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Paper No. 46

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE, LLC,
Petitioner,

v.

GEOSCOPE COMPANIES PTE. LTD.,
Patent Owner.

IPR2023-01209 (Patent 7,561,104 B2)
IPR2023-01210 (Patent 8,400,358 B2)
IPR2023-01211 (Patent 8,786,494 B2)
IPR2023-01212 (Patent 8,406,753 B2)

Record of Oral Hearing
Held: November 20, 2024

Before PATRICK R. SCANLON, SHEILA F. McSHANE, and
BRIAN D. RANGE, *Administrative Patent Judges*.

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The above-entitled matter came on for hearing Wednesday, November 20, 2024, commencing at 1:00 p.m. EST, via videoconference.

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

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3 JUDGE SCANLON: Okay, Thank you. Good afternoon and welcome
4 to the Patent Trial and Appeal Board.
5 We are here today for a consolidated hearing in IPR2023-01209, -
6 1210, -1211, and -1212 between Petitioner Google, LLC, and Patent Owner
7 Geoscope Technologies, Pte., Ltd. The -1209 case involves Patent No.
8 7,561,104; -1210 involves 8,400,358; -1211 involves Patent No. 8,786,794;
9 and case, the -1212 case involves Patent No. 8,406,753.
10 I'm Judge Scanlon, and with me today are Judge McShane and Judge
11 Range.
12 So let's start with appearances. Who's here for Petitioner, please?
13 MR. KEANE: Good afternoon, Your Honor. On behalf of Petitioner
14 Google, LLC, I am Patrick Keane, and with me are colleagues Roger Lee
15 and Sam Harrod. And also in attendance from Google is in-house counsel
16 Jim Sherwood. Speaking will be myself and Mr. Lee.
17 JUDGE SCANLON: All right, very good, thank you. And for Patent
18 Owner, please?
19 MR. MCBRIDE: Good afternoon, Your Honor. This is Steve McBride
20 for Patent Owner Geoscope. We also have on the line Jim Carmichael, as
21 well as Chris Abidin. And Brad Close, the Executive Vice President of
22 Patent Owner Geoscope, is following along on the public line.
23 JUDGE SCANLON: Okay, thank you. I do want to note that I
24 misspoke earlier. The patent -1211 case I -- the Patent No. is 8,786,494, just
25 for the record.

1 So, okay, thank you. I want to begin with a few brief guidelines for
2 the video hearing. If at any time during the hearing you encounter any
3 technical or other difficulties, please let us know immediately. If you get
4 disconnected entirely, please try to contact the hearing staff that provided
5 you with the connection information.
6 Please make every effort to speak clearly and avoid speaking over
7 others. This will assist our court reporter in making a clear record. Also, you
8 may want to mute your line while not speaking.
9 We do have the entire record, including the demonstratives. When
10 referring to materials from your demonstratives, it's helpful if you provide
11 us with the page number for the slide to improve the clarity of the record.
12 As set forth the hearing order, each party is permitted 90 minutes to
13 present their arguments. Because it bears the burden of persuasion,
14 Petitioner will go first and may reserve no more than half of its time for
15 rebuttal.
16 Patent Owner will then have an opportunity to respond and may also
17 reserve time for rebuttal or surrebuttal. We will keep time to the best of our
18 ability, and I'll try to provide updates about remaining time as the hearing
19 progresses.
20 So, with that, let's start with Petitioner. Please let us know how much
21 time, if any, you would like to reserve for a rebuttal.
22 MR. KEANE: Yes, Judge Scanlon, we would like to reserve 30
23 minutes on behalf of Google LLC.
24 JUDGE SCANLON: Okay, very good. You can -- you may start when
25 you are ready.

