussions in the meeting, I'm attending physically
12 meetings, some meetings are also held online. So
13 I'm -- I'm following the developments and discussions
14 about the evolution of the ETSI IPR policy.

15 Q And does your work as the -- with the --
16 strike that.

17 Your work as a delegate to the ETSI IPR
18 special committee, does that relate to 3GPP in any
19 way?

20 A It does, because the ETSI IPR policies are
21 also applicable to 3GPP activities.

22 THE WITNESS: Am I -- am I enough?

1 Okay.

2 So it also applies to the work in 3GPP.

3 BY MR. SALTMAN:

4 Q And so, how does it apply to the work of
5 3GPP?

6 A So all members of the individual 3GPP
7 partners, which are ETSI, ATIS, TTA -- and in total,
8 seven organizations, which are the partner
9 organizations of 3GPP. So every member of one of the
10 individual 3GPP partners has to follow the IPR policy
11 of the partner organization.

12 That means with an ETSI member working for
13 3GPP, has to follow the obligations under the ETSI IPR
14 policy, so there's a direct connection.

15 Q Okay. Starting in paragraph 20 and going
16 through paragraph 35, this is the summary of your
17 opinions; right?

18 A It is.

19 Q And for each of these documents you used
20 similar language; is that fair to say?

21 A That's -- that's fair to say.

22 Q Okay. And so for example, for each of the

1 documents you said that each was -- it is your opinion
2 that each was uploaded and made available via the 3GPP
3 FTP server to 3GPP delegates and the general public by
4 a given date; right?

5 A Yes, I see that.

6 Q Okay. We talked about ETSI being in charge
7 of 3GPP'S IT services, including the website; right?

8 A We did.

9 Q Okay. How did that come about? How did
10 ETSI become in charge of the 3GPP'S IT services?

11 A So --

12 MR. MAY: Objection to the form.

13 THE WITNESS: -- when 3GPP was created
14 in December 1998, we -- at that time, five founding
15 organizational partners decided together that ETSI
16 would have a kind of additional role in this
17 organization, and one of the additional roles is to
18 provide IT services for 3GPP.

19 The second additional role was, and
20 still is, to provide administrative and technical
21 support to the 3GPP, for example, by the Mobile
22 Competence Center, which I worked for, and several

1 other experts worked for, to ensure the day-to-day
2 operation and the running of the work according to
3 specific procedures.

4 BY MR. SALTMAN:

5 Q And for example, for TDocs, who is actually
6 responsible for uploading those documents to the 3GPP
7 FTP server?

8 A So the responsibility --

9 MR. MAY: Objection. Objection to the
10 form.

11 THE WITNESS: The responsibility for
12 specific folders, like the working group folders, lies
13 within the hands of the respective project managers,
14 which are working with ETSI, the Mobile Competence
15 Center, to support 3GPP, so they have the -- the
16 control about these specific working group folders.

17 But the tool also allows -- the -- the
18 portal -- 3GPP portal allows also to upload documents
19 from -- by the delegates themselves, they are able to
20 upload documents, which are then, in the end, also
21 transferred to the FTP server.

22 //

1 BY MR. SALTMAN:

2 Q Now, has that process changed over time, or
3 has it always been that either a delegate or the, you
4 know, who's in charge of the working group would be
5 the one to upload it?

6 A So that process, the key aspects and
7 components of that process, have not changed since
8 3GPP was founded. There have been, however, as we
9 discussed earlier, some additional tools being
10 established, which were later bonded by establishing
11 the 3GPP portal.

12 So the process has not changed since 2015 to
13 today. But when I was part of the team originally
14 setting up 3GPP, we did not have a portal and the
15 folders were, to a large extent, managed in a manual
16 fashion by the project managers and secretaries.

17 Q Right. And the 3GPP portal then allowed
18 delegates to now upload documents; is that fair?

19 A Yeah. We can ask for a TDoc number assigned
20 by the portal and then upload this document.

21 Q In paragraph 39.

22 A Okay.

1 Q You start that paragraph and paragraph 40
2 with "In the ordinary course of its regularly
3 conducted business activities"; do you see that?

4 A Yes.

5 Q What does it mean to be in the ordinary
6 course of its regularly conducted business activities?

7 A Well, simple words. In a way -- in a way,
8 how this is performed by 3GPP in their daily work,
9 following their procedures, which have been defined
10 for -- for running this day-to-day work.

11 Q And did you draft that language? The
12 language at the top of 39 and the language at the top
13 of 40?

14 A So this wording I might have used also in
15 previous declarations.

16 Q Okay. Starting in paragraph 42, you talk
17 about the numbering system for the documents
18 associated with their meetings.

19 A I see.

20 Q Do you see that? And the numbering system,
21 you says, "Typically follows the following example,
22 which is" -- this is all one word --

1 "X-M-I-N-N-Z-Z-Z-Z." Do you see that?

2 A I see that.

3 Q Okay. And "X" stands for one of R, which
4 could be the radio access network groups, C, core and
5 terminals or S, service and system aspects groups; is
6 that right?

7 A That's right.

8 Q And you said that was the case in 2018, is
9 that still the case today?

10 A That's still the case today.

11 Q And then, "M" is a single character
12 corresponding to the working group, typically 1, 2, or
13 3, or in the case of the TSG itself, it's P; do you
14 see that?

15 A Yes.

16 Q All right. What is the difference in the
17 working group numbers? Like, what's the difference
18 between 1, 2, and 3?

19 A This is just an ID used to identify the
20 different working groups, which you can see in the
21 screenshot, paragraph 41.

22 Q Okay.

1 A Like RAN1, RAN2, RAN3.

2 Q Right. And then, "I" is normally a hyphen.

3 A It is.

4 Q And "NN" is the calendar year in which the
5 document was submitted; correct?

6 A That's correct.

7 Q So for 2018 it would be 18?

8 A Correct.

9 Q And "ZZZ" is just a running number, and some
10 working groups can use five digits; right?

11 A Right.

12 Q So aside from knowing what working group a
13 document came from, does this numbering system tell
14 any -- give any indication of what the substance of
15 the document is?

16 A By -- by identifying the working group, you
17 get already some understanding about the functional
18 area which it's related to, but it does not
19 specifically tell you exactly which aspects of this
20 functional area are covered by the document number.
21 For that you have to look at the title of the
22 document, or you have to go to the portal to find out

1 more information.

2 Q Or look at the -- if you have the document,
3 you can look at the body of the document, right, to
4 figure out --

5 A Oh, yeah, of course.

6 Q So for example, we have the screenshot on 15
7 that you were looking at the. The document number
8 would tell you that it came out of -- page 15, if you
9 go -- the screenshot on page 15.

10 A Oh, okay.

11 Q All right.

12 A Yeah.

13 Q Yeah. So for example, looking at the
14 screenshot on page 15, the document number would tell
15 you that the document came out of RAN WG1, but it
16 wouldn't tell you anything more -- I mean, and what
17 year it came out -- but other than that you wouldn't
18 have any more information about the document; right?

19 A That's right. You cannot put much into a
20 document number.

21 Q Right. All right. In paragraph 45, it's on
22 page 16, you talk about that in 1999 there were at

1 least a hundred companies that were members of 3GPP,
2 ranging from Bosch to Ericcson to Nokia to Samsung.
3 And then, in the next sentence you said "Each of these
4 companies typically delegated multiple individuals to
5 regularly participate in 3GPP meetings"; right?

6 A I see it.

7 Q And so, you know, a company like Ericsson or
8 Samsung will have potentially thousands of engineers;
9 correct?

10 A They may have.

11 Q All right. And so, then they would
12 designate only a handful of those people to be 3GPP
13 delegates?

14 A It depends. There are also big companies
15 which may send, like, 50 people.

16 Q Well, is it fair to say for these large
17 companies, that the vast majority of engineers that
18 work there are not 3GPP delegates?

19 MR. MAY: Objection to the form.

20 THE WITNESS: Yeah. There are
21 certainly more engineers working, for example in the
22 R&D area compared to the number of engineers which are

1 delegates.

2 BY MR. SALTMAN:

3 Q Okay. Was that true of Vodafone when you
4 worked there? Were there a larger number of non-3GPP
5 delegates engineers than there were 3GPP delegates?

6 A Well, in the technical department of a big
7 company, you have many different tasks and the
8 standardization is only one of them.

9 Q Right. But you had engineers working on
10 telecommunication-related products; right?

11 A Yes.

12 Q All right. And is it fair to say that the
13 majority of those engineers were non-3GPP delegates at
14 Vodafone?

15 A Yes, because when developing technical
16 products we have many, many tasks involved in the
17 original research and development and the design of
18 the products and the testing of the products. And so,
19 the standardization is also an important aspect, but
20 it's only one of several different aspects.

21 Q In paragraph 46 on page 17, you say that,
22 based on your experience, you would expect any person

1 implementing a cellular network or device to consult
2 the corresponding specifications on the 3GPP FTP
3 server, as well as other related documents. Do you
4 see that?

5 A I see that.

6 Q Okay. So here you're saying, people who are
7 implementing cellular networks or devices would
8 consult the specifications on the 3GPP server; right?

9 A Yes. People, experts working in this field,
10 would be aware of 3GPP specifications and where to
11 find them.

12 Q And we talked earlier, TDocs are draft
13 documents; right? Or they're temporary documents, I
14 guess; is that fair?

15 A They are temporary documents.

16 Q Right. And so, TDocs don't necessarily end
17 up in the specification; correct?

18 A Some do.

19 Q And some don't; right?

20 A Yeah.

21 Q And in your declaration, you don't mention
22 that someone implementing a cellular network or device

1 would consult TDocs; correct?

2 MR. MAY: Objection to the form.

3 THE WITNESS: So if you are company who
4 is developing products which are supposed to be
5 compliant with the standard, then you can of course
6 wait until the standard is finished and take the
7 finalized versions of the standard and start
8 implementing, but then you might be a bit late to the
9 market.

10 So if you want to be earlier to the
11 market, you might already start with early
12 specifications and then this instability -- there's --
13 there's still some instability in these early
14 specifications and you can find out about this
15 instabilities by looking at the TDocs.

16 You can see what is still under
17 discussion and what is looking to be kind of stable
18 finalized. So if you want to be very early to the
19 market, then you might already follow the
20 standardization discussions prior to the finalization
21 of the standard.

22 I did not explain this in whole length

1 here. I just wanted to make the point that people
2 working in this area would be aware of 3GPP resources.
3 BY MR. SALTMAN:

4 Q All right. And then, my question was just a
5 little narrower -- and I think you got to it at the
6 end -- that in your declaration you don't talk about
7 people implementing a cellular network or device
8 consulting the TDocs; correct?

9 A Did not specifically mention this in this
10 paragraph. Yeah.

11 Q Okay. In paragraph 52 on page 21 -- I'm
12 sorry, paragraph 53 on page 21. In the first sentence
13 you said "TDocs are usually uploaded to 3GPP's FTP
14 server and website before the meeting where they are
15 to be discussed." Are you aware of any examples where
16 a TDoc was not uploaded to the 3GPP server or website
17 before a meeting?

18 A That's why I wrote "usually."

19 Q Right.

20 A There are certainly instances that TDocs are
21 not uploaded before a meeting.

22 Q And in your experience, are the TDocs

1 eventually uploaded, or sometimes are they just never
2 uploaded?

3 A It may happen that a TDoc, which has been
4 registered, is never uploaded because it never has
5 been created.

6 Q Okay. All right. And are you aware of any
7 examples where a TDoc existed but was never uploaded
8 to the FTP server?

9 A Not from my memory, but it may have happened
10 that a company created the document and forgot to
11 submit it. That's also possible.

12 Q All right. In paragraph 59 on page 25 and
13 26, at the bottom, this paragraph talks about 3GPP's
14 practice is to store documents on its FTP server, and
15 at the bottom you say "Almost every week a new meeting
16 folder with the respective documents is added." Do
17 you see that?

18 A Okay. I see that, yes.

19 Q Yeah, sorry. You can -- I don't know, you
20 may want to take the clip off there if we're
21 getting --

22 A Yeah.

1 Q And then, on page 26 you have a number of --
2 you have a screenshot with a number of folders. Do
3 you see that?

4 A I see that.

5 Q And for instance, you referenced the folder
6 named WG2_RL2. Do you see that at the top of 26?

7 A Yes, I see it.

8 Q Okay. What is WG2_RL2? What does that
9 mean?

10 A It stands for the RAN working group tool.
11 The RL, I think it was meant to be radio link layer or
12 something.

13 Q And then, each of these folders in the
14 screenshot, those correspond to a different meeting;
15 is that right?

16 A That's right.

17 Q And did these meetings -- so for example,
18 TSGR2_117-E, what does that mean, or what does that
19 stand for?

20 A So this is -- the 117 is a running number,
21 so each meeting has a running number. The dash-E just
22 meant that this was an electronic meeting which

1 happened during the pandemic.

2 Q Okay. And what does TSGR2 mean?

3 A TSG stands for technical specification
4 group, R for RAN, and 2, working group 2.

5 Q Okay. So aside from knowing that these
6 meetings relate to that specific working group, the
7 folder names don't give you any indication of what
8 these meetings were about; correct?

9 A The folder names itself don't -- cannot
10 include the agenda, such you have to look up the
11 agenda or look on the portal which documents were
12 available for a specific meeting.

13 Q Right. And so, like if you turn to page 27
14 in your declaration here, this is what happens when
15 you click on one of the meetings and you can see
16 there's an agenda folder there; right?

17 A Yes.

18 Q So in theory you would -- if you didn't know
19 what number meeting you were looking for, you could
20 click on each of the meetings and then click on the
21 agendas and figure out if that's a meeting that you're
22 interested in; right?

1 A It would be one way of -- one way of doing
2 it to find out information you're interested in, but
3 the more convenient way would be to go via the 3GPP
4 portal.

5 Q Okay. All right.

6 MR. SALTMAN: So I'm about to switch
7 gears and we've been going about an hour. You want to
8 take a ten-minute break?

9 MR. MAY: Okay.

10 THE REPORTER: All right. The time is
11 1:31 p.m. We are off the record.

12 (Off the record.)

13 THE REPORTER: We're back on the record
14 at 1:44 p.m.

15 BY MR. SALTMAN:

16 Q Welcome back, Mr. Rodermund. Did you speak
17 with your counsel about any of the substance of your
18 testimony during the break?

19 A I did not.

20 Q Okay, great. If you could turn to Exhibit 1
21 on page 28, and starting in this section you start
22 talking about specific documents. And the first

1 document is TDoc R1-1808197. Do you see that?

2 A I see that.

3 Q Okay. And we talked about this document
4 before briefly, it was Exhibit 1011 in the IPR;
5 correct?

6 A I think so, yes.

7 Q Okay. I'm going to hand you what's been
8 marked as Exhibit 10. And Exhibit 10 is a document
9 that says "3GPP TSG RAN WG1 Meeting Number 94," and on
10 the right side it has that TDoc number R1-1808197. Do
11 you see that?

12 (Exhibit 10 was marked for
13 identification.)

14 A I see that.

15 Q Okay. And it's the same document you talk
16 about starting on page 28 of your declaration;
17 correct?

18 A Correct.

19 Q The document itself does not have a date;
20 right? It just says the date of the meeting at the
21 top of the page; correct?

22 A The document shows the date of the meeting,

1 yes.

2 Q All right. Now, you attended the meeting in
3 Gothenburg, Sweden in August of 2018; correct?

4 A Yes, I did.

5 Q Do you recall having seen this document
6 before you started working on these IPRs?

7 A I don't recall having seen this document
8 specifically. I might have seen it, given I have
9 reviewed several documents for that meeting, but it
10 has been, like, nearly eight years ago, so I can't
11 really recall having seen this document specifically.

12 Q Right. So it's fair to say you don't
13 remember either way whether you've seen this document,
14 Exhibit 10, before?

15 A I don't remember whether I have seen it.

16 Q Okay. It talks about a source and it says
17 ZTE; do you see that?

18 A I see that.

19 Q Okay. Is there any indication on -- so this
20 was authored by -- strike that.

21 This was authored by someone who worked at
22 ZTE, presumably?

1 A It's submitted by ZTE, and who has authored
2 this, we don't know, but it's some likelihood it was
3 somebody from ZTE.

4 Q All right. So the document doesn't indicate
5 who authored it; correct?

6 A The document doesn't show the -- the
7 person's name.

8 Q Right. And on page 29 of your declaration,
9 Exhibit 1 -- well, actually on the bottom of 28,
10 paragraph 65, and then the top of 29 -- you talk about
11 the document being confirmed -- the availability of
12 the document being confirmed as shown on a website
13 from the Internet Archive; you see that?

14 A I see that.

15 Q What is the Internet Archive?

16 A The Internet Archive is an internet-based
17 storage of -- of websites.

18 Q And so, what is that? You said it's an
19 internet-based storage of websites, is that what you
20 said?

21 A That's what I said.

22 Q Okay. And so, what does that -- does that

1 mean in practice you could go on there and look at
2 historical versions of websites?

3 A Yes, you can look at historical versions of
4 websites.

5 Q Okay. And did you speak with anyone at the
6 Internet Archive as part of your work on these IPRs?

7 A I did not.

8 Q Okay. Are you aware that the Internet
9 Archive has the ability to provide affidavits
10 regarding the authenticity of what's on their website?

11 A I am aware, yeah.

12 Q And did you ask the Internet Archive to
13 provide an affidavit?

14 A I did not, also because the Internet Archive
15 was only one of several pieces of evidence to show the
16 public availability of this document.

17 Q And well, the Internet Archive showed --
18 strike that.

19 This Internet Archive website showed what
20 the FTP site looked like at some prior date; correct?

21 A It shows what the 3GPP site or FTP site
22 looked at the specific date.

1 Q And you understand the Internet Archive
2 doesn't have websites from every day; right? So you
3 may have to -- strike that.

4 You understand the Internet Archive doesn't
5 maintain historical websites from every day in the
6 past; correct?

7 A That's correct.

8 Q Okay. And do you know, the Internet Archive
9 website you reference on page 29 of your declaration,
10 do you know what date this website was available and
11 up online?

12 A Could you please clarify the question? You
13 are asking about the date when the information was
14 recorded?

15 Q So the Internet Archive has website captures
16 from some time in the past; correct?

17 A Correct.

18 Q Okay. For the website that's referenced on
19 page 29, do you know what date in the past the website
20 is from?

21 A So this link provided here didn't provide a
22 screenshot, only the link.

1 Q Right.

2 A That's from 2018, as you can see in the
3 link, October 20th.

4 Q Okay. And do you know whether -- strike
5 that.

6 Do you understand what the priority date of
7 a patent is?

8 A I don't know exactly. I believe it was --
9 oh, I don't -- I don't want to speculate.

10 Q It's the idea of when a patent was --
11 simplest -- when it was first applied for or first
12 thought of; is that fair? Is that -- can we use that
13 understanding?

14 A That's my understanding. I -- but I don't
15 have a recollection of the exact date of the priority.

16 Q And do you know whether the October 20,
17 2018, date is before or after the priority date for
18 the 896 and 661 patents?

19 A I did not consider that when writing the
20 declaration, because I wanted just to illustrate that
21 a website -- that the 3GPP website, near the time of
22 the publication of the document, also near the time

1 the meeting happened, showed the identical times then
2 as it shows today, so that was my intention.

3 Q So it's fair to say you don't know either
4 way whether the October 20, 2018, date is before or
5 after the priority date of the 896 and 661 patents;
6 right?

7 A I can't recall. I might have seen the date,
8 but I don't know it now.

9 Q Okay. And then, at the bottom of the page
10 you have the 3G, which you determined that you --
11 strike that.

12 At the bottom of the page you have the
13 present day listing of the same document on the 3GPP
14 FTP server; do you see that?

15 A I see that.

16 Q Okay. And do you recall when the first time
17 you saw this website that you screenshot at the bottom
18 here?

19 A Well, the first time I saw this screenshot
20 would've been in 2018 when I was preparing for the
21 meeting.

22 Q All right. And through the -- this --

1 strike that.

2 At the bottom here of the screenshot, it
3 talks about 2018 different items; right?

4 A Yes.

5 Q Okay. And on this FTP server website,
6 there's no ability to search the substance of these
7 documents; correct?

8 MR. MAY: Objection to the form,
9 foundation.

10 THE WITNESS: So on this website
11 there's a way to search for the TDoc number, in case
12 you have the document list, for example, and you are
13 aware of the TDoc number, or somebody has given to you
14 a TDoc number, you are able to search for it and to
15 retrieve a document.

16 If you want to have additional search
17 capabilities, you just go to the 3GPP portal or -- or
18 use other examples of searching this -- other example
19 methods.

20 BY MR. SALTMAN:

21 Q All right. And in this declaration, your
22 original declaration, you don't discuss searching

1 for -- you don't discuss the search capabilities for
2 the ZTE document; correct?

3 MR. MAY: Objection to the form.

4 THE WITNESS: In my opening declaration
5 I do not specifically explain a portal search for the
6 ZTE document.

7 BY MR. SALTMAN:

8 Q According to the screenshot here on page 29,
9 the document was uploaded at 4:26 a.m.; do you see
10 that?

11 A Yes, I see it.

12 Q Okay. What time zone did the times listed
13 on the FTP site correspond to?

14 A According to my recollection, this is a UTC
15 time, like GMT.

16 Q Okay. And you weren't involved in uploading
17 this document to the FTP site; correct?

18 A I was not specifically involved in uploading
19 this document, because most likely it was uploaded by
20 the submitting company.

21 Q And you may have answered this question
22 already, so I apologize -- but in the 2018-2019

1 timeframe, were you involved in uploading any
2 documents to the 3GPP FTP site?

3 A Personally, no. But the people --
4 particularly the people who are working at ETSI in the
5 Mobile Competence Center, they're the -- responsible
6 for the entire document handling, including the
7 configuration of the portal for the meeting.

8 So we were following the same procedures as
9 I did when I was responsible for the upload, and we
10 did it for the community, which I was part of that
11 time.

12 Q Okay. So in the 2018-2019 timeframe, you
13 weren't personally involved in uploading any documents
14 to the 3GPP portal; right?

15 A I would have to check my notes. I can't
16 recall a specific contribution, but of course it's
17 also already eight years ago, so I'm not a hundred
18 percent sure if I have uploaded anything at the time.

19 Q Do you recall the last time you were
20 involved -- personally involved -- in uploading a
21 document to the 3GPP FTP server?

22 A No, I don't recall. I cannot tell you

1 exactly the last time. I just mentioned earlier that,
2 at least one example I recall, was during the
3 submission of MTC-related contributions in 2010, but I
4 may have uploaded documents after that.

5 Q Okay. And it was hard to hear, you said
6 2010?

7 A 2010 is one example I remember for sure.

8 Q So the last time you remember uploading
9 documents to the 3GPP server was in 2010?

10 MR. MAY: Objection to the form.

11 THE WITNESS: That's one example I
12 remember for sure, but I'm not sure if I have uploaded
13 any documents after that.

14 BY MR. SALTMAN:

15 Q In paragraph 66, you said "Experts in the
16 field of determining the public availability of 3GPP
17 documents would reasonably rely upon the FTP server
18 upload date on the 3GPP FTP server as the date the
19 document became available to the public"; you see
20 that?

21 A I see that.

22 Q And I think you have similar language for

1 other documents that you discuss in your declarations;
2 right?

3 A I have.

4 Q Did you -- have you spoken any with other
5 experts in the field of determining the public
6 availability of 3GPP documents?

7 MR. MAY: Objection to the form.

8 THE WITNESS: Yes, I -- I may have
9 spoken to our experts.

10 BY MR. SALTMAN:

11 Q Can you give me an example of an expert you
12 spoke to in the field of determining the public
13 availability of 3GPP documents?

14 MR. MAY: Objection to the form.

15 THE WITNESS: Well, for example, during
16 the -- my work at ETSI, I may have spoken with my
17 colleagues about such topics, when was a specific
18 document available, and how can we find out, and
19 obviously the FTP timestamp was considered by all of
20 us as we write means to find out the upload date.

21 BY MR. SALTMAN:

22 Q So when you were at ETSI back in 2004 or

1 earlier, you may have spoken to some of your
2 colleagues about trying to determine the public
3 availability date of 3GPP documents?

4 A There was one example I might have spoken
5 also to other people about it, to delegates for
6 example.

7 Q Sorry, I missed that. What?

8 A I might have spoken to delegates while
9 attending meetings about when a certain document was
10 uploaded.

11 Q Would those delegates be experts in the
12 field of determining the public availability of 3GPP
13 documents?

14 MR. MAY: Objection to the form.

15 THE WITNESS: Some of them could be, if
16 they are familiar enough with how to determine the
17 public availability of a 3GPP document. The public
18 availability of a document also plays a role when it
19 comes to the operations of a meeting.

20 Because when the officials, but also
21 other delegates, might want to establish that a
22 specific documents have been uploaded, submitted in

1 time before the document deadline, which is often one
2 week before the meeting. So it's something which is
3 looked at by people.

4 BY MR. SALTMAN:

5 Q And you said you may have spoken with
6 delegates. Do you recall any specific examples of
7 speaking with delegates about the public availability
8 of 3GPP documents?

9 A I don't have any specific examples, because
10 it's something which, during the course of
11 standardization, happens frequently that you look at
12 the upload date for a meeting for the reasons I
13 mentioned.

14 Q In paragraph 67 you discussed the modified
15 date of this document, Exhibit 10, as being August 11,
16 2018; do you see that?

17 A Yes, I see that. And I mentioned this here
18 because it aligns with the other dates, like the
19 historic and recurrent FTP server timestamps.

20 Q And on its own, a modified date doesn't tell
21 you when a document is publicly available; right?

22 A No, that was not the purpose of showing it

1 here. The purpose was to show that the document has
2 been modified at the time, shortly before it was made
3 available to delegates and the public.

4 Q Beginning in paragraph 70, you discussed the
5 meeting report from the Gothenburg, Sweden meeting;
6 you see that?

7 A I see that.

8 Q And that this document, Exhibit 10, is
9 mentioned on page 93; right?

10 A I see that.

11 Q The meeting report can be hundreds of pages;
12 right?

13 A It can be.

14 Q Okay. And there could be thousands of
15 documents referenced in the meeting report; correct?

16 A Depending on the working group, yes.

17 Q Okay. And so, this document was just
18 mentioned on one page of this large meeting report;
19 correct?

20 MR. MAY: Objection to the form.

21 THE WITNESS: I'm citing here only one
22 page.

1 BY MR. SALTMAN:

2 Q Okay. And we talked about document lists.
3 On page 33, in Footnote 3, you discuss that the
4 document list for this meeting has over 2,000 -- is
5 over 2,000 documents?

6 A I see that.

7 Q Right. And so, Exhibit 10 is just one of
8 those 2,000 documents; right?

9 A Yes, that's correct.

10 Q Okay. All right, you can put that to the
11 side. Handing you what's been marked as Exhibit 11,
12 and that's a document that, in the upper right, says
13 "R1-1810751." Do you see that --

14 (Exhibit 11 was marked for
15 identification.)

