

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

SAMSUNG ELECTRONICS CO., LTD.,)	
)	
Petitioner,)	
)	
vs.)	Case No.
)	IPR2025-00934
WILUS INSTITUTE OF STANDARDS AND)	
TECHNOLOGY INC.,)	
)	
Patent Owner.)	
-----)	

REMOTE DEPOSITION OF
CHRISTOPHER J. HANSEN
FEBRUARY 10, 2026

Reported by:
Brooke Silvas, CSR 10988
Job No. 1483882

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Deposition of CHRISTOPHER J. HANSEN, taken
remotely via Zoom, commencing at 9:03 a.m.,
on Tuesday, February 10, 2026, before
Brooke Silvas, Certified Shorthand Reporter
No. 10988.

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2 (All appearances are via videoconference.)

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I N D E X

WITNESS: CHRISTOPHER J. HANSEN

EXAMINATION BY

PAGE

MR. MILKEY

5, 28

MR. STEPHENS

25

E X H I B I T S

(None)

I N S T R U C T I O N N O T T O A N S W E R

(None)

I N F O R M A T I O N T O B E S U P P L I E D

(None)

1 proceeding?

2 A Yes, I did.

3 Q Okay. And do you have a copy of the
4 declaration that you submitted in this proceeding?

5 A Yes. I have a printed copy on my desk
6 here.

7 Q Okay. Feel free to refer to any clean
8 versions of materials that you have in this case.
9 You don't need to use the ones that I'm going to
10 provide. But just for the benefit of the
11 reporter, I'm going to upload a few exhibits into
12 the chat. The first of these exhibits is
13 Exhibit 1001.

14 A Uh-huh.

15 Q Which is the '210 patent. Then we also
16 have your declaration, which is Exhibit 1003. And
17 then the prior art references, Exhibits 1004,
18 which is the 802.11 draft. And Exhibit 1013,
19 which is the -- I'm probably going to pronounce
20 this wrong but the Bharadwaj reference. Feel free
21 to refer to any of these materials or any other
22 materials during the proceeding as you're
23 answering your questions.

24 MR. STEPHENS: Counsel, just for the
25 record, Dr. Hansen had submitted I think two

1 declarations initially with this proceeding. So I
2 understand we will be referring to Exhibit 1003
3 today. Is that correct?

4 MR. MILKEY: That's correct.

5 MR. STEPHENS: Thank you.

6 BY MR. MILKEY:

7 Q So, Dr. Hansen, what -- how did you
8 prepare your Exhibit 1003 declaration in this
9 proceeding?

10 A Yeah. As I recall, I discussed, you
11 know, the technical issues with counsel. And we
12 drafted this written document. And the opinions
13 in it are mine, my opinions.

14 Q Okay. What materials did you review in
15 preparing the opinions set forth in Exhibit 1003?

16 A Starting on paragraph 50, I have a
17 section materials considered and a list of
18 documents and a table there. Starting -- pages 17
19 through -- what's the number? It is a large
20 number. Actually through page 19.

21 Q Okay. Do you recall reviewing any other
22 materials informing your opinions in Exhibit 1003?

23 A I don't recall any other specific
24 materials. But it's possible I did.

25 Q Did you -- did you prepare for today's

1 deposition?

2 A Yes, I did.

3 Q And how did you prepare for today's
4 deposition?

5 A I met with counsel. And I reviewed
6 the -- my declaration.

7 Q Other than your declaration, did you
8 review any other materials in preparation for
9 today's deposition?

10 A Yes. I believe I reviewed some of the
11 other exhibits.

12 Q Do you recall which exhibits you
13 reviewed?

14 A I believe I reviewed Exhibit 1001, the
15 '210 patent. I also believe I reviewed IEEE
16 802.11ax Draft 1.0, Exhibit 1004. And I did
17 review Exhibit 1013, the Bharadwaj patent.

18 Q Okay. I would like to discuss it at more
19 of a high level in discussing the differences and
20 the similarities between the primary prior art
21 references that you rely on in your opinion. And
22 in doing so, I want to direct you to page 86 of
23 your declaration. And if you could let me know
24 when you're there.

25 A Yes. I'm on page 86.

1 Q Okay. And do you see that towards the
2 bottom of page 86, you provide an annotation of
3 the Bharadwaj reference?

4 A Yes, I see that.

5 Q Okay. And then on page 68 of your
6 declaration, you provide a different annotation of
7 a different reference. This is an annotation of
8 the 802.11ax D1.0 reference.

