UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC,

Petitioner

v.

GEOSCOPE TECHNOLOGIES PTE. LTD.

Patent Owner

Case No. IPR2023-01209

Patent 7,561,104

Case No. IPR2023-01210

Patent 8,400,358

Case No. IPR2023-01211

Patent 8,786,494

DEPOSITION OF MARK A. STURZA

TAKEN REMOTELY BY VIDEOCONFERENCE

August 27, 2024

Reported by: Mary Ann Payonk

Job No. 1578

GOOGLE EXHIBIT 1031
Google v. Geoscope
IPR2023-01212

August 27, 2024
8:50 a.m. Pacific

DEPOSITION OF MARK A. STURZA, reported remotely by videoconference pursuant to Notice and agreement of counsel, stenographically reported by Mary Ann Payonk, Shorthand Reporter and Notary Public, CA CSR No. 13431.

All attorneys participating in this deposition acknowledge that the reporter is not physically present in the deposition room and there is no objection to the oath being administered remotely.

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THE REPORTER: Before I place the witness under oath, let me give you my California license number, which is 13431. Now I'll swear the witness.

MARK ALAN STURZA,

called as a witness, having been duly sworn, was examined and testified as follows:

EXAMINATION

BY ATTORNEY LEE:

Q. Good morning, Mr. Sturza. How are you today?

A. Good morning. Doing well, thank you.

Q. Can you state your full name for the record, please.

A. Mark Alan Sturza.

Q. Mr. Sturza, my name is Roger Lee, and I represent the petitioner in these IPR proceedings. For the record, we are conducting a deposition for three IPR proceedings today. The proceedings are IPR2023-01209, IPR2023-01210, and IPR2023-01211.

And you are testifying in these three proceedings today. Do you understand that?

A. Yes, I do.

Q. I'm going to be asking you questions throughout the day concerning these IPR proceedings.

Do you understand that that's why you're here

today?
A. Yes, I do.
Q. I'll first go over some ground rules.
Do you understand that you're providing your testimony under oath and you are expected to tell the truth?
A. I do.
Q. And is there any reason why you would not be able to provide complete and accurate testimony today?
A. No, there's no reason.
Q. Have you taken any medication that might impair your ability to provide complete and accurate testimony today?
A. No, I've not.
Q. If I ask you a question that is unclear or that you don't understand, I would ask that you ask me to clarify the question and not your counsel.
Do you understand that?
A. Yes, I understand that.
Q. If you do not tell me otherwise, I will assume that you understand the question.
Do you understand that?
A. Yes, that's fair.
Q. Since the questions and answers are being typed by the court reporter, I would ask that you

audibly answer every question. So a nod of the head is not sufficient. We would need a "yes" in that case.

Do you understand?

A. Yes, I understand that.

Q. We can take breaks at any time that you would like so long as there is not a question that is pending.

Do you understand that?

A. Yes, I understand that.

Q. Mr. Sturza, did you prepare for your cross-examination today?

A. Yes, I did prepare.

Q. Did you look at any documents in preparing for your cross-examination today?

A. Yes. I reviewed the declarations in this matter. I refreshed my memory on the patents and some of the other documents.

Q. Okay. So you reviewed the declarations in this case, your declarations?

A. My declarations, yes.

Q. And you reviewed the patents.

Is that correct?

A. Yes, I, you know, just refreshed my memory on the patents.

Q. Were there any other documents that you reviewed in preparation for your cross-examination

today?

A. I -- I did look at a variety of the documents that are referenced in my declaration. I looked at the Markman order from the district court that's referenced in my declarations. I looked at some others. I don't remember specifically which ones.

Q. Do you know if all the documents that you reviewed today are exhibits cited in your declaration?

A. Yes. All the documents I reviewed are cited in the declaration as well as, of course, the declaration itself.

Q. Did you review any documents in your preparation for your cross-examination today that are not cited in your declaration?

A. Not that I'm aware of.

Q. Did you speak to anybody in preparing for your cross-examination today?

A. Yes. I spoke with Mr. McBride.

Q. Did you speak with anybody else?

A. No, I did not.

Q. Do you know how much time you spent preparing for your cross-examination today?

A. I don't have a -- I'd have to check my time records for an exact answer.

Q. Do you have a rough idea?

A. It would be tens of hours. Perhaps, you know, 10 or 20, something like that, between the four declarations.

Q. When did you start preparing for your cross-examination today?

A. Well, a few -- I started preparing a few weeks ago. I don't remember the specific date.

Q. Did you spend more than 100 hours in preparing for your cross-examination today?

A. No, I don't believe that I spent more than 100 hours.

Q. Did you spend more than 50 hours?

A. Again, I would have to check my time records, but I don't believe it was that many.

Q. Are you being compensated for your testimony?

A. Yes, I am being compensated.

Q. And what is your rate?

A. My rate's $500 an hour.

Q. Do you know who is paying for your compensation?

A. Ultimately, I believe it's Geoscope. And I'm being paid through a law firm.

Q. And do you know how much you've billed to date in connection with these proceedings?

A. No. I would have to check my billing records.

Q. Do you have a rough idea?
A. No, I don't.
Q. Is it more than $1,000?
A. Yes, that would be two hours' my time. It was definitely more than that.
Q. Is it more than $10,000?
A. That would be 20 hours. Are we talking about the preparation for this deposition, or is your question with reference to preparing the declarations?
Q. The entirety of proceedings, including your declaration.
A. Okay. So yeah, I don't have an exact number. It's been over a period of time, you know, for preparing the declarations themselves. There's, I believe, a -- referring to three of them at this time. And, you know, I would guess that it exceeded 100 hours. But again, I'm not sure.
Q. Okay. Have you been involved in any other legal proceedings as an expert witness?
ATTORNEY McBRIDE: Objection. I just want to counsel the witness here to the extent that there's -- this involves a privileged matter, I'd counsel the witness not to disclose any privileged information. But to the extent -- I'm sorry, strike that. Strike that objection.

THE WITNESS: I believe the question was if I've been involved in providing testimony in any other matters as an expert.

ATTORNEY LEE: Yeah, I'll repeat the question.

THE WITNESS: Okay.

BY ATTORNEY LEE:

Q. Have you been involved in any other legal proceedings as an expert witness?

A. Yes, I have been involved in other proceedings as an expert.

Q. What proceedings were they?

A. I -- there was many of them over the years. I believe they're contained in my CV, which I believe is included in this matter. I don't recall all of them.

Q. How many proceedings have you been involved in in the capacity as an expert witness?

A. Again, without looking at the record, you know, my -- my records, I would say somewhere between 12 and 20.

Q. Did your work as an expert witness in these legal proceedings include work in district court litigation?

A. Yes. Most of my expert work has been involved with district court litigation.

Q. Have you done expert work in IPRs before,

aside from these matters?

A. Yes, I recall -- I don't recall specifically which IPR, but I do -- I was involved previously in one or two IPRs.

Q. In the one or two IPRs that you were an expert witness in, do you recall if you represented the petitioner or the patent owner?

A. No, I do not.

Q. Have you ever been deposed before?

A. Yes, I've been deposed before.

Q. In your context as an expert witness, have you been deposed before?

A. Yes, I've been deposed as an expert witness.

Q. Okay. How many times?

A. Again, I would have to refer back to my CV and a list of expert engagements I keep. But I would guess again somewhere between 12 and 20 times.

Q. Do you recall if any of those depositions related to IPR matters?

A. I believe that some of them were related to IPR matters, but I'm not sure.

Q. Okay. So can you tell me when you first started working on these IPR proceedings?

A. Yeah, I believe it was earlier this year, but I'm not -- I don't have a specific date. I don't recall

a specific date.

Q. Do you recall speaking to anyone during the course of preparing your original declarations?

A. Yes. I spoke to counsel when I was preparing my original declarations, yes.

Q. Do you recall the names of counsel that you spoke with?

A. It was Mr. Desari.

Q. Can you spell that?

A. No, I'm sorry, I don't -- I'm not sure how to spell it.

Q. Okay. But can you say that again?

A. I believe it's Desari.

Q. Desari?

A. Yes.

Q. Okay. Did you speak to anybody else?

A. That's the only person I recall in preparing these declarations that we're discussing.

Q. Okay. So, Mr. Sturza, tell me a little bit about your technical experience.

A. Well, I have, you know, over 45 years' or so experience in position location navigation systems, communications systems. I provided a brief summary in my declaration.

Q. And do you have any industry experience

working on radio communications?

A. Yes, I do.

Q. Okay. What was that industry experience?

A. Well, over the years, I have been involved in many different systems, from point to point, fixed microwave, Wi-Fi. Been involved with cellular, WiMax. LNDS, satellite communications. And I'd have to refer to my CV to see all of the different things I have been involved with.

ATTORNEY LEE: Okay, I'm going to hand to you a document that was previously marked Geoscope Exhibit 2021 from proceeding IPR2023-01209.

(Exhibit No. 2021, previously marked, was referenced and indexed.)

THE WITNESS: Thank you.

BY ATTORNEY LEE:

Q. Do you recognize this document?

A. Yes. This appears to be my CV.

Q. And if you could turn to page 2 as it's paginated in the footer.

A. Okay, page 2.

Q. I'd like you to go to the third paragraph.

A. Okay.

Q. If you can, read the first sentence there aloud, please.

A. Mark has served as a technical advisor to Microsoft, Google, SpaceX, Facebook, and Viasat in communications systems and spectrum regulatory matters.

Q. What were your responsibilities as a technical advisor?

A. It varied by company and by time. When I was working with the companies in some cases, it was, you know, very technical; in other cases, it was more market focused or bigger picture technology focused.

Q. Okay. Well, let's start with Microsoft. What did you do as a technical advisor for Microsoft?

A. Sure. So I'd like to refer to -- I believe I provided some explanation of what I did with Microsoft, so that's -- for example, I prepared a white spaces technical report addressing the question of unlicensed devices operating in TV bands. That was one of the things I did for Microsoft.

Q. Okay. And what is a white spaces technical report? And you're referring to page 5 of your CV. Is that correct?

A. Yes, I am. It's on page 5.

Q. Okay.

A. And white spaces were the FCC, the Federal Communications Commission, had realized that their TV station frequencies are not used in every location. Not

all channels are available in all locations. So these empty frequencies are -- have been referred to as white spaces.

So again, this was, what, almost 20 years ago. And I do remember preparing a fairly thick report, so I don't remember all of the details. But I was looking at the possibility of using the white spaces for other uses besides TV. In other words, the unused TV channels.

Q. Did this have anything to do with locating mobile communications devices?

A. I don't recall that being involved. Well, it's -- there was a -- as I recall, there was a location component to it because you had to know where you were to know which TV channels were not being used.

Q. And was the location component relating to a location of a mobile communications device?

A. I don't recall if it was only fixed or if it was mobile.

Q. And so going back to page 2 of your CV, you also served as a technical advisor for Google.

Is that correct?

A. Yes, that's correct.

Q. And can you describe your responsibilities in that regard?

A. Let me see. I'm sure I provided some -- I

1 don't recall off the top of my head what it was I did
2 with Google, but looking through my CV, supported
3 Google's international and domestic spectrum regulatory
4 activities.
5 Q. And you are at page 4 of your CV?
6 A. I am at page 4, yes.
7 Q. Okay. What are international and domestic
8 spectrum regulatory activities?
9 A. So this was 10 years ago. My recollection is
10 that Google was interested in the adoption of additional
11 frequencies for Wi-Fi communications, and I provided
12 support both in their dealings with the FCC and
13 internationally with organizations or other
14 administrations.
15 Q. And did your work with Google involve the
16 development of technology for locating mobile
17 communications devices?
18 A. No, it did not.
19 Q. Going back to page 2 in your CV, same
20 paragraph, the third paragraph, the next company you
21 list is SpaceX.
22 Do you see that?
23 A. Yes, I do.
24 Q. What were your responsibilities as a technical
25 advisor for SpaceX?

A. I recall working for SpaceX on two occasions. I see on page 4 of my CV I supported SpaceX with spectrum regulatory activities, and then also -- I'm not seeing it on this CV, but there was also some -- I do recall two occasions. Both were related to -- oh, here it is on page 6 of my CV. I designed a K band with 5 gigahertz transverter, which is 21 years ago. I don't remember the details.

Q. Do you recall if your work with SpaceX involved the development of technology for locating a mobile communications device?

A. No, I don't recall that being involved.

Q. Your CV indicates that you also served as a technical advisor for Facebook.

Do you see that?

A. Yes, I do.

Q. What was your -- what were your responsibilities as a technical advisor for Facebook?

A. Referring to page 3 of my CV under Meta, so I supported their international and domestic spectrum regulatory and standards activities, was rapporteur for an Etsy brand standard, and supported various of their connectivity projects and developed link budgets and simulation tools.

Q. Did your work with Facebook and Meta involve

technology for locating the mobile communications device?

A. Not to my recollection.

Q. Your CV also indicates that you worked as a technical advisor for Viasat.

Do you see that?

A. Yes, I do.

Q. What did you do for Viasat?

A. Well, I've done a few things over the years. Recently, I have been supporting their international and domestic spectrum regulatory activities for non-GSO and GSO satellite systems and providing systems expertise on non-GSO satellite systems.

Previous to that, I served as an expert witness in a case involving satellite communications. And there may have been other occasions where I worked and provided some support to Viasat. But I see on page 6 I was an expert witness in a government contract dispute. And there may be something else.