16 A I see that.

17 Q -- document, Exhibit 11? All right. And if
18 you turn to page 57 of Exhibit 1, your declaration,
19 this is where you talk about this document; right?

20 A That's correct.

21 Q All right. And just for reference, it's
22 Exhibit 1006 in the actual IPR; correct?

1 A Correct.

2 Q Okay. And just like the previous document
3 we looked at, Exhibit 11 doesn't have an actual date
4 of the document, it just has the date of the meeting
5 at the top; correct?

6 A It shows the date of the RAN1 forty --
7 ninety-four, this meeting.

8 Q All right. And you didn't attend the
9 meeting in Chengdu, China in October of 2018; right?

10 A I did not attend that meeting.

11 Q Had you seen this document, Exhibit 11,
12 before you started working on these IPRs?

13 A I might have seen it, but I can't recall
14 specifically.

15 Q So you don't know either way whether you had
16 seen Exhibit 11 before you started working on these
17 IPRs?

18 A Yeah. I have seen certainly documents on
19 beam management, but I don't know if this document was
20 part of them.

21 Q Okay. And again, this was authored by
22 someone at Intel; correct?

1 A It shows the source, Intel Corporation.

2 Q And it doesn't indicate who the actual
3 author at Intel is; correct?

4 A Correct.

5 Q In your declaration, in paragraph 111, you
6 again make reference to the Internet Archive; you see
7 that?

8 A I see that.

9 Q And if you look at the URL for the Internet
10 Archive, it looks like this specific webpage for the
11 FTP server was the version that existed on November
12 19, 2018; does that seem right?

13 A That's right.

14 Q Okay. And we talked about earlier, you
15 don't know the priority date for the 896 and 661
16 patents; correct?

17 A I can't recall the priority date.

18 Q Okay. And so you don't know whether
19 November 19, 2018, was before or after the priority
20 date; correct?

21 A I can't tell, and as I mentioned before, the
22 main purpose or intention was to show a -- the

1 historic webpage, close to the time when the document
2 was submitted and close to the meeting, make visible
3 that information provided by the historic webpage is
4 identical to what is provided by the FTP server today.

5 Q Okay. And then, on page 59 you again have
6 the FTP server website from this meeting; correct?

7 A That's right.

8 Q And do you recall the first time you saw
9 this website?

10 A I don't recall.

11 Q Okay. And in this declaration, you didn't
12 discuss how to search for the document on the FTP
13 website; correct?

14 A That information I provided in the
15 supplementary declaration.

16 Q Okay. But in your original declaration, it
17 doesn't discuss how to search for this document on the
18 FTP website; correct?

19 MR. MAY: Objection to form.

20 THE WITNESS: I have not discussed a
21 search on the website or on the portal.

22 //

1 BY MR. SALTMAN:

2 Q And for this meeting, as you can see in that
3 screenshot, there were 1,957 items; correct?

4 A I see that.

5 Q If you go to paragraph 115, it's on page 61,
6 and again talks about the final meeting report. And
7 in the last sentence you say "The meeting was attended
8 by 478 individuals"; right?

9 A I see that.

10 Q As part of your work in your case, did you
11 speak with any of those attendees of the meeting in
12 Chengdu, China?

13 A I did not.

14 Q Did you attempt to contact any of the 478
15 individuals who attended the meeting in Chengdu,
16 China?

17 A I did not.

18 Q Do you have a sense of how many individuals
19 actually saw Exhibit 11 at the meeting in Chengdu,
20 China?

21 A The document was available to all of them,
22 plus anybody who wanted to access the document via

1 3GPP resources, but how could I know how many of them
2 have reviewed a document?

3 Q And then, in paragraph 116 you again
4 referenced the meeting report. The meeting report for
5 the Chengdu meeting was 216 pages long; does that
6 sound about right?

7 A I don't know. I have not counted the pages.

8 Q Okay. I mean I'm happy to go through
9 Appendix E, but will you take my word for it that it's
10 216 pages?

11 A Yes, I believe you.

12 Q Okay, thank you. And you referenced that
13 the meeting report mentions Exhibit 11 on page 58;
14 right?

15 A I see that.

16 Q All right. And so, of the 216 pages, your
17 declaration talks about the meeting report mentioning
18 this exhibit on one of those pages; correct?

19 A Which is not unusual, right, 'cause
20 documents are mentioned once or twice in the meeting
21 report, but not, like, ten times.

22 Q All right. And then, partly because there

1 are thousands of documents, potentially; correct?

2 A Yes.

3 Q Like in this example, in Footnote 8, you
4 talk about that there are over 2,000 documents
5 associated with this meeting; right?

6 A I think it was around 2,000, I don't know
7 the exact number.

8 Q Okay. Well, in the footnote you say that
9 the document list is over 2,000 rows, then you put in
10 parentheses "Documents"; right?

11 A That's what I say in the footnote, yeah.

12 Q And this document is just referenced in Row
13 703; do you see that?

14 A I see that.

15 Q It says it's tagged as available. What does
16 available mean?

17 A Available means the document has been
18 uploaded, it's available to everybody who's interested
19 in seeing it.

20 Q What are some of the -- it's under "TDoc
21 status." What are some other TDoc statuses that could
22 be in that field?

1 A Agreed is one example. If the document was
2 discussed and agreed, then it would be agreed.

3 Q Okay. Are there any others that you're
4 aware of?

5 A Yes. Postponed, noted. Noted is also very
6 common, that the document has been seen by meeting
7 attendees during the meeting, but it has not been
8 agreed, either because people was not asked for it to
9 be agreed, just for information, or it has been noted
10 because people didn't want to agree.

11 Q And what is -- did you say "treated" before?
12 Is that a word you used or no?

13 A No, I mean -- I meant postponed, agreed,
14 noted. There are a couple of more different types of
15 status.

16 Q All right, you can put that to the side --
17 or, you're still in that. I'm saying, you put Exhibit
18 11 to the side. All right. I am handing you what's
19 been marked as Exhibit 12. And Exhibit 12 is a
20 document that is entitled 3GPP TS 38.214 V15.3.0. Do
21 you see that --
22 //

1 (Exhibit 12 was marked for
2 identification.)

3 A I see that --

4 Q -- Mr. Rodermund? And the discussion in
5 your declaration of this document starts on page 92 in
6 Exhibit 1. So all right -- so I'll let you get there
7 as well. All right. So Exhibit 12 is a technical
8 specification; correct?

9 A That's correct.

10 Q And in the top right it says 2018-09. Do
11 you see that?

12 A I see that.

13 Q And does that mean -- what -- strike that.
14 What does 2018-09 -- what does that mean?

15 A That means this is the month this document
16 was released by 3GPP. That is the month when the
17 plenary happened, which agreed changing this to this
18 document. As a result of agreeing changing this, this
19 new version was created.

20 So the meeting happened that month, but the
21 document might have been available at that month or
22 maybe following month. Sometimes it takes a few weeks

1 until the updated specifications become available.

2 Q Okay. So it's fair to say that, the
3 document was finished in September of 2018 and maybe
4 have been uploaded at that time, or sometimes in the
5 month or two after that?

6 A Yes.

7 Q All right. And if you look at the top of
8 page 93 of your declaration, it says -- it refers to
9 the month being March. I assume that's a typo, you
10 meant September.

11 A Oops. Yeah. Nine stands for September.

12 Q I assumed that was, but just want to double
13 check. All right, and then on page 94 you referenced
14 the 3GPP FTP site. Do you see that -- or you have a
15 screenshot of it? Do you see that?

16 A This one? Yes.

17 Q Okay. Did you see this 3GPP FTP website in
18 2018? Do you recall?

19 A There's a high likelihood I did.

20 Q And do you recall -- do you know for a fact
21 that you saw it, or is it just, it's likely you did
22 but you're not positive?

1 A I would stick with the high likelihood,
2 because I was following 3GPP at the time, I was
3 accessing specifications, and there's a good chance I
4 also have had a look at the physical layer procedures.
5 But it's eight years ago, so I wouldn't say today, as
6 I sit here, I'm sure about it.

7 Q All right. And is this -- did -- does --
8 is -- strike that.

9 Is 3GPP still updating this FTP server?
10 Like, are they still adding items to this at this
11 point?

12 A They do.

13 Q Okay. Because the reason I ask is, I went
14 on a couple weeks ago and it had 75 items, not 73. So
15 that would probably explain why.

16 A Oh, yes.

17 Q Okay. And you can see that the document
18 name's 38214-f30.zip. Do you see that?

19 A Yeah.

20 Q Now, the 38214 indicates that it relates to
21 technical specification 38.214; right?

22 A That's correct.

1 Q And is f30 just -- is that just the new --
2 like, they just keep going, because there's f10, f20,
3 f30 -- or what does -- strike that.

4 What does f30 mean?

5 A f30 just indicates the version number, and
6 because according to 3GPP convention, which has been
7 maintained regarding the file name of specifications,
8 you can only have three digits for the version
9 numbers. And so, you can go up to 9.0.0 but then you
10 would've to add one digit or move to letters.

11 Q Letters, okay.

12 A So 10 stands for A, A says -- that stands
13 for 10, and F stands for 15.

14 Q And aside from knowing which technical
15 specification it relates to, does the file name
16 indicate the subject matter of the document?

17 A The file name, according to 3GPP'S
18 convention for specification, only includes a
19 specification number.

20 Q So it doesn't include what the substance of
21 the document is; right?

22 A It does not include the substance of the

1 document.

2 Q And looking back at Exhibit 12, the
3 actual -- at the very bottom there's some small type
4 and the last sentence said, "Specifications and
5 reports for implementation of the 3GPP system should
6 be attained via the 3GPP organizational partners,
7 publications, offices." Do you see that?

8 A Is it the first sentence, or?

9 Q It's the very bottom; I know it's small
10 type.

11 A I see that, yes.

12 Q What is the 3GPP organizational partners,
13 publications, offices?

14 A So the 3GPP organizational partners are the
15 original standards organizations which have
16 together -- which are working together in 3GPP to
17 develop cellular communication standards, ATIS for the
18 United States, ETSI for Europe, ARIB for Japan, and
19 then additional organizations for Korea, China, and
20 India, and these are the organizational partners and
21 they have their own publication offices.

22 And these documents, they are made available

1 by 3GPP as specifications. And they are shortly after
2 becoming available by 3GPP, they are adopted by the
3 organizational partners and republished as an ETSI
4 standard for example.

5 Q Okay.

6 A But they don't change in content, it's just
7 the cover sheet.

8 Q The cover sheet will say, like, ETSI, or one
9 of the other --

10 A Yeah.

11 Q Okay. In paragraph 169, you talk about
12 doing a -- being able to locate this specification via
13 a Google search; do you see that?

14 A I see that.

15 Q And in your declarations, you didn't discuss
16 doing any Google searches for TDocs; correct?

17 A I did not discuss that, although nowadays
18 this is also possible.

19 Q But in your declarations, you only talked
20 about doing Google searches with respect to
21 specifications; correct?

22 A That's correct.

1 Q Did you attempt to locate any of the TDocs
2 that you discussed in your declarations through a
3 Google search?

4 A No.

5 Q The Google search was done around the time
6 you issued your declaration; right? So in 2025?

7 A That sounds right.

8 Q So you didn't try to figure out a way to run
9 this Google search back in 2018, for example; right?

10 A I did not. And I also mentioned in one of
11 the paragraphs, that the search was performed at the
12 time close to the preparing declaration, but that a
13 similar search done during 2018 would've led to
14 similar results.

15 Q Do you know whether Google adjusts the
16 algorithm on its search tool?

17 MR. MAY: Objection to form.

18 THE WITNESS: I don't have any specific
19 information about that. But as I said, this was just
20 illustrating that by specific search tools -- and
21 Google is just one example of them, there are also
22 other search tools -- it would be possible to find a

1 specification by an internet search tool. And that
2 I -- according to my experience, I think that this
3 would also have been possible in 2018.

4 BY MR. SALTMAN:

5 Q Did you run a similar search in 2018 or
6 2019, as you did here?

7 A Well, I -- I run --

8 MR. MAY: Objection -- sorry.
9 Objection to form.

10 THE WITNESS: I -- from time to time I
11 run the searches also on -- on search engines, when
12 I'm looking for a specific specification. Of course
13 it can be sometimes quite convenient to use a search
14 engine for -- for this purpose.

15 BY MR. SALTMAN:

16 Q And so, you didn't run this search -- you
17 don't recall searching for this document in 2018;
18 correct? Via Google?

19 A I don't recall a specific instance that I
20 have searched for this document, and then eight years
21 ago.

22 Q And you don't know how Google's search

1 algorithm has changed since 2018; correct?

2 A I don't know specifically if and how it has
3 changed, but I recall that I have been doing such
4 searches over the past 10 or 20 years regularly and I
5 never had any difficulties to find a specific 3GPP
6 specifications.

7 Q Do you know whether Google tailors its
8 search results to the person that's searching, in any
9 way?

10 A Could you please repeat?

11 Q Sure. So, do you know whether Google
12 tailors or adjusts the search results based on the
13 individual that's doing the searching?

14 MR. MAY: Objection to form.

15 THE WITNESS: It might be the case.

16 BY MR. SALTMAN:

17 Q So you don't know if, like, you did a search
18 and I did a search, whether we'd get the same results
19 or not?

20 A I don't know for sure.

21 Q Okay. I'm going to hand you what's been
22 marked as Exhibit 13. And Exhibit 13 is a Google

1 search, and at the top you can see it says "Physical
2 layer procedures for data." It's cut off a little
3 bit, but that's what it says. Do you have that in
4 front of you?

5 (Exhibit 13 was marked for
6 identification.)

7 A I have it.

8 Q Okay. I ran this search in incognito mode.
9 Do you know what incognito mode is?

10 A Incognito mode, so the system doesn't know
11 your identity.

12 Q Now, you can see the search at the top -- I
13 know it's cut off, but it has the -- it says "Physical
14 layer procedures for data." Do you see that?

15 A I see that.

16 Q Okay. And the search results which you have
17 on page 97 of your declaration, are not the same as
18 resulted from this search; correct?

19 A They are not exactly the same, but they are
20 very close. So we have here three instances of the
21 document we were looking for.

22 Q Version 15.3 is one of the results here?

1 A So it's not exactly the same version, but we
2 have the specification which is found -- found here.
3 That's -- that's also -- my research did not reveal
4 the version, but revealed the webpage from where you
5 could find all the different versions.

6 Q Right. And this one, for example, has
7 Version 16.2 as the first result, for example; right?

8 A Yeah. But this is -- would not have been
9 possible in 2018, 'cause 2018 Version 16.2.0 would not
10 have existed. So it would have a -- it could have
11 been showing 15.3.0.

12 Q Well, we don't know what it would've shown
13 in 2018; right?

14 A No, but I wanted to say that this result
15 would not have been there in 2018.

16 Q No, I know. But then you said, "Well, maybe
17 15.3 would've resulted in 2018"; right? That's what
18 you said?

19 A Yes. Or just a webpage without having a
20 specific version number in the title.

21 Q But we don't know what the Google results
22 would've been in 2018, because we don't have those --

1 we don't have that available to us; right?

2 A That's what I said here. I don't know -- we
3 don't know exactly what results would've been. But
4 also with this search, by looking at the -- by
5 entering the keywords "Physical layer procedures," you
6 would've found the right 3GPP specification, and this
7 is the main point you want to achieve if you want to
8 get to the right document.

9 Q Right. And when I ran that search in
10 incognito mode, I didn't end up getting Version 15.3
11 as a result; correct?

12 A That's correct. But I didn't either in
13 my -- my search.

14 Q Right. And so, you ran a search for -- you
15 can put that to the side. The search you ran was for
16 physical layer procedures for data; right?

17 A Yes.

18 Q Okay. How did you decide to run a search
19 for that term?

20 A Sorry, could you please repeat the question?

21 Q Sure. So you ran a Google search -- strike
22 that.

1 To locate Exhibit 12, you ran a Google
2 search for physical layer procedures for data; right?

3 A I did.

4 Q Okay. Why did you choose -- I'm sorry,
5 strike that.

6 Did you pick that term? Did you -- strike
7 that.

8 Did you pick that term to search on Google?

9 A I picked that term, yes.

10 Q Why did you pick that term to search?

11 A So in this case, I picked the term from the
12 title, but it also reflects a specific technical area
13 in the mobile communication system, the physical layer
14 procedures.

15 Q And when you ran this Google search, you
16 already had a copy of Exhibit 12; correct?

17 A I had.

18 Q And so, you looked at the title and made
19 sure it was consistent with what the document
20 discussed and then you ran a search for that title;
21 correct?

22 A That's correct. But also putting myself

1 into the shoes of somebody who didn't have the
2 information about the title, who was a technical
3 expert in physical layer procedures and wanted to know
4 what has 3GPP specified in this regard. So we would
5 just enter such keywords, or different keywords which
6 were similar to these keywords, to find a
7 specification.

8 Q Did you run alternate searches with
9 different words that weren't in the title to try to
10 find this document?

11 A I -- I can't recall it.

12 Q Does the term physical layer procedures for
13 data relate to the issues in the prior art that the
14 patents were intending to solve?

15 MR. MAY: Objection, scope, form.

16 THE WITNESS: So as I mentioned
17 earlier, I have not looked at the technical details
18 because the technical details of the patents are
19 covered by other experts.

20 BY MR. SALTMAN:

21 Q And so, when determining what someone would
22 Google or what someone would search for, you didn't

1 look at what issues in the prior art the patents were
2 trying to solve; right?

3 MR. MAY: Objection, scope, form.

4 THE WITNESS: I did not look into the
5 patent itself to identify research terms.

6 BY MR. SALTMAN:

7 Q And your declaration doesn't discuss why a
8 POSITA would choose to run a search for physical layer
9 procedures for data; right?

10 MR. MAY: Objection, form.

11 THE WITNESS: Well, a POSITA, like a
12 member of the 3GPP community or a member of the
13 cellular telecommunications industry, interested in
14 this topic. I was trying to put myself to the shoes
15 of such a person and choose a term which would be
16 commonly used to find a document related to this
17 topic.

18 BY MR. SALTMAN:

19 Q Well, I'm just talking about what you put
20 forth in your declaration, and your declaration
21 doesn't explain why a POSITA would do a search for
22 physical layer procedures for data; correct?

1 MR. MAY: Objection, form.

2 THE WITNESS: I did not refer
3 specifically to a POSITA in my declaration.

4 BY MR. SALTMAN:

5 Q Okay. We talked about email exploders
6 earlier. With respect to Exhibit 12, in your
7 declaration you don't discuss that it was announced in
8 an email exploder; correct?

9 A I would need to check my declaration. I did
10 not discuss the announcement via the email exploder,
11 but the evidence which I included in this chapter is
12 already sufficient to establish the availability date.
13 And in addition, you also have the copyright on the
14 second page, which shows the document was available in
15 2018.

16 Q My question is a little narrower. Just, in
17 your declaration, you don't discuss whether Exhibit 12
18 was announced in an email exploder; correct?

19 A I did not discuss it.

20 Q Thank you.

21 MR. SALTMAN: Why don't we take a
22 break, because I'm going to switch declarations and

1 been an hour.

2 THE REPORTER: Okay.

3 MR. MAY: Ten minutes, or?

4 MR. SALTMAN: Yep, that works.

5 THE REPORTER: The time is 2:39 p.m.

6 We are off the record.

7 (Off the record.)

8 THE REPORTER: We are back on the
9 record at 2:53 p.m.

10 BY MR. SALTMAN:

11 Q Welcome back, Mr. Rodermund. Did you speak
12 with your counsel about the substance of your
13 testimony during your break?

14 A I did not.

15 Q Okay. All right. So we're going to turn to
16 Exhibit 2, which is your declaration in the 1188 IPR;
17 right?

18 A Yes.

19 Q Okay. And you did not issue a supplemental
20 declaration in this IPR; correct?

21 A Correct.

22 Q All right. So if we turn to page 36 of

1 Exhibit 2, and there you discuss TS 38.321 Version
2 15.3.0; do you see that?

3 A I see that.

4 Q And that is -- in this IPR, is Exhibit 1007;
5 right?

6 A Yes.

7 Q And Mr. Rodermund, I've just handed you
8 Exhibit 14, which at the top says TS 38.321 Version
9 15.3.0, and at the bottom it says "Samsung Exhibit
10 1007"; do you see that?

11 (Exhibit 14 was marked for
12 identification.)

13 A Yes.

14 Q And Exhibit 14 is the document you discussed
15 beginning on page 36 of your declaration, Exhibit 2.

16 A I see it.

17 Q And like the last document, Exhibit 14, in
18 the upper right, says "2018-09"; right?

19 A It does.

20 Q All right. And so, that's the same as we
21 talked about before, that the document was finalized
22 and it was posted around that time, if not a little

1 later?

2 A That's right.

3 Q Okay. We didn't talk about the version
4 numbering system that much. How -- you said it goes
5 up to -- strike that.

6 Could you explain how the specification
7 versioning numbering system works?

8 A It's difficult to explain that in a few
9 sentences, but I try. So the first digit indicates
10 the release to which a specific specification is
11 attached, like Version 15 means this is part of the
12 Release 15 specification set.

13 The second digit is covering what is
14 version -- version count of this document. So Version
15 15.3 means this is the third version of this
16 specification belonging to Release 15. And the third
17 digit is rarely used. The third digit is only used
18 for very minor editorial changes.

19 Q Okay. In paragraph 73 you reference the
20 Internet Archive at the top of page 37?

21 A I do.

22 Q And so, that Internet Archive, the date on

1 which the Internet Archive pulled this website was
2 October 3, 2018; right?

3 A It was.

4 Q And as with the other patents we talked
5 about, you don't know the priority date of the 535
6 patent; correct?

7 A I don't know it right now.

8 Q And so, you don't know if this October date
9 was before or after it; right?

10 A I don't know.

11 Q Okay. And we talked about a similar
12 screenshot in the last declaration, but on page 37 you
13 have a screenshot of the FTP server, related to this
14 specification -- related to 38.321; right?

15 A I see that.

16 Q Okay. And in your declaration, you don't
17 explain how a POSITA would be able to -- strike that.

18 In your declaration, you -- strike that.

19 The file numbering system, again, doesn't
20 explain what the substance of the specification is;
21 right?

22 MR. MAY: Objection to form.

1 THE WITNESS: File numbering system
2 indicates a file number, according to 3GPP convention,
3 does not include which title of the specification or
4 any other substance information.

5 BY MR. SALTMAN:

6 Q And in your discussion of Exhibit 14, the
7 38.321 specification, you don't discuss a person of
8 ordinary skill in the art; correct?

9 A I do not explicitly mention a person of
10 ordinary skill in the art.

11 Q Okay. And starting in paragraph 77, you
12 again talk about doing a Google search; right?

13 A I do, yes.

14 Q And the Google search was you -- like with
15 the last Google search, this Google search was
16 conducted around the time you issued your
17 declarations, so sometime in 2025; right?

18 A That's what I mentioned in paragraph 18.

19 Q Okay. Do you know on what date Exhibit 14
20 would've first shown up in a Google search?

21 MR. MAY: Objection, form.

22 THE WITNESS: The earliest date it

1 could have shown up, as this version, under this
2 version number, would've been the 3GPP application
3 date.

4 BY MR. SALTMAN:

5 Q Well, you said the date it could have shown
6 up. Do you have any idea when it actually -- the
7 first -- strike that.

8 Do you have any idea when the first time
9 Exhibit 14 would've actually shown up in a Google
10 search?

11 MR. MAY: Objection, form.

12 THE WITNESS: Well, what I demonstrated
13 with my search, which was taken, like, a year ago or
14 something, is that a Google search reveals you the
15 specification number and the area on the 3GPP portal
16 where you can find the different versions, like --
17 like shown on this screenshot.

18 So I did not specifically search for a
19 specific version. So this version would've shown up
20 by the date it was published on -- on this website.

21 BY MR. SALTMAN:

22 Q So you know for a fact, that as of September

1 25, 2018, a Google search would have shown -- would've
2 resulted in Exhibit 14 showing up in a Google search?

3 MR. MAY: Objection, form.

4 THE WITNESS: I did not say that
5 Version 15.3.0 would've shown up in a Google search.
6 I just said and demonstrated here that the
7 specification showed up in the Google search and this
8 link provides you access to all the different
9 versions.

10 BY MR. SALTMAN:

11 Q Do you know when the earliest date that a
12 search for 5G Mac spec would have resulted in the
13 specification result you see in your Google search?

14 MR. MAY: Objection, form.

15 THE WITNESS: So you mean this result,
16 or this result?

17 BY MR. SALTMAN:

18 Q Sure. The result in the Google search --
19 the second one down is the one you clicked on;
20 correct? To get the screenshot on page 41?

21 A Correct.

22 Q All right. If you did a 5G MAC spec search

1 earlier, do you know what the earliest date that
2 would've resulted in that link showing up as a result?

3 A As I explained in the paragraph 80 is, the
4 search with Google or any other search engine at a
5 time around 2018 would've led to similar results, so
6 we would have been able to find the specification.

7 Not only at the specific time, but you
8 would've been able to find it from January 1st
9 onwards. You would've been able to find the
10 specification number, but on January 1st you would
11 have not been able to find 15.3.0, because it was only
12 published by September 25th.

13 Q Okay. And so did you -- in the 2018-2019
14 timeframe, did you run a search, 5G MAC spec?

15 A That's --

16 MR. MAY: Objection to the form.

17 THE WITNESS: That's likely, because I
18 was working with the specs during that time. But I
19 cannot, now eight years ago, recall whether I did a
20 specific search in 2018.

21 BY MR. SALTMAN:

22 Q And we talked about earlier, you don't know

1 how the Google algorithm has changed since 2018;
2 right?

3 A I don't know, but according to my experience
4 it would've been certainly possible to find a
5 specification related to a specific technical subject
6 in 2018.

7 Q And do you know how soon after a publication
8 that spec would show up as a result in the search?

9 A As I explained earlier, the spec version
10 does not show up as a result of the search, but only
11 the specification number, which leads you to the
12 webpage, which provides you all available version at
13 that time.

14 Q Okay. And so, it's your contention that if
15 you did a search for 5G MAC spec in 2018, you would
16 get this specification number landing page as one of
17 the results?

18 MR. MAY: Objection to the form.

19 THE WITNESS: I'm saying here in
20 paragraph 80 that this search or similar research
21 would've led to this result. I did not say that it
22 has to be -- I said it's similar, so I did not say

1 that it had to be necessarily always the same
2 keywords.

3 Maybe it would've been slightly -- you
4 would've entered slightly different keywords which
5 would've led to -- to the result. I did not say it
6 has to be necessarily the same keywords, because it's
7 difficult or -- to reproduce a search how it has
8 worked in the past in historic search.