9 And my question is, is there any
10 substantive difference between what is being
11 indicated by these two different annotations that
12 you're providing in your declaration?

13 MR. STEPHENS: Objection. Form.

14 THE WITNESS: Yeah. I don't know what
15 you mean by substantive difference.

16 BY MR. MILKEY:

17 Q Okay. Both of these annotations describe
18 bits 18 through 22 of the HE-SIG-A field of a
19 HE-MU-PPDU; correct?

20 A Well, both references are -- I mean, they
21 have those -- it appears that they have those bit
22 numbers in them. But, you know, they're -- these
23 are snippets. So I'm not -- I'm not certain of --
24 I'm not certain that they -- you know, they're
25 necessarily describing exactly the same thing.

1 Q So sitting here today, you don't know
2 whether the diagrams on page 68 and 86 are
3 describing the same thing?

4 A I would say sitting here today, they're
5 clearly related and, you know, share information
6 that is similar. But I'm not certain if they're
7 entirely or exactly the same thing.

8 Q Okay. Sitting here today, are you able
9 to offer any opinions regarding any differences
10 between the functionality of the bits described in
11 your annotations on pages 68 and 86 of your
12 declaration?

13 A Yeah. I don't know how to answer that
14 question. These are -- you know, these are
15 descriptions and tables. But -- yeah, I -- yeah.
16 I'm not certain how to answer that question.

17 Q Are you aware of any reason why a POSITA
18 would have understood bits 18 through 21 in the
19 802.11ax D1.0 reference to operate any differently
20 than bits 82 to 21 described in the Bharadwaj
21 reference?

22 A I'm not aware of a difference, but there
23 could be -- there could be different -- I mean,
24 they're different documents. One is a draft in a
25 standard and the other one is a patent. So, I --

1 you know, they're -- you know, there could be
2 differences between them.

3 Q Okay. Feel free to refer to the actual
4 substance of your opinions. But if you could go
5 to page 2 of your declaration, which is the table
6 of contents. And let me know when you're there.

7 A Yes. I'm on page 2.

8 Q And you see on pages 2 and 3 of your
9 declaration in the table of contents that each of
10 your grounds 1A and 1B is based, at least in part,
11 on the 802.11ax_D1.0 reference?

12 A Yes. Yes, I see that.

13 Q Okay. So I want to ask you about the
14 title of that reference. What does the D1.0 at
15 the end of that reference signify?

16 A My understanding is the D1.0 refers to --
17 it's the Draft 1.0. Draft 1.

18 Q Okay. Do you know if there were any
19 other revisions to this draft beyond version 1.0?

20 A Yes. I believe IEEE 802.11ax developed
21 other drafts after Draft 1.0.

22 Q Okay. I'm going to direct you to a
23 paragraph in the middle of a section of your
24 declaration. Feel free to orient yourself once
25 you get there. If you could please turn to

1 paragraph 124 of your declaration and let me know
2 when you're there.

3 A Yes, I'm there.

4 Q Okay. And in paragraph 124, you cite to
5 official comments on the draft specification;
6 correct?

7 A Yes, I believe I do that. Yes.

8 Q Okay. But who -- who is able to submit
9 official comments on the draft of this
10 specification?

11 A I believe -- I know that IEEE 802.11
12 voting members can submit comments. And that
13 extends also to, you know, other related groups.
14 And it may be that -- it may be a larger set of
15 people can submit comments.

16 Q Would comments typically be submitted by
17 individuals having the level of a person of
18 ordinary skill in the art?

19 A I'm not certain if all comments would be
20 from a person of ordinary skill in the art.
21 Certainly a large number would be, but I'm not
22 certain that all -- all of the comments would be.

23 Q Okay. You reference a specific comment
24 CID5264 in your declaration. Do you know if that
25 comment was submitted by a person of ordinary

1 skill in the art?