Q. Did your work with Viasat involve technology for locating mobile devices?

A. There was some aspect of that there, but it would -- it's something proprietary to them.

Q. What aspect was that that you were involved in?

ATTORNEY McBRIDE: I'll just counsel the witness not to reveal anything proprietary.

A. What I was doing for them was -- I think it's really -- I'm not sure how to go further on this without, you know, disclosing their proprietary information.

BY ATTORNEY LEE:

Q. So you are unable to explain even the general nature what your role or responsibilities were in the development of the product?

A. Well, I was basically doing a high-level kind of feasibility analysis, engineering analysis of capabilities. And that's really all I'm comfortable saying.

Q. What is a feasibility analysis?

A. An engineering study to determine if something is possible, if a capability can be developed or if it's -- you know, what would be involved in developing the capability, if it's something feasible.

Q. And what is an engineering analysis?

A. Again, using my engineering judgment, experience, calculations, simulations, other tools, engineering tools to, for example, provide an estimate of the performance of a system.

Q. At page 3 of your declaration at the top, the

first entry is Viasat.

Do you see that?

A. Yes, I do.

Q. Are mobile communications devices mentioned in that description?

A. No, they are not.

Q. Are technologies for developing -- strike that.

Are technologies for locating a mobile communications device described in that entry?

A. Again, nowhere in that entry does it say anything about location or mobile devices.

Q. And so your work with Viasat did not involve locating mobile communications devices. Correct?

ATTORNEY McBRIDE: Objection. Misstates testimony.

ATTORNEY HARROD: May I interrupt for one second? I think we're having a probably with the live feed, the same issue you were having.

(Discussion held off the record to resolve a technical issue.)

BY ATTORNEY LEE:

Q. So before the break, Mr. Sturza, we were talking about your experience with Viasat.

A. Yes, I recall that.

Q. And we were looking at your description of the work that you did for Viasat at page 3 of your CV.

Do you see that?

A. Yes, I do.

Q. And I had asked you whether your description of your work for Viasat included any mention of the development of technology for locating mobile communications devices, and I'll just repeat that question.

Did your work with Viasat involve the development of technology for locating mobile communications devices?

A. Yes, it did.

Q. And what was that work?

A. As I mentioned before, to go any further on this I would have to disclose their proprietary information.

Q. And so are you unable to describe in a general nature the type of work that you did for Viasat that involved mobile communications devices?

A. So I believe I did describe in a general nature that what was involved was engineering analysis and feasibility. Basically, a feasibility study.

Q. Okay. But that is not noted in your description of your work for Viasat in your CV.

Correct?

A. What's noted there is provide systems expertise on NGSO satellite systems and --

Q. Sorry. Go ahead.

A. Yes, and that, you know, that work that we were discussing was included in -- as part of that.

Q. So it's your testimony that NGSO satellite systems include mobile communications devices?

ATTORNEY McBRIDE: Objection. Form.

A. No, I didn't say that. What I said was -- you'd asked me with regard to the positioning of mobile devices. And in my CV, it doesn't, you know, for many reasons doesn't break out every single thing I've done for every company.

And, you know, what I did for Viasat was under the category or umbrella of providing systems expertise on NGSO satellite systems.

Q. And how do mobile communications devices and locating such devices relate to NGSO satellite systems?

A. Well, again, I would have to disclose the proprietary information to answer that.

Q. So your testimony is that how a mobile device relates to a satellite system is proprietary information?

Is that your testimony?

ATTORNEY McBRIDE: Object to form. Misstates testimony.

A. No. What I was saying is that to get into anymore detail as to the work that I did, I would have to disclose their proprietary information.

BY ATTORNEY LEE:

Q. Okay. Well, stepping away from what their proprietary information was, how does or how can a mobile communications device relate to a satellite system?

A. Okay. So the most famous example is the global positioning system, GPS, where satellites are used to provide positioning information for devices. Mobile devices include GPS receivers which, by processing the signals from GPS satellites, are able to determine the position of the mobile device.

Q. Do you have any other examples?

A. There are a variety of other systems. There's the Russian GLONASS system, there's the European Galileo system, there's a Chinese system, a variety of satellite systems.

Q. Okay. I'd like for you to turn to page 1 of your -- page 2 of your CV, fourth paragraph. Can you read the first sentence there of that fourth paragraph?

A. Sure. Mark's industry experience includes

1 senior engineering management and tactical positions at
2 LinQuest, Teledyne, Magnavox, and Litton, where he
3 developed advanced navigation and guidance systems for
4 both commercial and government customers.
5 Q. Can you tell me about your work with LinQuest
6 that involved the development of advanced navigation and
7 guidance systems?
8 A. LinQuest, I was involved in a variety of
9 different projects and technologies, and I -- there's a
10 paragraph on page 3 of my CV that discusses many of
11 them. I don't see anything here specifically listing
12 navigation and guidance systems. So I -- yeah, I don't
13 recall to what extent or what of that LinQuest work
14 related to navigation and guidance systems.
15 Q. And the next company in the list is Teledyne.
16 Do you see that?
17 A. Yes, I do.
18 Q. Can you tell me about your work with Teledyne
19 in developing advanced navigation and guidance systems?
20 A. Certainly. Referring to page 11 of my CV and
21 bottom of page 19, I worked on a variety of inertial
22 navigation systems. I worked on GPS systems of various
23 sorts. I worked on Loran-C, which is another radio
24 navigation system. I work on a Doppler Omega navigation
25 system using Omega radio signals and Doppler

information.

Virtually all of my work at Teledyne was involved with navigation and guidance systems.

Q. Did your work with Teledyne relate to mobile communications devices?

A. I don't, you know, recall there being -- certainly, you know, decades before cellphones or mobile devices when I was involved with Teledyne. I mean, there were aircraft and ship systems which were mobile, so depending on which -- what we mean by mobile.

Q. Cellphones, for example.

A. Again, this -- my work at Teledyne was decades before cellphones.

Q. And the same could be said about your work with Magnavox at page 10 of your CV.

Is that correct?

A. Yes. My work at Magnavox was involved with GPS for, again, aircraft. Well, actually, there was -- part of the Magnavox effort, there were basically three types of equipment that I was working on. And one was what was called a Manpack, which was basically a backpack that contained a GPS system and provided mobile positioning information to infantry troops.

Q. And can the same be said about the work with Litton at pages 9 and 10 of your CV?

A. I'm not sure what you mean by "can the same be said."

Q. Did your work with Litton outlined at pages 9 and 10 of your CV relate to the development of technology for locating mobile communications devices?

A. Again, this -- all this work predated cellphones. There was handheld positioning devices that I was working on at the time using GPS, but I -- I don't recall if they had communications capability. I think they were -- my recollection is they were strictly navigation and positioning.

Q. I'd like you to turn to page 5 of your CV. The second-to-last entry, Wi-Fi Alliance, do you see that?

A. Yes, I do.

Q. Did your work with Wi-Fi Alliance involve developing technologies for locating mobile communications devices?

A. So several years ago, what I thought I say in my CV was perform simulations of adaptive spectrum sharing rules. So the Wi-Fi Alliance, you know, Wi-Fi, so this was work on Wi-Fi devices in terms of their algorithms for what frequencies to use.

Q. And what was your -- what were your responsibilities in developing that technology?

A. 20 years ago, so I don't have a direct recollection. Looking at my CV, I was performing simulations of how these spectrum sharing rules would work, what kind of performance they would provide, how effective they would be.

Q. The next entry in your CV is TrueSpan.

Do you see that? I'm at page 5.

A. Yes, at the bottom, yes.

Q. What did you do for TrueSpan?

A. So TrueSpan was a startup that was developing DVB-TH technology, so this was providing video to mobile devices, the DVB-TH standard. So TrueSpan was developing a chipset to implement video to the phone. Video's the handheld device.

And I was involved from the start of the company, helping with the business plan, the system architecture. Once we were funded, I was doing more technical work, performing simulations, and conducting design traits for the receiver chipset.

Q. Did your work with TrueSpan involve the development of technology for locating mobile communication devices?

A. I don't recall if the DVB-TH standard included any kind of positioning or location.

Q. On the next page at page 6 of your CV, you

had -- work for --

(Reporter clarification.)

BY ATTORNEY LEE:

Q. On the next page of your CV, page 6, the first few items are GigaBeam Corporation and IOSTAR Corporation.

Do you see that?

A. Yes, I do.

Q. And your work with GigaBeam and IOSTAR appear -- appears to overlap in the 2004 to 2006 time frame. Do you see that?

A. Yes, I see that.

Q. Did your work with GigaBeam and IOSTAR relate to development of technology relating to locating mobile communications devices?

ATTORNEY McBRIDE: Objection. Form.

A. I don't recall that with respect to IOSTAR.

With respect to GigaBeam, I recall working with the founder to identify and protect key IP. I don't recall what that encompassed, the technologies involved in that IP.

Q. Okay, I'd like to go to page 3 of your CV. The fourth item under Experience says Geoscope Technologies Singapore.

Do you see that?

A. Yes, I do.

Q. It says: Expert witness in the areas of positioning and location.

Do you see that?

A. Yes, I do.

Q. Can you tell me a little bit about your work with Geoscope in this area?

A. So this is the -- providing my services as an expert witness in the district court case as I've, you know, continued to do.

This appears to -- the date here ends in 2023, but I've also, you know, continued to provide my expertise in the IPR matters.

Q. Do you recall if your work as an expert witness in this capacity related to patent invalidity issues?

ATTORNEY McBRIDE: I'd just counsel the witness not to reveal any potentially privileged information in answering the question.

A. This was a couple of years ago, but my -- my recollection is I was involved in -- on the invalidity side of the issues, or validity.

BY ATTORNEY LEE:

Q. Do you recall whether your opinions involved invalidity or validity of a patent?

ATTORNEY McBRIDE: Objection. Form. With that same instruction, you can answer. Be careful not to disclose any privileged information.

A. My recollection is that I did prepare some reports on validity. I believe it's sometimes referred to as rebuttal invalidity, and sometimes I've heard it referred to as invalidity, even though I believe my report was, you know, rebutting invalidity.

BY ATTORNEY LEE:

Q. Do you recall the technology of the patents that were involved?

A. Well, my recollection is it's the same patents involved in the IPRs.

ATTORNEY LEE: Okay, I think we can take a break.

(Recess taken.)

ATTORNEY LEE: Mr. Sturza, I'm going to hand to you some exhibits from these proceedings. I'm handing to you Exhibit 1001 from IPR2023-01209.

(Exhibit No. 1001(A), previously marked, was referenced and indexed.)

BY ATTORNEY LEE:

Q. Do you recognize this document?

A. This appears to be what we have been referring to as the '104 patent.

ATTORNEY LEE: I'm also going to hand to you Exhibit 1001 from IPR2023-01210.

(Exhibit No. 1001(B), previously marked, was referenced and indexed.)

BY ATTORNEY LEE:

Q. Do you recognize this document?

A. Yeah, this appears to be the '358 patent.

ATTORNEY LEE: And lastly, I'm going to hand to you Exhibit 1001 from IPR2023-01211.

(Exhibit No. 1001(C), previously marked, was referenced and indexed.)

BY ATTORNEY LEE:

Q. Do you recognize this document?

A. This appears to be the '494 patent.

Q. Okay. So I may refer to these three patents collectively as the '104 patent family.

Is that fair?

A. I understand that.

Q. Okay. Have you read the '104 patent family?

A. Yes, I have read the patents.

Q. Have you read the patents cover to cover?

A. I have read the patents cover to cover, yes.

Q. Okay. What is the purpose of the '104 patent?

ATTORNEY McBRIDE: Objection. Form.

A. I would -- you know, I provided a summary in

my declarations in this matter of the '104 patent, so I'd prefer to refer to that rather than trying to recreate on the fly.

BY ATTORNEY LEE:

Q. Okay. But you have read these patents. Correct?

A. Yes, I have read these patents, and I've read a lot of documents. I've not memorized them.

Q. Sure.

Is there a particular technical problem that the '104 patent family addresses?

A. Well, again, you know, I spent a lot of time preparing my declaration and, you know, I hesitate to, you know, just give you responses off the fly, you know, when I've spent the time to, you know, document all my thoughts in the reports --

Q. Okay.

A. -- and the declarations.

ATTORNEY LEE: Understood. I'm going to hand to you Exhibit 2020 from IPR2023-01209.

THE WITNESS: Thank you.

(Exhibit No. 2020(A), previously marked, was referenced and indexed.)

BY ATTORNEY LEE:

Q. Do you recognize this document?

A. This appears to be my declaration with regards to the '104 patent.

ATTORNEY LEE: I'm also handing to you Exhibit 2020 from IPR2023-01210.

(Exhibit No. 2020(B), previously marked, was referenced and indexed.)

BY ATTORNEY LEE:

Q. Do you recognize this document?

A. Yes. It appears to be my declaration with regard to the '358 patent.

ATTORNEY LEE: Okay. I'm handing to you Exhibit 2020 from IPR2023-01211.

(Exhibit No. 2020(C), previously marked, was referenced and indexed.)

BY ATTORNEY LEE:

Q. Do you recognize this document?

A. Yes. This appears to be my declaration on the '494 patent.

Q. So you have your declarations before you now and available to you. Correct?

A. Yes, I do. Thank you.

Q. Okay. You also have the '104 patent, the '358 patent, and the '494 patent in front of you.

Is that correct?

A. That is correct.

Q. Okay. So what is the purpose of the '104 patent family?

ATTORNEY McBRIDE: Object to form.

A. The '104 patents and the other two related patents disclose an invention for determining the location of a mobile device for geolocating using signal information from wireless communications networks, for example, cellular signals.