9 BY MR. SALTMAN:

10 Q Okay. So you just said it's impossible to
11 recreate a search -- strike that.

12 You're saying today it's impossible to
13 recreate a search from 2018 to see what the results
14 would be; right?

15 MR. MAY: Objection to the form.

16 THE WITNESS: I did not say impossible.
17 It's -- it may be that the search results don't look
18 one-to-one identical as shown on this page; they may
19 have looked slightly different. But what I said here
20 in paragraph 80 is that it nevertheless would've been
21 possible to identify the specification and find it for
22 download.

1 BY MR. SALTMAN:

2 Q Okay. And so, your contention is that if
3 you did a search for either 5G MAC Spec or some other
4 similar search, you would've been able to locate
5 Exhibit 14 in 2018; right?

6 A Yes.

7 Q Okay. And you don't recall ever having done
8 that search in the 2018 timeframe; right?

9 A I said that it's -- for me sitting here
10 today, it's difficult to say for sure about eight
11 years ago I have done such a search on the internet.

12 Q And you ran the -- the search term you ran
13 was 5G MAC spec; right?

14 A Yes.

15 Q Okay. And did you decide to run that search
16 term yourself?

17 A I did.

18 Q And if you look at the title of Exhibit 14,
19 it is MAC Protocol Specification; right?

20 A That's right.

21 Q And it relates to the 5G standard, you can
22 see that at the middle of the page; right?

1 A Yes.

2 Q All right. So the information that you
3 searched was available on the first page -- strike
4 that.

5 The Google search you did was based on the
6 information that you could find on the first page of
7 Exhibit 14; right?

8 MR. MAY: Objection to the form.

9 THE WITNESS: Again, this is a key --
10 key layer, or key technical component of a 5G system,
11 the medium access control. And I put myself into the
12 shoes of somebody who was looking specifically for the
13 developments in this area. So I put in the search
14 term 5G MAC, which is the abbreviation for medium
15 access control.

16 BY MR. SALTMAN:

17 Q And you had a copy of Exhibit 14 when you
18 formulated the search -- the Google search; right?

19 A I had a copy.

20 Q And is 5G MAC spec at all related to the
21 problem the 535 patent identified in the prior art?

22 MR. MAY: Objection, scope, foundation.

1 THE WITNESS: As I mentioned, it was
2 not my role in this case to look at the technical
3 details of the patent.

4 BY MR. SALTMAN:

5 Q And as -- strike that.

6 We mentioned earlier that, when talking
7 about the Google search or anything related to this
8 document, you don't reference a person of ordinary
9 skill in the art; correct?

10 A I don't provide a reference to a person of
11 ordinary skill in the art in my declaration.

12 Q Okay. Now, if you turn back to page 70 --
13 I'm sorry -- paragraph 76 on page 39, this is where
14 you discussed that the specification was announced via
15 the email exploder on September 25, 2018; do you see
16 that?

17 A I see that.

18 Q And that email exploder, as of July of 2025,
19 had about 1100 subscribers; right?

20 A I see that. Yeah.

21 Q And you say that "I would expect a similar
22 or slightly smaller number of subscribers around

1 2018." Why would you expect that?

2 A Well, I -- I'm aware how these exploders
3 evolved and how the interest on participating in this
4 exploders increased over the years. I recall that at
5 the beginning of 3GPP, we had only like a few hundred
6 people for the larger working groups. Today we have,
7 like, 1,100 for -- for RAN2 alone.

8 And I'm also aware that there has been still
9 a growing number of members over the past ten years in
10 3GPP. So I assume that the number might have been
11 slightly smaller, but I did not vary for that -- or
12 sorry.

13 Q Would the recipients of the email exploder
14 mostly be 3GPP delegates?

15 A So the recipients of the email exploder
16 emails is a mixture of 3GPP delegates and people who
17 are interested in the subject matter as discussed, but
18 not attending themselves, so, like, people in the R&D
19 department of different companies who need to be aware
20 of the developments in the standardization.

21 Q And do you have a sense whether most of the
22 recipients of -- for example, on this email exploder,

1 would be 3GPP delegates or not?

2 MR. MAY: Objection to the form.

3 THE WITNESS: I would say most are not.

4 BY MR. SALTMAN:

5 Q Okay.

6 A Because if you compare the number of meeting
7 attendees verse a number of subscribers to a -- in the
8 list, you see that it's more than double. Yeah.

9 Q Right. Well, some of the -- can there be
10 non-attendees who are also 3GPP delegates?

11 A Excuse me?

12 Q Can there be non-attendees who are 3GPP
13 delegates?

14 MR. MAY: Objection to the form.

15 THE WITNESS: That's also possibility.

16 BY MR. SALTMAN:

17 Q Okay. Well, and my point is, you said there
18 are, say 400 people who attended and there are 1100 on
19 the email, therefore most have to be non-3GPP
20 delegates. But there are some 3GPP delegates who were
21 not included in that 400 in that example; correct?

22 MR. MAY: Objection to the form.

1 THE WITNESS: I have not analyzed this,
2 but this might be a possibility.

3 BY MR. SALTMAN:

4 Q Okay. You referenced the email exploder
5 being in Appendix G, so let's turn to that. It's on
6 page -- if you look at the bottom, it's on page 754 of
7 773.

8 A All right. Sorry, which page?

9 Q 754.

10 A 754.

11 Q So it's almost at the end.

12 A Oh, it's double sided.

13 Q It's double sided. Yep. All right. So
14 this email exploder was written by Juha Korhonen; do
15 you see that?

16 A I see that.

17 Q And do you know who Juha Korhonen is?

18 A He -- at that time, he was the so-called
19 secretary of the RAN2 working group.

20 Q Okay. Did you receive this email exploder?

21 A I may have. I -- I can't recall, but I may
22 have received it.

1 Q Do you know whether you're a part of this
2 Listserv that's listed at the top?

3 A Oh, I certainly used to follow the email
4 discussions of RAN2 and RAN1 at some time,
5 particularly also in 2018. So I may have been
6 subscribed to this email exploder at that time, but I
7 can't tell you for sure today.

8 Q All right. And if you look at the body of
9 the email, it says, "Dear all, I have uploaded two new
10 draft versions for review," and then it lists two
11 different drafts; do you see that?

12 A Yes.

13 Q And the document we were talking about,
14 Exhibit 14, is not one of those two drafts; right?

15 A Yes, that's right.

16 Q Okay. And then the next sentence it says,
17 "I have also uploaded three final spec versions to
18 3GU"; do you see that?

19 A I see that.

20 Q What is 3GU?

21 A This is another name for the 3GPP portal.
22 It stands for 3G Ultimate.

1 Q Ultimate?

2 A Ultimate. It's supposed to be the ultimate
3 tool for 3GPP.

4 Q All right. And then, it references the
5 specification as the third document 38.321-f30; right?

6 A It does.

7 Q All right. And so, this document was not
8 attached to the email exploder; right?

9 A The document was not attached, but the
10 availability of the document was announced.

11 Q Yeah. By saying "I've also uploaded three
12 final spec versions to 3GU"; right?

13 A That's right.

14 Q And then at the bottom, on the email below
15 the table, it says "The draft specifications for
16 review will be available here," and then it gives a
17 URL; right?

18 A It gives a URL, right.

19 Q And that is not related to Exhibit 14,
20 right, 'cause it wasn't a draft specification; right?

21 A That's correct.

22 Q Okay. So the email exploder didn't provide

1 a similar URL for where you could find the Exhibit 14;
2 right?

3 A The email didn't provide the URL for the
4 3GU, because this is part of your day-to-day work of
5 people following standardization, so they have 3GU
6 open all the time.

7 Q All right. Let's put Exhibit 2 to the side
8 and let's go to Exhibit 3. And Exhibit 3 is your
9 declaration in the 1189 IPR; correct?

10 A Correct.

11 Q Okay. And if you turn to page 27. And this
12 is where you talk about specific documents, and the
13 first document is TDoc R1-1903016; do you see that?

14 A I see that.

15 Q And that's also referred to as Exhibit 1,008
16 in the IPR, right?

17 A I see that.

18 Q I am handing you a document that has been
19 marked as Exhibit 15, and at the top right it says
20 "R1-1903016," and at the bottom it says "Samsung
21 Exhibit 1,008." Do you see that?

22 //

1 (Exhibit 15 was marked for
2 identification.)

3 A Sorry, Exhibit 15?

4 Q Yeah, Exhibit 15. Yeah, so at the top right
5 it says R1-1903016, and at the bottom it says "Samsung
6 Exhibit 1,008."

7 A Oh, okay. Yes.

8 Q Okay. And so, this is the document that you
9 discussed starting on page 27 of Exhibit 3; right?

10 A That's correct.

11 Q Okay. And like with the other TDocs we
12 looked at, Exhibit 15 doesn't provide the actual date
13 of the document, it just has the date of the meeting
14 at the top; right?

15 A That's correct.

16 Q Do you recall seeing Exhibit 15 before you
17 began working on these IPRs?

18 A I don't recall specifically. I may have
19 seen it, but I have seen so many 3GPP documents.

20 Q Did you attend the meeting in Athens, Greece
21 in February and March of 2019?

22 A No, I did not.

1 Q And this document was authored by someone at
2 Qualcomm; right?

3 A It's submitted by Qualcomm.

4 Q Right. But we don't know who at Qualcomm
5 submitted this document; right?

6 A We would be able to know by looking at the
7 portal, but it's not shown on the document.

8 Q And when discussing Exhibit 15 in your
9 declaration, you don't describe how to search for it
10 on the 3GPP portal; right?

11 A I did not explain a specific search for this
12 document on the portal.

13 Q Okay. On page 28, paragraph 62, it
14 references an Internet Archive website; do you see
15 that?

16 A I see that.

17 Q Okay. And though it doesn't list it, when I
18 went to the Internet Archive website, there were 2314
19 items listed. Any reason to disagree with that?

20 A Excuse me, where did you see that?

21 Q It's not on here. It's when I -- I went on
22 the website itself.

1 A Oh.

2 Q There were 2314. Any reason to disagree
3 with that? Does that seem unreasonable?

4 MR. MAY: Objection to the form,
5 foundation.

6 THE WITNESS: That sounds reasonable.

7 BY MR. SALTMAN:

8 Q Okay. Now the date on the -- the date stamp
9 for this document is February 16, 2019; right? You
10 discussed that in paragraph 62?

11 A That's correct.

12 Q And one of the things you said about the
13 Internet Archive was that you looked at the Internet
14 Archive to make sure that the document was uploaded
15 and available on the FTP server soon after the date of
16 its upload, or of the document; right?

17 A That was one of the reasons. In this
18 instance, there is a specific reasons why I show the
19 screenshot compared to the present day listing.

20 Q And the Internet Archive date, or the date
21 that this document -- the Internet Archive shows this
22 document -- or this -- strike that.

1 The date the Internet Archive shows that
2 this FTP server website existed online is June 19,
3 2020; right?

4 A I see that.

5 Q Okay. And so, that is about 16 months after
6 the document was first uploaded; right?

7 A That might be. Of course, there might not
8 have been -- have been an earlier record of this app
9 page.

10 Q Right. I'm just saying there were 16 months
11 between the date shown that it was supposedly uploaded
12 and the Internet Archive date; correct?

13 A That's correct. And there was not a
14 correct -- or it was an updated timestamp on the
15 present-day FTP server, so -- which meant that the
16 document was overwritten, the original timestamp was
17 overwritten, which would've been showing 15
18 February -- not 15 -- 16 February. Because this
19 current FTP server screenshot with the timestamp was
20 not useful, I used this one.

21 But it still aligns extremely well with the
22 15 February, 2019 modification date, and this was just

1 uploaded the day after, February 16th. And it aligns
2 well with the meeting, which took place from February
3 25th to March 1st, so it was uploaded in advance to
4 the document deadline.

5 Q Right. And my question was pretty simple.
6 It was that the Internet Archive date was about 16
7 months before this, Exhibit 15, was supposedly
8 uploaded to the FTP server; right?

9 A Around that time after it was uploaded.

10 Q Right. And do you know what the priority
11 date is of the 911 patent?

12 A I don't know --

13 MR. MAY: Objection to scope.

14 THE WITNESS: I -- I don't know.

15 BY MR. SALTMAN:

16 Q And so, you don't know if June 19, 2020, is
17 before or after the priority date for the 911 patent;
18 right?

19 MR. MAY: Objection to form.

20 THE WITNESS: I don't know.

21 BY MR. SALTMAN:

22 Q Okay. You referenced the 3GPP site, which

1 you talk about in Footnote 3. Did you see that FTP
2 site in 2018?

3 A That's possible, but it's eight years ago
4 and I don't know for sure.

5 Q And in Footnote 3, you said that the current
6 FTP site shows the date of November 25, 2024, as the
7 upload date; right?

8 A Yes.

9 Q Okay. And so the Internet Archive had an
10 upload date of 2019, and the FTP server had the upload
11 date of 2024; right?

12 A Yes. As I -- as I explained in my
13 declaration, it may have happened occasionally that
14 the original timestamp was overwritten.

15 Q And do you know, why would the original
16 timestamp have been overwritten?

17 A That can have various reasons, like, a
18 re-upload of a specific meeting folder for -- for some
19 reason. Maybe there was a document missing which was
20 late provided, or somebody noticed that there was a
21 mistake in the document list and then somebody just
22 uploaded the whole folder. So that might have

1 different reasons. I don't know in this specific case
2 what the reason was.

3 Q And did you attempt to investigate why the
4 date on the FTP server was supposedly incorrect?

5 A I did not, because I am showing here
6 sufficient evidence that the publication date is, as I
7 have written here, February 16th of 2019.

8 Q Were you involved in uploading Exhibit 15 to
9 the 3GPP FTP site?

10 A No, it would've been done by the author.

11 Q And in paragraph 66 on page 31, it
12 references that 503 people attended this meeting in
13 Athens; do you see that?

14 A I see that.

15 Q Did you attempt to speak with any of those
16 503 people as part of your work in these IPRs?

17 A No, I did not.

18 Q And paragraph 67 references the meeting
19 report; right?

20 A Yes.

21 Q All right. And the meeting report is in
22 Appendix C and is 169 pages long; does that seem about

1 right? If you'd like to look at it, you're more than
2 welcome, but.

3 A Yeah, no, I have not counted the pages, but
4 it sounds in the right range.

5 Q Okay. And Exhibit 15 is mentioned just in
6 passing on one page, page 135; right?

7 A I see that.

8 Q And you reference the document list starting
9 on page 32. And the document list for this meeting,
10 like the others, included over 2,000 documents; right?

11 A I've -- that's what I've written here in my
12 footnote.

13 Q And this document, Exhibit 15, is listed in
14 just one of those rows, in Row 1,538; right?

15 A Yeah. Each document gets its own row, yes.

16 Q And this document is listed as "not
17 treated"; do you see that?

18 A I see that.

19 Q And what does that mean?

20 A So this indicates in this case that the
21 document had not been treated at a meeting, and one
22 frequent reason for this is due to the enormous

1 amount -- the high number of documents, it's
2 impossible to treat all documents at a meeting.

3 Q Okay. All right. And then, starting on
4 page 32, you referenced TDoc R1-1905031; do you see
5 that?

6 A I see that go.

7 Q And I'll just hand you Exhibit 16, which in
8 the top right says "R1-1905031," and at the bottom
9 says "Samsung Exhibit 1,007." Do you see that?

10 (Exhibit 16 was marked for
11 identification.)

12 A I see that.

13 Q And Exhibit 16 is the same document you
14 discuss in your declaration, Exhibit 3, starting on
15 page 32; correct?

16 A Correct.

17 Q And this document relates to a meeting in
18 Xi'an, China in April of 2019; right?

19 A That's right.

20 Q And like with the other documents, it
21 doesn't have the actual date of the document, it just
22 has the date of the meeting; correct?

1 A That's correct.

2 Q Do you recall ever having seen this document
3 before you started working on the IPRs?

4 A I may have seen the document, but I'm not
5 sure. But maybe let me clarify that, it's not
6 necessary for me to have the document seen at the time
7 to establish authenticity and also to establish the
8 public availability.

9 That's possible, because I have, like, 26
10 years of experience of working with 3GPP methods and
11 tools and procedures, so I can testify upon the
12 availability of any document, without having seen,
13 like, the 10,000 documents in advance.

14 Q I understand that. I was just curious if
15 you've seen this document before?

16 A Yeah. I might have, but I'm not sure.

17 Q Okay. And this document is authored by
18 someone at Qualcomm; correct?

19 A Yeah, the source is Qualcomm.

20 Q All right. And in paragraph 71 you
21 reference a Internet Archive page; do you see that?
22 It's on page 33.

1 A Yes.

2 Q Okay. And the date -- strike that.

3 That page is a page from the FTP -- the
4 website from the FTP server; correct?

5 A That's correct.

6 Q Okay. And the date the Internet Archive
7 indicated that that website -- that version of the
8 website was pulled, is June 19, 2020; right?

9 A That's right.

10 Q And like with the last document, this was
11 about 15 months after the date stamp for Exhibit 16;
12 right?

13 A That's roughly right. Of course, there was
14 no earlier version of this webpage.

15 Q And you don't know whether June 19, 2020, is
16 before or after the priority date of the 911 patent;
17 right?

18 A I don't know.

19 Q And when discussing Exhibit 16 in your
20 declaration, you don't discuss how to search for it on
21 the 3GPP portal; correct?

22 A I have not included a portal search for this

1 document.

2 Q And in your discussion of Exhibit 16 in your
3 declaration, you don't discuss the concept of a
4 POSITA; correct?

5 A I did not discuss a POSITA or refer to in my
6 declaration.

7 Q Okay. Looking at the FTP screenshot on page
8 34, at the bottom there are 2,002 items listed on this
9 FTP site; right?

10 A That's right.

11 Q Okay. And this FTP site -- aside from
12 searching, doing a Control-F by the file name --
13 there's no other searching function that's available
14 on this particular FTP site; right?

15 MR. MAY: Objection to the form.

16 THE WITNESS: For additional metadata
17 research, you need to use the portal, as an example.
18 BY MR. SALTMAN:

19 Q Okay. And if you go to page -- sorry,
20 paragraph 75 on page 36, the meeting in Xi'an was
21 attended by 470 people; right?

22 A That's right.

1 Q All right. And did you attempt to speak
2 with any of them as part of your work in this case?

3 A No. It was not required to speak to any of
4 them to establish the availability date of this
5 document.

6 Q And then, in paragraph 76, you talk about
7 the meeting report for the meeting in Xi'an; right?

8 A Yes.

9 Q And again, you're more than welcome to take
10 a look, but that meeting report is 171 pages long;
11 does that seem about right? Any reason to disagree?

12 A I have no reason to disagree.

13 Q Okay. And the meeting report references
14 Exhibit 16 on one page, on page 133; correct?

15 A That's correct.

16 Q And then, you talk about the document list
17 again, and that there were over 2,000 documents
18 associated with this meeting in Xi'an, China; right?

19 A That's right.

20 Q And this is just one of those over 2,000
21 documents -- sorry, strike that.

22 Exhibit 16 is just one of those over 2,000

1 documents; correct?

2 A That's correct.

3 Q And it's listed in Row 1193?

4 A That's correct.

5 Q Actually, I had a question about the meeting
6 report real quick. It's Appendix E, and so let me
7 find that. It's on page 354 of 900. Are you there?

8 A I'm there.

9 Q Okay. So the title says final report from
10 the Xi'an meeting in April of 2019; right?

11 A Yes.

12 Q But the top talks about a meeting in Reno in
13 May of 2019; do you see that?

14 A I see that.

15 Q And so, why does it have both of these
16 meetings listed on here? What's the reason for that?

17 MR. MAY: Objection to the form.

18 THE WITNESS: So the input document for
19 the Reno meeting in May 2019 is the final report of
20 the previous meeting held in Xi'an, and the reason is
21 that the report of the previous meeting gets agreed by
22 the subsequent meeting. So therefore the header shows

1 the current meeting that time, which looked at the
2 report of the previous meeting and finally agreed it.
3 BY MR. SALTMAN:

4 Q Okay. And is the report from the meeting
5 made public on, like, the FTP site prior to the
6 subsequent meeting?

7 A Yeah, absolutely. Actually it is made
8 available shortly after the meeting to which it
9 actually refers to.

10 Q Right.

11 A So normally it's the week after a meeting
12 has happened, the report becomes available, the draft
13 report, and then there might be some changes and some
14 updates up to the following meeting.

15 MR. SALTMAN: Okay. Well, thank you,
16 Mr. Rodermund. I don't have any more questions for
17 you at this point. I pass the witness.

18 THE WITNESS: Okay.

19 MR. MAY: No further questions.

20 THE REPORTER: Give me one moment.

21 Okay, transcript orders. Okay.

22 MR. SALTMAN: I don't know what we

1 have. What do we have?

2 THE REPORTER: You mean, in terms of --

3 MR. SALTMAN: Do we have a standing
4 order or anything? Do you know?

5 THE REPORTER: I don't know. I don't
6 know what you guys have.

7 MR. SALTMAN: All right. Well, we
8 definitely want to rough, and then

9 THE REPORTER: Want a rough? Okay.

10 MR. SALTMAN: Yeah. I want a rough,
11 and then the final, I mean ...

12 THE REPORTER: Now, let me get this
13 down.

14 MR. SALTMAN: What's the -- how quickly
15 can you get a final done?

16 THE REPORTER: Keep -- keep your mics
17 on for a sec. Rough is like one to three days, I
18 think. And then -- yeah, so -- so regular is ten.

19 MR. SALTMAN: Yes.

20 THE REPORTER: And that's not counting
21 weekends.

22 MR. SALTMAN: Right.

1 THE REPORTER: I think it's -- so
2 anything less than that is expedited.

3 MR. SALTMAN: Right. Yeah, we have a
4 response due, and so, I'd like to have the final
5 before that. Which is due on the -- a week from
6 Monday.

7 THE REPORTER: A week from --

8 MR. SALTMAN: Yes.

9 THE REPORTER: A week from Monday.
10 Okay.

11 MR. SALTMAN: So I'd like it sometime
12 next week, so.

13 THE REPORTER: Okay. Monday? Tuesday?
14 Wednesday?

15 MR. SALTMAN: Yeah. How about Tuesday?

16 THE REPORTER: Tuesday works. Okay.
17 Let me make sure I have -- so rough, Tuesday.

18 MR. SALTMAN: That's for the final,
19 Tuesday. Rough.

20 THE REPORTER: Yeah, that's -- yeah.
21 Rough, and then -- yeah. Rough is probably tonight or
22 tomorrow.

1 MR. SALTMAN: Yeah. Got it.

2 THE REPORTER: And then expedite for
3 Tuesday.

4 MR. SALTMAN: Perfect.

5 THE REPORTER: Okay.

6 And Mr. May would -- how about you?
7 Would you like a -- a copy of the transcript?

8 MR. MAY: Regular is fine.

9 THE REPORTER: Regular is fine for you?
10 Okay.

11 MR. SALTMAN: They don't have that
12 deadline.

13 MR. MAY: Take your time.

14 THE REPORTER: Okay, let me see. May,
15 regular. Do you want the exhibits in your copy of the
16 transcript?

17 MR. MAY: I guess so; right?

18 You would? You want the exhibits?

19 Yes.

20 THE REPORTER: Okay, excellent.

21 Because it's optional for copies. Okay. And then,
22 we'll take spellings off the record.

1 Does anyone have anything else to say?
2 No? Okay.

3 All right. The time is 3:44 p.m. We
4 are off the record.

5 (Signature waived.)

6 (Whereupon, at 3:44 p.m., the
7 proceeding was concluded.)

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16

17
18
19
20
21
22

CERTIFICATE OF DEPOSITION OFFICER

I, KYLE G. JAMOLIN, the officer before whom
the foregoing proceedings were taken, do hereby
certify that any witness(es) in the foregoing
proceedings, prior to testifying, were duly sworn;
that the proceedings were recorded by me and
thereafter reduced to typewriting by a qualified
transcriptionist; that said digital audio recording of
said proceedings are a true and accurate record to the
best of my knowledge, skills, and ability; that I am
neither counsel for, related to, nor employed by any
of the parties to the action in which this was taken;
and, further, that I am not a relative or employee of
any counsel or attorney employed by the parties
hereto, nor financially or otherwise interested in the
outcome of this action.

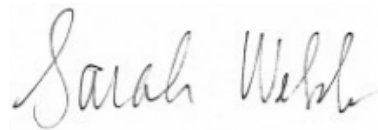


KYLE G. JAMOLIN
Notary Public in and for the
State of District of Columbia

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22

CERTIFICATE OF TRANSCRIBER

I, SARAH WEBB, do hereby certify that this transcript was prepared from the digital audio recording of the foregoing proceeding, that said transcript is a true and accurate record of the proceedings to the best of my knowledge, skills, and ability; that I am neither counsel for, related to, nor employed by any of the parties to the action in which this was taken; and, further, that I am not a relative or employee of any counsel or attorney employed by the parties hereto, nor financially or otherwise interested in the outcome of this action.



SARAH WEBB

1 Samsung Electronics Co LTD, Et Al. v. Hannibal IP LLC
2 Friedhelm Rodermund Job No. 7915183
3 E R R A T A S H E E T
4 PAGE_____ LINE_____ CHANGE_____
5 _____
6 REASON_____
7 PAGE_____ LINE_____ CHANGE_____
8 _____
9 REASON_____
10 PAGE_____ LINE_____ CHANGE_____
11 _____
12 REASON_____
13 PAGE_____ LINE_____ CHANGE_____
14 _____
15 REASON_____
16 PAGE_____ LINE_____ CHANGE_____
17 _____
18 REASON_____
19 PAGE_____ LINE_____ CHANGE_____
20 _____
21 REASON_____
22 _____
23 _____
24 Friedhelm Rodermund Date
25

1 Samsung Electronics Co LTD, Et Al. v. Hannibal IP LLC
2 Friedhelm Rodermund 7915183

3 ACKNOWLEDGEMENT OF DEPONENT

4 I, Friedhelm Rodermund, do hereby declare that I
5 have read the foregoing transcript, I have made any
6 corrections, additions, or changes I deemed necessary as
7 noted above to be appended hereto, and that the same is
8 a true, correct and complete transcript of the testimony
9 given by me.