2 A Yes, I do believe that was a person of
3 ordinary skill in the art.

4 Q And what is the basis for that
5 understanding?

6 A Can I open the -- that particular
7 document?

8 Q Yeah. Go ahead. And I'll -- it's a
9 large document. But I'll upload it as well.

10 A If you can share the comment.

11 Q It's -- the formatting is pretty --
12 pretty strange, but I'll upload it. It's going to
13 take a while for --

14 Okay. So I have just uploaded
15 Exhibit 1035 into the chat.

16 And if it is helpful, I believe this is
17 on page PDF page 142 --

18 A Yes.

19 Q -- of this document.

20 A So I have it here. I have the -- can you
21 repeat the question?

22 Q Yeah. How do you know whether the
23 comment CID5264 was submitted by a person of
24 ordinary skill in the art?

25 A Right. So I've -- I know -- the

1 commenter, Dorothy Stanley, I have known her for
2 probably 20 -- more than 20 years. And she is
3 definitely a person of ordinary skill in the art
4 or probably more than that. But yes. Uh-huh.

5 Q And after these comments are submitted,
6 who has access to those comments?

7 A Just a question. Are you referring to
8 comments such as this one?

9 Q Correct.

10 A Just -- okay. The comments -- my
11 understanding is comments such as this one are
12 organized into -- into a large spreadsheet
13 document that's been placed on the IEEE file
14 server. So the comments are all public. They're
15 available to everyone.

16 Q Okay. I've also uploaded Exhibit 1036
17 into the chat. Again, feel free to refer to any
18 copies that you have. If you could please open
19 that exhibit and let me know when you have it.

20 A Yes, I have the document up here.

21 Q Okay. Do you see at the -- first of all,
22 what is Exhibit 1036?

23 A It's -- it looks like a contribution to
24 802.11.

25 Q Okay. What is the purpose of

1 contributions to 802.11, such as this?

2 MR. STEPHENS: Objection. Form.

3 THE WITNESS: Well, the IEEE 802.11
4 standards body is an open standards body, and it
5 runs on contributions. So contributions are made
6 by participants in the meetings. And that's how
7 standards are drafted, based on contributions.

8 BY MR. MILKEY:

9 Q Okay. Does this document propose changes
10 to the 802.11 draft?

11 A It appears to propose changes to the
12 IEEE 802.11.

13 Q Okay. Is Exhibit 1036 proposing a change
14 to 802.11ax D1.0?

15 A I'm not certain which part of the
16 document you're referring to. Are you --

17 Q Which -- so you said that -- you said
18 that this appears to propose changes to IEEE
19 802.11. What portions of this document do you
20 understand are proposing changes to IEEE 802.11?

21 A I see proposals on page 3. The bottom of
22 page 3. And the bottom of page 2.

23 Q Okay. And so for the bottom of page 2
24 change, what version of 802.11 is that proposing a
25 change for?

1 A Reading this document, it's not entirely
2 clear. But given that it's addressed to -- it
3 says TGax editor, that would imply that it could
4 be the -- it could be 802 -- one of the 802.11ax
5 drafts.

6 Q Okay. And do you know which of the
7 802.11ax drafts it is proposing change to?

8 A Right. It appears that it is Draft 1.1.
9 It says Draft 1.1.

10 Q Okay. And then regarding the proposed
11 change on the bottom of page 3, do you know which
12 version of the 802.11ax standard that this is
13 proposing a change for?

14 A Well, the paragraph shows it as -- as a
15 proposal to change -- a change to Draft 1.1.

16 Q Can you please read the last sentence of
17 page 3 of Exhibit 1036 into the record.

18 A Fields of the User field for a
19 non-MU-MIMO allocation.

20 Q I think that's the last parenthesis.
21 I'll read this, and you let me know if I have this
22 correct.

23 Okay. So do you see that the -- the last
24 paragraph on page 3 of Exhibit 1036 states, "When
25 the SIGB Compression field in the HE-SIG-A field

1 of an HE-SIG-A field of an HE MU PPDU is set to 1
2 (indicating full bandwidth MU-MIMO transmission)
3 and the number of HE-SIG-B symbols or MU-MIMO
4 users field in the HE-SIG-A field of an HE-MU-PPDU
5 is set to 0 (indicating 1 MU-MIMO user) the User
6 Specific field in the HE-SIG-B field consists of a
7 single User Block field containing one User field
8 for a non-MU-MIMO allocation as shown in
9 Table 28-22 (Fields of the User field for a
10 non-MU-MIMO allocation)?"

11 A Right. I believe you read this
12 correctly.

13 Q Thank you.

14 So is it your opinion that in the context
15 of 802.11ax D1.0, a person of ordinary skill in
16 the art would have not understood that the number
17 of MU-MIMO users cannot be one in the HE-SIG-A of
18 the HE MU PPDU?