1 MR. KEANE: All right, good afternoon, your Honors. I'm Patrick
2 Keane. I'm going to start off with a few common threads which we find in
3 related patents that all derive from the same priority filing. And then I'm
4 going to have my colleague Mr. Lee present argument on demonstratives for
5 what we refer to as the '104 patent family. And that would be the '104 patent,
6 the '358 patent, and the '494 patent. Then I will return to present our slides
7 on the final patent we'll be discussing here, which is the '753 patent.
8 As I said, I think it's helpful to have some context. We had five
9 patents at issue here deriving from the same priority document. One of
10 those was argued in oral hearing this morning, the '784 patent. That was the
11 one we did first.
12 And then we're turning to this '104 family, and then finally the '753,
13 which is kind of a reverse order, I mentioned this morning, of the way you
14 would logically think about the technology at issue.
15 The '753, which is what we'll be arguing last today, is the database
16 structure. It's a stored database of grid points and what they -- what grid
17 point really is. And we'll be talking about how that grid point database's
18 access is located in a mobile device at an unknown location, that's what the
19 claims are directed to.
20 That's what we're ending with, and then we'll be, before that today,
21 this afternoon session, arguing the '104 family, which is directed to the
22 accessing of that existing database.
23 This morning we talked about adding additional data to the database,
24 you can see that you're going from the database to access the database to

1 add expanded or additional information regarding screens and so forth.
2 That's really a context of the five patents we're discussing.
3 Similarly to that context of how these patents relate to one another,
4 they have similar problems across them. Similar to what we discussed this
5 morning with the '784, the patents were the subject of District Court
6 litigation, where the patents we're discussing this afternoon were held by
7 final judgment -- some of the claims that we're discussing this afternoon
8 were held by final judgment to be unpatentable. And on appeal to the Court
9 of Appeals for the Federal Circuit, some of the claims at issue in those
10 patents have been disclaimed from the '104 patent family. My colleague Mr.
11 Lee will be discussing that with our demonstratives.
12 And, finally, in terms of the context, the claim construction, because
13 of the common priority aspect of these five patents, the claim construction is
14 consistently applied across all the five patents. And that claim construction
15 was decided by the District Court in its Markman ruling and adopted by this
16 Board in its Institution Decision. And we believe that those are the correct
17 claim constructions for the terms at issue.
18 I want to add a little bit to my context from this morning with regard
19 to the patents we're talking about today. As I said, these claims are directed
20 to methods of locating a mobile device situated at an unknown location,
21 methods and related systems. As such, they access a database of stored grid
22 points where the grid points have been defined. It's not a question of how
23 the grid point is produced or arrived upon or determined. It's what's in the
24 database.

1 Petitioner has set forth in each of its petitions compelling merits that
2 were recognized in the ID as to why each of the patents under examination
3 here should be held as unpatentable, given the material prior art that's been
4 cited. There's substantial evidence that has been presented by Petitioner in
5 the form of expert testimony. Much of that expert testimony is going
6 unrebutted. That's been mentioned this morning.
7 Just for context, I'd also like to briefly mention that we'll be hearing
8 some of the terms over and over again today, although the claimed
9 construction ruling dealt with a broad array of terms. The ones that seem to
10 have the most impact to this hearing will be the terms "calibration point,"
11 "grid point," and "non-uniform grid points." I'm not going to go through
12 what those are because they're defined in the Markman ruling and in the
13 Institution Decision. They were recognized to be consistent with the
14 Markman ruling.
15 I would, however, like to briefly point out that, as regards this term
16 "non-uniform grid points," I raise for Your Honors to appreciate that we're
17 talking about non-uniform grid points and not grids or not non-uniform
18 regions. We're talking about the points themselves. And I think that's
19 important.
20 It's also important to recognize that a non-uniform grid point, referred
21 to as a NUG, N-U-G, that point can be added to a database, a uniform
22 database. And it may make that uniform database a non-uniform database,
23 but there's nothing that says you can't apply a non-uniform grid point into a
24 database of existing points to create a non-uniform point in that database.