BY ATTORNEY LEE:

Q. And is that the purpose of the '104 patent family?

ATTORNEY McBRIDE: Object to form.

A. Well, I'm not sure what you mean by the word "purpose."

BY ATTORNEY LEE:

Q. What don't you understand about the word "purpose"?

A. Well, I understand the patents, the '104 and the other two patents that we're discussing, disclose inventions. And the inventions, you know, relate to determining a location of mobile devices, geolocating, so I'm not sure if that's what you mean by "purpose."

Q. Is there a technical problem that the '104 patent family purports to address?

A. Yes. The '104 patent family, if you will, is

1 addressing the problem of -- that the observed network
2 measurement data varies based on conditions and other
3 variables, for example, environmental factors or signal
4 propagating indoors. And with the prior art, this
5 caused a issue with positioning accuracy.
6 And so the invention is to modify the observed
7 network measurement data and then compare the modified
8 network measurement -- the modified observed network
9 measurement data with the database of calibration data
10 to determine location of mobile devices.
11 Q. Okay. I'd like you to turn to the abstract,
12 which is at page 1 looking at the '104 patent. Tell me
13 when you get there.
14 A. Sure. I need my glasses for this one.
15 Q. The font is quite small, isn't it?
16 A. Yes, it is. Okay.
17 Q. Can you read the first sentence of the
18 abstract?
19 A. A method of modifying calibration data used to
20 geolocate a mobile station located in an indoor
21 environment is disclosed.
22 Q. And what is a mobile station?
23 A. In the context of these patents, a mobile
24 station's a mobile device.
25 Q. And what is a mobile device?

A. Something like a cellular phone or other kind of mobile device.

Q. Are there any other examples of mobile stations on -- with the devices?

A. Well, we see, you know, in Figure 1 maybe a car is mobile. So it's not necessarily a handheld device, but a device in motion.

Q. Can you turn to column 1, line 12 of column 1 underneath Background.

Do you see that?

A. Yes, I do.

Q. Can you read that first sentence?

A. The use of wireless communication devices, such as telephones, pagers, personal digital assistants, laptop computers, etc., hereinafter referred to collectively as mobile appliances or mobile stations has become prevalent in today's society.

Q. And so in this disclosure, the '104 patent provides examples of mobile stations. Correct?

A. Yes, these are examples.

Q. Okay. I'd like you to turn back to the abstract of the '104 patent. And the '104 patent uses the term "calibration data."

Do you see that?

A. Yes, I do.

Q. What is calibration data?
A. I don't -- I don't recall providing an opinion on that. Is there somewhere in my report where I provide an opinion on that?
Q. Feel free to review your report.
A. All right. I don't, you know, recall providing any opinion on that.
Q. Okay. So do you have an understanding of what calibration data is?
ATTORNEY McBRIDE: Object to scope.
A. Well, it -- again, it's nothing that I provided an opinion on in this matter. It's -- there may have been some claim construction in the district court proceeding with regard to that. I'm not sure. You know, the plain and ordinary meaning for calibration data would be data used to calibrate.
BY ATTORNEY LEE:
Q. And so calibration data encompasses any data that is used to calibrate?
Is that correct?
A. Well, you know, again, it's something I haven't provided an opinion in this matter. And, you know, I'd want to go back and look at the district court claim construction to see if "calibration data" was construed or not. And then I'd want to look through the

intrinsic record to see how it's used, you know, in these patents.

Q. Okay. If you could turn to column 1, there's a sentence that begins "Estimating."

Do you see that?

A. Yes, I do.

Q. Can you read that sentence aloud, please.

A. Estimating location or geolocating a mobile station may require one or more types of calibration data associated with the mobile station. For example, signal strength, round-trip time, time difference of arrival, TDOA, etc.

Q. Is signal strength an example of calibration data?

A. Yes, it's, you know, given in an example here of calibration data associated with a mobile device, the mobile station.

Q. Is round-trip time an example of calibration data?

A. Yes. It's also given as an example.

Q. Is time difference of arrival an example of calibration data?

A. Yes. It's also given as an example here.

Q. I'd like you to turn to column 3, line 50 of the '104 patent.

A. Okay.
Q. There is a sentence that begins "In general." Do you see that?
A. Yes, I do.
Q. Can you read that sentence aloud, please.
A. In general, a nonuniform grid point, NUG, N-U-G, may represent the signal characteristics and/or calibration data over a given region.
Q. What is a nonuniform grid point?
A. So I've actually provided an opinion on that. And, you know, nonuniform grid point is a point associated with respective calibration data for an area whose boundaries are determined from evaluation of the calibration data.
Q. Okay. And can a nonuniform grid point represent the signal characteristics and/or calibration data over a given region?
A. I'm not sure how your question differs from what I just said. Am I missing something?
Q. Yeah. So I'm reading from column 3, line 50 of the '104 patent. It's the disclosure that you had just read aloud, the sentence beginning, "In general."
A. Yes.
Q. And I'm asking you can a nonuniform grid point represent the signal characteristics and/or calibration

1 data over a given region?
2 A. My opinion, in looking at the entirety of the
3 intrinsic evidence, is that a nonuniform grid point is a
4 point associated with representative calibration data
5 for an area whose boundaries are determined from
6 evaluation of the calibration data.
7 Q. Okay. And I understand that.
8 And my question to you is can a nonuniform
9 grid point represent the signal characteristics and/or
10 calibration data over a given region?
11 A. Well, the nonuniform grid point is associated
12 with representative calibration data for an area whose
13 boundaries are determined from evaluation of the
14 calibration data. So once the nonuniform grid point has
15 been defined, then it has boundaries and it represents
16 the calibration data or, you know, or is associated with
17 the calibration data for that area.
18 Q. So is it your testimony that the nonuniform
19 grid point cannot represent the signal characteristics
20 and/or calibration data over a given region?
21 ATTORNEY McBRIDE: Objection. Form.
22 A. That's not what I said. So, you know, going
23 back to a nonuniform grid point is a point associated
24 with representative calibration data for an area whose
25 boundaries are determined from evaluation of the

calibration data. A calibration data is used. It's used to determine the boundaries of the nonuniform grid point. And then that nonuniform grid point, you know, is associated with that representative calibration data for that area.

BY ATTORNEY LEE:

Q. Okay. And so my question to you again is can a nonuniform grid point represent the signal characteristics and/or calibration data over a given region?

I'm essentially reading from the patent and I'm wondering if you agree that a nonuniform grid point can represent the signal characteristics and/or calibration data in a given region.

A. Again, you know, my -- my understanding, you know, looking at the totality of the intrinsic evidence is, you know, that the nonuniform grid point's a point associated with representative calibration data for an area whose boundaries are determined from evaluation of the calibration data.

And, you know, so nonuniform grid point, it's associated with representative calibration data for an area. An area could be a -- could be called a region. Basically, synonyms. So the -- so the -- you know, to the extent that the nonuniform grid point is associated

with the representative calibration data for an area, then the nonuniform grid point may represent, I would say, you know, "associated with" instead of "may represent." And, you know, I -- I think that would be a clearer way of saying it.

Q. What is the difference between "associated with" and "may represent"?

A. Well, in my mind, "associated with" and "may represent" are -- let me rephrase that.

That a nonuniform grid point may represent the signal characteristics and/or calibration data over a given region. And, you know, I would go further and say the nonuniform grid point is a point associated with the representative calibration data for an area whose boundaries are determined from evaluation of the calibration data. And I think that's a much clearer, precise way of saying it.

Q. And you are -- you are reading from something, are you, when you're --

A. I -- I was, yes. I was referring to my report where I provided my opinion on the construction on the nonuniform grid point. It's page 32 of the '104 report. And, you know, I spent a lot of time thinking about this and reviewing the entirety of the intrinsic record. And I think that's the -- you know, in my opinion, what a

nonuniform grid point is.

And to the, you know, to the extent that's what it's saying on line 50 of column 3, I would agree with that. But it's -- it's not -- there may be some ambiguity in column 3, line 50 so I would prefer, you know, my construction.

Q. So I'm at page 32 of the declaration, Exhibit 2020.

A. Yes.

Q. And opinion B says Construction of Nonuniform Grid Point. Do you see that?

A. Yes, I see that.

Q. What data is contained in the nonuniform grid point?

A. Well --

ATTORNEY McBRIDE: Objection. Form.

A. -- calibration data is used to construct the nonuniform grid point to determine its boundaries.

BY ATTORNEY LEE:

Q. Right. So then after you use the calibration data to determine the boundaries, you are left with a grid point. Correct?

A. Yes. You have a nonuniform grid point.

Q. And my question to you is, what does -- what data does that nonuniform grid point contain?

A. Well, a nonuniform grid point is a boundary on a map. It's an area on a map, so it's -- a nonuniform grid point contains some area on a map or some area on the earth.

Q. So it's your testimony that a point is actually an area. Is that correct?

ATTORNEY McBRIDE: Objection. Form.

A. Well, the way, you know, nonuniform grid point is used in the patent and other intrinsic evidence, it's not what we would classically think of as a point. It's actually an area. A nonuniform grid point represents an area.

BY ATTORNEY LEE:

Q. So when you say that a nonuniform grid point represents an area, does that mean that the nonuniform grid point contains data describing the area?

A. Well, the nonuniform grid point, you know, it's associated with representative calibration data, but the nonuniform grid point is -- there's an example on page 36 of my declaration, Figure 6, which shows examples of nonuniform grid points. And, you know, they're areas, so they contain physical space.

Q. So a nonuniform grid point is an actual physical area in the real world?

ATTORNEY McBRIDE: Objection to form.

BY ATTORNEY LEE:

Q. Is that correct?

A. A nonuniform grid point is the boundaries that define a physical area. And your question was with regards to what it contains, and the boundaries are the boundaries of an area.

BY ATTORNEY LEE:

Q. So a nonuniform grid point contains data representing the boundaries of the area it represents?

Is that correct?

A. Well, it --

ATTORNEY McBRIDE: Objection to form.

A. It's associated with the representative calibration data.

BY ATTORNEY LEE:

Q. Okay. And it's your testimony that a nonuniform grid point is a point associated with representative calibration data for an area whose boundaries are determined from evaluation of the calibration data.

Is that correct?

A. Yes, that is correct.

Q. Okay. So there is an evaluation that needs to occur in order to arrive at a nonuniform grid point.

Is that correct?

A. Yes, that's -- that's correct. It's determined from an evaluation -- excuse me, evaluation of the calibration data.

Q. Okay. After that evaluation occurs --

A. Uh-huh.

Q. -- you're talking about after the evaluation occurs --

A. Yes.

Q. -- you are left with a nonuniform grid point. What results is a nonuniform grid point.

Is that correct?

A. Yes. We've -- we can -- we have a nonuniform grid point, yes.

Q. What data is contained in the nonuniform grid point?

A. Well, there's calibration data associated with the nonuniform grid point. I'm not sure what "contains" means in this context.

Q. What type of data constitutes a nonuniform grid point?

A. Well, so it's the representative calibration data is used to determine -- you know, is evaluated to determine the boundaries of the nonuniform grid point.

Q. During the evaluation. Is that correct?

A. Yeah. The boundaries are determined from

evaluation of the calibration data.

Q. So you obtain boundaries from the evaluation of calibration data.

Is that correct?

A. Yes. You -- you -- the boundaries are determined from evaluation of the calibration data, yes.

Q. Okay. And so are the boundaries the data that constitutes a nonuniform grid point?

ATTORNEY McBRIDE: Objection. Form.

A. Well, so the -- the boundaries define the nonuniform grid point, that they're the boundaries of the point which, as I mentioned, is actually an area.

BY ATTORNEY LEE:

Q. Does the term "nonuniform grid point" require any data?

A. Well, you need -- you know, it's a point associated with representative calibration data, so we -- we need calibration data to construct the nonuniform grid point to determine its boundaries.

Q. Right. You're getting back to how a nonuniform grid point is generated. Correct?

ATTORNEY McBRIDE: Objection. Form.

A. Well --

BY ATTORNEY LEE:

Q. What I'm talking about is after you generate a

nonuniform grid point --

A. Yes.

Q. -- you are left with something, the nonuniform grid point. Do you follow me?

A. Yes. And you -- you have -- you know, there's the associated -- the representative calibration data.

Q. And the associated calibration data, is that part of the nonuniform grid point?

A. Well, it's -- it's what defines the nonuniform grid point. The, you know, the boundaries are determined from evaluation of the calibration data.

Q. Once the nonuniform grid point is generated from evaluation, is that nonuniform grid point stored?

A. I don't believe I provided an opinion on that in these declarations. I would, you know, have to refer back to the claims.

Q. Okay. Well, how is the nonuniform grid point used? What is its function in the claimed method?

A. So again, I would refer to the claim language itself, that, you know, it's -- so we have, you know, from Claim 2 depending on Claim 1 that the -- in the '104 patent that the database comprises previously generated calibration data for one or more nonuniform grid points within said region.

And, you know, in Claim 1, we have providing a

database of previously gathered calibration data for a predetermined region in a wireless network wherein said network includes a first transmitter and a second transmitter.

Q. And so it's your opinion that the calibration database comprises previously gathered calibration data for one or more nonuniform grid points.

Is that correct?

A. Yeah, I believe that was the claim language.

Q. And Claim 1 requires providing the database.

Is that correct?

A. Database is previously gathered calibration data.

Q. So the nonuniform grid point is a part of the database that is provided in the method of Claim 1.

Is that correct?

ATTORNEY McBRIDE: Objection. Form.