19 MR. STEPHENS: Objection. Form.

20 THE WITNESS: Yeah. I don't understand
21 the question. I'm not sure who you're referring
22 to in particular.

23 BY MR. MILKEY:

24 Q Okay. I'm asking about the understanding
25 of a POSITA. You understand that you've provided

1 opinions regarding how a POSITA would understand
2 certain disclosures in 802.11ax D1.0; correct?

3 A My declaration references Draft 1.0 and
4 provides opinions based on what I believe a POSITA
5 would understand, yes.

6 Q Okay.

7 A Uh-huh.

8 Q In your opinion, would a POSITA have
9 believed that the number of MU-MIMO users cannot
10 be one in the HE-SIG-A of the HE-MU-PPDU in the
11 context of 802.11ax D1.0?

12 MR. STEPHENS: Objection. Form.

13 THE WITNESS: Yeah. I don't -- I don't
14 recall ever stating that. It doesn't --

15 BY MR. MILKEY:

16 Q Do you have any opinion one way or the
17 other whether a POSITA would have believed that
18 the number of MU-MIMO users cannot be one in the
19 HE-SIG-A of the HE-MU-PPDU in the context of
20 802.11ax D1.0?

21 MR. STEPHENS: Objection. Form.

22 THE WITNESS: Referring to paragraph
23 108 -- 108 of my declaration, I state, "Put simply
24 when the number of MU-MIMO users indicated is one
25 (the value of the HE-SIG-A field is zero), then

1 the receiver identifies the format of the HE-SIG-B
2 user field for a single-user allocation." That
3 would be -- that would indicate one user.

4 BY MR. MILKEY:

5 Q Okay. So it is your opinion that a
6 POSITA would have understood that the number of
7 MU-MIMO users can be one in the HE-SIG-A of the
8 HE-MU-PPDU?

9 A Well, what I believe I'm referring to in
10 paragraph 108 is that a POSITA reading Draft 1.0
11 would -- would find it obvious that this -- the
12 value in the field could be zero and that that
13 would indicate a number of MU-MIMO users as one.

14 Q Okay. So it is your opinion that a
15 POSITA would believe that the number of
16 MU-MIMO users can be one -- in other words, a
17 value of zero -- in the HE-SIG-A field of the
18 HE-MU-PPDU?

19 A I think what I'm stating is that based on
20 reading that Draft 1.0, a POSITA would find it
21 obvious to set that value to zero, indicating one
22 user.

23 Q Okay. Is it your opinion that that is
24 disclosed by the 802.11ax D1.0 standard?

25 A Once again, I think reading the standard,

1 it would be obvious to -- it would be obvious that
2 placing a value of zero in that field would
3 indicate one user.

4 Q Do you disagree that as in 802.11ax, as
5 drafted, the number of MU-MIMO users cannot be one
6 in HE-SIG-A of HE-MU-PPDU?

7 MR. STEPHENS: Objection. Form.

8 THE WITNESS: Yeah. I don't -- I don't
9 understand the question. Can you repeat the
10 question?

11 BY MR. MILKEY:

12 Q Yeah. Do you disagree that in 802.11ax,
13 as drafted, the number of MU-MIMO users cannot be
14 one in HE-SIG-A of HE-MU-PPDU?

15 MR. STEPHENS: Objection. Form.

16 THE WITNESS: Yeah. I'm not certain
17 which 802.11ax draft you're referring to.

18 BY MR. MILKEY:

19 Q I'm referring to the 802.11ax D1.0
20 specification that you're relying on for your
21 ground 1A and 1B.

22 A Okay. And as I have stated, the
23 802.11ax -- I believe a POSITA reading 802.11ax
24 Draft 1.0 would find it obvious that this the
25 number of MU-MIMO users bit field could be set to

1 zero, indicating one. And that's the -- that's
2 the opinion that I have here in my draft. I'm --
3 I'm not certain that -- or I haven't really
4 analyzed, you know, the question that you're
5 asking.

6 Q Okay. Do you describe anywhere in your
7 declaration why it would be obvious to do
8 something that cannot be done?

9 MR. STEPHENS: Objection. Form.

10 THE WITNESS: I'm not aware -- I'm not
11 aware of that specifically.

12 BY MR. MILKEY:

13 Q Okay. Could you please turn to page 75
14 of your declaration and let me know when you're
15 there.

16 A Yes, I'm there.

17 Q Okay. When you see page 75 includes the
18 claim language from Elements 1.5 through 1.7 of
19 Claim 1 of the '210 patent?