1 With that, I'm going to turn now, as I said, to the slides, the
2 demonstratives, on that '104 patent family, to my colleague Mr. Lee, and
3 allow him to discuss demonstratives for the '753 patents.
4 MR. LEE: Thank you, Mr. Keane.
5 May it please the Board, my name is Roger Lee. I'm representing
6 Petitioner Google, LLC, in these proceedings. And I'd like to take a few
7 moments to discuss our petitions and the proceedings relating to the '104,
8 '358, and '494 patents. Go to Slide 2, please.
9 And these patents, the '104/'358/'494 patents, they all belong to the
10 same family and I'll be referring to these as the '104 patent family. The '358
11 patent is a continuation of the '104 patent, and the '494 patent is a
12 continuation. Next slide, Slide 3, please.
13 So, there has been a significant narrowing of issues across all three
14 IPRs, and that's reflected in this slide. As you can see, there were a number
15 of claims which have challenged in the petitions, and the majority of those
16 claims were disclaimed by Patent Owner during the course of (audio
17 interference). And that would include all of the challenged claims. That's
18 also reflected in the third column in this table.
19 So the claims that now remain after Patent Owner's disclaimers are
20 Claim 2 of the '104 patent, Claim 18 of the '358 patent; and Claims 4 and 26
21 of the '494 patent. And then Slide 4, please.
22 And for the Board's convenience, we filtered the grounds against the
23 main claims, and this slide shows the grounds that would be challenging
24 each of the claims that survived after the patent was published. And, as you
25 can see, there remains a number of grounds concerning patentability with

1 respect to each of the remaining claims on each of (audio interference). Go
2 to Slide 5, please.
3 The challenged claims of the '104 patent family relate to methods for
4 determining a location of a mobile station such as a mobile phone, as well as
5 systems for determining location.
6 JUDGE RANGE: Counsel, this is Judge Range. Our technical people
7 are indicating that the court reporter is having some issues with audio
8 quality. And I'm also having a little bit of trouble hearing you.
9 MR. LEE: Okay. I have repositioned the mike. Hopefully you can
10 hear me now, but if you cannot, feel free to interrupt me and let me know if
11 that is not satisfactory.
12 JUDGE RANGE: That sounds better to me.
13 MR. LEE: That sounds better? Okay.
14 MR. SLAY: The closer you can get to the microphone would be
15 helpful.
16 MR. LEE: Okay, we have repositioned the microphone, so hopefully
17 this will help with that issue.
18 JUDGE RANGE: Thank you.
19 MR. LEE: Thank you. Now, the challenged claims of the '104 patent
20 family, they all relate to methods and systems for determining a location of a
21 mobile station such as a mobile phone. And, as discussed at pages 8 and 9
22 of the '104 petition, the purported novelty of the '104 patent family has to do
23 with modifying the observed network measurement data that is obtained by
24 the phone.

1 And the patent, in its background -- the patents, in their backgrounds,
2 discussed the purported problem of signal attenuation, for example, when
3 the mobile phone is located in a building. And the proposed solution of the
4 challenged claims is to modify the observed network measurement data
5 received by the phone prior to comparing that observed network
6 measurement data to the previously gathered calibration data.
7 If we can go to the next slide. As you can see, the remaining claims
8 have nothing to do with this purported novelty. The remaining claims have
9 nothing to do with observed network measurement data, nor do they have
10 anything to do with modifying the observed network measurement data.
11 Indeed, all of the challenged claims recited this purported novel feature of
12 modifying the observed network data, but all the challenged claims were, in
13 fact, disclaimed by Patent Owner. So the purported novelty discussed in the
14 '104 patent family is actually not -- it's not novel at all.
15 If you can go to Slide 7, please. The Patent Owner's only argument
16 for patentability is that the prior art does not disclose the claimed grid point.
17 And Patent Owner supports this argument by asserting that a grid point
18 must be obtained by an "evaluation of calibration data to determine the
19 boundaries of the area represented by a grid point."
20 However, the District Court already considered this very issue that the
21 Patent Owner is advancing now in these IPRs, and the District Court came to
22 the final construction. And that final construction is shown in this slide on
23 the left. It is a point associated with representative calibration data for an
24 area.