A. Well, the database is the previously gathered calibration data.

BY ATTORNEY LEE:

Q. Does the database contain the nonuniform grid point?

A. Database contains the representative calibration data, which is used -- which is what defines the nonuniform grid point or points.

Q. Does the database contain the nonuniform grid point?

A. Well, the database contains the calibration data. That calibration data is used to determine the boundaries of the nonuniform grid point.

Q. Do you know if the database contains the nonuniform grid point?

A. Well, I think you're asking a question with regard to possible embodiments that, you know, it's -- again, it's something that I've not provided an opinion on here.

Q. I see.

So because you have not provided an opinion on the question of whether the database contains the nonuniform grid point, is it true that your construction does not require the nonuniform grid point to be a part of the database?

ATTORNEY McBRIDE: Objection. Scope.

A. Well, again, that's not something that I've provided an opinion on.

BY ATTORNEY LEE:

Q. So you have not opined on whether the database contains a nonuniform grid point. Correct?

A. That -- you know, my understanding is that it's the calibration data. The representative

calibration data is what's in the database. Going beyond that seems to be getting into possible embodiments, which is something I've not formed an opinion on.

Q. So you have not opined on whether Claim 2 of the '104 patent requires the one or more nonuniform grid points to be contained in a database. Correct?

A. Well, you know, just reading Claim 2: Wherein said database comprises previously gathered calibration data for one or more nonuniform grid points within said region. So, you know, again, I haven't provided an opinion on that. But, I mean, just, you know, reading it, it says database comprises previously gathered calibration data. And, you know, that's consistent with my construction.

Q. I think I am clear on your opinion as to how calibration data relates to the database.

My question is, how does the nonuniform grid point relate to the database?

It's my understanding that you have not provided an opinion as to how the nonuniform grid point relates to the database. Is that correct?

A. I -- that's not -- I don't think that's quite correct. You know, what I said is that a nonuniform grid point is a point associated with the representative

calibration data for an area whose boundaries are determined from evaluation of the calibration data.

Q. And does a -- does the -- strike that.

Does the database contain the nonuniform grid point?

A. Well, the database contains the representative calibration data. And, you know, and I haven't formed any opinions beyond that.

Q. Does the nonuniform grid point require any specific kind of data?

A. Well, it requires representative calibration data.

Q. Is there any requirement as to the amount of representative calibration data?

A. That's something I haven't provided an opinion on.

Q. Can a representative calibration data include 1,000 calibration points?

ATTORNEY McBRIDE: Objection. Scope.

A. I haven't, you know, thought about that. I haven't, you know, provided an opinion on how big or small the set of calibration data could be.

BY ATTORNEY LEE:

Q. So you do not have any opinion on how much data is required to arrive at a nonuniform grid point.

Is that correct?

ATTORNEY McBRIDE: Same objection.

A. That's fair. I haven't provided a -- any opinion on the amount of calibration data, you know, or anything related to amount of calibration data.

BY ATTORNEY LEE:

Q. Okay. I want to go back to the nature of the data that constitutes a nonuniform grid point.

ATTORNEY McBRIDE: Objection. Scope. Sorry, strike that. Do you have a question first?

BY ATTORNEY LEE:

Q. Does a nonuniform grid point require any specific type of data?

A. Well, it requires representative calibration data.

Q. Is there a difference between representative calibration data and calibration data?

A. Well, representative calibration data for an area, calibration data for an area, you know, what I've -- the, you know, opinion I formed was that the nonuniform grid point is a point associated with representative calibration data for an area whose boundaries are determined from the evaluation of the calibration data. So, you know, it can't be calibration data from, you know, the other side of the world.

Q. Okay. And going back to the nonuniform grid point, do you have an opinion as to whether a nonuniform grid point requires any specific type of data?

A. Well, it requires representative calibration data for an area.

Q. Is that representative calibration data for an area stored in the database?

ATTORNEY McBRIDE: Objection. Scope.

A. Yeah, it's not, you know, something I provided an opinion on here.

BY ATTORNEY LEE:

Q. So you do not have an opinion as to whether the representative calibration data is stored in the database. Is that correct?

A. I don't recall providing an opinion on that. If there's something you'd like to point me to, I'd be happy to address that, but I -- I don't recall providing an opinion on that.

Q. And so earlier, we looked at the '104 patent and we looked at examples of types of data that can constitute calibration data.

Do you recall that?

A. Yes, I do.

Q. And do you recall how signal strength was an example of calibration data according to the '104 patent

family?
A. Yes, I do.
Q. Can signal strength be the data that constitutes a nonuniform grid point?
A. Well, again, I haven't provided an opinion on what could constitute calibration data.
Q. I'm asking about a nonuniform grid point. I'll repeat the question.
Can signal strength be the data that constitutes a nonuniform grid point?
A. Well, so, you know, the nonuniform grid point's a point associated with representative calibration data for an area whose boundaries are determined from evaluation of the calibration data.
As we've discussed, you know, when we looked at the '104 patent, I provided an example of a calibration data and suggested signal-to-noise ratio, among other examples.
Q. Can signal strength be the data that constitutes a nonuniform grid point?
A. Well, I don't -- I'm having trouble parsing the question.
Q. What don't you understand about the question?
A. So a nonuniform grid point is a point associated with representative calibration data of an

area whose boundaries are determined from evaluation of the calibration data.

So when you're asking if the nonuniform grid point can be signal strength, I don't understand how that could be, how that would work.

Are you asking if -- can the signal strength be the calibration data?

Q. Well, let's start with that.

Can the signal strength be the data that constitutes the representative calibration data?

A. Well, that was, you know, as we saw, an example in one point in the '104 patent.

Q. Is that a yes or a no?

A. That signal strength could be a calibration data? Again, it's, you know, not something that I've provided an opinion on here.

Q. So you do not have an opinion as to whether a signal strength can constitute calibration data.

Is that correct?

A. Well, you know, just in the, you know, what we looked at in the '104 patent, you know, it's talking about calibration data and providing an example of the signal strength. I agree that could be an example of calibration data as well as the time of arrival and the other things mentioned there.

Q. Let's get back to the idea of the boundaries. You mentioned boundaries in the construction.

Do you recall that?

A. Yes, I do.

Q. How are the boundaries determined?

A. Well --

ATTORNEY McBRIDE: Objection. Form.

A. -- they're determined from evaluation of the calibration data.

BY ATTORNEY LEE:

Q. And after the boundaries are determined, are they stored?

A. Well, you know, I think that's getting into embodiments, which is something I haven't opined on.

Q. So the boundaries are not required to be stored. Is that correct?

A. I -- you know, again, I haven't provided an opinion on that. I don't recall if there's something in the claim that goes one way or another on that. But, you know, it's not something I've thought about, not something I've provided an opinion on.

Q. Have you ever been a named inventor in a US Patent?

A. Yes, I have. I have been a named inventor on several patents.

Q. Have you ever reviewed a patent file history before?

A. Yes, I have reviewed patent file histories.

Q. And you reviewed the file histories of the '104 patent family.

Is that correct?

A. Yes, that is correct. At least the three that we're discussing now and at least one more and possibly some others.

Q. What were the other file histories that you reviewed?

A. The -- there was, I believe -- well, there's the -- I believe it's the '753 patent, and I think that's right. Anything that I did review would be included in my list of exhibits that I've looked at. I'd refer back to that for exactly what I've looked at.

Q. Okay. I'd like you to have in front of you Exhibit 2020 from IPR2023-01209, your declaration.

A. So this is the '104 patent?

Q. Oh, no, the second, declaration Exhibit --

A. Yes.

Q. -- 2020.

A. Right, that's --

(Simultaneous speaking)

Q. Right.

A. For the '104 patent.
Q. Yes.
A. Okay.
Q. And I'd like you to turn to paragraph 2 on page 1.
A. Okay.
Q. And can you read that paragraph?
A. Sure. I have been asked to provide my opinions on the technology claimed in and patentability or nonpatentability of Claim 2 of the '104 patent. This declaration is directed to Claim 2 of the '104 patent and sets forth certain opinions I've formed, the conclusions I have reached, and the basis for each.
Q. Okay. And so you have only provided opinions concerning Claim 2 of the '104 patent in your declaration. Is that correct?
A. Yes, that's correct.
Q. And your declaration does not address any other claim of the '104 patent aside from Claim 2.
Is that correct?
A. Well, Claim 2 depends on Claim 1, so my understanding is Claim 2 and -- also embodies Claim 1, although that might not be correct words that I used.
Q. So aside from the relationship between Claim 2 and Claim 1, your declaration does not address any other

1 claim of the '104 patent.
2 Is that correct?
3 A. That is correct.
4 Q. I'd like to turn to paragraph 23 --
5 A. Sure.
6 Q. -- of your declaration. And can you read the
7 first sentence of paragraph 23?
8 A. I was a member of the team that developed the
9 SiRFstar 1, SiRFstar 2, and SiRFstar 4 GPS chipsets
10 including between 2006 and 2009.
11 Q. What was your role on the team?
12 A. I had a variety of roles. This is over a
13 multi-year period with a gap between SiRFstar 2 and
14 SiRFstar 4.
15 With SiRFstar 1, I was involved in
16 architecting the chipset, working on the RF section, the
17 digital signal processing, the software, pretty much
18 touched all aspects of it. SiRFstar 2, I think that
19 overlapped. By SiRFstar 4, I think I was more focused
20 on some of the algorithms and DSP, all of -- I -- I may
21 have touched, you know, other parts of it.
22 Q. So the work that you describe in paragraph 23
23 all relates to the development of GPS chipsets.
24 Is that correct?
25 A. Well, the first sentence that I read is -- was

all GPS chipsets. Also, you know, towards the bottom of the paragraph, I investigated positioning and geolocation techniques for GSM and UMTS mobile devices and analyzed hybrid positioning techniques for mobile devices.

Q. Can you describe your work in investigating the positioning and geolocation techniques for GSM and UMTS mobile devices?

A. Yes. Going back 20 years, so I don't have all the details, but SiRF was developing GPS chipsets to be embedded in mobile handsets, mobile phones, cellular phones. And the standard bodies, GSM and UMTS at the time, were also developing cellular-based positioning techniques. This was all driven by the E911 mandates of the time.

And my role was to understand the capabilities and implementations of the cellular standards-based positioning techniques and how to best integrate them with the GPS positioning.

There was, you know, there was always -- there was attention, at least at the time, in the mobile devices, cellular devices for real estate, so the chips that could do more capabilities. So doing more than just GPS was a plus, and so we were looking at what aspects of the standards-based positioning we could

incorporate into the SiRFstar chipsets and, you know, how we could -- the best way to combine the positioning from the standards with the GPS positioning.

Q. I'd like to go back once again to page 32 of your declaration and again section B where you provide your construction of a nonuniform grid point.

Do you see that?

A. Yes, I do.

Q. And so we earlier had talked about the boundaries in your construction.

A. Yes.

Q. And you indicated that a nonuniform grid point is a point associated with representative calibration data for an area whose boundaries are determined from evaluation of calibration data.

Is that correct?

A. Yes, that is correct.

Q. Now, when you look at Claim 2, are the boundaries used in the claimed process?

ATTORNEY McBRIDE: Object to form.

A. Again, that's something that I don't recall providing any opinion on.

BY ATTORNEY LEE:

Q. So you do not have an opinion on whether the boundaries are used in the claimed methods.

Is that correct?

ATTORNEY McBRIDE: Same objection.

A. Well, Claim 2, method of Claim 1, whereas said database comprises previously gathered calibration data for one or more nonuniform grid points within said region.

And then in Claim 1, they're the -- well, again, it's something that I, you know, haven't studied and thought about. I don't recall providing an opinion as to the -- you know, how it's used.

BY ATTORNEY LEE:

Q. I'd like you to turn to paragraph 53, page 15 of your declaration.

A. Okay.

Q. And can you read the first sentence of paragraph 53, please.

A. Sure. Some systems, like the '104 patent, relied on collecting calibration data from mobile devices moving through various geographic regions by saving this information into a calibration database.

Q. So here, you are describing various systems that collect calibration data from mobile devices. Correct?

A. Yeah, relied on collecting calibration data in mobile devices, yes.

Q. And how was the calibration data collected?
ATTORNEY McBRIDE: Objection. Form.
A. It could be, you know, the mobile device is moving through the region collecting calibration data. It could be done as something that was referred to as war driving, where -- driving through neighborhoods to collect calibration data.
BY ATTORNEY LEE:
Q. So is there any specific way that the calibration data was required to be collected?
A. I don't recall that being a limitation of the claim. And I don't recall providing an opinion on that.
Q. Right. So I'm talking about the state of the art. You were saying in this paragraph, paragraph 53, you mentioned some systems, like the '104 patent, relied on collecting calibration data from mobile devices moving through various geographic regions by saving this information into a calibration database.
Do you see that?
A. Yes, I do.
Q. And so I -- my question is -- I'm trying to get a better understanding of how this was done.
How did -- how is this calibration data collected?
A. One example was what I mentioned was referred

to as war driving at the time where vehicles, cars, trucks, were instrumented with various devices to collect calibration data as well as recording GPS position. And these vehicles drove through neighborhoods. My recollection is originally it started in the Bay area and spread, you know, across the country --

Q. And would --

A. -- and the world. Sorry.

Q. And would the vehicles follow a predetermined path, or would it be more of a random path or item?

A. Again going back 20-some years, I recall routes being planned to make sure that every street was covered, that kind of thing in neighborhoods. But there may have been some ad hoc adjustments. I don't recall.