20 A Yes, I see that here.

21 Q Okay. And just for the record, feel free
22 to refer to Exhibit 1001, the full '210 patent in
23 answering your questions as well. I thought page
24 75 was useful because it lays out the limitations
25 with -- with 1.5, 1.6, 1.7 identifiers.

1 So my question is, do you agree that for
2 limitation 1.7 to be practiced, the SIG-B
3 compression field of the HE-SIG-A must indicate
4 full bandwidth MU-MIMO transmission as required by
5 limitation 1.5?

6 MR. STEPHENS: Objection. Form. Scope.

7 THE WITNESS: Yeah. Can you repeat the
8 question?

9 BY MR. MILKEY:

10 Q Yeah. Is it possible for limitation 1.7
11 of the '210 patent to be practiced even when the
12 SIG-B compression field of the HE-SIG-A does not
13 indicate full bandwidth MU-MIMO transmission?

14 MR. STEPHENS: Same objections. Form.
15 Scope.

16 THE WITNESS: Yeah. I don't believe
17 I've -- I've done any analysis on that.

18 BY MR. MILKEY:

19 Q Okay. Do you see the limitation 1.7
20 refers to, quote, the number of MU-MIMO users,
21 unquote?

22 A Yes, I see that there.

23 Q Okay. What is your understanding of
24 what, quote, the number of MU-MIMO users, unquote,
25 is referring to in limitation 1.7?

1 A I believe it is referring to the -- an
2 earlier reference to MU-MIMO users in the claim.

3 Q Okay. Is it your opinion that that is
4 referring to, quote, a number of MU-MIMO users
5 indicated by a subfield of the HE-SIG-A, unquote,
6 as recited in limitation 1.5?

7 A I'm not certain I've made specific
8 reference to that in my declaration. But I
9 believe that is correct.

10 Q Okay. If you open up Exhibit 1004, the
11 802.11ax D1.0 reference. Do you see that at the
12 top of the page, it says November 2016? The top
13 of the first page.

14 A Yes, I see it says November 2016.

15 Q Okay. Is it your opinion that a person
16 of ordinary skill in the art would have had access
17 to this reference as of November 2016?

18 MR. STEPHENS: Counselor, we have another
19 deposition scheduled for his opinions on the
20 public accessibility of this document. I think
21 that is beyond the scope of our agreed testimony
22 for today.

23 MR. MILKEY: I promise this will be very,
24 very quick. And we may, in fact, be able to
25 cancel tomorrow's deposition. I have two

1 questions about this. And it relates to this
2 other reference. So if we can go forward with
3 this, I would appreciate it. I understand. I
4 don't want to duplicate stuff.

5 Q So, Dr. Hansen, is it your opinion that a
6 person of ordinary skill in the art would have
7 access to the 802.11ax D1.0 reference as of
8 November 2016?

9 A My understanding is -- I have, you know,
10 two separate declarations on this topic. I would
11 have to -- yeah, I don't recall exactly what -- I
12 don't recall exactly what, you know, is in those
13 documents.

14 Q Do you see, if you open up Exhibit 1013
15 of the Bharadwaj reference, that this has a filing
16 date of December 21st, 2016?

17 A Yes, I see that. Yeah, I see that date.
18 The filing date, yes.

19 Q Okay. Assuming that the 802.11ax D1.0
20 reference was publicly available before
21 December 21st, 2016, would a POSITA have had
22 access to that reference as of the filing date of
23 the Bharadwaj reference?

24 A So if a -- can you repeat the question?

25 Q Yeah. Would a POSITA have had access to

1 publicly available 802.11 drafts as of the time
2 that they were made publicly available?

3 MR. STEPHENS: Just preserving for the
4 record, objection to scope.

5 THE WITNESS: Yes. I believe a POSITA
6 would have access to a publicly accessible
7 document.

8 MR. MILKEY: Okay. Okay. I'll pass the
9 witness.

10 MR. STEPHENS: Can we take a 15-minute
11 break, reconvene at 1:15 Eastern?

12 MR. MILKEY: Yes.

13 MR. STEPHENS: Okay. Thanks. Off the
14 record.

15 (A recess was taken.)