1 Nowhere in the District Court's construction is there a requirement
2 that the grid point derive that particular manner, much less evaluation of the
3 calibration data. Nor is there any requirement that the grid point be obtained
4 via evaluation "to determine the boundaries of the area." You can go to slide
5 –
6 JUDGE SCANLON: Excuse me, Counsel. You're still -- the quality
7 of the audio is a little better than it was, but it's still kind of garbled at times.
8 Can everyone who's not speaking mute their microphones? That may help.
9 MR. LEE: Okay. Your Honors, I will try to speak louder. And, again,
10 feel free to interrupt me if the sound quality is not sufficient for your
11 purposes.
12 MR. SLAY: Hello, this is the tech. You sound fine now, but once you
13 started again, it's getting garbled on our end. And I do notice that you have
14 two microphones in the room. One probably needs to be muted. I'm not
15 sure which one you're using, but if you'd like to check it, we can do that
16 now. Or we may have to interrupt you again.
17 MR. LEE: Okay. ;I've been told that this microphone here is not
18 functional, and so we just have the one speakerphone that we are using.
19 MR. SLAY: Can you move that speakerphone closer? Because that
20 may be the problem, it's just too far away from you.
21 MR. LEE: It is on the podium now.
22 MR. SLAY: As close as you can get it without it interfering with what
23 you're doing.
24 MR. LEE: Okay.

1 MR. SLAY: I wonder if some of the garble is because it's too close to
2 the microphone.
3 MR. LEE: Okay, shall I -- we've repositioned the speakerphone to a
4 place where we think it'll be optimized. Shall I continue?
5 JUDGE SCANLON: Yes, please do. At least right now, it's sounding
6 better than it was before.
7 MR. LEE: Okay. And, once again, if there are any issues as we move
8 forward, feel free to interrupt me and we'll try to work on our end to address
9 the issue.
10 JUDGE SCANLON: Thank you.
11 MR. LEE: Thank you.
12 JUDGE RANGE: This is Judge Range. I was going to interrupt you
13 on the merits this time.
14 MR. LEE: Yes, Your Honor.
15 JUDGE RANGE: Could we go back a slide to, like, Slide 6?
16 MR. LEE: Yes.
17 JUDGE RANGE: Okay. So, I like this slide because it lays out the
18 claim language that everyone seems to be focused on. And I know that the
19 Petitioner and Patent Owner have a lot to say about what non-uniform grid
20 point means and whether or not the prior art teaches it. But it looks, to me,
21 from these claims, that the claims require that the database comprise
22 previously gathered calibration data. Correct?
23 MR. LEE: That is correct.
24 JUDGE RANGE: Right. And so I don't know that the database
25 necessarily has to contain a grid point. And it says that it's previously

1 gathered calibration data for one or more non-uniform grid points within
2 said region in all four of these claims.
3 And I'm wondering what the word "for" is doing there. In other
4 words, how does the calibration data that is in the database relate to the
5 recited non-uniform grid point?
6 MR. LEE: Yes. So, we agree with you, Your Honor, that the term
7 "for" is an important term to understand the meaning of the recited one or
8 more non-uniform grid points.
9 And the first thing to note is that a highlighted language in all of these
10 dependent claims that recite the previously gathered calibration data, that
11 limitation is actually recited in the disclaimed base dependent claims, which
12 Patent Owner is not contesting as being novel.
13 So, previously gathered calibration data -- and, again, this is the data
14 that the system uses to compare received network measurement data to
15 locate the phone. That is well-known in the art and it's a part of the
16 disclaimed claims.
17 So what's left is this phrase "for one or more non-uniform grid
18 points." And Patent Owner has argued in its Patent Owner response as
19 surreply that the claimed grid point requires a specific manner in which the
20 grid point needs to be obtained, in which the grid point is generated. And
21 we believe that the Patent Owner's construction emphasizes the fact that the
22 grid point recitation in these claims are, in fact, directed to an intended use.
23 The claim recites previously gathered calibration data. And then it
24 modifies that by saying for one or more non-uniform grid points. All that
25 phrase is adding is an intended use of how that calibration data might be