Q. Are there any other ways of collecting calibration data aside from the -- is it war driving?

A. It was called war driving at the time mostly because it was very tedious and -- but another -- you know, again, you know, something I haven't written any opinions in my report on but, you know, there are -- in recent years, crowdsourcing has become a popular way of collecting data, calibration data.

Q. What is crowdsourcing?

A. This is where a mobile device sends its

position and whatever calibration parameters it's measuring to a central database.

Q. And so you use the location of various users' mobile devices to develop a calibration database? I want to be sure I understand that.

A. Well, it's the -- the measurements are the calibration measurements so they are then incorporated into a database, which is the calibration database. Instead of going out and collecting the data points yourself, it's using crowdsourcing. It's a much more recent innovation.

Q. And would the crowdsourcing resemble kind of more of a predetermined path of the various users or would it be more of a random type situation?

A. Well, it's, you know, wherever people or devices happen to be, so it's biased as to where there's people.

Q. Are there any other ways in which you can think of that calibration data was collected?

A. Nothing comes to mind.

ATTORNEY LEE: We can take a break now if that works for you.

THE WITNESS: All right.

ATTORNEY McBRIDE: Sure.

ATTORNEY LEE: Off the record.

THE REPORTER: Yes, we're off the record for a break.

(Recess taken.)

BY ATTORNEY LEE:

Q. Mr. Sturza, I'd like you to turn to paragraph 67 of your declaration.

A. Okay.

Q. And it starts on the bottom of page 23 and it goes on to page 24, and there's a block quote from the '379 provisional.

Do you see that?

A. Yes, I do.

Q. And can you read that block quote aloud, please?

A. That's the first one towards the top of the page?

Q. Correct.

A. The NUGs fully cover the region R, and each NUG has statistically similar data accumulated into itself. The geometrical shape and the amount of data accumulated into each NUGs is seen to be variable, since there are determined by the statistical similarity of the data allocated to a NUG.

Q. So it's your opinion that the geometrical shape and the amount of data accumulated into such NUGs

is variable.

Is that correct?

A. No, I believe what I just read is a quote from the provisional, you know, not an opinion I provided.

Q. So I'm asking you, do you agree with the '379 positional on this point?

A. That the -- I'm sorry, could you repeat the question, please.

Q. The geometrical shape and the amount of data accumulated into the NUGs are variable.

Is that correct?

A. Yes, that's -- that's correct.

Q. And so the NUG can have any geometrical shape.

Is that correct?

A. Well, I don't know that I'd -- any geometrical shape. I'm -- I'm not sure, you know, what that could embody. But, you know, generally, you know, without -- with the possible exception of some corner cases as to what a geometrical shape could be, yes, it can -- there's no predetermined shape for a NUG.

Q. And similarly, a NUG can contain any amount of data. Is that correct?

A. This is where we get into what does "contained" mean. So I would say that the -- you know, any amount of data -- let me get this right. That, you

1 know, any amount of data could be in that associated --
2 the representative calibration data for the area.
3 Q. Could you repeat that?
4 A. That the -- sorry, I lost my place on the
5 block quote. Okay, so the amount of -- from the block
6 quote, the amount of data associated with -- accumulated
7 into each NUG is seen to be variable.
8 And what I was saying, to be clear, is that
9 the, you know, the NUG being a point associated with
10 representative calibration data for an area whose
11 boundaries are determined from the evaluation of the
12 calibration data, you know, I would -- I would say the
13 representative calibration data for the area is what's
14 being discussed in this block quote.
15 And so the data accumulated into such NUGs is,
16 you know, the data, the representative calibration data
17 for the area that you use to determine the boundaries.
18 Q. And this disclosure of the '379 provisional is
19 getting to the amount of data.
20 Do you see that?
21 A. Amount of data seen to be variable.
22 Q. Yes.
23 A. Yes.
24 Q. And so my question to you is, the amount of
25 data accumulated into the NUG is not limited to any

specific amount.

Is that correct?

ATTORNEY McBRIDE: Objection. Form.

A. Well, you know, again, not something I provided an opinion on. But, you know, I'm not a -- you know, off the top of my head, I'm not aware of any limitation as to how much data, you know, could be used or not used.

BY ATTORNEY LEE:

Q. Okay. And concerning the geometrical shape of the NUG, is it your opinion that there are no limitations to the geometrical shape of the NUG?

A. Well, I don't -- you know, again, something I haven't opined on. Just off the top of my head, I -- you know, any geometrical shape, you know, I'm not sure what that could encompass. But yeah, I'm not aware of any requirement that, for example, a shape be a regular polygon or something like that.

Q. What does it mean that the geometrical shape is variable?

A. Well, I understand that to mean that the, you know, the boundary is not fixed. It's, for example, it's not necessarily a square or not necessarily a triangle.

Q. So it's your opinion that the geometrical

shape being variable means the geometrical shape is not limited to any particular shape.

Is that correct?

A. Right, because the boundaries of the NUG are determined from the evaluation of the calibration data.

Q. I'd like you to turn to paragraph 93, which is on page 39 of your declaration.

A. Okay. Got it.

Q. And can you read that paragraph aloud, please.

A. Sure. For the reasons I explain below, it is my opinion that Claim 2 of the '104 patent is not invalid under any of these grounds. In particular, each of the prior art references in these grounds fails to teach the nonuniform grid points required by Claim 2 of the '104 patent.

Q. So your opinion is based on the fact that Claim 2 requires, quote, "nonuniform grid points."

Is that correct?

A. That is correct.

Q. Okay. I'd like you to turn to paragraph 62.

A. Okay.

Q. And can you read this paragraph for me, please.

A. The claimed grid points of the '104 patent usually will not be uniformly distributed throughout the

geographic region; and thus, the '104 patent uses the term "nonuniform grid point," or NUGs, when describing grid points.

Q. What does it mean that the grid points usually will not be uniformly distributed?

A. Well, the -- you know, you might think of a grid like lines of paper lined in both directions. And that would be a traditional uniform grid. And because the nonuniform grid points here, their boundaries are determined for evaluation in the calibration data, so they're not, you know, necessarily going to line up into a uniform grid.

Q. What do you mean by -- strike that.

So you state that the boundaries may not necessarily line up into a uniform grid.

Is that correct?

A. Well, since the boundaries are determined from evaluation of the calibration data, the nonuniform grid points, you know, will not necessarily -- in fact, will typically not end up in a uniform grid pattern.

Q. Is it possible that the evaluation that you speak of would result in boundaries that are uniform?

ATTORNEY McBRIDE: Objection. Form.

A. Well, I think that's a -- unlikely but, you know, perhaps possible.

BY ATTORNEY LEE:

Q. Okay. I'd like you to turn to paragraph 68.

A. I'm sorry, 68?

Q. 68, yes.

A. Okay.

Q. And can you read the first sentence of that paragraph aloud, please.

A. A fundamental characteristic of a claimed grid point is that the geographical boundaries of the area it represents must be determined by evaluating the calibration data collected in a region.

Q. And so a grid point must be generated based on evaluation of calibration data.

Is that correct?

A. Well, the geographical boundaries, you know, must be determined by evaluating the calibration data collected in a region.

Q. So you state that the geographical boundaries of the area is a, quote, "fundamental characteristic of the claimed grid point."

Do you see that?

A. Yes. A fundamental characteristic of the claimed grid point is that the geographical boundaries of the area it represents must be determined by evaluating the calibration data collected in a region.

Q. Are the geographical boundaries a required element of the -- of the claimed nonuniform grid point?

A. So a nonuniform grid point is a point associated with representative calibration data for an area whose boundaries are determined from evaluation of the calibration data.

Q. You state that the claimed grid -- a fundamental characteristic of a claimed grid point is that the geographical boundaries of the area it represents must be determined by evaluating the calibration data collected in a region.

Do you see that?

A. Yes, I do.

Q. How is this evaluation conducted?

A. There's a -- you know, for example, you read the -- you asked me to read the block quote on the previous page earlier. And since these are determined by a statistical similarity of the data allocated to a NUG so, you know, a statistical similarity is one way of doing it.

Q. One way of conducting the evaluation is, quote, "statistical similarity"?

A. Yes.

Q. Is that your opinion?

A. Yes, that, you know, the boundary's, you know,

determined by statistical similarity of the data.

Q. What is statistical similarity of the data?

ATTORNEY McBRIDE: Objection. Scope.

A. Well, it's -- it's, you know, not something I provided an opinion on here. I did -- you know, I did mention, you know, at the bottom of page 25 statistical similarity in the calibration data can be evaluated using different types of statistical analysis, including clustering tests, probability density function, the mean and variance of the data, or other functions of the calibration data.

Q. And you're at paragraph 69?

A. Correct.

Q. So it's your opinion that clustering tests are one example of how the statistical similarity of the gathered calibration data can be evaluated?

A. Yes. Clustering tests are a way of establishing the -- the statistical similarity.

Q. What is a clustering test?

A. Not something I addressed in my report. I've implemented them in the past, but I can't, you know, off the top of my head give you any algorithms.

Q. What is a clustering test?

Can you describe what a clustering test is?

A. Oh, it's a -- it's a test of statistical

similarity between data.

Q. Okay. And how is a clustering test performed?

A. And, you know, sitting here, it's not something I've refreshed my memory on. It's something I know I've used in the past, but I, you know, I can't recall an algorithm.

Q. So it's your testimony that you have conducted a clustering test in the past but you cannot describe what a clustering test is.

Is that correct?

ATTORNEY McBRIDE: Objection. Form.

A. Yes, basically, that's correct. I haven't -- you know, I've done a lot of things over the last 45-plus years, and I do recall doing clustering tests, and I -- I don't recall specific algorithms.

BY ATTORNEY LEE:

Q. When did you perform these clustering tests?

A. The last recollection I have of doing something like that would have been the late '20 aughts the early '20 teens --

Q. And --

A. -- something like that.

Q. And which company did you do the clustering tests for?

A. I'm thinking it was involved with my work for

LinQuest.

Q. And can you describe how the clustering test is performed?

A. Well, again, I haven't refreshed my memory on clustering tests and limitations, so no, sitting here today, I can't.

Q. Do you know what a clustering test is?

ATTORNEY McBRIDE: Objection. Asked and answered.

A. Well, you know, as I said, it's a test of statistical similarity.

BY ATTORNEY LEE:

Q. Aside from parroting back the description of what a clustering test is in the exhibit that you cited --

A. Uh-huh.

Q. -- can you provide any additional description of what a clustering test is?

A. No. Again, I haven't refreshed my memory on the details of implementing a clustering test. It's, you know, it's not something I've done in the context of this report or anything related to it. So no, I can't off the top of my head.

Q. You also mentioned a probability density function in paragraph 69 of your declaration.

Do you see that? It's towards the end.

A. Yes. Yes, I do.

Q. How is a probability density function performed?

A. So a PDF is a density function over some number of dimensions, and it's looking for values that occur more often, have a higher probability density. And the function describes in one or two or more dimensions the shape of the distribution. The distribution's the highest, the most probable values. And then, you know, characterizes what's the -- you know, where the probability, the higher probabilities lies.

Q. And how is a probability density function used to evaluate the statistical similarity of the gathered calibration data?

ATTORNEY McBRIDE: Objection. Scope.

A. Well, again, it's not -- not something I opined on here.

BY ATTORNEY LEE:

Q. Can a probability density function be used to determine the statistical similarity of the calibration data?

A. You know, again, not something I've thought about how to implement here. But yes, probability

density functions, you know, can provide peaks, if you will, and areas around peaks, and those can be used to determine statistical similarity.

Q. And how would a probability density function be used to determine the statistical similarity of the data we're talking about in this case?

ATTORNEY McBRIDE: Objection. Scope.

Q. The gathered calibration data.

A. So again, it's not something I've opined on here. It's not something I've spent time thinking about how to implement.

Q. You also mention the meaning and variance of the data at paragraph 69 of your declaration.

Do you see that?

A. Yes, I do.

Q. How can the meaning and variance of the data be used to determine the statistical similarity of the gathered calibration data?

ATTORNEY McBRIDE: Objection. Scope.

A. Here again, something, you know, I haven't opined upon here, something I haven't thought about in this context. I don't know.

BY ATTORNEY LEE:

Q. You mention other functions of the calibration data. Do you see that at the -- close to the end of

paragraph 69?

A. Yes, I do.

Q. Can you name some examples of other functions of the calibration data?

A. Again, you know, not something I've opined on or thought about in this context, so no.

Q. What is a function of the calibration data?

A. Well, a function is something that has inputs and provides outputs. It could be, you know, for example, the function X squared where you put in an X and you get X squared out. So it's some manipulation of input data to provide output data.

Q. And so anything that takes input data and outputs data -- strike that.

Anything that takes calibration data as an input and outputs data would be considered a function of the calibration data.

Is that correct?

ATTORNEY McBRIDE: Objection. Form.

A. Well, a function that you input calibration data in and function combines the data in some fashion and provides an output, so that's a function of the calibration data. Not necessarily useful, you know, in this context, but -- but yeah, function.