16 MR. STEPHENS: Thank you.

17

18 EXAMINATION

19 BY MR. STEPHENS:

20 Q Dr. Hansen, do you -- do you recall being
21 asked questions about Exhibit 1036?

22 A Yes, I do.

23 Q I'm going to ask you a few questions
24 about that document. Do you have a copy available
25 that you can reference?

1 A Yes. I have it open here.

2 Q All right. I would like to refer to
3 page 3 of the PDF.

4 A Yes.

5 Q And at the bottom of page 3, there is a
6 paragraph that's led by the header "Changes to
7 subclause 28.3.10.8.1 related to CIDS:5264." Do
8 you see that?

9 A Yes, I do.

10 Q And just beneath that line, it states,
11 "TGax Editor: Please add the underlined texts on
12 page 294 line 37 of D1.1 as following." Did I
13 read that correctly?

14 A Yes, that's correct.

15 Q And underneath that text, there's a
16 paragraph with some text underlined. What does
17 the underlined text state?

18 A The underlined text says, "a single User
19 Block Field containing one."

20 Q What is your understanding of the nature
21 of this underlined text?

22 MR. MILKEY: Objection to form. Outside
23 the scope.

24 THE WITNESS: Right. So the -- this --
25 this text here is -- is the proposed change, this

1 addition text to Draft 1.1. And it appears to be
2 a clarification to the -- or a -- you know, an
3 editorial clarification to the Draft 1.1.

4 BY MR. STEPHENS:

5 Q What is an editorial clarification?

6 MR. MILKEY: Objection to form. Outside
7 the scope.

8 THE WITNESS: In the standards process,
9 the standards relevant process, oftentimes
10 comments are made and address -- that don't
11 involve any technical change to the draft. In
12 other words, not a technical change to what is in
13 the standard. They're just additions to make the
14 standard easier to read.

15 BY MR. STEPHENS:

16 Q And is it your opinion that the text
17 reflected on the bottom of page 3 is an editorial
18 change?

19 MR. MILKEY: Objection to form.

20 THE WITNESS: Yes, I believe this is an
21 editorial change.

22 BY MR. STEPHENS:

23 Q Why do you believe it is an editorial
24 change?

25 MR. MILKEY: Objection to form. Outside

1 the scope.

2 THE WITNESS: I think if you look above,
3 where it says "Discussion," you know, it -- it
4 states that it is proper to add a description to
5 clarify after related description. So that --
6 that implies to me that the intent of the change
7 is to clarify rather than -- rather than to
8 provide a technical change to the standard.

9 MR. STEPHENS: Thank you. No further
10 questions.

11 MR. MILKEY: All right. Just a few
12 questions for me.

13

14 FURTHER EXAMINATION

15 BY MR. MILKEY:

16 Q Dr. Hansen, you testified just now that
17 you believe that the underlined portion at the
18 bottom of page 3 of Exhibit 1036 is an editorial
19 change; correct?

20 A Yes, I believe that's correct.

21 Q Okay. It is an editorial change to what
22 specifically?

23 A It -- it would be an editorial change to
24 the working -- I mean, in this case, Draft 1.1,
25 the working draft at the time.

1 Q Okay.

2 A For 802.11ax.

3 Q Okay. All right. I thought that your
4 invalidity opinions relied on version Draft 1.0 of
5 the draft. Isn't that correct?

6 A My declaration and other documents refer
7 to Draft 1.0 of 802.11ax.

8 Q Do you know whether the addition -- the
9 underlined addition in page 3 of Exhibit 1036
10 would have been considered an editorial change to
11 version 1.0 of the 802.11ax draft specification?

12 MR. STEPHENS: Objection to form. Scope.

13 THE WITNESS: Well, my understanding is,
14 you know, based on reading this here, that this --
15 this comment was made -- this was a comment that
16 was made on Draft 1.0. And then later -- and, you
17 know, at the time the comment was addressed, it --
18 as described here, the comment was addressed --
19 the actual text change was made to Draft 1.1. But
20 the comment was made on Draft 1.0.

21 MR. MILKEY: I'll object as
22 nonresponsive.

23 Q Dr. Hansen, my specific question is, do
24 you know whether the underlined addition in page 3
25 of Exhibit 1036 would have been considered an

1 editorial change to version 1.0 of the 802.11ax
2 draft specification?