1 used. And we think that Patent Owner's explanation of what a grid point is
2 actually further demonstrates that this is an intended use because Patent
3 Owner's entire argument concerning of grid point revolves around the idea
4 that a grid point must be generated in a particular manner from preexisting
5 calibration data.
6 So we think that the claims, these particular claims that remain, reflect
7 that idea that, yes, there is a requirement that there be previously gathered
8 calibration data. We've already satisfied that limitation in the disclaimed
9 base independent claims. These claims add this additional feature of "for
10 one or more non-uniform grid points."
11 But, again, this is just an intended use of the calibration data that's
12 already found in the prior art, that are already recited in the independent
13 claims, which have already been disclaimed by the Patent Owner.
14 JUDGE RANGE: This is Judge Range again. What if the "for"
15 language serves the purpose of saying something about the calibration data?
16 In other words, the calibration data has to be of such a nature that it's "for
17 one or more non-uniform grid points within said region." Like, for example,
18 perhaps the calibration data has to be sufficient to be able to generate the
19 recited grid point.
20 MR. LEE: Well, if the term "for" is read to require the calibration data
21 to have a particular quality that would enable it to be used for a grid point,
22 we also believe that the prior art discloses that. Meaning, if there's some
23 kind of limitation imparted by the "for" phrase that somehow requires the
24 calibration data to be used to create a grid point, we think that the prior art
25 also discloses that as well.

1 So, backing up and taking a step back, if the claim is read to mean that
2 the "for" limitation is actually an intended use and nonlimiting, we think the
3 prior art discloses that.
4 Conversely, if the "for" recitation is read to be limiting under either
5 construction, under Petitioner's construction that followed the District
6 Court's ruling and the Institution Decision, or the Patent Owner's
7 construction that attempts to import the manner in which the grid point is
8 made, the prior art discloses grid point or non-uniform grid point under
9 either construction.
10 JUDGE RANGE: Thank you, Counsel.
11 MR. LEE: If we can go to Slide 7. We went over this earlier, but the
12 main point to take away from this slide is Patent Owner's construction
13 advanced in this proceeding attempts to import new limitations that are not
14 required in the final construction of the District Court: evaluation to
15 determine the boundaries of the area. We can go to Slide 8, please.
16 The District Court expressly considered Patent Owner's argument.
17 This argument that Patent Owner is advancing in its response and in its
18 surreply was the very argument that the District Court considered during the
19 Markman process in the related litigation, and the District Court expressly
20 rejected this argument.
21 And this is an excerpt from Exhibit 1028, the Markman order, where
22 the District Court explained all of this. And I'm just going to read the
23 excerpt at the very bottom, the bolded language in this bubble. The Court
24 said that the italicized language from which Plaintiff's construction is drawn

1 is directed more toward what must be done to arrive at a grid point, or a set
2 of grid points, rather than what a grid point is.
3 And so the District Court considered Patent Owner, or Plaintiff's
4 argument attempting to limit a grid point to manner in which it is made by
5 use of analysis. And the District Court rejected that argument, saying, well,
6 that goes to how a grid point is made, and that's not how we're going to
7 construe this claim term "grid point." We should construe this term "grid
8 point" based on what it is.
9 And so the District Court relied on the disclosure here in the '104
10 patent that ultimately made its way as the basis for the District Court's final
11 construction.
12 Now, one quick --
13 JUDGE SCANLON: Excuse me, Counsel. This is Judge Scanlon. A
14 quick question on what you're showing us on Slide 8.
15 So, similar to that language from the District Court, it seems to be
16 equating grid point and non-uniform grid point. So my question is, do you
17 agree that those are the same, or is there any distinction in how a non-
18 uniform grid point, you know, differs from an ordinary grid point?
19 MR. LEE: Thank you, Your Honor. As the Petitioners, we submitted
20 a separate construction for the term "non-uniform grid point." And that's
21 discussed at Slide 19 of our slide deck, and if we could advance to Slide 19.
22 The first bullet point, non-uniform grid points were construed as grid
23 points that are non-uniformly spaced throughout a geographic region. And
24 so that was the construction that we advanced in the petition. It was the
25 construction that we relied on for explaining how the prior art satisfies the