10
11 _____
12 Friedhelm Rodermund

Date

13 *If notary is required

14 SUBSCRIBED AND SWORN TO BEFORE ME THIS
15 _____ DAY OF _____, 20____.

16
17
18 _____
19 NOTARY PUBLIC

&	1007 6:12 7:8	88:1 123:5	140 69:4
& 1:15 2:7 8:9	185:4,10	1188 12:15	145 5:8
1	1008 6:18	14:15 184:16	15 5:21 6:11,13
1 3:7 16:13	1011 5:8 99:7	1189 12:15	122:2 135:6,8
21:3,6 24:13	99:11,12,17	16:3 202:9	135:9,14
24:15 67:6	100:9 103:8,15	1190 12:15	171:13 186:11
76:21 84:5	115:9 145:4	17:2 21:4 22:7	186:12,16
99:5 100:12	1012 3:19 5:21	24:14 67:7	202:19 203:1,3
123:4,8 133:12	1026 3:11	88:1 123:5	203:4,12,16
133:18 144:20	1029 3:15	1193 216:3	204:8 206:17
147:9 160:18	1045 4:7	11:56 105:18	206:18,22
168:6	105 16:11,17	12 5:15 111:10	207:7 209:8
1,006 111:8,12	10:38 60:10	167:19,19	210:5,13
114:13	10:48 60:13	168:1,7 172:2	213:11
1,007 211:9	11 5:9 158:15	180:1,16 183:6	15.3 177:22
1,008 202:15,21	160:11,14,17	183:17	178:17 179:10
203:6	161:3,11,16	120 77:16	186:15
1,100 197:7	164:19 165:13	125 21:15	15.3.0 185:2,9
1,538 210:14	167:18	12:34 105:21	190:5 191:11
1,957 164:3	11,057,896 3:10	12th 5:10 7:4	15.3.0. 178:11
10 3:3 5:3	4:6	13 6:3 176:22	16 3:19 7:3
15:11 106:8	11,272,535 3:15	176:22 177:5	122:1 135:22
145:8,8,12	11,368,911 3:19	132 77:17	205:9 206:5,10
146:14 158:15	11,641,661 3:10	133 215:14	206:18 207:6
159:8 160:7	4:7	135 210:6	211:7,10,13
171:12,13	1100 196:19	14 3:15 6:5	213:11,19
176:4	198:18	90:5 118:5	214:2 215:14
10,000 212:13	111 162:5	185:8,11,14,17	215:22
1006 5:14 99:8	115 164:5	188:6,19 189:9	16.2 178:7
99:16 111:5	116 165:3	190:2 194:5,18	16.2.0 178:9
114:5 115:14	117 142:18,20	195:7,17	160 5:14
160:22	1187 12:15	200:14 201:19	168 5:21
	17:2 21:4 22:7	202:1	169 173:11
	24:14 67:7		209:22

16th 207:1 209:7 17 137:21 171 215:10 177 6:4 18 21:18 134:7 188:18 185 6:12 1875 2:19 19 67:14,15 162:12,19 206:2 207:16 213:8,15 1998 124:22 125:7 129:14 1999 135:22 1:31 144:11 1:44 144:14 1st 6:14 191:8 191:10 207:3	20 70:4 128:15 150:16 151:4 176:4 225:15 20001 1:18 2:10 8:11 20006 2:20 2000s 47:9 2004 4:10 78:18 125:1,7 156:22 2005 34:8 2008 34:9 2009 32:17 2009-2010 34:1 2010 32:17 155:3,6,7,9 2011 30:19 2014 30:19 36:20 126:3 2015 25:10 47:9,12 92:13 92:15,18 131:12 2018 5:5,11 27:10 71:5,13 74:16 77:6 80:1 82:2,2,6 88:10 89:8 111:15 119:15 119:17 133:8 134:7 146:3 150:2,17 151:4 151:20 152:3 158:16 161:9	162:12,19 169:3,18 174:9 174:13 175:3,5 175:17 176:1 178:9,9,13,15 178:17,22 183:15 187:2 190:1 191:5,20 192:1,6,15 193:13 194:5,8 196:15 197:1 200:5 208:2 2018-09 5:15 6:5 168:10,14 185:18 2018-12 4:15 4:16 77:4 78:21 79:2,6 79:11 80:9 81:4 2018-2019 153:22 154:12 191:13 2019 6:15 7:4 71:5 122:3 175:6 203:21 205:9 206:22 208:10 209:7 211:18 216:10 216:13,19 202 2:13,14,22 2020 206:3 207:16 213:8 213:15	2023 126:17 2024 208:6,11 2025 4:9 13:5 15:11 16:13 21:18 174:6 188:17 196:18 2026 1:13 8:9 22:17 203 6:18 20th 5:4 150:3 21 3:11 68:21 140:11,12 211 7:8 216 165:5,10,16 22 4:7 76:22 77:2 122:3 23 22:16 77:9 99:20 101:18 2314 204:18 205:2 24 84:6 24th 5:5 25 44:7,11 64:11 84:10 104:11 105:3 106:8 141:12 190:1 196:15 208:6 25th 6:14 7:4 191:12 207:3 26 109:16 125:14,16,18 141:13 142:1,6 212:9
2			
2 3:12 14:14,16 15:6 30:20 91:17 123:8 133:12,18 143:4,4 184:16 185:1,15 202:7 2,000 160:4,5,8 166:4,6,9 210:10 215:17 215:20,22 2,002 214:8			

27 143:13 202:11 203:9 28 111:3 144:21 145:16 147:9 204:13 29 111:2 147:8 147:10 149:9 149:19 153:8 2:39 184:5 2:53 184:9	37 186:20 187:12 38 68:1 118:5 38.214 5:15 167:20 170:21 38.321 6:5 185:1,8 187:14 188:7 201:5 38214 170:18 170:20 39 131:21 132:12 196:13 3:44 221:3,6 3g 36:18 74:14 151:10 200:22 3gpp 4:8,11,13 4:15 5:3,9,15 6:5,13 7:3 19:2 23:17 24:2,19 26:8,9,10,17,18 26:19 27:4 28:10,12,14,16 28:18,20,21 29:3,5,9,18 31:5,9,12,15,20 32:2,5,7,10,18 33:6,10,22 34:15,19,21 35:5,9,10,15 36:2,11 37:6 37:21 38:1,3,8 38:10,13,22 39:5,9,11,12,15 39:19,21 40:2	40:4,9,10,15,17 41:9,12 42:5,7 42:8,10 43:3 43:11,14,20 44:2,6,11,15 45:3,13,16,20 46:11,13,17,19 49:22 50:1,3,5 50:8,13 51:13 51:14,18,22 52:1,14,18 53:3,10,11 54:10,16,21 55:11,22 61:7 61:12,19,22 62:3,10,12,14 62:17 63:1,10 63:18 64:6,12 65:3,13,14 66:3,10,21,22 67:1,2,19 69:20 70:21 71:14 72:20,21 73:2,6,16 77:6 80:1,20 83:19 83:20,22 84:7 84:11,12,14,18 85:2,10 86:10 87:10,19 88:7 88:8 89:7,10 89:11,16,17 90:8,15 91:4 92:12,17,22 93:4,8,18,21	95:11 97:10 100:18 101:3,5 102:5,7,13,14 102:17,18 103:5 104:6 105:4,7,8 107:3,7 108:5 109:3 110:9,17 111:12 112:9 114:14 115:4 116:1,8,16,18 118:7 119:9,20 120:11,13,18 121:6,9 123:11 124:15 125:11 125:11,12,15 125:18,22 126:4,14 127:18,21 128:2,5,6,9,10 128:13 129:2,3 129:13,18,21 130:6,15,18 131:8,11,14,17 132:8 136:1,5 136:12,18 137:4,5,13 138:2,8,10 140:2,16 144:3 145:9 148:21 150:21 151:13 152:17 154:2 154:14,21 155:9,16,18
3			
3 3:16 15:18,18 16:2,4,11 63:20 88:5 124:18,21 133:13,18 160:3 187:2 202:8,8 203:9 208:1,5 211:14 304-1611 2:22 30504 223:14 31 112:14 209:11 32 210:9 211:4 211:15 33 160:3 212:22 34 214:8 35 128:16 354 216:7 35466 222:16 36 184:22 185:15 214:20			

[3gpp - 911]

156:6,13 157:3 157:12,17 158:8 165:1 167:20 168:16 169:14,17 170:2,9 171:6 172:5,6,12,14 172:16 173:1,2 176:5 179:6 181:4 182:12 188:2 189:2,15 197:5,10,14,16 198:1,10,12,19 198:20 200:21 201:3 203:19 204:10 207:22 209:9 212:10 213:21 3gpp's 52:9 125:1,5 129:7 129:10 140:13 141:13 171:17 3gpp.org 4:19 74:20 82:19 83:8,12,16 3gppsa1 32:21 33:4,15 36:7 3gu 200:18,20 201:12 202:4,5 3rd 5:16 6:6	106:7 122:16 124:21 40 119:13 132:1,13 400 198:18,21 408-4416 2:14 408-4447 2:13 41 133:21 190:20 42 132:16 45 135:21 46 137:21 470 214:21 475 2:19 478 164:8,14 4:26 153:9	59 141:12 163:5 5g 68:22 69:3 69:15 122:2 190:12,22 191:14 192:15 194:3,13,21 195:10,14,20	71 212:20 73 170:14 186:19 74 4:14 75 170:14 214:20 754 199:6,9,10 76 196:13 215:6 77 188:11 773 15:3 199:7 7915183 1:20 224:2 225:2
	5	6	8
	5 1:13 4:8,9 8:9 62:22,22 63:3 67:10 50 136:15 503 209:12,16 51 68:21 77:1 52 140:11 53 140:12 535 187:5 195:21 55 76:21 77:2 79:5,8 57 160:18 58 84:6,7 165:13	6 4:11 22:17 70:12,13,15 61 164:5 62 204:13 205:10 63 4:10 65 147:10 66 155:15 209:11 661 150:18 151:5 162:15 67 158:14 209:18 68 15:5,8 684 21:9	8 4:15 80:7,10 89:6,15 98:21 101:1 166:3 80 4:16 191:3 192:20 193:20 82 4:19 896 150:18 151:5 162:15 8th 5:10 7:4
4		7	9
4 4:3 22:6,6,9 78:21,22 87:17		7 4:13 73:21,22 74:1 77:12,17 77:21 78:22 88:4,5 93:7 70 4:12 159:4 196:12 703 166:13	9 4:17 82:17,21 88:4 126:22 9.0.0 171:9 90 70:3 900 16:9 216:7 901 1:17 2:9 8:10 911 207:11,17 213:16

92 168:5 93 159:9 169:8 94 5:3 104:14 106:14 109:18 145:9 169:13 94b 5:9 96 6:13 96b 7:3 97 177:17 9:12 1:14 8:5 9:26 20:16 9:42 20:20	above 225:7 abreast 28:11 absent 8:15 absolutely 36:22 217:7 access 5:19 6:9 6:10 29:2 66:21,21 67:1 72:11 83:7,20 83:21 88:7 89:22 90:1,7 97:18 101:5 103:6 111:15 113:15,21 114:2 121:1 133:4 164:22 190:8 195:11 195:15 accessed 4:8 91:22 121:3,3 accessibility 123:11 124:6 accessible 124:8,9 accessing 29:7 53:11 62:1,7 101:13 170:3 account 34:22 accuracy 62:16 64:4 accurate 12:9 14:20 16:8 17:21 21:11,13 22:13 65:1	222:9 223:5 achieve 38:10 179:7 acknowledge... 225:3 acknowledge... 8:13 action 222:12 222:16 223:8 223:12 active 125:15 activities 26:11 26:15 92:11 127:21 132:3,6 actual 34:18 67:16 109:12 112:10 113:21 115:12 160:22 161:3 162:2 172:3 203:12 211:21 actually 14:14 32:3 65:20 79:11 100:12 110:6 123:20 126:9 130:5 147:9 164:19 189:6,9 216:5 217:7,9 add 65:10 72:14 171:10 added 63:18 64:21 71:9 73:9 74:18	122:8,13 141:16 adding 75:9 170:10 addition 28:20 87:14 93:2 183:13 additional 23:16 46:20 47:7 65:18 73:10 97:21 114:19 129:16 129:17,19 131:9 152:16 172:19 214:16 additionally 8:15 113:7 124:11 additions 225:6 address 108:17 adds 24:5 adjusts 174:15 176:12 administer 8:13 administrative 129:20 adopted 173:2 ads 93:1 advance 109:17 113:13 207:3 212:13 affidavit 148:13
a			
a.m. 1:14 8:5 20:16,20 60:10 60:13 105:18 153:9 abbreviation 33:10 115:11 195:14 ability 148:9 152:6 222:10 223:7 able 15:2 28:7 39:15 54:5 57:3 82:16 98:11 107:7 112:12 115:22 116:7 130:19 152:14 173:12 187:17 191:6,8 191:9,11 194:4 204:6			

affidavits 148:9	120:3,5 167:10	americanized	appear 16:7
agenda 89:9	agreed 167:1,2	10:18	22:12
90:12 91:2,4	167:2,8,9,13	amount 211:1	appears 16:6
91:10 98:1	168:17 216:21	analysis 52:13	16:10
101:4,9,11	217:2	53:2 54:3,4	appended
105:9 109:19	agreeing	58:8 64:13	225:7
109:19,20	168:18	65:11	appendices
110:2 111:17	agreements	analyze 54:1	67:12
111:19 112:15	120:8	analyzed 199:1	appendix 25:4
112:18,19,21	ahead 106:20	announced	165:9 199:5
113:5,8,9,11,13	aim 56:2	91:7 92:10	209:22 216:6
113:16,16,18	al 224:1 225:1	104:22 105:1	appendixes
113:22 114:2,3	alerted 91:15	183:7,18	19:11
114:8 115:7,10	algorithm	196:14 201:10	apple 95:6
115:15,20	174:16 176:1	announcement	applicable 8:21
116:4,5,7,11,13	192:1	78:20 121:6	127:21
116:16,18	alia 8:8	183:10	application
117:1,2,3,7,12	aligns 158:18	answer 11:10	24:4 31:16
118:10,13,16	206:21 207:1	11:19 12:2,5,6	189:2
118:19 119:1,4	alliance 31:8,10	28:1 110:1	applied 150:11
119:10 143:10	31:18 32:11,16	answered	applies 87:22
143:11,16	allocated	153:21	128:2
agendas 29:8	116:12,12	answering	apply 128:4
29:12 119:12	allow 11:10,12	11:12	appreciate
143:21	11:13	anybody 57:3	44:10
ago 44:7,11	allowed 122:9	89:19 105:8	approach
82:13 126:20	131:17	164:22	45:12 58:16
146:10 154:17	allowing 101:4	apologies	approve 42:13
170:5,14	allows 29:5	109:11	april 7:4
175:21 189:13	113:7 130:17	apologize 118:1	211:18 216:10
191:19 194:11	130:18	153:22	archive 75:15
208:3	alternate 181:8	app 206:8	76:7,16 79:13
agree 8:17	america 1:5 2:3	appeal 1:2	81:21 147:13
11:17 57:18			147:15,16

148:6,9,12,14 148:17,19 149:1,4,8,15 162:6,10 186:20,22 187:1 204:14 204:18 205:13 205:14,20,21 206:1,12 207:6 208:9 212:21 213:6 area 44:18 57:20,22 59:8 95:2 96:7 114:11 134:18 134:20 136:22 140:2 180:12 189:15 195:13 areas 41:17 45:11 54:7 86:16 arib 172:18 art 48:20 51:4 53:20 58:10,15 58:21 59:5,7,9 59:12 88:13,18 181:13 182:1 188:8,10 195:21 196:9 196:11 aside 13:14 17:16 18:18,20 19:8 26:2 28:12 75:10	97:9 103:9,20 134:12 143:5 171:14 214:11 asked 26:1 123:9 167:8 asking 11:9,13 149:13 asks 83:21 aspect 137:19 aspects 24:5 34:14,20 86:12 131:6 133:5 134:19 137:20 assigned 8:3 131:19 assist 41:7 associated 132:18 166:5 215:18 assume 11:20 51:22 52:14 53:2 169:9 197:10 assumed 169:12 assumes 86:6 athens 6:13 203:20 209:13 atis 128:7 172:17 attached 48:5 186:11 201:8,9 attained 172:6	attempt 164:14 174:1 209:3,15 215:1 attend 28:5 32:2,18 35:4 161:8,10 203:20 attendance 9:6 attended 26:20 27:4,9,17 28:3 34:1,3 35:12 36:13 37:3 126:15 146:2 164:7,15 198:18 209:12 214:21 attendeess 164:11 167:7 198:7,10,12 attending 28:12,15,16 31:17 32:6,10 33:6 89:7 104:12 106:12 106:19 125:13 125:22 126:10 126:11 127:11 157:9 197:18 attorney 12:4 222:14 223:10 attorneys 13:14 13:17,19 14:3 attributes 38:9	audible 78:2 audio 222:8 223:3 august 5:4 146:3 158:15 authentic 123:17 authentication 23:5 authenticity 123:10,19 148:10 212:7 author 94:8 96:1 110:18 115:6 162:3 209:10 authored 94:9 146:20,21 147:1,5 161:21 204:1 212:17 authorized 8:12 authors 94:8 98:2 automate 47:2 availability 89:18,21 91:15 92:2,10 107:1 147:11 148:16 155:16 156:6 156:13 157:3 157:12,17,18 158:7 183:12 201:10 212:8
---	---	--	--

212:12 215:4 available 4:18 23:12,18 61:8 61:14,20 63:14 72:22 82:19 84:2 89:10 91:6,13,21 92:9,15 102:9 104:22 107:17 107:22 108:2 108:10 111:14 111:15 129:2 143:12 149:10 155:19 156:18 158:21 159:3 164:21 166:15 166:16,17,18 168:21 169:1 172:22 173:2 179:1 183:14 192:12 195:3 201:16 205:15 214:13 217:8 217:12 avenue 1:17 2:9 8:10 average 126:8 avoid 117:22 aware 17:16,19 34:21 138:10 140:2,15 141:6 148:8,11 152:13 167:4 197:2,8,19	b b 3:5 4:1 5:1 6:1 7:1 back 15:17 16:20 18:19 20:19 21:2 36:10 47:4 60:12 61:2 71:5 78:22 84:5 89:6 99:4 99:19 105:20 106:2,6 144:13 144:16 156:22 172:2 174:9 184:8,11 196:12 background 24:2,16,16,19 24:19 123:6 base 59:3,6 based 7:6 21:10 21:12 56:18 57:9 59:13 86:5 94:18 96:12,15 101:10 109:18 110:6 125:6,9 125:14 137:22 147:16,19 176:12 195:5 basically 43:5 58:17 94:22	beam 5:13 115:15,17 161:19 becoming 173:2 began 203:17 beginning 9:7 159:4 185:15 197:5 behalf 2:2,16 9:9,12 33:7 60:18 behavior 58:18 believe 27:9 36:15 73:9 80:22 82:12,13 100:5 105:1 115:13 150:8 165:11 belonging 186:16 benefit 57:15 best 11:9 222:10 223:6 better 10:16 big 48:4 81:11 136:14 137:6 bit 22:2 48:2 123:6 139:8 177:3 board 1:2 bodies 31:2 body 94:17,19 96:22 135:3	200:8 bonded 131:10 bosch 136:2 bottom 67:16 68:1 77:15 90:10 100:22 118:4 141:13 141:15 147:9 151:9,12,17 152:2 172:3,9 185:9 199:6 201:14 202:20 203:5 211:8 214:8 box 46:3 93:12 break 11:22 60:1,5 61:4 106:3 144:8,18 183:22 184:13 breakfast 44:10 briefly 145:4 bring 24:13 broadcast 34:5 34:12,14 35:4 35:8 broadcasting 34:15 building 31:13 built 31:9 bullet 31:1 32:20 99:6 business 90:14 91:18 125:2,5
--	---	---	--

132:3,6	cause 58:3	192:1	circulated
c	126:12 165:19	changes 42:13	90:12,14 91:3
c 2:1 8:1 11:3	178:9 201:20	186:18 217:13	91:4,10,12,18
78:3 133:4	cellular 138:1,7	225:6	91:20 92:4
209:22	138:22 140:7	changing	104:13 106:13
calendar 134:4	172:17 182:13	168:17,18	109:17
call 62:3,6	center 83:18	channel 7:7	citing 159:21
92:21	129:22 130:15	chapter 183:11	claims 123:22
called 10:3 42:2	154:5	character	124:4
43:3 66:6 99:1	ceo 25:16	133:11	clarify 85:5
110:9 111:4	certain 47:17	characterize	102:21 118:22
115:15 199:18	55:10,14 157:9	38:8	149:12 212:5
capabilities	certainly 28:15	charge 129:6	clear 11:8
46:20 97:21	35:11 39:4,21	129:10 131:4	64:22 107:12
114:20 152:17	136:21 140:20	check 27:6	click 71:15 72:6
153:1	161:18 192:4	100:10 107:15	76:1 79:16,19
captures	200:3	154:15 169:13	82:10 83:4
149:15	certificate	183:9	93:8 143:15,20
care 41:20	222:1 223:1	checked 82:5	143:20
case 1:6 16:21	certified 8:18	checking 37:9	clicked 190:19
17:15 51:13	certify 222:4	chen 2:6 60:16	clicking 70:5
100:5 102:22	223:2	chen.zang 2:12	112:6
103:4 115:13	cetera 31:22	chengdu 5:10	clients 28:8
121:22 124:11	71:12	161:9 164:12	30:13
127:6 133:8,9	chairman	164:15,19	clip 141:20
133:10,13	32:16 35:22	165:5	close 117:17
152:11 164:10	chance 170:3	china 5:10 7:4	163:1,2 174:12
176:15 180:11	change 30:9,10	161:9 164:12	177:20
196:2 209:1	42:13 173:6	164:16,20	closely 127:1
210:20 215:2	224:4,7,10,13	172:19 211:18	cn 71:12
categories 43:7	224:16,19	215:18	cole 2:18 9:9
68:5	changed 78:18	choose 180:4	coleschotz.com
	78:19 131:2,7	182:8,15	2:21
	131:12 176:1,3		

[collaborative - continue]

collaborative 13:22 colleague 40:13 41:11 60:15,16 60:17 colleagues 39:20 40:16 156:17 157:2 columbia 8:14 222:19 column 77:22 combined 48:2 combines 92:22 come 15:17 16:20 70:5 100:3 119:8 129:9 comes 38:4 39:1 157:19 coming 40:16 62:18 65:20 117:15 comments 14:1 committee 127:3,9,18 common 101:2 102:2,11,12 167:6 commonly 182:16 communication 36:7 172:17 180:13	communicati... 32:22 community 154:10 182:12 companies 38:19,20 136:1 136:4,14,17 197:19 company 8:8 10:20 11:1 25:17 30:15 33:8,8 65:22 94:6,14 125:21 136:7 137:7 139:3 141:10 153:20 compare 198:6 compared 54:19 136:22 205:19 competence 83:18 129:22 130:14 154:5 complete 24:1 46:21 47:11 86:21 225:8 completeness 64:4 compliant 28:18 139:5 component 195:10 components 131:7	comprise 71:10 81:8 computer 78:10 concept 49:8,11 214:3 concluded 221:7 conclusions 62:18 conducted 54:3 132:3,6 188:16 configuration 154:7 confirm 15:2 16:9 37:8 confirmed 147:11,12 connected 28:8 48:4 62:8 connection 31:12 128:14 connectivity 31:15 consider 38:2,3 64:8,10 150:19 considered 156:19 consistent 65:11 93:3 180:19 consists 69:4 122:6	constitute 9:3 constrained 104:2 consult 138:1,8 139:1 consultancy 25:14 26:5,9 26:14 28:7 30:14 consulting 25:20,22 26:2 26:8,13 30:5 30:10,13 140:8 cont'd 4:1 5:1 6:1 7:1 contact 93:13 94:4,4,7 164:14 contain 17:8,11 115:20 contained 64:5 96:2 contains 77:5 content 173:6 contention 116:17 192:14 194:2 contents 4:17 82:18 context 52:12 73:1 94:5 121:21 continue 127:1
--	--	---	---

[continued - covering]

continued 89:11	correct 12:16 12:17 14:7,8	164:3 165:18 166:1 168:8,9	counsel 10:6 18:5,6,9,18,20
contributing 36:6 65:22	15:3 16:3,10 17:6 22:12,15	170:22 173:16 173:21,22	61:3 106:4 144:17 184:12
contribution 154:16	23:22 25:11 27:14,15 35:9	175:18 176:1 177:18 179:11	222:11,14 223:7,10
contributions 43:5 155:3	48:16 55:11,15 59:5 65:1	179:12 180:16 180:21,22	count 126:8 186:14
control 6:10 58:5 75:8,10	69:13 80:14,15 82:3 83:8 84:8	182:22 183:8 183:18 184:20	counted 20:9 126:5 165:7
130:16 195:11 195:15 214:12	85:3,10 86:1 87:10 88:2,3	184:21 187:6 188:8 190:20	210:3
convenient 29:6 144:3	88:14 89:16 93:22 94:1	190:21 196:9 198:21 201:21	counting 218:20
175:13	96:17 99:11 101:18 102:13	202:9,10 203:10,15	couple 13:9 26:5 36:13
convention 171:6,18 188:2	103:21 104:6 104:20 107:13	205:11 206:12 206:13,14	120:8 122:11 126:10 167:14
copies 79:13 220:21	108:20 109:8 110:22 125:8	211:15,16,22 212:1,18 213:4	170:14
copy 14:20 15:4,14 16:2,8	134:5,6,8 136:9 138:17	213:5,21 214:4 215:14,15	course 43:8 89:19 91:13
16:10,16 21:3 21:11,13,21	139:1 140:8 143:8 145:5,17	216:1,2,4 225:8	114:18 132:2,6 135:5 139:5
22:13,15,19,20 54:18 95:5	145:18,21 146:3 147:5	correction 122:11	154:16 158:10 175:12 206:7
108:6,9 113:10 113:12 180:16	148:20 149:6,7 149:16,17	corrections 122:9 225:6	213:13
195:17,19 220:7,15	152:7 153:2,17 159:15,19	correspond 77:11 115:7	court 11:10 cover 54:6
copyright 183:13	160:9,20,22 161:1,5,22	142:14 153:13 109:19 133:12	173:7,8 covered 56:12
core 45:7 133:4 corporation 5:12 162:1	162:3,4,16,20 163:6,13,18	corresponding 138:2	95:2 119:11 134:20 181:19
			covering 34:21 186:13