3 MR. STEPHENS: Objection to form. Scope.

4 THE WITNESS: Yeah. I don't know --
5 other than -- as I stated previously, this
6 resolution was made in response to a comment on
7 Draft 1.0. The comment -- the resolution as
8 drafted was drafted based on -- was drafted as a
9 change to 1.1. I don't -- I'm not certain how to
10 answer it in a way other than that.

11 BY MR. MILKEY:

12 Q Okay. So part of the last paragraph on
13 page 3 of Exhibit 1036 states that -- there's a
14 scenario, "When the SIG-B Compression field in the
15 HE-SIG-A field of an HE-MU-PPDU is set to 1 and
16 the number of HE-SIG-B Symbols or MU-MIMO users
17 field in the HE-SIG-A field of an HE-MU-PPDU is
18 set to 0 (indicating one MU-MIMO user)." Do you
19 see that?

20 A Yes. I see those words there.

21 Q Okay. Are you aware of any equivalent
22 teaching in 802.11ax version 1.0 of the draft
23 specification that indicates that the HE-MU-PPDU
24 field can indicate one MU-MIMO user?

25 MR. STEPHENS: Objection. Form. And

1 beyond the scope of redirect.

2 THE WITNESS: Right. As -- as I state in
3 my declaration, paragraph 108, "Put simply when
4 the number of MU-MIMO users indicated is 1 (the
5 value of the HE-SIG-A field is zero), then the
6 receiver identifies the format of the HE-SIG-B
7 user field for a single-user allocation. One
8 user."

9 BY MR. MILKEY:

10 Q So, Dr. Hansen, I understand that's what
11 your declaration states. I'm asking a slightly
12 different question.

13 So specifically, this bottom paragraph on
14 page 3 of Exhibit 1036 states that the MU-MIMO
15 Users field can indicate one MU-MIMO user. I
16 didn't see anything like that in the 802.11ax D1.0
17 draft. Did I miss something?

18 MR. STEPHENS: Objection. Form. Scope.

19 THE WITNESS: Yeah. I really don't --
20 don't know the answer to that. I know that --
21 you know, what I have stated previously.

22 MR. MILKEY: Okay. No further questions.

23 MR. STEPHENS: No questions.

24 MR. MILKEY: All right. Let's go off the
25 record.

1 (The proceedings concluded at 10:32 a.m.)

2 -oOo-

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6 I have read the foregoing deposition
7 transcript and by signing hereafter, subject to any
8 changes I have made, approve same.

9

10 Dated: _____

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13

(Signature of Deponent)

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DEPOSITION OFFICER'S CERTIFICATE

STATE OF CALIFORNIA)
) SS.
COUNTY OF RIVERSIDE)

I, BROOKE SILVAS, a certified shorthand reporter for the State of California, do hereby certify:

That prior to being examined, the witness named in the foregoing deposition solemnly stated to testify to the truth, the whole truth, and nothing but the truth;

That the said deposition was taken down by me remotely in stenotype at the time and place therein stated and thereafter reduced to typewriting under my direction, and that the deposition transcript is a true and correct record of the proceedings here held.

I further certify that I am not of counsel or attorney for any of the parties hereto or in any way interested in the event of this cause and that I am not related to any of the parties thereto.



Dated: February 10, 2026

Brooke Silvas

BROOKE SILVAS

CSR No. 10988

1 DEPOSITION OFFICER'S CERTIFICATE

2

3 STATE OF CALIFORNIA)

) SS.

4 COUNTY OF RIVERSIDE)

5

6 I, Brooke Silvas, hereby certify:

7 I am the deposition officer that
8 stenographically recorded the testimony in the
9 foregoing deposition.

10 Written notice pursuant to Code of Civil
11 Procedure, Section 2025.520(a), having been sent, the
12 deponent took the following action within the allotted
13 period with respect to the transcript of the
14 deposition:

15 () In person, at the office of the
16 deposition officer, made the changes set forth on the
17 original of the transcript. (The parties attending
18 the deposition have been notified of said changes.)

19 () Approved the transcript by signing it.

20 () Refused to approve the transcript by
21 not signing it.

22 () By means of a signed letter, made the
23 changes and approved or refused to approve the
24 transcript as set forth therein. (Said letter has
25 been attached to the original transcript and copies

1 thereof mailed to all parties attending the
2 deposition.)

3 () Failed to approve the transcript within
4 the allotted time period.

5

6 Dated: February 10, 2026

7

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Brooke Silvas

BROOKE SILVAS

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CSR NO. 10988

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