BY ATTORNEY LEE:

1 Q. In the first sentence of paragraph 69 you say
2 that: This evaluation involves determining which data
3 are statistically very similar.
4 Do you see that?
5 A. Yes, I do.
6 Q. How similar does the data have to be to
7 qualify as statistically very similar?
8 A. Well, you know, not something that I believe
9 I've opined upon here. It's -- you know, very -- "very
10 similar" is not a defined value, if you will.
11 Q. You then say: Using increasingly stringent
12 tests of statistical sufficiency.
13 Do you see that?
14 A. Yes, I do.
15 Q. What are increasingly stringent tests of
16 statistical sufficiency?
17 A. Just to be clear, these are, you know,
18 excerpts from various intrinsic evidence in the matter,
19 and it's not something, you know, that I've provided an
20 opinion on.
21 Q. Does the evaluation in your construction
22 require multiple stringent tests of statistical
23 sufficiency?
24 ATTORNEY McBRIDE: Objection. Scope.
25 A. Well, you know, not something that I provide

an opinion on here. It's, you know, it's something that, yeah, I would need to think about and, you know, review the intrinsic evidence, not something, you know, I could give you an answer here.

BY ATTORNEY LEE:

Q. Would the evaluation in your construction be satisfied by performing a single stringent test of statistical sufficiency?

ATTORNEY McBRIDE: Objection. Scope.

A. Now, you know, again, not something I've, you know, provided an opinion on here.

BY ATTORNEY LEE:

Q. What statistic is considered when determining whether data is statistically similar?

ATTORNEY McBRIDE: Same objection.

A. Again, not something I specifically opined upon. At the -- the last sentence on this page of 69 that we looked at previously, statistical similarity in the calibration data can be evaluated using different types of statistical analysis, including the examples that we've mentioned before.

BY ATTORNEY LEE:

Q. Is there any limit to the type of statistic that is used to determine whether the data is statistically similar?

ATTORNEY McBRIDE: Objection. Form.

A. Not something I provided an opinion on here.

BY ATTORNEY LEE:

Q. I understand that you do not provide an opinion on that in your declaration, but do you have an opinion on that today?

A. No. That is something I would need to -- you know, just as I spent time developing the opinions in my declaration, I would want to spend time reviewing the intrinsic record before forming an opinion on that.

Q. So you mention -- you mentioned that a nonuniform grid point should be construed as -- I'm at page 32 -- a nonuniform grid point should be construed as a point associated with representative calibration data for an area whose boundaries are determined from evaluation of the calibration data.

Do you see that?

A. Yes, I do.

Q. How is the evaluation performed?

A. I don't believe I provided an opinion as to any specific form for evaluation. You know, as we have been discussing, you know, from the record, you know, there are several examples of using statistical similarity with examples of algorithms for, you know, determining statistical similarity.

Q. But you don't know how similar the data has to be to qualify as being statistically similar. Correct?

ATTORNEY McBRIDE: Objection. Form. Scope.

A. Well, you know, I haven't, you know, provided an opinion on statistically similar, you know, in -- in this matter. It's not something I spent, you know, time thinking about. So at this point, I have no opinion on that.

BY ATTORNEY LEE:

Q. Can the evaluation be performed by a human?

A. Again, it's not, you know, something I've thought about. You know, I would -- I would need to look at the, you know, record again on that. I don't -- you know, I don't have an opinion on that, no.

Q. Can the evaluation be performed as purely -- as a pure mental process?

ATTORNEY McBRIDE: Objection. Form. Scope.

A. Well, you know, I'm not sure what does a pure mental process means. But again, it's not something that I've, you know, provided an opinion on or thought about.

BY ATTORNEY LEE:

Q. Can the evaluation be fully performed in the mind of a human?

ATTORNEY McBRIDE: Objection. Form. Scope.

Calls for a legal conclusion.

A. Yeah, not, you know, not something, you know, I've provided an opinion on, not something I've thought about.

BY ATTORNEY LEE:

Q. Can the evaluation be performed by a computer?

ATTORNEY McBRIDE: Objection. Form. Scope. Calls for a legal conclusion.

A. So yeah, again, you know, not something that I provided an opinion on here, not something that I've thought about. I -- you know, to address that, I'd need to spend, you know, time with the intrinsic record to form an opinion. So no, I don't have one now.

BY ATTORNEY LEE:

Q. So sitting here today, you cannot tell me whether the evaluation can be conducted by either human or computer.

Is that correct?

ATTORNEY McBRIDE: Objection. Form. Scope. Calls for a legal conclusion. Counsel, this is --

ATTORNEY FEDOWITZ: Hey, counsel, quit coaching the witness. State your objection if --

ATTORNEY McBRIDE: I didn't want to interrupt your --

(Simultaneous speaking)

ATTORNEY FEDOWITZ: -- you have a problem with the form. Huh?

ATTORNEY McBRIDE: -- this IPR.

(Simultaneous speaking)

ATTORNEY McBRIDE: And I don't know who's talking, but they're not of record.

ATTORNEY FEDOWITZ: This is Matthew Fedowitz. I'm counsel for Google. State your objection. Stop coaching the witness.

THE WITNESS: Repeat the question.

BY ATTORNEY LEE:

Q. So sitting here today, you cannot tell me whether the evaluation can be conducted by either a human or a computer.

Is that correct?

ATTORNEY McBRIDE: Objection. Form. Scope. Calls for a legal conclusion.

A. As I --

ATTORNEY FEDOWITZ: Stop coaching.

A. As I mentioned, you know, I've not provided an opinion on that. It's not something, you know, that I've considered in this matter. To provide an opinion, I would need to spend time with the intrinsic record, thinking about it, to provide a thoughtful answer as I did for the opinions that I provided in my report.

BY ATTORNEY LEE:

Q. If the evaluation cannot be performed by a human or a computer, how would the evaluation be performed?

A. You know, I've provided, you know, no opinion on how the evaluation could be performed. I don't know -- you know, I -- I really can't provide an answer to that without, you know, doing the work.

Q. So you do not have any opinion on how the evaluation in your construction might be performed.

Is that correct?

ATTORNEY McBRIDE: Objection. Scope.

A. That's correct. I would want to, you know, consider that in light of the intrinsic record and form a considered opinion before providing one.

BY ATTORNEY LEE:

Q. And sitting here today, you have no opinion as to -- strike that.

ATTORNEY LEE: I'm handing to you Exhibit 1005 from IPR2023-01209.

(Exhibit No. 1005, previously marked, was referenced and indexed.)

BY ATTORNEY LEE:

Q. Do you recognize this exhibit?

A. Actually, did you hand me two copies?

Q. Oh, thank you.
A. So this appears to be the provisional application.
Q. Yes, I'll represent to you this is Provisional Application No. 60899379. I may refer to this as the '379 provisional application or the provisional.
Is that okay?
A. That's great, thank you.
Q. Have you read this document?
A. Yes, I have. I've -- yeah, it looks different than the hard copy, but yes, I've read this.
Q. And you've read it cover to cover?
A. I have.
Q. So the provisional has two sets of page numbers. If you turn to page 3 of 40, you can see that there's a --
A. Yes.
Q. -- page number 1, but it also says page 3 of 40.
A. I see that.
Q. When I refer to page numbers, I'll be -- I'll be referring to the page numbers of 40.
A. Okay, sure.
Q. I'd like you to turn to page 5 of the provisional application.

A. Okay.
Q. And I'm at the second paragraph that starts with Acronyms.
A. I see that.
Q. And can you read the first -- first entry there?
A. Sure. NUG, N-U-G, nonuniform grid point.
Q. And so the '379 provisional application discloses that an NUG is a nonuniform grid point.
Is that correct?
A. Yes. It's a -- defines an NUG as a nonuniform grid point.
Q. I'd like to turn back to your declaration, paragraph 67.
A. Okay.
Q. At page 24, we talked about the first block quote there from Exhibit 1005.
Do you see that?
A. Yes.
Q. And Exhibit 1005 is the supplemental provisional.
A. Okay, thank you.
Q. And so you cite to a portion, this portion of the '379 provisional at page 7.
Do you see that?

A. Yes, I do, though I'm not sure which page 7.
Q. It's the page 7 of 40.
A. Okay.
Q. And the language reproduced in the block quote in your declaration I believe corresponds to the last paragraph of page 7.
Do you see that?
A. Yes, I see that.
Q. Is this the only portion of the provisional application that is relevant to determining the construction of a nonuniform grid point?
A. You know, I -- I don't recall. It's a, you know, 40-page document, and I believe nonuniform grid point is discussed elsewhere. You know, for example, the bottom three paragraphs of page 7 of 40 are talking about nonuniform grid.
Q. Bottom three paragraphs of page?
A. 7 of 40.
Q. 7 of 40? Okay.
A. Right. They all seem to be referring to NUGs. You know, there's also, for example, the bottom two paragraphs of page 8 of 40. And so, you know, I don't recall all the places where NUG is discussed in this document. I see page 11 of 40.
Q. Did you consider the disclosures in the

provisional application beyond the block quote that you produced -- reproduced in your declaration in coming to your understanding of what a nonuniform grid point is?

A. Yes. I read the entire document, you know, and considered it with the other documents in the intrinsic record in forming my opinions.

Q. And you mentioned other portions of the provisional application that mention NUGs as being relevant to the construction.

Is that correct?

A. I don't believe that's what I said. I said there were other places in the document where NUGs are discussed. I would have to, you know, refresh my memory on those as to, you know, which may or may not be relevant to, you know, my understanding of or my opinion as to, you know, what a nonuniform grid point is.

Q. So you mentioned the bottom two paragraphs of page 8 of 40 as mentioning NUGs.

A. And yes, it's this one. You know, sitting here, I'm just, in responding to your question, I was pointing out that NUG appears in various places --

Q. Yeah.

A. -- including those two paragraphs.

Q. And, in fact, NUG appears in each of the paragraphs at page 8 of 40.

Is that correct?

A. Yes, that appears to be the case.

Q. And NUG appears also in the bottom three paragraphs at page 7 of 40.

Do you see that?

A. Yes, I do.

Q. So are -- you picked out the last paragraph of page 7 of 40 as your support for your arriving at a construction.

Is that correct?

A. That's the paragraph that I abstracted in my declaration, yes.

Q. And you mentioned the other mentions of -- strike that.

You mentioned that the other references to NUGs in the provisional application may or may not be relevant to the construction of the term.

Is that correct?

A. Well, you know, I cite various places. You know, that's not my only cite to that one block quote that we looked at. It's not the only cite in this section to the provisional. There are, you know, other cites throughout the section.

Q. What are the cites?

A. Let's see. So start with the -- well, there's

a cite on page 20, three lines from the bottom. There's, you know, there's a cite in page 23 about eight lines from the bottom. There are numerous cites. For example, page 25, page 26, so -- and throughout this section, I've cited to, you know, various portions of the original application.

Q. Were the portions of the provisional application that were cited in your declaration the only portions that were relevant to the construction of the term "nonuniform grid point"?

A. This is the -- I believe we're in the Background of The Technology section at this point. And so these were, you know, providing the background of the technology in the '104 and related patents. And I, you know, as I mentioned, I did read the entire provisional, you know. And that and the rest of the intrinsic record is what I used to form my opinions.

And, you know, I've cited in various places to various documents in the intrinsic record supporting my opinions. And if, you know, if there were something that I felt was, you know, particularly relevant to my opinion, I tried to cite to it. But the fact that I didn't, you know, cite to something doesn't mean that I hadn't read it.

Q. Mr. Sturza, did you write your report?

A. Yes. It's my report. I've signed it. I've, you know, provided it under, you know, penalty of perjury. It's my report.

Q. My question was: Did you write your report?

A. Well, you know, there's a process involved in creating the report. I discussed my opinions with counsel. I, you know, developed a draft. Drafts went back and forth. More discussion and drafts and, you know, editing, cleanup, and getting the cites right. And so yes, I mean, you know, as I said, it's my report.

Q. And how did you arrive at these particular citations to the provisional application as being most relevant to developing your understanding of construction of the term "nonuniform grid point"?

A. So during, you know, my initial review and then discussion with counsel, as I articulated my thinking, and, you know, the results ended up as the report.

Q. So during your initial review of the provisional application, how did you arrive at the specific parts of the provisional application that you cited in your report?

ATTORNEY McBRIDE: Objection. Form. I'll instruct the witness not to reveal any potentially privileged information.

A. So, you know, I don't, you know, recall how each individual quote or citation arrived. It's -- you know, some of them, I identified; some, you know, were identified through the process. It was a, you know, back-and-forth kind of editing process so I can't, you know, specifically with regard to any citation, you know, know exactly how it got there.

BY ATTORNEY LEE:

Q. So you mentioned that there are several paragraphs, just moving to the page 7, page 8 subsection of the provisional application, that mention the term "NUG."

A. That's correct.

Q. And so I'm trying to understand why -- why was there a specific focus on this last paragraph on page 7, which seems to be cited numerous times in your report?

A. Again, I don't have a detailed recollection of how everything came together. But, you know, this is a -- you know, really, the relevant section here as to, you know, generating the location estimate using NUGs obtained over a region. That's sort of the heading above the bottom of -- oh, I'm sorry. I'm on the wrong page.

So yeah, the heading here, which is on page 5 of 40, a method for generating nonuniform grid from

calibration data. And I'm -- this is a relative illustrative paragraph that I included in my Technology Overview section.

Q. So I believe you mentioned at page 5 -- strike that.

I believe you were looking at page 5 of the provisional application and the heading you mentioned, is that what you mean?

A. Yes.

Q. And that heading says: A method for generating nonuniform grid points (NUGs) from calibration data.

Do you see that?

A. Yes, I do.

Q. And so what follows on four pages, essentially pages 5 to page 8 --

A. Uh-huh.

Q. -- in the provisional application --

A. Sure.

Q. -- all of that disclosure in that section relates to a method for generating nonuniform grid points, NUGs, from calibration data. Correct?