[covers - declaration]

covers 23:15 96:9 craft 55:6 56:1 56:6 59:13 crafted 55:14 57:9 crafting 55:4 55:21 create 92:20 created 13:21 42:6 43:21,22 44:11 78:7 129:13 141:5 141:10 168:19 creates 78:11 creation 44:1 44:14 criteria 116:17 cross 100:10 ct 71:12 120:1 curious 212:14 current 40:14 206:19 208:5 217:1 currently 10:19 25:7 curriculum 25:5 cut 177:2,13 cv 25:5 30:20 35:8,10 48:18	d d 3:1 8:1 78:3 daily 132:8 dash 142:21 data 5:20 6:4 177:2,14 179:16 180:2 181:13 182:9 182:22 database 120:22 databases 92:22 date 1:13 28:14 64:16 74:12 75:22 78:3 122:8 129:4 145:19,20,22 148:20,22 149:10,13,19 150:6,15,17,17 151:4,5,7 155:18,18 156:20 157:3 158:12,15,20 161:3,4,6 162:15,17,20 183:12 186:22 187:5,8 188:19 188:22 189:3,5 189:20 190:11 191:1 203:12 203:13 205:8,8	205:15,20,20 206:1,11,12,22 207:6,11,17 208:6,7,10,11 209:4,6 211:21 211:22 213:2,6 213:11,16 215:4 224:24 225:12 dated 15:11 16:13 21:18 22:17 dates 23:4 24:4 77:22 78:4,6 78:11 123:10 124:5 158:18 day 18:7,10,10 18:11,12 41:21 41:21 83:19,19 90:14 130:1,1 132:10,10 149:2,5 151:13 202:4,4 205:19 206:15 207:1 225:15 days 18:8,14 91:19 120:9 218:17 dc 1:18 2:10,20 8:11 deadline 158:1 207:4 220:12 deal 25:3	deals 33:11 dear 200:9 december 77:6 80:1 81:4 82:2 124:22 126:16 126:16 129:14 decide 29:10 179:18 194:15 decided 129:15 declaration 3:7 3:12,16 4:3 14:7,15,21 15:6,11 16:2,8 16:13 17:1,2,6 21:4,11,15,18 22:7,13,17,22 23:1,4,6,8,11 23:13,15,21 24:1,5,9,14 25:1 55:10 67:7,11,15 68:4 72:19 73:11,14,19 76:22 77:13,16 79:8 84:6 85:8 86:15 87:5,8 87:17,18,21 88:1,17,22 89:3 90:20 93:7 98:22 99:5,20 100:14 101:1 103:19 104:4 105:12 106:7 107:18

[declaration - determine]

107:21 111:9	66:17 67:22	131:3	197:19
111:11 114:4	69:18 73:7,15	delegated	dependency
123:4 138:21	79:10 84:18,22	136:4	31:8 34:17
140:6 143:14	97:3,9 102:12	delegates 33:5	depending
145:16 147:8	107:2,12	38:1,3,8,14,17	159:16
149:9 150:20	118:18 121:18	38:22 39:11	depends 38:18
152:21,22	123:14 132:15	40:9 50:5	136:14
153:4 160:18	156:1 173:15	82:15 89:7,11	deponent 225:3
162:5 163:11	173:19 174:2	89:16,17 91:5	deposed 11:4
163:15,16	183:22 188:17	94:21 95:5	19:18 20:3
165:17 168:5	declare 225:4	101:2,9 102:3	deposition 1:12
169:8 174:6,12	deemed 225:6	102:5,7,11,13	8:6 9:1 18:3
177:17 182:7	default 71:16	102:15,17	19:9,19 60:17
182:20,20	defined 49:4	103:5,6 104:12	222:1
183:3,7,9,17	132:9	104:19 105:4,7	describe 33:6
184:16,20	defining 33:12	106:12,19	41:18 204:9
185:15 187:12	34:13	107:3,8 108:6	described
187:16,18	definitely 218:8	129:3 130:19	87:13
196:11 202:9	definition	131:18 136:13	description 3:6
204:9 208:13	34:17,18 49:5	136:18 137:1,5	4:2 5:2 6:2 7:2
211:14 213:20	49:19 50:12,18	137:5,13 157:5	design 7:7
214:3,6	50:21 51:1,6	157:8,11,21	137:17
declarations	51:15,17 89:5	158:6,7 159:3	designate
12:11 13:4,5	definitions	197:14,16	136:12
13:13,15,20	33:11	198:1,10,13,20	detail 85:14
14:6 16:21	delegate 32:21	198:20	118:8
17:8,11,17,21	33:3,9,9 38:9	deleted 71:9	details 30:1
18:4,20,22	49:22 50:1,3,8	demonstrate	53:21 59:1
19:3,6,8,10	51:13,14,18	56:2,10	85:2,9 181:17
20:7 24:20	52:1,1 56:3	demonstrated	181:18 196:3
27:18,21 49:12	71:14 101:4	59:7 189:12	determine
49:15,19 50:20	118:14,19	190:6	54:16 55:1
52:3,5,8 54:9	125:22 127:2,9	department	61:7,20 157:2
55:13 61:6,18	127:10,17	45:8 137:6	157:16

[determined - distributions]

determined 54:21 151:10	39:7,7,8 41:17 44:20 45:13	digits 12:15 134:10 171:8	52:5 73:4 84:7 90:19,21 99:21
determining 155:16 156:5 156:12 157:12 181:21	46:10 48:9,10 48:12,15 62:1 64:21 65:5,6 65:10 66:6	direct 128:14 directly 65:8 directory 4:11 4:13,15	104:18 109:16 112:9,13 114:7 118:9 121:18 124:15 131:9
develop 42:16 46:19 172:17	71:4 72:11 75:16 79:17	directs 82:10 disagree 83:3 204:19 205:2 215:11,12	140:15 158:14 159:4 163:20 167:2 174:2 180:20 185:14
developed 37:16 42:4 47:8	80:4 81:1 86:15,16,16 92:22 93:4	disclaimer 63:22	196:14 197:17 203:9 205:10
developing 37:15 45:7 137:15 139:4	110:3 113:1 114:20 117:4 119:22 120:16	discuss 49:15 52:7,8 61:3 69:18 72:20 73:5,15 87:6,9 88:17 90:11 101:15,17 103:18,19 105:3,6,11,13 106:3 114:4,13 114:18 118:18 119:9 152:22 153:1 156:1 160:3 163:12 163:17 173:15 173:17 182:7 183:7,10,17,19 185:1 188:7 211:14 213:20 214:3,5	discussing 56:18 89:2,4 101:8,12 204:8 213:19
development 28:10 126:2 137:17	121:1 133:20 137:7,20 142:14 152:3 167:14 178:5 181:5,9 189:16 190:8 193:4,19 197:19 200:11 209:1	discussion 46:14 64:19 104:15 106:15 123:1 139:17 168:4 188:6 214:2	
developments 28:9 29:1 52:19 53:11 127:13 195:13 197:20	differentiate 47:14	discussions 47:18 127:11 127:13 139:20 200:4	
device 31:11 32:16 138:1,22 140:7	difficult 29:22 38:7 48:2 126:8 186:8 193:7 194:10	distinct 62:3,4 62:7	
devices 28:19 138:7	difficulties 176:5	distinction 48:1	
dialog 93:12 dialogue 46:3	digit 171:10 186:9,13,17,17	distinguish 42:21 56:22	
difference 77:18 133:16 133:17	digital 222:8 223:3	distributions 64:17	
different 12:12 19:11 25:1			

[district - documents]

district 8:13	118:7,10,13,16	179:8 180:19	55:14,22 56:3
222:19	123:17,19,20	181:10 182:16	56:4,10 57:21
document 24:3	124:7,9,10,13	183:14 185:14	58:2 59:10,16
36:16 37:6	124:14 131:20	185:17,21	59:18 62:1
41:8 42:12,19	134:5,13,15,20	186:14 196:8	64:18 65:6
42:22 46:9	134:22 135:2,3	200:13 201:5,7	67:22 68:4
55:3,5 56:5,6	135:7,14,15,18	201:9,10	79:17 80:4
56:12,14,17	135:20 141:10	202:13,18	81:11,14,16
57:8,9,15 61:8	145:1,3,8,15,19	203:8,13 204:1	88:7 89:18,21
61:20 63:6	145:22 146:5,7	204:5,7,12	90:4,8 96:8,16
65:20,21 72:1	146:11,13	205:9,14,16,21	102:7,8,18
90:12 91:2,4	147:4,6,11,12	205:22 206:6	103:6 107:17
91:10 92:8	148:16 150:22	206:16 207:4	111:18 112:20
93:3 94:6,8,10	151:13 152:12	208:19,21	116:12,12
94:15,18,19	152:15 153:2,6	210:8,9,13,15	123:11 124:6
95:2,4,10,17	153:9,17,19	210:16,21	128:19 129:1
96:3,22 97:16	154:6,21	211:13,17,21	130:6,18,20
97:18,19,20	155:19 156:18	212:2,4,6,12,15	131:18 132:17
98:6,8,12,13,16	157:9,17,18	212:17 213:10	138:3,13,13,15
98:20 99:15	158:1,15,21	214:1 215:5,16	141:14,16
100:6,17	159:1,8,17	216:18	143:11 144:22
103:10 104:13	160:2,4,12,17	documents	146:9 152:7
104:15,19,22	160:19 161:2,4	19:9,13,15	154:2,13 155:4
105:4,10	161:11,19	23:5,17 24:6	155:9,13,17
106:13,15,20	163:1,12,17	27:13,17,22	156:1,6,13
107:1,4,20,22	164:21,22	28:22,22 29:6	157:3,13,22
108:1,4,6,10	165:2 166:9,12	35:14 36:2,9	158:8 159:15
109:17 110:6,7	166:17 167:1,6	36:11,14,18	160:5,8 161:18
110:8 111:16	167:20 168:5	39:13,17 40:1	165:20 166:1,4
111:21 112:2,5	168:15,18,21	40:11,17 42:1	166:10 172:22
112:15,22	169:3 170:17	43:1,4,8 45:20	202:12 203:19
113:6,17	171:16,21	52:15 53:11	210:10 211:1,2
114:14 115:12	172:1 175:17	54:6,10,12,14	211:20 212:13
116:3,4,8	175:20 177:21	54:18,19,20	215:17,21

[documents - engineers]

216:1 doing 26:2,14 30:11,13 46:10 57:14 72:20 95:3 99:21 113:20 114:5 144:1 173:12 173:16,20 176:3,13 188:12 214:12 double 11:3 169:12 198:8 199:12,13 doubt 83:5 download 70:6 84:12 97:20 112:6 124:11 124:12 193:22 downloaded 36:14 54:18 79:12 110:12 112:22 113:1 downloading 31:21 89:9,12 draft 13:19 101:4,9,10 132:11 138:12 200:10 201:15 201:20 217:12 drafted 20:8 50:20 drafting 13:15 drafts 13:21 14:2,3 200:11	200:14 drive 95:6 due 210:22 219:4,5 duly 10:3 222:5 dunner 1:16 2:7 8:10 e e 2:1,1 3:1,5 4:1 5:1 6:1 7:1 8:1 8:1 78:3 142:18,21 165:9 216:6 224:3,3,3 earlier 23:19 32:5 36:20 47:10 51:21 58:20 74:8 76:6 92:12,16 107:7 110:16 111:5 125:17 131:9 138:12 139:10 155:1 157:1 162:14 181:17 183:6 191:1,22 192:9 196:6 206:8 213:14 earliest 188:22 190:11 191:1 early 47:9 139:11,13,18	easier 46:21 72:3,17 76:16 83:12 109:2 112:1 easily 11:11 easy 56:3,11 59:9 75:17 76:8 93:1 95:6 editor 42:3 editorial 186:18 effective 93:1 effort 14:1 eight 15:7 146:10 154:17 170:5 175:20 191:19 194:10 208:3 either 69:12 76:16 81:21 110:21 131:3 146:13 151:3 161:15 167:8 179:12 194:3 electronic 142:22 electronics 1:4 1:5 2:2,3 8:7 224:1 225:1 eleven 105:17 email 64:17 65:19 66:2,9 83:8,16 91:8,8 91:11,14 92:1	105:8 107:11 108:11,14,16 108:17,19 109:7 118:17 183:5,8,10,18 196:15,18 197:13,15,22 198:19 199:4 199:14,20 200:3,6,9 201:8,14,22 202:3 emails 197:16 employed 10:19,20 25:7 25:17 222:11 222:14 223:8 223:11 employee 222:13 223:10 employees 25:18 enables 86:5 engaged 26:15 engine 175:14 191:4 engineer 41:8 53:8 engineers 38:14,17,18 39:19 40:1 102:17 136:8 136:17,21,22 137:5,9,13
---	---	---	---

[engines - exhibit]

engines 175:11	92:17 131:10	evidence	104:9 107:5
english 109:12	establishing	148:15 183:11	111:17,20
123:21	24:4 131:10	209:6	112:11 114:19
enhance 35:1	estimate 20:2	evidentiary	115:8 124:16
39:6	20:10,13 27:3	8:22	124:17 128:22
enormous	et 8:8 31:21	evolution	129:21 130:5
210:22	71:12 224:1	127:14	132:21 135:6
ensure 130:1	225:1	evolve 39:5	135:13 136:21
enter 15:20,21	etsi 19:5 26:13	evolved 197:3	142:17 152:12
15:22 94:1	26:15,15 37:11	exact 19:21,22	152:18 155:2,7
96:7 101:2	37:12,14,18	80:21 103:9	155:11 156:11
108:17 111:16	41:17,19,20	150:15 166:7	156:15 157:4,6
111:16 181:5	43:21,22 44:12	exactly 13:8	166:3 167:1
entered 112:4	47:18 62:10,12	36:4 103:16	173:4 174:9,21
193:4	62:14 63:11,15	124:4 134:19	178:6,7 197:22
entering 179:5	64:3,12 66:7	150:8 155:1	198:21 214:17
entire 35:13	78:18 83:18	177:19 178:1	examples 42:17
154:6	124:19,21	179:3	87:18 90:17,19
entities 9:12	125:7,11 127:2	examination	90:21 97:8,13
60:18	127:3,9,14,17	3:2 10:8	97:15,15 104:2
entitled 167:20	127:20 128:7	examined 10:5	140:15 141:7
ericcson 136:2	128:12,13	example 19:3	152:18 158:6,9
ericsson 136:7	129:6,10,15	31:10 33:16	excel 97:20
errors 17:17	130:14 154:4	40:13 41:12	98:4 110:12,13
es 222:4	156:16,22	43:13 46:4	112:19 113:6,6
esquire 2:5,6	172:18 173:3,8	48:9 52:6	excellent
2:17	europe 37:17	55:18 58:4,6	220:20
essentially	172:18	73:1,10,19	exceptions
29:17	european 37:11	75:14,21 85:15	122:14
establish	37:14	87:14 93:20	excluding 69:3
157:21 183:12	eventually	95:14 96:15	excuse 17:10
212:7,7 215:4	141:1	97:2,5,6,14	198:11 204:20
established	everybody	100:20 101:12	exhibit 3:7,11
47:9 92:13,14	166:18	102:6 104:3,5	3:12,15,16,19

[exhibit - fair]

4:3,7,8,9,11,13 4:15,17 5:3,8,9 5:14,15,21 6:3 6:5,12,13,18 7:3,8 14:13,14 14:16 15:6,18 15:18 16:2,4 16:11 21:3,6 22:6,6,9 24:13 24:15 62:22,22 63:3,5 67:6 70:12,12,13,15 73:21,22 74:1 76:21 77:12,17 77:21 78:22 80:7,10 82:17 82:21 84:5 87:17 99:5,7 99:12 100:9 103:8,15 106:7 111:5,8,12 114:5,12 115:9 115:14 122:16 123:3 144:20 145:4,8,8,12 146:14 147:9 158:15 159:8 160:7,11,14,17 160:18,22 161:3,11,16 164:19 165:13 165:18 167:17 167:19,19 168:1,6,7	172:2 176:22 176:22 177:5 180:1,16 183:6 183:17 184:16 185:1,4,8,9,11 185:14,15,17 188:6,19 189:9 190:2 194:5,18 195:7,17 200:14 201:19 202:1,7,8,8,15 202:19,21 203:1,3,4,6,9 203:12,16 204:8 207:7 209:8 210:5,13 211:7,9,10,13 211:14 213:11 213:19 214:2 215:14,22 exhibits 19:11 220:15,18 existed 53:20 141:7 162:11 178:10 206:2 exists 37:2 expect 137:22 196:21 197:1 expedite 220:2 expedited 219:2 experience 38:13 39:11 64:11 125:15	125:16 137:22 140:22 175:2 192:3 212:10 experienced 75:14 expert 156:11 181:3 expertise 39:8 experts 25:19 130:1 138:9 155:15 156:5,9 157:11 181:19 explain 39:22 42:20 54:7 73:18 107:6 114:20 139:22 153:5 170:15 182:21 186:6,8 187:17,20 204:11 explained 40:3 86:12,14 88:6 107:7,18,19,21 111:22 191:3 192:9 208:12 explaining 54:4 explanation 69:22 87:15 explanatory 40:6 explicitly 188:9 exploder 66:2 107:11 108:14 108:16,19	109:8 183:8,10 183:18 196:15 196:18 197:13 197:15,22 199:4,14,20 200:6 201:8,22 exploders 66:9 91:8,11,14 92:1 105:8 183:5 197:2,4 explorer 95:7 extent 86:7 131:15 external 25:19 extract 77:14 extremely 38:4 206:21 f f 75:8,10 171:13 214:12 f10 171:2 f20 171:2 f30 171:1,3,4,5 201:5 f30.zip. 170:18 fact 169:20 189:22 facts 122:10 fair 11:20,21 12:20,21 14:4 14:5,15 24:18 24:21 32:8 36:17 50:5
---	---	---	---

[fair - folders]

51:5 56:7 80:5 100:16 101:11 128:20,21 131:18 136:16 137:12 138:14 146:12 150:12 151:3 169:2 fairs 28:17 fall 126:17 familiar 31:19 103:7 157:16 fancy 124:3 far 17:13 22:14 farabow 1:15 2:7 8:9 fashion 112:17 131:16 faster 49:10 features 122:13 february 6:14 22:17 203:21 205:9 206:18 206:18,22 207:1,2 209:7 feedback 14:3 fetch 124:10 field 96:8 138:9 155:16 156:5 156:12 157:12 166:22 fields 37:16 85:14 figure 98:11 135:4 143:21	174:8 file 78:8 80:17 81:1,13,17 82:7,10,13 83:4,6 97:20 171:7,15,17 187:19 188:1,2 214:12 files 80:21 filled 81:11,11 filter 98:1 111:18 113:8 final 164:6 200:17 201:12 216:9,19 218:11,15 219:4,18 finalization 139:20 finalized 139:7 139:18 185:21 finally 217:2 financially 222:15 223:11 find 39:8,16 40:1,7,11,17 52:20 54:12 56:4,6,11 57:4 59:9 71:22 72:3,5,15 73:3 75:15,17 76:2 76:8,16,18 79:19 81:1,14 81:20 82:11,16	84:12,19 86:5 87:1 88:7 90:4 98:19 112:1,12 115:22 116:2 116:11 120:19 124:13,14 134:22 138:11 139:14 144:2 156:18,20 174:22 176:5 178:5 181:6,10 182:16 189:16 191:6,8,9,11 192:4 193:21 195:6 202:1 216:7 finder 95:7,7 finding 27:6 45:12 fine 10:17 220:8,9 finish 11:9,12 11:13 finished 139:6 169:3 finnegan 1:15 2:7 8:9 9:11 60:18 finnegan.com 2:11,12 first 10:3 12:22 13:5 14:13 24:1 30:22 86:14 90:6,6	90:11 91:1 99:6,6 106:11 124:18 140:12 144:22 150:11 150:11 151:16 151:19 163:8 172:8 178:7 186:9 188:20 189:7,8 195:3 195:6 202:13 206:6 five 129:14 134:10 focus 26:6 32:6 33:20 focused 32:10 focusing 31:6 folder 4:17 71:10,16,22 72:7 74:8 75:3 75:15 76:8,9 76:15,17 77:14 78:9,21 79:2,6 79:11,14,16,20 80:5,13,17 81:5 82:2,6,19 83:8,11 141:16 142:5 143:7,9 143:16 208:18 208:22 folders 44:20 70:2 71:8,8,9 71:11 72:1 74:11,18 76:1
---	---	--	---

[folders - ftp]

76:11 84:3 95:5 130:12,12 130:16 131:15 142:2,13 follow 29:15 31:20 32:7 109:2,2 127:1 128:10,13 139:19 200:3 following 26:10 32:10 123:11 125:12 126:1,1 127:10,13 132:9,21 154:8 168:22 170:2 202:5 217:14 follows 10:5 132:21 footnote 160:3 166:3,8,11 208:1,5 210:12 foregoing 222:3,4 223:4 225:5 forgot 141:10 form 19:20 20:11 23:2 26:21 27:19 29:11,20 32:12 33:18 35:16 36:21 38:6,15 39:3 41:3,10 43:16 45:5,18 46:6,16 47:21	48:11 49:2,17 50:6,15 51:9 51:19 56:8,21 57:11,17 58:11 59:19 63:12 65:16 66:4,11 68:2 69:21 70:22 71:17 72:9 73:8 74:21 76:5 78:12 82:4 83:9 85:4,11 86:2 88:19 92:19 95:12 96:4,18 97:11 101:19 102:20 103:11,22 104:7 108:7,21 109:9,21 114:6 114:16 116:9 116:19 117:9 118:21 121:10 129:12 130:10 136:19 139:2 152:8 153:3 155:10 156:7 156:14 157:14 159:20 163:19 174:17 175:9 176:14 181:15 182:3,10 183:1 187:22 188:21 189:11 190:3 190:14 191:16	192:18 193:15 195:8 198:2,14 198:22 205:4 207:19 214:15 216:17 formulated 195:18 forth 109:6 182:20 forty 161:6 found 57:21 120:13,15 178:2,2 179:6 foundation 50:16 51:10,20 52:16 53:5 55:7,16 66:12 74:22 86:3 96:5,19 101:20 109:10 152:9 195:22 205:5 founded 131:8 founding 37:19 129:14 four 12:11,15 12:19 13:10 14:6 17:8,11 53:13 76:10,12 119:20 120:2 161:7 fraction 110:20 fractions 94:2 frequent 210:22	frequently 158:11 friedheim 3:7 3:12,16 4:4 friedhelm 1:12 2:3 8:6 9:14 10:2,14 30:5,9 30:12 224:2,24 225:2,4,12 front 14:9 21:5 70:13 73:22 177:4 frozen 122:3,4 122:7,12 ftp 4:11,12,13 4:14,15,16 29:3,4 35:15 36:2,11,18 37:6 39:13 40:2 41:9 43:14 44:11,15 45:1,4,10,16 46:1,5,13 47:4 47:6,6,14,16,20 48:3,4,5,8 54:16 61:13,19 62:12,17 64:14 64:15 65:3,7,8 65:8,14,18 66:3 67:1 69:19 70:2,7,8 70:19,21 71:3 71:15 72:6,15 74:5,8,14,20
---	--	--	--

75:11,13 78:13 78:17 80:9 89:11 112:2 118:7 120:13 120:21 121:1 129:3 130:7,21 138:2 140:13 141:8,14 148:20,21 151:14 152:5 153:13,17 154:2,21 155:17,18 156:19 158:19 162:11 163:4,6 163:12,18 169:14,17 170:9 187:13 205:15 206:2 206:15,19 207:8 208:1,6 208:10 209:4,9 213:3,4 214:7 214:9,11,14 217:5 full 10:12 18:10 61:17 function 24:8 46:15 47:19 73:6,16,18 85:2,9,14 86:4 214:13 functional 57:20 134:17	134:20 functionalities 45:1,3 47:17 48:9,15 functionality 41:13 45:17 47:11 74:19 75:4 87:3 98:3 122:7 functionally 122:3,4,6,12 functions 23:16 23:18,21 35:2 42:16 47:2,3 73:11 85:17 92:15 93:2 further 217:19 222:13 223:9	generic 110:1 germany 10:22 getting 141:21 179:10 give 12:8 13:6 20:12 72:10 85:9 97:2 134:14 143:7 156:11 217:20 given 37:2 42:5 54:19 56:3 64:11,12 129:4 146:8 152:13 225:9 gives 83:20 97:21 201:16 201:18 gmt 153:15 go 11:7 20:15 24:22 32:4 48:8 66:20 67:6,14 68:1 70:11 75:4,16 79:11 84:6 86:13 87:16 89:6 97:17 98:15,16 99:4 99:5 100:11 105:15 120:20 122:20 123:5,8 126:4,7 134:22 135:9 144:3 148:1 152:17 164:5 165:8	171:9 202:8 211:6 214:19 goal 56:9 92:20 goes 83:17 186:4 going 11:6 14:10 18:19 22:2 24:15 28:12,14 36:10 59:22 60:1,2 62:21 73:20 78:22 93:15,18 93:21 99:10,19 123:5 128:15 144:7 145:7 171:2 176:21 183:22 184:15 good 8:2 10:10 10:11 20:13 49:4 117:17 170:3 google 6:3 55:14,17 56:16 57:2,5,9 58:6 97:3,5,6,10 173:13,16,20 174:3,5,9,15,21 175:18 176:7 176:11,22 178:21 179:21 180:1,8,15 181:22 188:12 188:14,15,15 188:20 189:9
	g 1:19 8:1 199:5 222:2,17 gained 125:9 garrett 1:15 2:7 8:9 gears 144:7 general 48:22 51:7,11 87:15 103:3 107:16 119:7 129:3 generally 12:19 38:14 generation 5:17 6:7 37:19		

189:14 190:1,2 190:5,7,13,18 191:4 192:1 195:5,18 196:7 google's 175:22 gothenburg 5:4 27:10 28:4 104:14 105:5 106:14 107:4 118:12 146:3 159:5 grab 123:3 great 144:20 greece 6:14 203:20 ground 11:7 group 5:18 6:8 33:11 71:21 120:4,6 130:12 130:16 131:4 133:12,17 134:12,16 142:10 143:4,4 143:6 159:16 199:19 groups 33:14 41:21 42:4 43:3 44:19 45:13 71:12 92:11 93:4 110:2 119:22 133:4,5,20 134:10 197:6	growing 197:9 guess 115:9 138:14 220:17 guys 218:6 h h 3:5 4:1 5:1 6:1 7:1 224:3 hand 9:18 21:2 59:18 62:21 68:15 73:20 145:7 176:21 211:7 handed 185:7 handful 136:12 handing 22:5 80:7 82:17 160:11 167:18 202:18 handles 83:22 handling 24:3 42:1,12,19 43:10,11 93:3 154:6 hands 130:13 hannibal 1:9 2:16 4:9 8:8 9:10 224:1 225:1 happen 41:2 141:3 happened 40:19,20,22 41:5 81:16	98:18 117:20 121:12 141:9 143:1 151:1 168:17,20 208:13 217:12 happening 28:9 happens 29:9 83:3 143:14 158:11 happy 165:8 hard 40:6 44:9 93:11 95:6 155:5 harmonized 45:12 head 50:18 header 216:22 hear 155:5 heard 11:7 48:19,21 hearing 9:16 heavily 34:15 held 30:18 34:8 123:1 127:12 216:20 help 13:14 40:10,17 56:1 112:15 helped 40:15 helpful 104:1 helping 41:8 42:9 henderson 1:15 2:7 8:9 9:12	60:18 hereto 222:15 223:11 225:7 high 18:3 29:22 37:13 41:18 169:19 170:1 211:1 higher 42:21 historic 64:15 65:7,9 82:6 158:19 163:1,3 193:8 historical 148:2 148:3 149:5 hold 122:22 hosted 66:7 hour 59:22 144:7 184:1 hours 18:13,16 hundred 136:1 154:17 197:5 hundreds 69:13 159:11 hyphen 134:2 i idea 51:7 80:16 150:10 189:6,8 ideally 113:12 identical 45:14 71:13 113:4 151:1 163:4 193:18
--	---	---	---

[identification - intending]

identification 14:17 16:5 21:7 22:10 63:4 70:16 74:2 80:11 82:22 145:13 160:15 168:2 177:6 185:12 203:2 211:11 identified 195:21 identify 9:6 133:19 182:5 193:21 identifying 134:16 identity 177:11 illustrate 150:20 illustrating 174:20 implement 42:10 47:4 implementati... 172:5 implementing 42:7 45:3 46:13 138:1,7 138:22 139:8 140:7 important 43:10 105:7 137:19	impossible 193:10,12,16 211:2 include 50:13 51:18 79:22 108:1 116:5 120:18 143:10 171:20,22 188:3 included 23:15 24:8,10 34:13 41:22 49:19 81:5,13 89:5 101:3 115:10 183:11 198:21 210:10 213:22 includes 17:13 97:22 98:20 110:11 171:18 including 14:7 24:3 42:2 54:5 65:14 88:9 90:8 125:12 129:7 154:6 incognito 177:8 177:9,10 179:10 incorporated 6:16 7:6 64:5 incorrect 209:4 increased 197:4 indexed 109:18 112:21	indexes 112:20 india 172:20 indicate 147:4 162:2 171:16 indicated 213:7 indicates 170:20 171:5 186:9 188:2 210:20 indication 134:14 143:7 146:19 individual 38:20 71:11,22 94:14 128:6,10 176:13 individuals 33:6 136:4 164:8,15,18 industry 182:13 info 4:19 82:19 83:8,12,16 information 23:7,10,11,14 24:17,19 40:14 52:18,21 54:8 61:7,10,19 62:7,19 64:5 64:21 65:1,2,6 65:10,13,18 71:22 72:3 73:10 83:12 84:2 101:14	107:8 110:11 110:13 117:13 121:16 135:1 135:18 144:2 149:13 163:3 163:14 167:9 174:19 181:2 188:4 195:2,6 infrastructure 28:18,21 45:8 66:7,10,14 input 216:18 insert 114:8 instabilities 139:15 instability 139:12,13 instance 36:5 40:12 77:4 142:5 175:19 205:18 instances 121:12 140:20 177:20 institute 37:12 instructs 12:5 intel 5:11 111:4 161:22 162:1,3 intellectual 127:5 intended 8:20 intending 181:14
---	--	---	--

[intention - july]

intention 151:2 162:22 inter 3:8,13,17 4:5 interdocument 115:14,16 interest 23:17 71:20 197:3 interested 29:14 57:20 84:11 92:10 95:14 98:11 108:16 113:17 117:12 119:7,7 143:22 144:2 166:18 182:13 197:17 222:15 223:12 interesting 81:19 interfacing 31:15 internet 25:15 31:16 95:7 147:13,15,16 147:16,19 148:6,8,12,14 148:17,19 149:1,4,8,15 162:6,9 175:1 186:20,22 187:1 194:11 204:14,18 205:13,13,20	205:21 206:1 206:12 207:6 208:9 212:21 213:6 introduce 60:15 introduction 32:22 investigate 209:3 involved 41:12 44:1,14 125:18 125:20 137:16 153:16,18 154:1,13,20,20 209:8 involvement 44:6,17 iot 25:15 31:9 iotecc 11:3 25:6 25:9,13,14,18 25:20 26:4,7 26:10,12,16 27:5 30:4,10 36:10,12 37:2 37:2,7 ip 1:9 2:16 8:8 9:10 224:1 225:1 ipr 12:12,14 14:15,21 16:3 16:8 127:2,3,5 127:9,14,17,20 128:10,13	145:4 160:22 184:16,20 185:4 202:9,16 ipr2025-01187 1:7 ipr2025-01188 1:8 ipr2025-01189 1:9 ipr2025-01190 1:10 iprs 12:18,19 13:1,11 17:2,3 17:6,9,12 19:14 20:7 21:4,11 22:7 24:14 49:22 50:13,22 51:5 53:14,17 64:9 67:7 88:1 123:5 146:6 148:6 161:12 161:17 203:17 209:16 212:3 issue 77:19 184:19 issued 13:5 14:6 16:20 17:5,18 66:17 87:22 174:6 188:16 issues 5:13 115:17 181:13 182:1	item 40:15 42:14 109:19 111:17,19 112:15,18 113:9,16,18 114:2,8 115:7 115:10,15,20 116:4,5,7,11,13 116:16,18 117:7 items 77:16,17 98:1 109:20 110:2 113:8 117:4 152:3 164:3 170:10 170:14 204:19 214:8 j j 2:5 jamolin 1:19 8:3 222:2,17 january 25:9 191:8,10 japan 172:18 jeff 9:8 jeffrey 2:17 job 1:20 28:6 30:22 224:2 joined 60:17 jsaltman 2:21 juha 199:14,17 july 13:5 15:11 16:13 21:18
--	---	---	---

196:18 june 124:20,22 206:2 207:16 213:8,15 junior 38:18	know 10:18 11:6,17 12:1 13:8 14:19 19:21 25:3 26:22 27:1,8 27:12,22 39:12 44:9 49:14,16 49:21 50:10,12 50:21 51:6 52:19 53:19 58:20 59:22 63:9,17,19 75:14,22 77:17 77:20,22 78:6 78:10,17,19 79:1,15,16,19 81:15,18 82:7 83:15,15,20,22 85:21 86:7,10 88:20 92:17 95:8,9,22 98:10,15,18 105:7 111:4,21 112:9,12 113:9 117:1,6,11 119:3,6 126:6 131:4 136:7 141:19 143:18 147:2 149:8,10 149:19 150:4,8 150:16 151:3,8 161:15,19 162:15,18 165:1,7 166:6	169:20 172:9 174:15 175:22 176:2,7,11,17 176:20 177:9 177:10,13 178:12,16,21 179:2,3 181:3 187:5,7,8,10 188:19 189:22 190:11 191:1 191:22 192:3,7 199:17 200:1 204:4,6 207:10 207:12,14,16 207:20 208:4 208:15 209:1 213:15,18 217:22 218:4,5 218:6 knowing 52:21 57:15 134:12 143:5 171:14 knowledge 50:13 52:9,14 53:3,7,9 125:1 125:4,9,10,14 222:10 223:6 knowledgeable 38:4,11 39:1,5 known 58:1 koblentz 10:22 korea 172:19 korhonen 199:14,17	kyle 1:19 8:3 222:2,17 l labeled 14:14 landing 192:16 language 109:12 114:8 115:21,21 123:13 128:20 132:11,12,12 155:22 large 131:15 136:16 159:18 larger 137:4 197:6 late 139:8 208:20 latest 28:9 29:1 31:21 41:13 78:8,8 84:13 launched 47:11 laws 8:22 layer 5:20 6:3 34:17,18 142:11 170:4 177:2,14 179:5 179:16 180:2 180:13 181:3 181:12 182:8 182:22 195:10 layers 31:14 leads 73:2 86:17 192:11
--	--	--	--

[learn - looking]

learn 53:10	linked 86:22	160:2 200:10	look 14:20,22
led 174:13	links 62:9	listserv 66:7	21:10 30:1
191:5 192:21	list 71:16 79:17	200:2	35:7 48:10,12
193:5	90:12 91:2	litigations 26:1	51:1 53:21
left 78:18	92:8 96:8	26:3	56:11 58:14
125:11 126:3	97:16,18,19,20	little 22:2 49:10	59:11 70:18
length 139:22	98:6,8,12,13,16	65:12 109:5	71:21,22 76:14
letters 171:10	98:20 104:13	117:15 123:6	98:12 101:11
171:11	104:19,22	126:20 140:5	110:14 117:2
level 18:3 29:22	105:4,10	177:2 183:16	134:21 135:2,3
37:13 41:18	106:13,20	185:22	143:10,11
42:21 118:8	107:1,4,9,20	llc 1:9 2:16 8:8	148:1,3 158:11
levels 39:8	108:1,4,6,10,11	9:10 224:1	162:9 169:7
lies 130:12	108:19 109:8	225:1	170:4 182:1,4
lightweight	109:17 110:6,7	llp 1:16 2:8	193:17 194:18
31:10	110:8 112:22	8:10	196:2 199:6
likelihood	113:6,17	locally 95:4	200:8 210:1
147:2 169:19	118:10,13,16	locate 39:13	215:10
170:1	152:12 160:4	41:8 90:7	looked 56:17
likely 44:3	166:9 198:8	95:10 103:8,10	57:8 59:1
95:15 121:13	204:17 208:21	103:15 111:12	77:11,12 79:4
153:19 169:21	210:8,9 215:16	112:15 116:7	82:3 100:17
191:17	list.etsi.org	173:12 174:1	148:20,22
limitations	108:15	180:1 194:4	158:3 161:3
46:2	listed 71:16	located 88:9	180:18 181:17
limited 8:8	91:1 153:12	102:18	193:19 203:12
line 64:22	200:2 204:19	location 1:15	205:13 217:1
224:4,7,10,13	210:13,16	81:1 115:11	looking 27:21
224:16,19	214:8 216:3,16	117:17 124:10	40:7,13 52:18
link 70:6 112:7	listing 104:14	locations 65:6	57:16 58:4,14
121:8 142:11	106:14 151:13	120:16	67:21 71:14,19
149:21,22	205:19	long 18:8 82:13	72:18 74:8
150:3 190:8	lists 72:1 91:4	165:5 209:22	75:8,17,22
191:2	91:10 95:1	215:10	76:2 86:8

[looking - meeting]

112:2 116:22 116:22 117:2 135:7,13 139:15,17 143:19 172:2 175:12 177:21 179:4 195:12 204:6 214:7 looks 15:3,8 21:12 22:14 71:1,4 162:10 lot 14:19 76:1 81:8 lte 33:16,20	main 18:5 26:6 33:20 120:13 120:18,18 121:6 162:22 179:7 maintain 149:5 maintained 171:7 maintenance 5:6 99:22 100:8 103:20 127:2 majority 136:17 137:13 make 11:14 17:21 42:13 46:20 49:10 93:2 99:13 140:1 162:6 163:2 205:14 219:17 makes 64:3 72:3,17 109:2 making 60:20 manage 62:10 62:12,14 managed 131:15 management 5:13 31:11 32:17 42:17 115:15,17 161:19	manager 34:5 34:12 35:3,8 124:19,22 managers 130:13 131:16 managing 83:19 manner 9:1 84:14 102:9 manual 131:15 march 1:13 6:14 8:8 122:3 169:9 203:21 207:3 marked 14:16 16:4 21:3,6 22:5,9 62:22 63:3 70:12,15 73:21 74:1 80:7,10 82:17 82:21 145:8,12 160:11,14 167:19 168:1 176:22 177:5 185:11 202:19 203:1 211:10 market 139:9 139:11,19 matter 8:7 171:16 197:17 matters 38:11 88:8 mbms 34:22	mean 33:3 92:5 92:6,7 94:5,13 119:1 122:4 132:5 135:16 142:9,18 143:2 148:1 165:8 166:16 167:13 168:13,14 171:4 190:15 210:19 218:2 218:11 means 9:2 62:7 64:14,14 90:22 91:12 112:13 119:21 121:1 122:5,7,12 123:16 124:7,9 127:10 128:12 156:20 166:17 168:15 186:11 186:15 meant 42:20 92:8 142:11,22 167:13 169:10 206:15 medium 6:9 195:11,14 meet 18:6,9 meeting 5:3,9 27:9,11,13 28:4,22 29:2,8 29:9,9 30:1 31:18 33:9 35:11 43:5
m			
m 2:17 31:11 133:1,11 mac 6:10 190:12,22 191:14 192:15 194:3,13,19 195:14,20 macbook 95:7 machine 31:11 31:11 32:22 36:7 48:4 made 44:3 64:22 89:10 91:6,21 92:9 104:22 120:8 129:2 159:2 172:22 180:18 217:5,7 225:5			

[meeting - moment]

65:7 76:10,12 81:4 89:7,8,10 89:12 90:13,15 91:3,3,19,21 92:3,8 95:5,8 97:17 98:7,9 98:11,14,15,17 98:19,20 104:12,14,15 105:2,5 106:12 106:13,15,19 106:20 107:5 109:18,20 113:11,12,14 113:16,22 114:8 116:22 117:1,3,6,11,12 118:9,12,19 119:1,4,6,8,10 120:1,8 126:12 126:14 127:11 140:14,17,21 141:15 142:14 142:21,22 143:12,19,21 145:9,20,22 146:2,9 151:1 151:21 154:7 157:19 158:2 158:12 159:5,5 159:11,15,18 160:4 161:4,7 161:9,10 163:2 163:6 164:2,6	164:7,11,15,19 165:4,4,5,13,17 165:20 166:5 167:6,7 168:20 198:6 203:13 203:20 207:2 208:18 209:12 209:18,21 210:9,21 211:2 211:17,22 214:20 215:7,7 215:10,13,18 216:5,10,12,19 216:20,21,22 217:1,2,4,6,8 217:11,14 meeting's 89:9 91:18,19 101:4 109:19 meetings 26:17 26:18,19 27:4 27:8,16 28:5,6 28:13,15,16 29:13,15,17,18 32:2,11,18 33:6,7 34:1,3 35:5,10 36:13 37:3 42:1 64:20 77:7 80:2 90:12,13 91:2,10 110:3 117:4 119:21 120:4,6 125:13 126:4,6,10	127:12,12 132:18 136:5 142:17 143:6,8 143:15,20 157:9 216:16 member 128:9 128:12 182:12 182:12 members 43:6 128:6 136:1 197:9 memory 141:9 mention 35:9 35:10,11 88:13 88:15 101:22 102:14 138:21 140:9 188:9 mentioned 51:21 72:21,22 73:17 76:3,6 88:21 97:12,14 111:13 123:21 155:1 158:13 158:17 159:9 159:18 162:21 165:20 174:10 181:16 188:18 196:1,6 210:5 mentioning 165:17 mentions 165:13 met 18:5	metadata 65:19 98:2 113:1,2,3 214:16 methods 152:19 212:10 mic 117:16 mics 218:16 middle 77:22 194:22 minor 186:18 minute 144:8 minutes 184:3 missed 157:7 missing 208:19 mistake 208:21 mistakes 17:17 17:19 mixture 38:16 39:7 197:16 mobile 31:8,10 31:18 32:11,16 34:5,12 35:4,8 83:17 129:21 130:14 154:5 180:13 mode 177:8,9 177:10 179:10 modification 206:22 modified 64:16 158:14,20 159:2 moment 217:20
---	---	---	---

[monday - number]

monday 219:6 219:9,13 month 75:3 76:9 168:15,16 168:20,21,22 169:5,9 months 13:9 30:7,14 81:10 122:11 206:5 206:10 207:7 213:11 morning 8:2 10:10,11 move 171:10 mtc 155:3 multiple 111:14,15 136:4	native 109:12 123:21 navigate 39:12 39:16 40:10 69:19 navigates 70:1 near 150:21,22 nearly 146:10 necessarily 52:19 53:7 71:18 108:3 109:7 138:16 193:1,6 necessary 212:6 225:6 need 11:22 41:12 67:11,12 113:21 114:2 117:6,10 183:9 197:19 214:17 needed 30:14 82:15 needing 40:17 neither 222:11 223:7 network 5:19 6:9 28:18 33:1 133:4 138:1,22 140:7 networks 138:7 never 20:9 141:1,4,4,7 176:5	nevertheless 193:20 new 1:17 2:9 8:10 40:4 42:6 53:10 81:10 86:9 122:7 141:15 168:19 171:1 200:9 nine 30:17 169:11 nineteen 67:17 ninety 161:7 nn 134:4 nokia 136:2 non 40:9 102:5 102:7,13,14,17 103:5 105:4,7 107:3,7 108:5 137:4,13 198:10,12,19 normally 94:7 134:2 217:11 northwest 1:17 2:9,19 8:10 nos 1:6 3:9,18 4:6 notary 8:12 222:18 225:13 225:19 noted 167:5,5,9 167:14 225:7 notes 27:6 37:9 154:15	noticed 17:18 68:14 208:20 notification 92:2 105:9 106:22 108:10 118:15 november 162:11,19 208:6 nowadays 173:17 nr 5:19 6:9 68:22 69:3 number 19:22 26:22 27:7 46:8 54:9 80:4 85:18,22 86:6 91:17 93:12,16 93:19 95:22 104:14 106:14 109:18 110:1 110:17 111:18 111:22 112:4,7 112:10 113:2 115:5 116:11 116:13 126:5 131:19 134:9 134:20 135:7 135:14,20 136:22 137:4 142:1,2,20,21 143:19 145:9 145:10 152:11 152:13,14
n			
n 2:1 3:1 8:1 133:1,1 name 8:2 10:12 10:14,16 11:1 30:11 94:10 147:7 171:7,15 171:17 200:21 214:12 name's 170:18 named 142:6 names 143:7,9 narrow 109:5 narrower 140:5 183:16			

166:7 171:5,19 178:20 188:2 189:2,15 191:10 192:11 192:16 196:22 197:9,10 198:6 198:7 211:1 numbering 52:6,7,10,20,22 86:11 132:17 132:20 134:13 186:4,7 187:19 188:1 numbers 52:15 75:19 86:11,18 133:17 171:9 numerous 69:8 77:5	50:6,15 51:9 51:19 52:16 53:5 55:7,16 56:8,21 57:11 57:17 58:11 59:19 63:12 65:16 66:4,11 68:2 69:21 70:22 71:17 72:9 73:8 74:21 76:5 78:12 82:4 83:9 85:4,11 86:2 88:19 92:19 95:12 96:4,18 97:11 101:19 102:20 103:11 104:7 108:7,21 109:9 109:21 114:6 114:16 116:9 116:19 117:9 118:21 121:10 129:12 130:9,9 136:19 139:2 152:8 153:3 155:10 156:7 156:14 157:14 159:20 163:19 174:17 175:8,9 176:14 181:15 182:3,10 183:1 187:22 188:21 189:11 190:3	190:14 191:16 192:18 193:15 195:8,22 198:2 198:14,22 205:4 207:13 207:19 214:15 216:17 objections 60:20 obligations 128:13 obviously 13:22 22:21 24:18,22 26:10 28:8 38:9,9 56:11 59:8 74:17 96:21 110:5 156:19 occasionally 38:17 208:13 occasions 121:14 occur 41:7 october 4:9 5:10 150:3,16 151:4 161:9 187:2,8 offer 28:7 offering 28:17 offers 90:3 94:21 office 1:1 25:14 officer 222:1,2	offices 172:7,13 172:21 official 125:12 officially 15:19 125:21 officials 125:11 157:20 oh 13:18 15:10 76:3 78:21 99:18 115:14 115:14 125:20 135:5,10 150:9 170:16 199:12 200:3 203:7 205:1 okay 9:16 10:15,17,18 11:1,4,6 12:2,3 12:18,22 13:4 13:10,18,19 14:12,19 15:5 15:10,16 16:7 16:19 17:1,5 17:20 18:6,8 19:12 20:14 21:9 22:1,12 22:16 24:12,22 26:2 27:8,12 27:16 28:3 30:16 32:15,20 33:15,22 34:4 36:17 38:1,13 43:20 44:5 46:3 47:3 49:7
o			
o 8:1 31:11 oaths 8:13 object 12:4 objection 8:15 9:17 19:20 20:11 23:2 26:21 27:19 29:11,20 32:12 33:18 35:16 36:21 38:6,15 39:3 41:3,10 43:16 45:5,18 46:6,16 47:21 48:11 49:2,17			

49:7 50:3 60:7 60:8,21 61:6 62:5 63:20 67:4,13,18,21 68:11,16 69:11 71:3,14 72:13 73:20 74:11 75:21 77:9,21 78:6 79:4,15 80:3,16,19 81:15 82:1,9 86:20 87:21 88:16 90:5 91:1,9 94:9,16 98:10 99:4,10 100:7,22 101:8 103:14 106:6 106:11,18 108:13 109:16 111:8 113:20 116:15 117:18 119:13 120:17 121:5 122:1 123:3 126:18 127:8 128:1,15 128:22 129:6,9 131:22 132:16 133:3,22 135:10 137:3 138:6 140:11 141:6,18 142:8 143:2,5 144:5 144:9,20 145:3 145:7,15	146:16,19 147:22 148:5,8 149:8,18 150:4 151:9,16 152:5 153:12,16 154:12 155:5 159:14,17 160:2,10 161:2 161:21 162:14 162:18 163:5 163:11,16 165:8,12 166:8 167:3 169:2,17 170:13,17 171:11 173:5 173:11 176:21 177:8,16 179:18 180:4 183:5 184:2,15 184:19 186:3 186:19 187:11 187:16 188:11 188:19 191:13 192:14 193:10 194:2,7,15 196:12 198:5 198:17 199:4 199:20 200:16 201:22 202:11 203:7,8,11 204:13,17 205:8 206:5 207:22 208:9 210:5 211:3	212:17 213:2,6 214:7,11,19 215:13 216:9 217:4,15,18,21 217:21 218:9 219:10,13,16 220:5,10,14,20 220:21 221:2 old 74:18 oma 31:11 once 54:20 93:7 106:8 113:15 165:20 ones 29:10 online 89:22 90:2 127:12 149:11 206:2 onwards 122:13 191:9 oops 169:11 open 31:7,10 31:18 32:11,16 83:6 202:6 opened 82:12 opening 23:8 107:18,21 153:4 operation 130:2 operations 41:21 157:19 opinion 88:6,12 89:7,15,17 102:2,4,10,12	107:3,13,14 108:5,18 109:6 109:14 129:1 opinions 17:9 17:12,12,14,14 23:7 64:9 123:9 128:17 opposite 99:16 optional 220:21 order 85:22 218:4 orders 217:21 ordinary 48:19 51:4 88:13,18 132:2,5 188:8 188:10 196:8 196:11 organization 31:14 37:15 41:22 71:5,6 128:11 129:17 organizational 129:15 172:6 172:12,14,20 173:3 organizations 31:7 128:8,9 172:15,19 original 13:21 14:2 17:1 23:3 23:12,21 24:9 24:20 55:13 72:19 73:7,15 84:17,22 85:8
---	--	--	--

[original - part]

87:5,8 99:5 137:17 152:22 163:16 172:15 206:16 208:14 208:15 originally 131:13 outcome 222:16 223:12 output 43:2 overwritten 206:16,17 208:14,16 own 10:20 54:12,18 158:20 172:21 210:15 owner 1:10 2:16 9:9	67:15,15 68:9 68:21 70:3,4 76:22 77:2,9,9 78:21,22 84:6 84:10 88:5 90:10 93:7 98:21 99:6 100:12 101:1,1 106:8 111:9,10 118:5 122:1 123:8 124:21 126:22 135:8,9 135:14,22 137:21 140:11 140:12 141:12 142:1 143:13 144:21 145:16 145:21 147:8 149:9,19 151:9 151:12 153:8 159:9,18,22 160:3,18 163:5 164:5 165:13 168:5 169:8,13 177:17 183:14 184:22 185:15 186:20 187:12 190:20 192:16 193:18 194:22 195:3,6 196:12 196:13 199:6,6 199:8 202:11 203:9 204:13 206:9 209:11	210:6,6,9 211:4,15 212:21,22 213:3,3 214:7 214:19,20 215:14,14 216:7 224:4,7 224:10,13,16 224:19 pages 14:20 15:3 16:9 21:9 69:12,13,14,16 159:11 165:5,7 165:10,16,18 209:22 210:3 215:10 pandemic 143:1 paragraph 64:2 68:21 76:21 77:1,2,3 79:5,8 84:6,7 85:12 87:11 88:5 89:6,15 90:5 92:5 99:20 101:15 101:18 104:11 104:18 105:3 105:14 106:8 107:15 109:16 111:2,3 112:14 118:5 119:13 123:8 124:18 124:21 128:15	128:16 131:21 132:1,1,16 133:21 135:21 137:21 140:10 140:11,12 141:12,13 147:10 155:15 158:14 159:4 162:5 164:5 165:3 173:11 186:19 188:11 188:18 191:3 192:20 193:20 196:13 204:13 205:10 209:11 209:18 212:20 214:20 215:6 paragraphs 84:21 88:4 174:11 parentheses 166:10 part 13:20 18:10,11,11 19:12 28:6,6 43:17 47:10 51:14 53:16 58:8 61:18 62:2 66:13 72:16 77:11 83:18 95:21 102:16,22 103:3,4 110:22 115:12,16
p			
p 2:1,1 8:1 133:13 p.c. 2:18 9:9 p.m. 105:21 144:11,14 184:5,9 221:3 221:6 page 3:2,6 4:2 5:2 6:2 7:2 15:5,8 16:11 16:16 21:14,15 22:16 30:20 63:20,21 67:14			

131:13 148:6 154:10 161:20 164:10 186:11 200:1 202:4 209:16 215:2 partes 3:9,14 3:18 4:5 participate 136:5 participated 26:17,18 participating 197:3 particular 31:7 31:14 57:22 84:11,19 214:14 particularly 29:13 154:4 200:5 parties 8:16 222:12,14 223:8,11 partly 165:22 partner 128:8 128:11 partners 37:19 128:7,10 129:15 172:6 172:12,14,20 173:3 partnership 5:17 6:7 37:20	pass 217:17 passing 210:6 past 149:6,16 149:19 176:4 193:8 197:9 patent 1:1,2,10 2:16 3:9,14,18 4:6 9:9 150:7 150:10 182:5 187:6 195:21 196:3 207:11 207:17 213:16 patents 25:16 53:13,16,19,22 58:21 59:2,4 59:12 150:18 151:5 162:16 181:14,18 182:1 187:4 pdcch 7:6 pending 12:2 people 39:1,5 51:3 75:14,19 76:17 81:19 91:7,13 92:1,5 92:8,10 107:7 108:3 124:10 136:12,15 138:6,9 140:1 140:7 154:3,4 157:5 158:3 167:8,10 197:6 197:16,18 198:18 202:5	209:12,16 214:21 percent 154:18 perfect 220:4 perform 114:1 performed 132:8 174:11 period 31:19 32:7 36:6,8 42:16 125:18 periods 126:9 126:11 permitted 8:20 person 40:4 41:14 48:19 52:17 54:5 56:4 57:21 58:16 71:19,20 88:6,13,17 93:15,18,21 94:7,9 108:13 137:22 176:8 182:15 188:7,9 196:8,10 person's 94:10 147:7 personal 125:1 125:4,8,10,14 personally 41:12 154:3,13 154:20 persons 45:9 petition 3:17	petitioners 1:7 2:2 petitions 3:8,13 4:5 ph.d. 2:6 photos 79:22 phrase 101:6 phrases 101:3 physical 5:19 6:3 112:18 113:5,5,5 125:22 170:4 177:1,13 179:5 179:16 180:2 180:13 181:3 181:12 182:8 182:22 physically 31:17 32:6 110:11 127:11 pick 180:6,8,10 picked 180:9 180:11 piece 64:16 pieces 64:21 65:10 148:15 place 120:2 207:2 plan 42:14,15 played 109:13 plays 157:18 please 9:6,18 10:12 11:8 12:1 15:21
---	--	---	--