A. That's correct.

Q. And so all those disclosures are irrelevant to development of an understanding of what a nonuniform

grid point is. Correct?

A. Yes, you know, the entire document as well as the other, you know, intrinsic evidence.

ATTORNEY McBRIDE: Can we take a break when you get a chance?

ATTORNEY LEE: We can take a break. Off the record.

THE REPORTER: We're off the record for a break.

(Recess taken.)

ATTORNEY LEE: Mr. Sturza, I'm handing to you Exhibit 1008 from IPR2023-01209.

(Exhibit No. 1008, previously marked, was referenced and indexed.)

BY ATTORNEY LEE:

Q. Do you recognize this document?

A. Yes. This is the '753 patent.

Q. Okay. So I'd like you to also pull up Exhibit 2020 from IPR2023-01209 --

A. Okay.

Q. -- which is your declaration from the '104 proceeding.

A. Yes.

Q. And I'd like you to turn to paragraph 69.

A. Okay.

Q. So in paragraph 69, after the first sentence, there is a citation to Exhibit 1005.

Do you see that?

A. Yes, I do.

Q. And then after that citation there is a citation to Exhibit 1008.

Do you see that?

A. Yes, I do.

Q. And Exhibit 1008 is the '753 patent that I just handed to you a moment ago.

Do you see that?

A. Yes.

Q. Okay. And what portion of Exhibit 1008 do you cite to there?

A. So this is a cite to 10-66 to 11-6.

Q. I was talking about the cite right before that. It's on the fourth line of paragraph 69.

A. Yeah, okay. So 10-44 to 59.

Q. Yes. Okay.

And then there's another statement that follows that citation. And then after that statement, there's another citation to Exhibit 1005.

Do you see that?

A. Yes.

Q. And then there's a second citation to

Exhibit 1008 that began as the '753 patent.

Do you see that?

A. Yes, I do.

Q. Okay. And what does that second citation cite to?

A. So that's the one to 10-66 through 11-6.

Q. Okay. So you'll note that you cite to column 10, lines 44 to 59.

A. Uh-huh.

Q. And you also cite to column 10, lines 66 to column 11, line 6 of the '753 patent.

Do you see that?

A. Yes, I do.

Q. So there is a -- if you could turn to column 10 of the '753 patent --

A. Uh-huh.

Q. -- you do not cite to column 10, lines 60 to 65. Correct?

A. Not here, no.

Q. And do you recall if you considered this disclosure, column 10 -- at column 10, lines 60 to 65 of the '753 patent, when arriving at your opinion?

A. Let me take a look at that. In the overview of the '104 patent section of my declaration, and at the -- yeah, so 10-44 to 59 and 66 to 11-6, so these

cites are what I found that are relevant to providing an overview of the '104 patent.

Q. Is column 10, lines 60 to 65, relevant to developing an understanding of what a nonuniform grid point is?

A. Well, I think the, you know, the totality of the intrinsic evidence is relevant here and, you know, this is part of that. If it had any, you know, particular relevance, I would have cited it in the, you know, discussion on the claim construction.

I didn't cite it in my section of my declaration providing an overview of the '104 patent. You know, I have -- you know, I don't believe I provided an opinion as to the relevance of these particular lines.

Q. Okay. And starting at column 10, line 61, there's a sentence that starts "Thus, one."

Do you see that?

A. "Thus, one," yes.

Q. Can you read that sentence aloud, please?

A. Sure. Thus, one or more of the adjacent calibration points may either wind up having all their data accumulated into a single NUG or, at the other extreme, each such calibration point may become the root of a separate NUG.

Q. So based on this disclosure, each calibration point can become the root of a separate NUG. Correct?
A. Yes. Each calibration point may become the root of a separate NUG.
Q. I'd like you to turn to paragraph 64 of your declaration.
A. Okay.
Q. And there's a Figure 6 that is reproduced on page 22.
A. Yes.
Q. Do you see that?
A. Yes, I do.
Q. What does this figure show?
A. So this shows three NUGs: NUG1, NUG2, and NUG3.
Q. And is NUG1 a nonuniform grid point?
A. Yes. NUG1 is a nonuniform grid point.
Q. Is NUG2 a nonuniform grid point?
A. Yeah, it's just -- you know, looking a little above the figure, geographical region R having NUGs represented by NUG1, NUG2, and NUG3.
Q. So is NUG2 a nonuniform grid point?
A. Well, just to be, you know, careful with language, the nonuniform grid points are represented by these colored areas on the map.

Q. And the NUG2 label in Figure 6 is pointing to a particular colored area.

Is that correct?

A. Yes, that's correct.

Q. And the term "NUG2" refers to a nonuniform grid point.

Is that correct?

A. Well, again, you know, quoting from the '784 patent where this figure comes from, the NUGs are represented by NUG1, NUG2, and NUG3.

Q. Is a NUG a nonuniform grid point?

A. Yes, a NUG is a nonuniform grid point.

Q. Is NUG2 a nonuniform grid point?

A. Well, the drawing, which has -- in green, which has the label NUG2, that -- that represents a nonuniform grid point.

Q. So you earlier said that NUG1 is a nonuniform grid point.

I am now asking you: Is NUG2 a nonuniform grid point?

A. Well, you know, to be precise, I may have misspoke earlier. And, you know, again looking at the language from the '784 patent, we're told that NUG1, NUG2, and NUG3 represent NUGs.

Q. So is NUG2 a nonuniform grid point?

A. Well, NUG2 represents a nonuniform grid point.
Q. Okay. Does NUG3 represent a nonuniform grid point?
A. Yes. NUG3 represents a nonuniform grid point.
Q. Does NUG1 represent a nonuniform grid point?
A. Yes. NUG1 represents a nonuniform grid point.
Q. How many calibration points are in NUG1?
A. We have -- I have no idea. It's nothing that I opined upon, it's nothing -- I don't recall anything in the patent that provided a number of points. So without referring to the '784 patent, which I don't think provides any clarity, you know, I have no idea how many points.
ATTORNEY LEE: I'm handing to you Exhibit 2013 from IPR2023-01209.
THE WITNESS: Thank you.
(Exhibit No. 2013, previously marked, was referenced and indexed.)
ATTORNEY LEE: I gave you two, actually. And I'm also handing to you Exhibit 1007 from IPR2023-01210, and IPR2023-01211. It uses the same exhibit as the 1007.
(Exhibit No. 1007, previously marked, was referenced and indexed.)
BY ATTORNEY LEE:

Q. Do you recognize this document?
A. These appear to be the same document, and they appear to be the '784 patent.
Q. Going back to your declaration at Figure 6, and you now have the '784 patent in front of you. Correct?
A. Yes, I do.
Q. And Figure 6 at page 22 of your declaration is the Figure 6 of the '784 patent.
Is that correct?
A. Yes, although there's no color in the Figure 6 in this document.
Q. Right. So in NUG1 in Figure 6, there is an element number 2.
Do you see that?
A. Yes, I do.
Q. What is element 2?
A. Looking at the '784 patent, I'm not seeing the reference to that element.
Q. If you turn to column 6, line 21 of the '784 patent, that could be helpful.
A. Yes, thank you. So MS2, the mobile stations. The MS are mobile stations, so 2 in Figure 6 appears to be a mobile station.
Q. And what is element 21 in NUG1?

A. It appears to be a base station.
Q. And can you read the sentence beginning at column 6, line 21 of the '784 patent beginning "A NUG may be"?
A. A NUG may be generated to represent the signal characteristics and calibration data over a given region.
Q. And if you can skip down to line 24, can you read the sentence beginning "The NUGs represent"?
A. The NUGs represent an area of collected calibrate data based on data collected via data collection devices and/or signals transmitted from the mobile stations, MSs, identified within the geographical region of the NUG, e.g., MS2 and BS21, NUG1.
Q. You can stop there.
A. Okay.
Q. So what is the calibration data that is in NUG1?
ATTORNEY McBRIDE: Objection. Form.
A. So I don't believe that I, you know, as we discussed, I provided an opinion on what calibration data, you know, contains. We've kind of discussed some examples from the various patents.
In this case, we see on line 35, column 6, network measurements reports may be used to represent

the current estimated location or signal characteristics of an MS. It doesn't exactly say calibration.

So, you know, as I mentioned earlier, there are some examples in the intrinsic record of calibration data. I'd have to reread more of the '784 to answer specifically with respect to that.

BY ATTORNEY LEE:

Q. Is the calibration data associated with mobile station 2 a calibration point?

A. The -- well, going back to column 6 around 24, the NUGs represent an area of collected calibration data based on data collected via data collection devices and/or signals transmitted over the mobile stations identified within the geographical region of -- and that's where we see the MS2 reference.

So I'm not -- I didn't provide an opinion on -- I don't believe I did, as to what -- whether point 2 in Figure 6 is a calibration data point. And I think it's not -- you know, from the excerpt I just read from column 6, you know, I would need to take more time to study the patent and the rest of the record.

Q. I'd like you to turn to paragraph 70 of your declaration.

A. Okay.

Q. And I'd like you to go to the sixth line on

1 that paragraph.
2 A. Okay.
3 Q. And there's a sentence that starts "If
4 clusters."
5 A. I see that.
6 Q. Can you read that sentence for me, please?
7 A. If clusters of data collected at different
8 locations, referred to as calibration points, are
9 statistically very similar, then the data for those
10 calibration points is allocated to the same grid point.
11 Q. What is a calibration point?
12 ATTORNEY McBRIDE: Objection. Scope.
13 A. Well, it's not -- a calibration point is not
14 something I provided an opinion on. Again, we're in the
15 overview of the '104 patent section, I believe. And so,
16 you know, really, it's nothing that I've provided an
17 opinion on.
18 BY ATTORNEY LEE:
19 Q. Do you have an understanding of what a
20 calibration point is?
21 A. Well, on this background section, you know,
22 referring to the sentence I just read, if clusters of
23 data collected at different locations (referred to as
24 calibration points) so, you know, this is indicating
25 that calibration points are data collected at different

locations. But that's just, you know, reading from this background section and not, you know, an opinion I provided.

Q. Well, you use the term "calibration point," don't you?

A. I do.

Q. But you don't understand what that --

A. Well, I --

Q. -- term means.

A. I use the -- the term "calibration data." And, you know, a calibration point is data collected at different locations, but that's not, you know, something I provided a construction for.

Q. So do you have an understanding of what a calibration point is?

A. Well, you know, I didn't, you know, provide an opinion in my report as to what a calibration point is. You know, as we've seen in this overview section, data collected at different locations is referred to as calibration points.

Q. Is data collected at a particular location a calibration point?

A. Well, it's calibration data.

Q. In that sentence you just read, does it say "calibration data" or "calibration points"?

A. Again, this is not an opinion I'm providing, this is an overview of the technology section. And, you know, what it -- what it says, you know, clusters of data collected at different locations (referred to as calibration points). But I'm not, you know, providing any opinion on calibration points.

Q. Right. And I'm just trying to understand what a calibration point is when you yourself used that term in your declaration.

You used the term "calibration point" in your declaration. You stated the term "calibration point" in your declaration and so I'm just trying to get an understanding of what your understanding was of the meaning of the term you yourself used.

What is the meaning of the term "calibration point"?

A. And, you know, again, I'm not providing an opinion as to how to construct or construe "calibration point." What I am saying in the technology overview is that, you know, this is how calibration points are used, you know, in this particular example from the intrinsic record.

Q. Can the calibration point be the same as a nonuniform grid point?

A. Well, it's not something I've thought about,

not something I've provided an opinion on. You know, in my opinion, a nonuniform grid point is a point associated with representative calibration data for an area whose boundaries are determined from evaluation of the calibration data.

Q. And the construction you just read, can that be satisfied by a calibration point?

ATTORNEY McBRIDE: Object to scope.

A. Well, I -- here again, I haven't provided any opinion on calibration point so, you know, I really can't answer that.

BY ATTORNEY LEE:

Q. So when you used the word "calibration point" in your declaration, you did not have any specific meaning of "calibration point" in mind.

Is that correct?

A. Well, again, I'm using it, you know, where we have been looking in the over -- in the overview section for the '104 patent, not in discussion of, you know, forming my opinions.

And, you know, I'm using it referenced to the various documents in the intrinsic record where, you know, that term is used.

Q. In that same paragraph, we're at paragraph 70, I'm looking at the fourth line from the bottom of the

paragraph. It begins "Because the."

Do you see that sentence?

A. Yes, I do.

Q. Can you read that sentence?

A. Because the geometrical shape of the area represented by a grid point is defined by the union of locations of calibration points allocated to it, this process of evaluating the calibration data in order to allocate it to different grid points defines the boundaries of the area.

Q. What do you mean by, quote, "the union of locations"?

A. Well, you know, again, we're in the technology overview section, and this is a quote from -- I think the 108 is the provisional, and then I don't recall what the 105 is, but it's -- it's language that was used that I'm showing here to provide an overview of the technology.

Q. Do you have an understanding of the meaning of "the union of locations"?

A. I've not provided an opinion on that.

Q. But do, you sitting here today, do you have an understanding of the union -- strike that.

Sitting here today, do you have an understanding of the meaning of the term "the union of

locations"?

A. Well, you know, I have a general understanding --

Q. What is that general understanding?

A. -- of -- allow me to finish, please. I have a general understanding of union of locations but, you know, I haven't considered that in terms of the intrinsic record here. So, you know, I'm prepared to provide an opinion of what it means, you know, specifically in this context.

You know, in general, a union of locations is a collection of locations.