17:10 25:2 85:5 102:21 149:12 176:10 179:20 plenaries 120:1 plenary 76:10 76:12 77:6 80:1 119:20 120:7 168:17 plus 125:11 164:22 point 11:22 31:1 32:20 81:6 91:15 99:6 122:13 140:1 170:11 179:7 198:17 217:17 policies 127:20 policy 127:2,14 128:10,14 popular 46:11 portal 29:5 39:16 40:5 45:22 46:11 47:8,9,11,15 48:3,5,6,10 54:22 55:11,22 56:4 61:22 62:6,9,14,18 65:3,14,17 66:3,6 70:2,2,5 72:2,17,20,21 73:3,4,6,16	75:4,20 76:17 81:22 83:13 84:3,7,12,14,18 84:19 85:3,10 86:22 87:1,10 87:15 88:9 90:3,15 92:12 92:14,18 93:8 93:18,22 94:21 95:11 97:10,13 97:19 100:18 101:3 102:18 104:6 110:10 110:14,17 111:12 112:2,9 112:21 113:4 113:18 114:14 114:21 115:4 116:1,8,16,18 119:9 120:14 120:21 121:4 124:15,17 130:18,18 131:11,14,17 131:20 134:22 143:11 144:4 152:17 153:5 154:7,14 163:21 189:15 200:21 204:7 204:10,12 213:21,22 214:17	portal's 47:16 portal.3gpp.org 88:9 portion 67:16 posita 49:8,11 49:15,16,19,21 50:2,3,7,10,13 50:18,21 51:2 51:6,7,12,15,17 51:18,22 52:9 52:11,14 53:3 53:6,8 54:1,2,5 69:19 70:1 75:21 88:15,21 89:2,4 101:17 101:22 108:18 108:22 109:7 109:13 182:8 182:11,21 183:3 187:17 214:4,5 positas 50:2,4 position 57:19 positive 169:22 possibility 75:1 198:15 199:2 possible 71:7 72:15 89:19 94:11 100:19 109:22 113:19 124:12 141:11 173:18 174:22 175:3 178:9 192:4 193:21	208:3 212:9 posted 185:22 postponed 167:5,13 potential 6:16 104:15 106:15 potentially 69:13 72:6 136:8 166:1 power 6:17 7:7 practice 101:2 102:3,4,11,13 141:14 148:1 practices 24:3 125:2,6 precondition 39:14 predicate 113:20 preparation 18:20 19:12 prepare 18:2 19:9 prepared 89:8 223:3 preparing 18:21 19:3,6 79:10 151:20 174:12 present 151:13 205:19 206:15 presented 27:18
--	--	---	---

presumably 146:22 pretty 207:5 previous 132:15 161:2 216:20,21 217:2 previously 19:17 prior 32:15 53:20 58:10,15 58:15,21 59:4 59:7,9,12 98:9 105:2 139:20 148:20 181:13 182:1 195:21 217:5 222:5 priority 150:6 150:15,17 151:5 162:15 162:17,19 187:5 207:10 207:17 213:16 probably 11:7 13:7 21:16 123:4 170:15 219:21 problem 53:19 54:2 58:10,21 59:12,13 195:21 problems 59:7 59:9	procedural 8:21 procedures 5:20 6:4 42:7 130:3 132:9 154:8 170:4 177:2,14 179:5 179:16 180:2 180:14 181:3 181:12 182:9 182:22 212:11 proceed 10:7 proceeding 8:4 8:19 221:7 223:4 proceedings 12:12,14 222:3 222:5,6,9 223:6 process 42:12 42:13,14,15,17 42:20 43:10,11 43:18 122:11 131:2,6,7,12 processes 42:7 42:10,10 43:11 produced 8:18 products 28:18 137:10,16,18 137:18 139:4 profession 28:6 program 78:10 progress 126:2	project 5:17 6:7 34:5,12 35:3,8 37:20 124:19,21 130:13 131:16 pronounce 10:16 property 127:5 proposals 43:6 protocol 6:10 194:19 provide 85:13 87:8,14,18 102:4,11 107:2 107:13,14 109:14 123:9 129:18,20 148:9,13 149:21 196:10 201:22 202:3 203:12 provided 14:3 17:14 19:13,16 23:4,6 24:2 38:19 54:13,14 54:15 62:20 64:13 65:21 98:6,8 102:6 104:5,8 107:16 108:5 121:16 121:21 149:21 163:3,4,14 208:20	provides 25:14 98:3 190:8 192:12 providing 46:14 47:19 78:15 87:14 public 61:8,20 89:19 107:17 123:10 124:5 129:3 148:16 155:16,19 156:5,12 157:2 157:12,17,17 158:7 159:3 212:8 217:5 222:18 225:19 publication 23:4 119:14 150:22 172:21 192:7 209:6 publications 172:7,13 publicly 107:22 108:2 124:8 158:21 published 118:7 119:16 119:18 120:10 121:7 189:20 191:12 pulled 187:1 213:8 purports 124:3
--	--	---	--

[purpose - recall]

purpose 22:22 75:20 158:22 159:1 162:22 175:14 purposes 52:13 put 15:16 16:19 22:1 24:12 48:18 57:19 58:8,13 67:9 82:7 84:4 109:6 122:16 135:19 160:10 166:9 167:16 167:17 179:15 182:14,19 195:11,13 202:7 putting 43:14 58:3 68:15 180:22	quasi 115:10 question 11:9 11:13,13,19 12:2,5,6 28:1 61:17 65:12 68:3 85:6 111:16 114:12 140:4 149:12 153:21 179:20 183:16 207:5 216:5 question's 47:15 109:5 questions 11:16 217:16,19 quick 14:22 21:10,12 60:4 216:6 quickly 99:4 218:14 quiet 117:15 quite 57:18 175:13 quote 99:21	160:13 r1-1903016 6:15 202:13,20 203:5 r1-1905031 7:5 211:4,8 radio 5:19 6:9 58:5 133:4 142:11 raise 9:18 ran 5:3,9 6:13 7:3 55:10 120:1 135:15 142:10 143:4 145:9 177:8 179:9,14,15,21 180:1,15,20 194:12,12 ran1 104:13 106:13 134:1 161:6 200:4 ran2 134:1 197:7 199:19 200:4 ran3 134:1 range 210:4 ranging 136:2 rarely 186:17 read 18:4 93:11 225:5 readily 88:7 readme 80:21 80:22 81:13,17 82:7,10,12	83:4,6 readme.htm 80:17 real 216:6 really 30:1 75:18 146:11 reason 12:8,10 83:2,5 170:13 204:19 205:2 208:19 209:2 210:22 215:11 215:12 216:16 216:20 224:6,9 224:12,15,18 224:21 reasonable 205:6 reasonably 155:17 reasons 81:7 126:13 158:12 205:17,18 208:17 209:1 recall 13:2 27:10,11,20 28:3 33:22 34:2 36:3,6,15 37:5 40:3,12 40:16 44:5,7 47:22 49:3,13 49:18 63:7,13 66:18 73:17 78:20 80:21 81:12 89:2,4,5
q	quiet 117:15		
qcl 5:7 99:22 100:8 103:17 103:21 115:11 qos 95:15 qualcomm 6:15 7:5 204:2,3,4 212:18,19 qualified 222:7 quality 95:15 quarter 121:13 quarterly 119:18	quite 57:18 175:13 quote 99:21		
	r		
	r 2:1 8:1 133:3 143:4 224:3,3 r&d 136:22 197:18 r1-1808197 5:5 99:1 145:1,10 r1-1810751 5:11 111:4		

103:16 115:9 146:5,7,11 151:7,16 154:16,19,22 155:2 158:6 161:13 162:17 163:8,10 169:18,20 175:17,19 176:3 181:11 191:19 194:7 197:4 199:21 203:16,18 212:2 receive 96:8 101:9 104:19 105:4 106:12 106:20,22 107:8 108:4,6 108:9,9 199:20 received 104:13 105:9 118:13,15 199:22 receives 83:16 receiving 104:21 107:3 recently 66:19 recipients 197:13,15,22 recollection 121:11 150:15 153:14	record 8:4,5,16 9:6 10:13 20:15,17,18,20 60:10,11,13 105:15,18,19 105:21 122:21 123:1 125:5 144:11,12,13 184:6,7,9 206:8 220:22 221:4 222:9 223:5 recorded 9:1 149:14 222:6 recording 8:18 222:8 223:4 records 82:6 94:22 125:2 recreate 193:11 193:13 recurrent 158:19 reduced 222:7 refer 12:18 49:7 52:11 68:4 99:11,12 111:8 183:2 214:5 reference 5:7 79:7 81:14 82:14 99:22 100:8 103:17 103:20 149:9 160:21 162:6	186:19 196:8 196:10 210:8 212:21 referenced 77:4 79:5 92:12 104:11 142:5 149:18 159:15 165:4,12 166:12 169:13 199:4 207:22 211:4 references 201:4 204:14 209:12,18 215:13 referred 202:15 referring 12:19 68:4 80:22 91:11 refers 169:8 217:9 reflect 78:8 reflected 95:16 110:8 reflecting 56:13 reflector 118:17 reflects 95:1,17 180:12 regard 32:6 181:4 regarding 123:10 125:5	148:10 171:7 registered 141:4 regular 218:18 220:8,9,15 regularly 40:22 132:2,6 136:5 176:4 relate 43:13 101:5 127:18 143:6 181:13 related 26:3 32:22 34:20 35:1 57:22 59:7,8,10,16 88:8 95:9 107:4 134:18 137:10 138:3 155:3 182:16 187:13,14 192:5 195:20 196:7 201:19 222:11 223:7 relates 27:13 89:16,17 116:5 170:20 171:15 194:21 211:17 relative 222:13 223:10 release 5:20 6:11 42:17 120:19 122:2,5 186:10,12,16
--	--	--	---

[released - results]

released 168:16	164:6 165:4,4	60:19 112:19	91:8,9,17
relevant 29:10	165:13,17,21	125:21	130:13 141:16
79:13 101:11	209:19,21	represents	response 78:2
reliability	215:7,10,13	95:18	219:4
62:17 64:4	216:6,9,19,21	reproduce	responsibilities
relied 34:15	217:2,4,12,13	193:7	25:12 34:11,13
61:6,11,13,18	reported 1:19	republished	35:7 41:16,19
62:16,19	reporter 8:2,3	173:3	44:21 127:8
rely 55:5 118:8	9:16 10:6	request 4:18	responsibility
155:17	11:10 15:19	82:19	32:21 130:8,11
remaining 5:12	20:16,19 60:9	requests 84:1,2	responsible
115:17	60:12 68:12,14	required 24:11	35:14 41:22
remember	68:17 105:17	94:1 215:3	42:6 44:18,22
36:18 44:9	105:20 117:14	225:13	45:2,9,10
146:13,15	117:19 122:18	requirement	78:14 130:6
155:7,8,12	122:21 144:10	109:1	154:5,9
remembering	144:13 184:2,5	requirements	rest 45:11
44:10	184:8 217:20	33:1,12,12	result 65:11
remitting 42:12	218:2,5,9,12,16	reread 87:11	76:12 112:5
removed 81:6	218:20 219:1,7	research	168:18 178:7
reno 216:12,19	219:9,13,16,20	137:17 178:3	178:14 179:11
repeat 17:10	220:2,5,9,14,20	182:5 192:20	190:13,15,16
176:10 179:20	reports 29:1,2	214:17	190:18 191:2
replaced 81:13	65:7 172:5	resolved 80:1	192:8,10,21
81:17	repository	resource 58:5	193:5
replacement	65:19	resources	resulted 177:18
81:16	represent 31:4	28:21 29:7	178:17 190:2
replacing 80:20	76:9	38:19 140:2	190:12 191:2
report 90:14	representations	165:1	resulting 112:5
91:18,20,21	64:3	respect 107:19	results 64:13
92:3,9 98:7,20	represented	114:12 173:20	96:12,15 120:3
107:6 118:5	65:11	183:6	120:5 174:14
119:12 159:5	representing	respective 23:5	176:8,12,18
159:11,15,18	9:13 31:1 33:8	90:11,13 91:2	177:16,22

[results - right]

178:21 179:3	25:7 28:1	95:17,20 96:13	145:10,20
191:5 192:17	29:19 30:5	97:4,8 98:7,12	146:2,12 147:4
193:13,17	32:8,11 34:9	98:21 99:8,19	147:8 149:2
retained 12:22	35:12 37:7,10	100:16 101:8	150:1 151:6,22
13:7,10	37:21 41:9,16	102:5,19 104:4	152:3,21
retrieve 54:6,8	42:9 44:8	105:5,11	154:14 156:2
72:17 152:15	45:17,22 47:13	106:21 109:5	158:21 159:9
retrieving	48:3,10 49:5	110:5,7,15,18	159:12 160:7,8
23:16 28:21	49:16 52:6,10	111:2,6 112:8	160:10,12,17
reuse 28:20	53:14 54:1,3	112:10,16	160:19,21
reveal 178:3	54:10,11,22	113:9,11,18,22	161:8,9 162:12
revealed 178:4	55:21 56:5,19	114:5,10,15	162:13 163:7
reveals 189:14	57:7,10,12,16	115:10 117:6	164:8 165:6,14
review 3:9,14	58:10,12,22	118:4,10,14	165:16,19,22
3:18 4:5 19:8	59:11,14,18,21	121:5,19	166:5,10
19:10,13,15	60:9 61:8,12	122:16 123:3	167:16,18
21:10,12 29:8	61:15,21 62:2	123:11,14	168:6,7,10
29:12 53:16	62:18,21 63:18	124:1,4,16,18	169:7,13 170:7
118:6 200:10	64:20 65:4,12	125:4,19	170:21 171:21
201:16	65:15 66:2,3	126:14,18,22	174:6,7,9
reviewed 146:9	66:10,20 67:10	127:6 128:17	178:6,7,13,17
165:2	68:8,18,22	129:4,7 131:17	179:1,6,8,9,14
reviewing	69:8,16,20	133:6,7,16	179:16 180:2
28:22,22 31:21	70:11,11 71:20	134:2,10,11	182:2,9 184:15
89:9,12	72:5,13 73:5	135:3,11,18,19	184:17,22
rich 98:3	73:13,20 74:4	135:21,21	185:5,18,18,20
richer 75:3	74:7,20 75:6	136:5,11 137:9	186:2 187:2,7
right 9:7,18	75:10 77:1	137:10,12	187:9,14,21
12:12 14:18	79:6 84:4,20	138:8,13,16,19	188:12,17
15:12,16 16:14	84:22 85:18	140:4,19 141:6	190:22 192:2
16:21 17:3,19	87:3,16,19	141:12 142:15	193:14 194:5,8
19:14 20:14,21	88:18 89:15,20	142:16 143:13	194:13,19,20
21:14,19 22:4	90:16,20 92:13	143:16,22	194:22 195:2,7
24:7,9,12 25:4	93:6,9,15,19,21	144:5,10	195:18 196:19

198:9 199:8,13 200:8,14,15 201:4,5,7,8,12 201:13,17,18 201:20,20 202:2,7,16,19 203:4,9,14 204:2,4,5,10 205:9,16 206:3 206:6,10 207:5 207:8,10,18 208:7,11 209:19,21 210:1,4,6,10,14 211:3,8,18,19 212:20 213:8,9 213:12,13,17 214:9,10,14,21 214:22 215:1,7 215:11,18,19 216:10 217:10 218:7,22 219:3 220:17 221:3 rights 127:5 rl 142:11 rl2 142:6,8 robust 46:15 47:19 rodermund 1:12 2:4 3:7,12 3:16 4:4 8:7 9:14,14 10:2 10:10,14,15,19 21:2 30:5,10	30:12 61:2 63:2 70:14 73:22 106:2 117:14 144:16 168:4 184:11 185:7 217:16 224:2,24 225:2 225:4,12 role 32:15,17 34:8 58:4 125:10 129:16 129:19 157:18 196:2 roles 129:17 room 60:17 rough 20:2,10 27:3 218:8,9 218:10,17 219:17,19,21 219:21 roughly 18:17 213:13 row 166:12 210:14,15 216:3 rows 166:9 210:14 rules 8:22 11:7 run 103:9,14 103:16 174:8 175:5,7,11,16 179:18 181:8 182:8 191:14 194:15	running 103:19 130:2 132:10 134:9 142:20 142:21 s s 2:1 3:5 4:1 5:1 6:1 7:1 8:1 78:3 133:5 224:3 sa 120:1 sa1 33:10 saltman 2:17 3:3 9:8,8 10:9 15:21 16:1 20:1,14,21 21:1 23:9 27:2 28:2 29:16 30:3 32:14 33:21 35:19 37:4 38:12,21 39:10 41:6,15 43:19 45:15,21 46:12,22 48:7 48:14 49:6,20 50:9,19 51:16 52:2 53:1,12 55:8,20 56:15 57:6,13 58:7 58:19 59:21 60:8,14,21 61:1 63:16 66:1,8,15 68:7 68:12,13,16,18	68:20 70:10 71:2 72:4,12 73:12 75:5 76:19 78:16 82:8 83:14 85:7,16 86:19 89:1 93:5 95:19 96:11 97:1 98:5 102:1 103:1,13 104:10 106:1 108:12 109:4 109:15 110:4 114:9 115:1 116:14 117:5 117:22 118:3 119:2 121:15 122:20 123:2 128:3 130:4 131:1 137:2 140:3 144:6,15 152:20 153:7 155:14 156:10 156:21 158:4 160:1 164:1 175:4,15 176:16 181:20 182:6,18 183:4 183:21 184:4 184:10 188:5 189:4,21 190:10,17 191:21 193:9 194:1 195:16
--	---	---	---

[saltman - search]

196:4 198:4,16 199:3 205:7 207:15,21 214:18 217:3 217:15,22 218:3,7,10,14 218:19,22 219:3,8,11,15 219:18 220:1,4 220:11 samsung 1:4,5 2:2,3 3:10,15 3:19 4:7 5:7,13 5:21 6:12,18 7:8 8:7 9:12 60:18 136:2,8 185:9 202:20 203:5 211:9 224:1 225:1 samsung's 13:14,17,19 14:3 sarah 223:2,15 saving 6:17 7:7 saw 56:17 151:17,19 163:8 164:19 169:21 saying 89:21 106:18 138:6 167:17 192:19 193:12 201:11 206:10	says 31:1 32:20 51:3 62:22 63:21 64:2 74:5 77:16,16 78:3 80:8 82:18 90:6 93:12 94:4,12 123:22 132:21 145:9,20 146:16 160:12 166:15 168:10 169:8 171:12 177:1,3,13 185:8,9,18 200:9,16 201:15 202:19 202:20 203:5,5 211:8,9 216:9 scheme 86:11 schotz 2:18 9:9 scope 181:15 182:3 195:22 207:13 screenshot 67:18,19,20 77:10,10,13 85:13 87:9,15 133:21 135:6,9 135:14 142:2 142:14 149:22 151:17,19 152:2 153:8 164:3 169:15 187:12,13	189:17 190:20 205:19 206:19 214:7 search 6:3 23:16,17,20 29:5 45:19 46:1,4,7,8 54:21 55:2,2,4 55:10,21 56:1 56:6,13,18 57:2,5,9 58:1,6 68:9 72:16 73:1,10 74:19 75:2,2,3,6,10 76:15 81:19 84:12 85:14,15 85:17 86:1,4 87:3,9 88:7 90:7 93:1,16 93:19,22 94:10 94:16,18,22 95:3,6,21 96:1 96:7,16,21 97:3,6,10,16,19 97:21,22 98:3 99:21 100:3,18 102:7,8 103:14 103:17,21,22 110:5 111:3,11 111:15,21 112:8 113:10 113:17,21 114:1,5,11,14 115:5 116:6,16	116:18 117:8 118:19 119:9 119:11 152:6 152:11,14,16 153:1,5 163:12 163:17,21 173:13 174:3,5 174:9,11,13,16 174:20,22 175:1,5,11,13 175:16,22 176:8,12,17,18 177:1,8,12,16 177:18 179:4,9 179:13,14,15 179:18,21 180:2,8,10,15 180:20 181:22 182:8,21 188:12,14,15 188:15,20 189:10,13,14 189:18 190:1,2 190:5,7,12,13 190:18,22 191:4,4,14,20 192:8,10,15,20 193:7,8,11,13 193:17 194:3,4 194:8,11,12,15 195:5,13,18,18 196:7 204:9,11 213:20,22
---	--	---	--

[searchability - sentences]

searchability 24:8 46:15 47:3,19 73:6 73:16,18 75:11 85:2,9	secretaries 131:16 secretary 41:17 46:18 124:20 124:22 199:19	145:1,2,11,14 146:17,18 147:13,14 150:2 151:14 151:15 153:9 153:11 155:19 155:21 158:16 158:17 159:6,7 159:10 160:6 160:13,16 162:6,8 164:2 164:4,9 165:15 166:13,14 167:21 168:3 168:11,12 169:14,15,17 170:17,18 172:7,11 173:13,14 177:1,12,14,15 185:2,3,10,16 187:15 190:13 193:13 194:22 196:15,17,20 198:8 199:15 199:16 200:11 200:18,19 202:13,14,17 202:21 204:14 204:16,20 206:4 208:1 209:13,14 210:7,17,18 211:4,6,9,12	212:21 216:13 216:14 220:14 seeing 166:19 203:16 seem 162:12 205:3 209:22 215:11 seen 63:6,7 66:16,17,18 121:14 146:5,7 146:8,11,13,15 151:7 161:11 161:13,16,18 167:6 203:19 203:19 212:2,4 212:6,12,15 select 108:15 self 40:6,6 send 136:15 senior 30:18 32:1,9 35:20 38:14,17,17 sense 11:14 13:6 24:2 164:18 197:21 sent 41:14 92:5 92:7 sentence 69:2 90:6,6 106:11 124:19 136:3 140:12 164:7 172:4,8 200:16 sentences 186:9
searchable 90:3	section 144:21 see 22:7 29:1 30:17,19 31:2 32:20 33:1,2 34:6 63:1,5,22 64:1,6,7 69:5,6 70:18,19,20 74:4,5,6,12,13 77:7,8,15 78:1 78:3 79:2 80:8 80:9,12 82:18 82:20 83:1,6 84:15,16 85:19 88:10,11 89:13 89:14 90:8,9 93:13 99:1,3,6 99:9,15,18 100:1,2 101:6 104:16,17 106:16 118:11 121:5 123:12 123:12 125:2,3 127:3,4 129:5 132:3,19,20 133:1,2,14,20 136:6 138:4,5 139:16 141:17 141:18 142:3,4 142:6,7 143:15		
searched 175:20 195:3			
searches 55:14 55:17 56:16 57:14 59:3,6 59:13 72:20 85:1 97:9 101:10 103:9 103:20 110:16 173:16,20 175:11 176:4 181:8			
searching 24:6 45:17 46:20 75:18 84:19 87:19 96:3,13 97:6 104:5 112:10 152:18 152:22 175:17 176:8,13 214:12,13			
sec 218:17			
second 64:2 90:13 105:16 122:19 129:19 183:14 186:13 190:19			

[september - single]

september	152:5 154:21	195:12	145:10 160:11
169:3,10,11	155:9,17,18	shortly 120:7	167:16,18
189:22 191:12	158:19 162:11	159:2 173:1	179:15 202:7
196:15	163:4,6 170:9	217:8	sided 199:12,13
series 68:1	187:13 205:15	show 57:3	signals 5:7
74:11 86:15,17	206:2,15,19	114:19 117:3	99:22 100:8
server 35:15	207:8 208:10	123:19 147:6	103:17,21
36:2,11,18	209:4 213:4	148:15 159:1	signature 15:14
37:6 39:13,16	service 33:1,11	162:22 192:8	16:16 21:21
40:2,5 41:9	33:12,12 34:17	192:10 205:18	22:19,20 221:5
43:15 44:11,15	34:20 35:1	showed 148:17	222:16 223:14
45:1,4,10,16,20	95:15 133:5	148:19 151:1	signed 107:9
46:1,5,14,19	services 25:15	190:7	similar 30:11
47:4,6,6,14,16	28:7 31:16	showing 28:17	58:12,16 63:10
47:20 48:3,4,6	129:7,10,18	70:12 158:22	74:15 102:9
54:17 61:13,19	set 30:15 81:10	178:11 190:2	112:17,17
62:12,17 64:14	122:6 186:12	191:2 206:17	115:21 123:13
64:15 65:3,14	sets 39:7	209:5	128:20 155:22
65:18 66:3,5	setting 44:18	shown 147:12	174:13,14
66:21,22 67:1	44:19 45:10	178:12 188:20	175:5 181:6
69:19 70:8,21	131:14	189:1,5,9,17,19	187:11 191:5
71:3,15 72:6	seven 79:1	190:1,5 193:18	192:20,22
72:15 74:9,15	128:8	204:7 206:11	194:4 196:21
75:12,13 78:13	several 37:3	shows 85:13	202:1
78:17 81:10	42:3,4 64:14	145:22 148:21	similarly 56:16
89:11 101:5	64:21 67:5	151:2 161:6	simple 132:7
102:18 107:10	69:9 90:7	162:1 183:14	207:5
112:3 118:7	129:22 137:20	205:21 206:1	simpler 65:13
120:14,21	146:9 148:15	208:6 216:22	simplest 150:11
121:2 129:3	shared 113:13	side 15:17	simplicity
130:7,21 138:3	sheet 110:12,13	16:20 22:1	100:20
138:8 140:14	113:6 173:7,8	24:13 34:20	simply 100:5
140:16 141:8	shoes 58:9,13	48:18 67:9	single 15:2
141:14 151:14	181:1 182:14	84:4 122:17	118:7 133:11