Q. So when you say, quote, "defined by the union of locations of calibration points," what does that mean?

A. Well, again, that's -- I don't believe these are my words. I believe these are a quote from one of the documents in the intrinsic record, or two of them. And, you know, I'd have to go back and, you know, evaluate that in the context, you know, to give you a, you know, a -- to provide an opinion on that.

Q. So at the end of that sentence, you cite page 7 of Exhibit 1005 --

A. Uh-huh.

Q. -- and a portion of column 12 of Exhibit 1008.

Do you see that?
A. Yes, I do.
Q. I believe you have those exhibits before you. Correct?
A. Yeah, I believe so. I think, let's see, the 105 I believe is the provisional, and I'm not sure which one 108 is.
Q. The '753 patent.
A. Okay, I have those in front of me.
Q. So earlier, you stated that you would need to go back and evaluate that in the context to provide an opinion on the meaning of "union of locations of calibration points." I'd like you to go back to the context of the exhibits that you cited explicitly in your declaration --
A. Uh-huh.
Q. -- and review the portions of the intrinsic evidence that you relied on to make the statement that you did and let me know what the meaning of "the union of locations" is.
A. I'll take a look.
Well, taking a quick look at the '753 patent, in column 12 around line 10 is: Union of locations of calibration points assigned to the NUG.
And then, you know, going to the next

paragraph, starts: Additionally, one may also consider the method of generating NUGs based on.

And so, you know, just limited review, this appears to be an embodiment of NUGs, an embodiment of, you know, of -- one embodiment of the invention in the '753.

And, you know, again, I haven't, you know, evaluated "union of locations of calibration points," you know, in the full context of the intrinsic record, you know, nor have I provided an opinion as to, you know, what that means.

Q. And so sitting here today, you do not have an understanding of what the term "union of locations of calibration points" means.

Is that correct?

ATTORNEY McBRIDE: Object to the form.

A. Well, you know, again, this is the '104 Patent Overview section where I'm providing, you know, a technology overview of the '104 patent. I'm not providing an opinion here. And, you know, I'm providing -- I've included a quotation from the '753 patent, it appears to be. And, you know, beyond, you know, what it says here, you know, I have no opinion as to union of locations of calibration points.

Q. I'd like you to turn to Exhibit 2013 from

IPR2023-01209. It's the '784 patent.
A. Okay.
Q. Column 3, line 12.
A. Okay, the '784 patent, column 3, line 12.
Q. Column 3, line 12.
A. Okay.
Q. And there's a sentence that starts "Figure 6."
Do you see that?
A. Yes, I do.
Q. Can you read that sentence for me?
A. Figure 6 illustrates an exemplary nonuniform grid, NUG, region R.
Q. And so Figure 6 illustrates an exemplary nonuniform grid NUG region. Correct?
A. That's the figure title, yes.
Q. And do you agree with that?
A. Well, that's a brief description of the figure which shows, you know, some regions that represent nonuniform grid points. Seems like a fair characterization.
Q. I'd like you to turn back to that figure. We're at page 33, paragraph 84. I'm at page 33, paragraph 84, and I'm about halfway down the page. There's a sentence that begins "Thus, the intrinsic."
Do you see that?

A. "The intrinsic"?
Q. "Thus, the intrinsic."
A. Thus? Yes, I see that, "Thus."
Q. Can you read that sentence for me?
A. Thus, the intrinsic evidence supports a construction that nonuniform grid point is a point associated with representative calibration data for an area whose boundaries are determined from the evaluation of the calibration data.
Q. And so the only way for a point to be considered to be a nonuniform grid point is that the point must be associated with representative calibration data for an area whose boundaries are determined from evaluation of the calibration data.
Is that correct?
ATTORNEY McBRIDE: Object to form.
A. Yeah, I believe that's correct. Nonuniform grid point, a point associated with representative calibration data for an area whose boundaries are determined from evaluation of the calibration data.
BY ATTORNEY LEE:
Q. And my question is: And that is the only way that a point can satisfy a nonuniform grid point. Correct?
A point must have the characteristics that you

just described in order to be a nonuniform grid point. That is the only way that a point can be a nonuniform grid point. Is that correct?

ATTORNEY McBRIDE: Object to form.

A. Well, so a nonuniform grid point is a point associated with representative calibration data for an area whose boundaries are determined from evaluation of the calibration data so that that would be a nonuniform grid point.

BY ATTORNEY LEE:

Q. Yeah, I understand that that would satisfy the nonuniform grid point.

My question is: That is the only way to satisfy a nonuniform grid point. Isn't that correct?

A. Well, I would say that is -- that is what a nonuniform grid point is.

Q. And it's the -- it's the only way to satisfy the term "nonuniform grid point."

Is that correct?

A. Well, I would say if that's -- if it's not, you know, point associated with representative calibration for an area --

(Reporter clarification.)

A. So if it's not a point associated with representative calibration data for an area whose

boundaries are determined from evaluation of the calibration data, then, you know, it -- it wouldn't be a nonuniform grid point.

BY ATTORNEY LEE:

Q. It cannot be under any circumstances a nonuniform grid point?

A. Well, I don't -- I don't believe I provided an opinion on that, and that -- you know, I'm not sure if that's -- if -- if there's some, you know, applicable law involved in that.

You know, what I can say is that a, you know, a nonuniform grid point is a point associated with representative calibration data for an area whose boundaries are determined from evaluation of the calibration data. And, you know, that's what a nonuniform grid point is.

Q. And what I'm trying to get an understanding of is, this is the only way that a point can qualify as a nonuniform grid point. Isn't that correct?

Or is it your opinion that there are other ways that a point can be a nonuniform grid point?

A. I'm not --

ATTORNEY McBRIDE: Object to form.

A. I'm not aware of other ways. I mean, this is, you know, my construction based on my review of the

intrinsic record, and my experience. And this is what a nonuniform grid point is. And if something is not a point associated with representative calibration data for an area whose boundaries are determined from evaluation of the calibration data, then that's not what I would consider a nonuniform grid point.

ATTORNEY LEE: Ready to take a break?

ATTORNEY McBRIDE: Okay.

(Recess taken.)

BY ATTORNEY LEE:

Q. Mr. Sturza, I'd like you to turn to paragraph 49 of your declaration, Exhibit 2020 in IPR2023-01209.

A. 49, okay.

Q. The heading above that is Background Of The Technology.

Do you see that?

A. Yes, I do.

Q. And here, you describe the background of the '104 patent family.

Is that correct?

A. Yes, that's correct.

Q. And at paragraph 52, page 14 --

A. Uh-huh.

Q. -- could you read the first two sentences there?

A. Sure. At the time of the invention, geolocation using RF signals, e.g., cellular data as opposed to, for example, GPS information, was of interest in the field. Many methods attempted to use RF signals to geolocate mobile devices but generally had problems, including limited accuracy.

Q. Okay. Then if we go to paragraph 55, if you could read that, the first sentence of paragraph 55, please.

A. There are a number of reasons calibration data may not correspond to the data observed by a mobile device at the time it is seeking its location even where the same stations are involved.

Q. If you could read the rest of that paragraph for me, please.

A. For example, variations in the environment, e.g., weather, can also affect the observed data. One potential reason for discrepancies is that the mobile data, the mobile device, was indoors when it collected the observed data.

Q. And then finally, if you can read paragraph 56, please.

A. Sure. The inventors of the '104 patent realized that calibration data is typically collected in an outdoor environment because it is more time-consuming

to perform calibration procedures indoors due to the required access to buildings and the inability to utilize automated collection procedures designed for outdoor environments. There's a reference. However, many mobile devices that require geolocation are located indoors where the signal strengths of signals received from the serving and/or neighboring base stations tend to be lower than the strength of the signals received by a wireless device located outdoors. A reference. Thus, calibration data collected outdoors may not necessarily approximate signals received indoors; therefore, geolocation for mobile devices located indoors may not be accurate.

Q. Okay. And now we're at paragraph 57, and if you could read the first two sentences there, please.

A. Sure. The inventors solved this problem by modifying the data observed by a mobile device to have a more accurate comparison to the stored calibration data. A reference. As described below, the important part of this solution is the generation and use of nonuniform grid points, NUGs, of varying shapes and sizes as part of the calibration database. And there's a reference.

Q. So referring to that very last statement that you read, how is the generation and use of nonuniform grid points an important part of the solution?

A. Well, this is a background section on the invention, and a component of the invention is the use of the nonuniform grid points of varying shapes and sizes. And I'm not sure what more I can say about that.

Q. So you state that the generation and use of nonuniform grid points is an important part of the solution. Do you see that?

A. Yes.

Q. And the solution is the solution to the various technical problems that you got through reading.

A. Well, just --

Q. Do you understand that?

A. Yeah, just to be precise, it ended with: As discussed below, an important part of this solution is the geolocation -- generation and use of nonuniform grid points, NUGs, of varying degree -- shapes and sizes as part of a calibration database.

Q. Okay, right.

And so how is the generation and use of nonuniform grid points of varying shapes and sizes as parts of a calibration database, how is that an important part to the solution to the various problems that you led us through?

A. Well, you know, it's not something I specifically opined on as part of my declaration. It

is, as I mentioned, you know, a key component of the invention as described in the intrinsic record. Nonuniform grid points are used throughout.

Q. And why is it important -- why is it an important part of the solution? I'm just reading from your declaration: An important part of this solution is the generation and use of nonuniform grid points of varying shapes and sizes as part of the calibration database.

I'm just reading your declaration.

A. Yes.

Q. I'm just -- I'm wondering why. Why is the generation and use of nonuniform grid points, why is that a, quote, "important part" of this solution to the problems that you just read?

A. Well, here again, it's an important part of the intrinsic record. It's something that's claimed in the inventions, particularly the claims that I looked at. And it was, you know, clearly important to the inventors. But I haven't done an independent analysis of the relative importance of the various parts of the invention so I have no opinion on that.

Q. So if something is claimed in the inventions, is that something necessarily an important part to addressing the technical problem?

ATTORNEY McBRIDE: Objection. Form.

A. Well, you know, it's -- it's certainly, you know, from the intrinsic record is an important part of this invention. A lot of time is spent on nonuniform grid points in the intrinsic record, you know, and it's something that's claimed. So, you know, I think it's fair to say it's an important part.

As I said, I haven't done an independent analysis of relative importance of the concepts or claim terms.

BY ATTORNEY LEE:

Q. So I'm specifically focused -- you seem -- strike that.

You seem to be addressing a question of whether a nonuniform grid point -- nonuniform grid point is an important part of the invention, but I'm asking a different question.

I'm asking you, how is the generation and use of a nonuniform grid point an important part to the solution of the technical problems that you describe in your declaration?

That's the question I'm asking, not the question of why is nonuniform grid point important to the case. I'm asking you, why is a nonuniform grid point important to -- an important part of the solution

to the problems that you describe?

That's my question.

ATTORNEY McBRIDE: Objection. Form. Scope.

A. Yes, but again, it's not something, you know, I provided an opinion on. It's not something in my declaration.

BY ATTORNEY LEE:

Q. So sitting here today, you cannot provide any explanation as to why the generation and use of a nonuniform grid point is an important part to the solution addressing the technical problems raised in your declaration.

Is that correct?

ATTORNEY McBRIDE: Objection. Form. Scope.

A. That's -- you know, I spent a lot of time with the intrinsic record to form the opinions that I've included in my declaration, and that's something that I, you know, I did not form a conclusion on. It was not something that I considered. So sitting here now, I have, you know, no answer for you.

ATTORNEY LEE: Okay, I think we're done here. Let's go off the record.

THE REPORTER: We are off the record.

(Discussion held off the record.)

ATTORNEY McBRIDE: Okay. Thank you,

Mr. Sturza. I have no further questions. I do want to put on the record that I don't recall if this was at the beginning of the IPR, but this transcript is for IPR2023-001209, -001210 and -001211. After this deposition concludes, the parties are going to proceed for the deposition in IPR2023-001212 covering the '753 patent. And the parties have stipulated that the two transcripts can be used across all four IPRs and what is done in the 01212 IPR -- I'm sorry, what has been covered in this transcript doesn't need to be re-covered in the 01212 transcript. Thank you very much. That's all that I have.

ATTORNEY FEDOWITZ: Okay, we can go off the record.

(Deposition adjourned at 2:49 p.m.)

- REPORTER'S CERTIFICATE -

I, MARY ANN PAYONK, shorthand reporter and Notary Public, CA CSR No. 13431, do hereby certify that the witness whose deposition is hereinbefore set forth was sworn by agreement of all parties, that the proceedings were reported stenographically by me, and that this transcript is a true, correct, and full record of the testimony given.

I further certify that I am not related to any of the parties to this action by blood or by marriage, and that I am in no way interested in the outcome of this matter.

IN WITNESS WHEREOF, I have hereunto set my hand this 30th day of August, 2024.

MARY ANN PAYONK, CSR #13431
Virginia Notary Registration No. 219251
My Commission expires 8/21/2026

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MARK A. STURZA	
Examination by Attorney Lee	4

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1 ERRATA SHEET FOR TRANSCRIPT OF: MARK A. STURZA

2 CASE CAPTION: Google vs. Geoscope

3 DEPOSITION DATE: August 27, 2024

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24 Signature of Deponent Date

25

I,

MARK A. STURZA,

state that I have read the foregoing deposition and declare under penalty of perjury:

That the foregoing is my deposition under oath;

That I have read same and have made the necessary corrections, additions or changes to my answers that I deem necessary;

That my answers as indicated are true and correct.

Executed at _____

this _____ day of _____, 2024.

_____

MARK A. STURZA

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