[sit - specifically]

sit 37:8 170:6	182:2	sources 61:11	71:21 72:16
site 29:3,4	somebody	spans 26:5	73:3 74:19
148:20,21,21	57:19 58:4,13	speak 18:18,21	75:2,18 76:12
153:13,17	147:3 152:13	19:2,5 102:16	83:11 85:1
154:2 169:14	181:1 195:12	117:15,16,17	86:5,17 87:14
207:22 208:2,6	208:20,21	144:16 148:5	88:8 90:4
209:9 214:9,11	soon 14:10	164:11 184:11	91:15 93:3
214:14 217:5	192:7 205:15	209:15 215:1,3	95:14 97:17
sitting 194:9	sorry 13:16	speaker 109:12	98:1,2,14,15,17
six 79:1 105:1	18:19 32:4	123:21	98:19 108:15
sixty 15:7	52:4 76:4	speaking	111:18,22
skill 39:7 48:19	78:22 79:7,8	117:21 118:2	113:8 117:1,12
88:13,18 188:8	105:18 107:1	158:7	118:19 119:1,4
188:10 196:9	112:18,22	spec 75:19	119:12 125:10
196:11	116:2 124:20	190:12,22	126:2 130:3,12
skills 51:4	140:12 141:19	191:14 192:8,9	130:16 143:6
222:10 223:6	157:7 175:8	192:15 194:3	143:12 144:22
slightly 114:19	179:20 180:4	194:13 195:20	148:22 154:16
114:19 193:3,4	196:13 197:12	200:17 201:12	156:17 157:22
193:19 196:22	199:8 203:3	special 127:3,9	158:6,9 162:10
197:11	214:19 215:21	127:18	174:18,20
small 172:3,9	sort 24:16 78:3	specific 23:16	175:12,19
smaller 196:22	122:10	28:7 29:5	176:5 178:20
197:11	sorted 74:12	34:14 40:12,13	180:12 186:10
snapshot 77:3	sound 165:6	40:14 41:13	189:19 191:7
77:5,5 79:21	sounds 174:7	42:16,16 44:5	191:20 192:5
80:3 83:11	205:6 210:4	44:8,19 45:10	202:12 204:11
snapshots	source 5:5,11	47:2 51:4,6	205:18 208:18
76:10 80:21	6:15 7:5 65:18	52:18,21 54:6	209:1
software 78:14	93:13 94:12,13	54:6 56:10	specifically
78:18,19	94:14 96:1	57:15,20 58:10	26:8 43:11
solve 53:20	110:17 113:2	58:14,15,17	52:11 55:1
54:3 58:10,22	115:6 146:16	64:17,17,20	59:6 63:8
59:4,13 181:14	162:1 212:19	70:6 71:19,20	64:10 73:5

[specifically - statement]

88:15 89:16,18 91:7 92:7 101:22 102:14 105:6,13 107:20 114:17 134:19 140:9 146:8,11 153:5 153:18 161:14 176:2 183:3 189:18 195:12 203:18 specification 5:16,18 6:6,8 6:11 41:13 58:5 71:12 72:16 73:1 76:8,15,18 84:11,13,20 85:18,22 86:6 86:11,13,15,17 87:2 120:19 121:8 122:10 138:17 143:3 168:8 170:21 171:15,18,19 173:12 175:1 175:12 178:2 179:6 181:7 186:6,10,12,16 187:14,20 188:3,7 189:15 190:7,13 191:6 191:10 192:5 192:11,16	193:21 194:19 196:14 201:5 201:20 specifications 33:14 42:3,14 43:2,14 54:10 55:18 57:1,2,4 57:7 68:6,10 68:22 69:3,4,7 69:9,12 70:3,7 71:10 72:5,11 72:14,18 73:3 74:15 75:16 76:7 77:6 79:13,22 81:2 81:5,8,10,12,20 81:21 82:11,16 83:7,21 86:5 97:4,7 119:14 119:15,18,22 120:10,12 121:18,21 122:6,15 138:2 138:8,10 139:12,14 169:1 170:3 171:7 172:4 173:1,21 176:6 201:15 specified 86:12 181:4 specify 116:21 specs 4:13,14 4:15,16 71:10	72:7 74:5,8,20 75:12 80:9 191:18 speculate 150:9 spellings 220:22 spoke 156:12 spoken 156:4,9 156:16 157:1,4 157:8 158:5 spreadsheet 98:4 112:19 113:7 stable 122:7,15 139:17 stage 23:19 stamp 205:8 213:11 stand 142:19 standard 33:16 34:14 36:7 39:6,6 69:4,15 125:1 139:5,6 139:7,21 173:4 194:21 standardization 28:5 31:2 33:7 137:8,19 139:20 158:11 197:20 202:5 standards 25:15 28:10 30:19 31:7,9,9 31:21 32:1,9	34:6,12,15,22 35:1,4,9,21 37:12,14,16,17 38:5 39:2 42:4 53:3,10 126:2 172:15,17 standing 218:3 stands 37:11 127:5 133:3 142:10 143:3 169:11 171:12 171:12,13 200:22 start 14:13 52:20 132:1 139:7,11 144:21 started 46:18 46:19,19 80:20 146:6 161:12 161:16 212:3 starter 86:10 starting 111:2 119:13 128:15 132:16 144:21 145:16 188:11 203:9 210:8 211:3,14 starts 168:5 state 10:12 222:19 statement 64:8 64:11 107:16
---	---	--	---

states 1:1 172:18	127:16 146:20 148:18 149:3	submitting 153:20	suite 2:19
status 40:14 113:2 166:21 167:15	150:4 151:11 152:1 168:13 170:8 171:3	subscribe 105:8 108:13 108:17	summarizing 88:12
statuses 166:21	179:21 180:5,6	subscribed 91:8,14 92:1 108:11,19 109:1,3,7 118:17 200:6 225:14	summary 128:16
stay 28:8	186:5 187:17		supplemental 14:7 17:6 22:6 22:13,17,21,22 23:10 55:9 73:14 87:16,18 87:21 88:1,17 89:3 90:19 93:7 98:22 99:20 101:1 103:18 105:12 106:6 118:5 184:19
stenographic 9:2	187:18 189:7 193:11 195:3 196:5 205:22 213:2 215:21	subscribers 196:19,22 198:7	supplementary 4:3 23:6,6,11 23:15 24:4 73:11,19 88:21 163:15
stick 170:1	string 75:2,8 97:22 99:21 100:4 114:11	subsequent 216:22 217:6	support 3:8,13 3:17 4:4 23:7 129:21 130:15
stipulation 9:3	strong 31:8,12 34:16,16	substance 61:3 106:3 134:14 144:17 152:6 171:20,22 184:12 187:20 188:4	supporting 26:1
stop 68:18,19 122:18	structure 44:20 45:14 74:15	substantially 84:14	supposed 139:4 201:2
storage 81:7,8 147:17,19	stuff 123:6	success 42:13	supposedly 206:11 207:7 209:4
store 70:3 141:14	subcategories 43:9	successfully 39:15	sure 9:8 15:1 17:11,21 32:3
stored 70:7,8 76:7,11 121:2	subject 38:11 95:14 110:19 171:16 192:5 197:17	sufficient 183:12 209:6	
straightforward 54:7 112:1	submission 155:3	suggested 48:1	
strategist 30:19 32:1,9 35:21	submit 43:6 141:11	suggesting 45:2	
street 2:19	submitted 12:11 13:13 94:6,15 134:5 147:1 157:22 163:2 204:3,5	suggestions 44:3	
strike 35:22 38:2 41:1 45:1 50:10 52:4 55:9 61:16 66:22 76:20 79:18 87:4,6 93:16 95:21 96:13 101:16 111:10 115:3 119:5,16			

35:6 36:22 67:15 82:14 85:8 87:12 99:13 100:11 103:2 107:15 116:3 117:20 119:3 122:20 154:18 155:7 155:12,12 170:6 176:11 176:20 179:21 180:19 190:18 194:10 200:7 205:14 208:4 212:5,16 219:17 surprised 84:1 swear 9:17 sweden 5:4 27:10 28:4 104:14 105:5 106:14 107:4 118:12 146:3 159:5 switch 60:1 144:6 183:22 sworn 8:16 10:3 222:5 225:14 system 52:6,7 52:10,20,22 132:17,20 133:5 134:13 172:5 177:10	180:13 186:4,7 187:19 188:1 195:10 t t 3:5 4:1 5:1 6:1 7:1 96:9 224:3 224:3 tab 93:9 table 201:15 tagged 166:15 tailors 176:7,12 take 8:4,12 11:22 34:22 60:1,4 98:16 139:6 141:20 144:8 165:9 183:21 215:9 220:13,22 taken 8:7 76:10 189:13 222:3 222:12 223:9 takes 122:9,11 168:22 talk 24:7 39:18 54:9 67:22 84:19 85:1 89:20 94:22 98:22 103:5 111:3 119:13 124:5 132:16 135:22 140:6 145:15 147:10 160:19 166:4	173:11 186:3 188:12 202:12 208:1 215:6,16 talked 19:17 28:11 38:1 39:20 42:9,19 58:20 66:2 68:21 69:2 73:13 76:20 77:3 107:10 110:15,16 111:5 112:14 115:2,4 116:15 120:14 125:17 129:6 138:12 145:3 160:2 162:14 173:19 183:5 185:21 187:4,11 191:22 talking 36:4 40:9 42:11 47:13 80:13 84:17,18 99:13 108:2,3 117:7 117:11 122:2 144:22 182:19 196:6 200:13 talks 25:6 141:13 146:16 152:3 164:6 165:17 216:12 tasks 137:7,16	tdoc 43:10 46:8 52:7 71:15,16 71:19 93:12,16 93:19,22 95:22 99:1,7 109:18 110:17 111:3 111:22 112:4,6 112:10 113:2 115:5 131:19 140:16 141:3,7 145:1,10 152:11,13,14 166:20,21 202:13 211:4 tdocs 42:2 43:4 43:4,9,14 52:6 54:10 55:19 57:1,5 64:20 68:5,10,11 89:10 90:8 93:8,12 101:5 101:11 130:5 138:12,16 139:1,15 140:8 140:13,20,22 173:16 174:1 203:11 team 45:12 131:13 technical 5:16 5:18 6:6,8 33:13 43:1 53:21 54:7 55:18 57:1,2
---	---	--	--

[technical - time]

57:22 59:1,8 71:11 84:13 86:12,13 95:2 95:16 97:7 110:19 119:14 119:15,17,22 120:9 129:20 137:6,15 143:3 168:7 170:21 171:14 180:12 181:2,17,18 192:5 195:10 196:2 techniques 6:17 technology 25:16 31:20 38:5 39:2 53:4 53:8 86:16 96:7 telecommuni... 37:15 38:5 39:2 137:10 telecommuni... 37:12 53:9 182:13 tell 10:4 22:14 121:12 134:13 134:19 135:8 135:14,16 154:22 158:20 162:21 200:7 temporary 43:4 138:13,15	ten 18:15,15,16 20:4,5 30:17 37:2 144:8 165:21 184:3 197:9 218:18 tens 69:15 term 33:5 48:19,21 49:1 51:3 56:13,18 101:22 109:13 179:19 180:6,8 180:9,10,11 181:12 182:15 194:12,16 195:14 terminals 133:5 terms 4:8 46:4 55:4,6,10,21 56:1,6 63:1,9 63:10,14,17 66:16,18 103:14 182:5 218:2 testified 10:5 19:19 testify 212:11 testifying 27:22 222:5 testimony 12:9 61:3 106:3 144:18 184:13 225:8	testing 137:18 thank 60:22 68:19 117:19 165:12 183:20 217:15 theory 143:18 thereto 64:5 thing 18:5 31:13 99:13 things 25:15 31:16 40:7 109:2 115:5 118:9 205:12 think 13:4,12 25:2 38:16 40:19 48:1 79:5 99:16 121:20,20 124:3 126:16 126:16 140:5 142:11 145:6 155:22 166:6 175:2 218:18 219:1 third 37:19 90:15 186:15 186:16,17 201:5 thought 104:1 150:12 thousand 69:14 thousands 69:16 81:11 136:8 159:14	166:1 three 24:20 30:18 41:17 81:9 90:11,19 97:13,15,15 171:8 177:20 200:17 201:11 218:17 thursday 1:13 tied 98:13 tim 9:11 time 1:14 9:5 12:4,4 13:11 20:16 23:12 30:12 31:4,6 31:18 32:7 33:15 35:13,18 36:1,6,8,10,17 37:1,6 42:5,16 47:5,7 60:9 63:14 78:8,9 81:3,4,6,12 82:13 89:8 91:16 92:21 105:17,18 117:21 118:6 120:5 122:10 122:13,15 125:6,9 126:12 129:14 131:2 144:10 149:16 150:21,22 151:16,19 153:12,15
---	--	---	---

[time - treated]

154:11,18,19 155:1,8 158:1 159:2 163:1,8 169:4 170:2 174:5,12 175:10,10 184:5 185:22 188:16 189:8 191:5,7,18 192:13 199:18 200:4,6 202:6 207:9 212:6 217:1 220:13 221:3	timing 77:19 timothy 2:5 timothy.may 2:11 title 5:6,12 6:16 7:6 46:9 85:18 85:22 86:6 93:12,22 94:2 94:17,19 95:1 95:10,16,17,21 96:2,10,13,16 100:6,9,14,17 100:18,21 103:9 104:5 110:18,20,21 114:5,14,18 115:6,7,12,16 115:18,22 116:4,6 134:21 178:20 180:12 180:18,20 181:2,9 188:3 194:18 216:9	together 45:11 120:1 129:15 172:16,16 tomorrow 219:22 tonight 219:21 took 207:2 tool 66:6 72:16 72:21 90:15 92:21 96:20 110:9 130:17 142:10 174:16 175:1 201:3 tools 46:20 47:8,10 62:20 64:12 102:8 120:16 131:9 174:20,22 212:11 top 24:5 63:1 63:21 70:19 74:4 79:1,2 80:8 82:18 84:10 93:1 111:10 122:2 127:1 132:12 132:12 142:6 145:21 147:10 161:5 168:10 169:7 177:1,12 185:8 186:20 200:2 202:19 203:4,14 211:8 216:12	topic 56:12,17 56:19 57:8,10 57:20 101:6 119:8 182:14 182:17 topics 25:19 26:6 56:13 101:3,10 156:17 total 18:9,13 128:7 touched 123:7 towards 45:12 63:21 track 29:18,22 trade 28:16 trademark 1:1 transcriber 223:1 transcript 8:18 217:21 220:7 220:16 223:3,5 225:5,8 transcriptionist 222:8 transferred 130:21 translated 33:13 transmit 34:18 34:19 treat 211:2 treated 167:11 210:17,21
timeframe 33:19 34:1 37:9 46:18 79:17 119:19 154:1,12 191:14 194:8	times 19:18 20:3,4,5 36:4 76:11,12 77:22 78:4,6,11 88:10 120:2 125:17,20 151:1 153:12 165:21		
timestamp 156:19 206:14 206:16,19 208:14,16	timestamps 65:7,8 158:19		
	titles 30:18 46:4 75:19 today 12:9 37:8 64:14 71:4,13 84:15 131:13 133:9,10 151:2 163:4 170:5 193:12 194:10 197:6 200:7 today's 18:2 19:9		

trial 1:2	63:20 76:21	typos 17:16	understood
true 14:20 15:3	84:5 88:4 90:5	u	11:20
16:7 47:10	93:6 98:21	u.s. 3:9,14,18	united 1:1
137:3 222:9	106:7 118:4	4:6	172:18
223:5 225:8	122:1 126:22	ue 6:17	unquote 99:22
truth 10:4,4,5	143:13 144:20	ultimate 92:21	unreasonable
truthful 12:8	160:18 184:15	200:22 201:1,2	205:3
17:22	184:22 196:12	201:2	unusual 165:19
try 68:19	199:5 202:11	unable 37:8	update 48:5
103:15 117:22	turning 106:6	under 8:21	updated 78:9
174:8 181:9	twelve 18:15,16	30:22 35:8	120:10 169:1
186:9	twenty 47:12	128:13 139:16	206:14
trying 47:4,14	twice 165:20	166:20 189:1	updates 217:14
47:15 53:20	two 14:9,10	underlying	updating 170:9
54:2 58:9,22	16:20 17:3	45:7 70:2	upload 36:16
59:4,12 103:8	18:8,14 30:7	120:22	130:18,20
121:5 157:2	42:22 43:1,1,7	underneath	131:5,18,20
182:2,14	68:5 126:19,20	78:4	154:9 155:18
ts 5:15 6:5	169:5 200:9,10	understand	156:20 158:12
167:20 185:1,8	200:14	8:17 11:11,16	205:16 208:7
tsg 5:3,9 6:13	type 26:3 32:22	12:6 21:9	208:10,10,18
7:3 71:21	36:7 113:20	47:16 53:13,15	uploaded 36:2
133:13 143:3	172:3,10	73:13 74:7	36:9,11,15
145:9	types 25:21	88:16 149:1,4	37:1,5 129:2
tsgr2 142:18	42:22,22 43:9	150:6 212:14	140:13,16,21
143:2	93:3 167:14	understanding	141:1,2,4,7
tta 128:7	typewriting	14:11 48:22	153:9,19
tuesday 18:12	222:7	51:2,12 74:14	154:18 155:4
219:13,15,16	typical 109:20	74:17 82:9	155:12 157:10
219:17,19	typically	100:7 108:4	157:22 166:18
220:3	132:21 133:12	123:16,18	169:4 200:9,17
turn 15:5,17	136:4	124:2,7 134:17	201:11 205:14
16:11 21:14	typo 169:9	150:13,14	206:6,11 207:1
22:16 25:4			207:3,8,9

[uploaded - washington]

208:22 uploading 35:14 36:18 130:6 153:16 153:18 154:1 154:13,20 155:8 209:8 upper 160:12 185:18 url 162:9 201:17,18 202:1,3 usage 40:5 use 4:8 22:2 24:15 46:9 55:22 57:4 58:17 63:1,9 63:10,14,17 66:16,18 75:19 76:17 93:1 94:2 114:13,18 116:10,17 124:3 134:10 150:12 152:18 175:13 214:17 used 33:5 37:17 37:18 55:17 56:5 57:2 58:5 62:19 75:13 92:4 100:5,17 100:20 128:19 132:14 133:19 167:12 182:16 186:17,17	200:3 206:20 useful 116:21 206:20 user 72:6 93:8 uses 8:20 70:2 using 45:9 46:11 57:22 84:13 88:8 92:22 97:3,10 112:15 114:13 usually 34:16 71:19 72:2 76:14 83:17 86:13 94:7 95:1 119:20 122:14 140:13 140:18 utc 153:14	veritext 8:4 verse 198:7 version 64:15 65:9 84:13 122:2 162:11 168:19 171:5,8 177:22 178:1,4 178:7,9,20 179:10 185:1,8 186:3,11,14,14 186:14,15 189:1,2,19,19 190:5 192:9,12 213:7,14 versioning 186:7 versions 69:8 69:10 75:15 139:7 148:2,3 178:5 189:16 190:9 200:10 200:17 201:12 versus 25:1 vice 32:15 35:22 view 50:1 visible 163:2 vitae 25:5 vodafone 30:17 31:1,5 32:2 34:4 35:4,13 35:18 36:1,19 37:10 39:18,21 40:1,8,18	126:3 137:3,14 vs 8:8
			w
			wait 11:9 139:6 waived 221:5 want 15:19 29:21 46:8 59:22 60:2,4 66:20 75:3 81:19 83:10 98:14,16,18 99:10,12 113:10 114:1 119:4,4,5 139:10,18 141:20 144:7 150:9 152:16 157:21 167:10 169:12 179:7,7 218:8,9,10 220:15,18 wanted 23:21 24:7 70:9 94:16 114:18 140:1 150:20 164:22 178:14 181:3 wants 38:10 53:10 89:22 warranties 64:3 washington 1:18 2:10,20

8:11	61:7,9,12,14,15	wee 123:6	50:7,17 51:11
way 10:16 29:6	61:19 62:3,6,9	week 141:15	51:21 52:17
46:11 48:6	62:10,17 63:10	158:2 217:11	53:6 55:17
49:14 57:3	63:18 64:6	219:5,7,9,12	56:9,22 57:12
62:1 66:21	65:3,9,14,21	weekends	57:18 58:12
67:1 72:2 76:8	67:2,19,20	218:21	59:20 60:6,19
95:3 102:7	69:20 70:1,4,6	weeks 105:2	63:13 65:17
104:21 110:1	70:8,19 73:2,2	113:13 120:9	66:5,13 68:3
112:8 114:20	74:20 75:7,12	168:22 170:14	69:22 71:1,18
115:7 124:14	75:13 86:14	welcome 21:2	72:10 73:9
127:19 132:7,7	87:19 93:16	61:2 106:2	75:1 76:3,6
144:1,1,3	110:10,14	144:16 184:11	78:13 82:5
146:13 151:4	119:9 120:11	210:2 215:9	83:10 85:5,12
152:11 161:15	120:13,19,20	went 120:18	86:4 88:20
174:8 176:9	121:3,7 129:7	170:13 204:18	92:20 95:13
ways 28:13,16	140:14,16	204:21	96:6,20 97:12
46:10 67:3,5	147:12 148:10	wg1 5:3,9 6:13	101:21 102:21
90:4,7,11	148:19 149:9	7:3 135:15	103:12 104:8
96:21 101:13	149:10,15,18	145:9	108:8,22
103:22 111:14	149:19 150:21	wg2 142:6,8	109:11,22
111:15 124:15	150:21 151:17	withdrawn	114:7,17
we've 59:21	152:5,10 163:6	69:3	116:10,20
118:9 120:14	163:9,13,18,21	witness 8:16,17	117:10,18
124:15 144:7	169:17 187:1	9:13,15,17	118:22 121:11
web 110:9	189:20 204:14	10:3 19:21	127:22 129:13
webb 223:2,15	204:18,22	20:12 23:3	130:11 136:20
webpage	206:2 213:4,7	26:22 27:20	139:3 152:10
162:10 163:1,3	213:8	29:12,21 32:13	153:4 155:11
178:4,19	websites	33:19 35:17	156:8,15
192:12 213:14	147:17,19	36:22 38:7,16	157:15 159:21
website 39:12	148:2,4 149:2	39:4 41:4,11	163:20 174:18
40:2,10 41:9	149:5	43:17 45:6,19	175:10 176:15
43:20 44:2,6	wednesday	46:7,17 47:22	181:16 182:4
48:8,10 50:14	219:14	48:12 49:3,18	182:11 183:2

188:1,22	215:2	world 37:18	215:7,18
189:12 190:4	worked 25:9	39:1	216:10,20
190:15 191:17	27:4 30:4,16	would've 33:20	y
192:19 193:16	36:12 37:11	40:15 71:6	yeah 15:8 16:9
195:9 196:1	40:9 63:11	105:9 111:14	18:17 20:6
198:3,15 199:1	125:6 129:22	151:20 171:10	24:10 32:5,13
205:6 207:14	130:1 137:4	174:13 178:12	40:21 41:20
207:20 214:16	146:21 193:8	178:17,22	59:17 60:6
216:18 217:17	working 30:4	179:3,6 188:20	67:9,18 68:13
217:18 222:4	33:11,14,16	189:2,9,19	68:17 73:13
word 92:4	34:19 41:21	190:1,5 191:2	77:2 79:3
124:3 132:22	42:4,5,7 43:3	191:5,8,9	96:12 98:13
165:9 167:12	44:19 45:11,13	192:4,21 193:3	100:11 106:10
wording 80:22	63:15 71:21	193:4,5,20	109:11 110:21
132:14	92:11 93:4	194:4 206:17	111:7 112:11
words 95:9	110:2 120:3,5	209:10	115:8,17,19
96:2 116:6	128:12 130:12	write 156:20	117:22 126:21
132:7 181:9	130:14,16	writing 150:19	131:19 135:5
work 10:21,22	131:4 133:12	written 9:3	135:12,13
11:2 25:6,18	133:17,20	58:2 199:14	136:20 138:20
25:21 26:1,2,4	134:10,12,16	209:7 210:11	140:10 141:19
26:6 30:11,14	136:21 137:9	wrote 23:8,12	141:22 148:11
39:15 40:15	138:9 140:2	124:21 140:18	161:18 166:11
42:14,14,15	142:10 143:4,6	www.3gpp	169:11 170:19
43:2 53:17	146:6 154:4	4:16	173:10 178:8
83:19 93:2	159:16 161:12	www.3gpp.org	196:20 198:8
102:16,22	161:16 172:16	4:12,14 70:19	201:11 203:4,4
103:4 109:2,3	191:18 197:6	74:5 80:9	210:3,15
127:15,17	199:19 203:17	x	212:16,19
128:2,4 130:2	212:3,10	x 3:1,5 4:1 5:1	217:7 218:10
132:8,10	works 112:17	6:1 7:1 133:1,3	218:18 219:3
136:18 148:6	184:4 186:7	xi'an 7:3	219:15,20,20
156:16 164:10	219:16	211:18 214:20	219:21 220:1
202:4 209:16			

[year - zzz]

year 13:3 29:15 75:2,6,9 76:9 76:11,13 119:21 120:2 125:18 126:7 126:10,12 134:4 135:17 189:13 years 30:17,17 36:3 37:2 44:7 44:11 64:11 125:15,16 126:19,20 146:10 154:17 170:5 175:20 176:4 191:19 194:11 197:4,9 208:3 212:10 yep 16:12 21:17 184:4 199:13 yesterday 18:7 18:7,11,11 44:10 york 1:17 2:9 8:10	153:2,6 zzz 134:9
z	
z 133:1,1,1,1 zang 2:6 60:16 zone 153:12 zte 5:6 99:1 115:9 146:17 146:22 147:1,3	

Federal Rules of Civil Procedure

Rule 30

(e) Review By the Witness; Changes.

(1) Review; Statement of Changes. On request by the deponent or a party before the deposition is completed, the deponent must be allowed 30 days after being notified by the officer that the transcript or recording is available in which:

(A) to review the transcript or recording; and

(B) if there are changes in form or substance, to sign a statement listing the changes and the reasons for making them.

(2) Changes Indicated in the Officer's Certificate. The officer must note in the certificate prescribed by Rule 30(f)(1) whether a review was requested and, if so, must attach any changes the deponent makes during the 30-day period.

DISCLAIMER: THE FOREGOING FEDERAL PROCEDURE RULES ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY. THE ABOVE RULES ARE CURRENT AS OF APRIL 1, 2019. PLEASE REFER TO THE APPLICABLE FEDERAL RULES OF CIVIL PROCEDURE FOR UP-TO-DATE INFORMATION.

VERITEXT LEGAL SOLUTIONS

COMPANY CERTIFICATE AND DISCLOSURE STATEMENT

Veritext Legal Solutions represents that the foregoing transcript is a true, correct and complete transcript of the colloquies, questions and answers as submitted by the court reporter. Veritext Legal Solutions further represents that the attached exhibits, if any, are true, correct and complete documents as submitted by the court reporter and/or attorneys in relation to this deposition and that the documents were processed in accordance with our litigation support and production standards.

Veritext Legal Solutions is committed to maintaining the confidentiality of client and witness information, in accordance with the regulations promulgated under the Health Insurance Portability and Accountability Act (HIPAA), as amended with respect to protected health information and the Gramm-Leach-Bliley Act, as amended, with respect to Personally Identifiable Information (PII). Physical transcripts and exhibits are managed under strict facility and personnel access controls. Electronic files of documents are stored in encrypted form and are transmitted in an encrypted

fashion to authenticated parties who are permitted to access the material. Our data is hosted in a Tier 4 SSAE 16 certified facility.

Veritext Legal Solutions complies with all federal and State regulations with respect to the provision of court reporting services, and maintains its neutrality and independence regardless of relationship or the financial outcome of any litigation. Veritext requires adherence to the foregoing professional and ethical standards from all of its subcontractors in their independent contractor agreements.

Inquiries about Veritext Legal Solutions' confidentiality and security policies and practices should be directed to Veritext's Client Services Associates indicated on the cover of this document or at www.veritext.com.