1 term "non-uniform grid point." It also was the construction that the Board
2 adopted for purposes of institution.
3 So, as Petitioners, we did offer different constructions for the terms
4 "grid point" versus "non-uniform grid point." My understanding of Patent
5 Owner's positions is that the terms "grid point" and "non-uniform grid
6 point," they mean the same thing.
7 And so we think that -- and I'll spend some time explaining this in a
8 moment -- we think that the intrinsic evidence that the Patent Owner points
9 to as support for construction actually does not support the idea that a grid
10 point ought to be limited in the way that Patent Owner is trying to do. And,
11 because of that, those arguments also apply to Patent Owner's construction
12 for non-uniform grid point.
13 To put it more succinctly, we believe that Patent Owner's arguments
14 for grid point and non-uniform grid point stand or fall together because the
15 arguments are the same.
16 Does that address your question, your Honor?
17 JUDGE SCANLON: Yes, thank you.
18 MR. LEE: So if we can go back to Slide 8. At the very bottom, Patent
19 Owner has admitted that "there is no relevant difference in evaluation and
20 analysis for purposes of this IPR."
21 The District Court's Markman order refers to "analysis." I believe
22 Patent Owner also used the term "analysis" in its preliminary response. But
23 in the Patent Owner's response and then its surreply, the Patent Owner
24 switches terms and goes from "analysis" to "evaluation." But it's the same

1 argument. Regardless of whether Patent Owner used the term "analysis" or
2 "evaluation," it's essentially the same argument.
3 Patent Owner is trying to introduce this idea of how the grid point is
4 being made as a requirement of grid point. And Patent Owner itself, in its
5 surreply at page 6, admits that there is no difference between "evaluation"
6 and "analysis."
7 Now if we can go to Slide 9, please. The Board recognized, correctly
8 recognized, the import of the Markman order and this particular language.
9 Patent Owner, again, attempted to point to this language as a basis for its
10 construction. But the Board correctly pointed out -- and this is the excerpt
11 on the right from the Institution Decision -- that "Patent Owner
12 mischaracterizes the District Court's claim construction order."
13 And so, again, Patent Owner's argument attempts to introduce
14 additional requirements that are not part of the claim construction. And, of
15 course, we think that that still holds true and we agree with that.
16 If we can go to Slide 10, please. Okay, so, we think that there is good
17 reason for why the District Court arrived at its decision in rejecting Patent
18 Owner's attempt to import limitations of evaluation and analysis. And,
19 turning to the intrinsic evidence, the first piece of evidence here is the '104
20 patent family itself, which describes a non-uniform grid point as being
21 represented -- as representing an area of collected calibration data.
22 So the '104 patent family itself describes non-uniform grid points
23 without any requirement for evaluation, without any requirement for any
24 specific manner in which the non-uniform grid point is generated. You can
25 go to Slide 11, please.

1 And the '753 patent is in agreement. The '753 patent is also the same
2 family as the '104 family. And, similarly, the '753 patent says that if the
3 non-uniform -- if the NUG contains only a single calibration point, the
4 location of the NUG, non-uniform grid point, may be set as the location of
5 the calibration point.
6 So here the '753 patent unequivocally discloses that a single
7 calibration point can serve as a non-uniform grid point. It "may be set as the
8 non-uniform grid point," without any requirement for evaluating that
9 calibration point, without any requirement for comparing that calibration
10 point to other calibration data to determine its statistical similarity. The '753
11 patent just simply states, in one embodiment, you can take a single
12 calibration point and use that point as a non-uniform grid point.
13 If you can go to Slide 12, please.
14 JUDGE SCANLON: Excuse me, Counsel, before you move on. So,
15 you're pointing us to the '753 patent. I may be mistaken, I'm not sure if the
16 other patents in these cases have that type of language that you just pointed
17 us to. Is that correct? Or can you point us to similar language in the, you
18 know, the '104 patent, for instance?
19 MR. LEE: Yes. The '104 patent, to my knowledge, does not have this
20 particular disclosure. But if we go back to Slide 10, this is the '104 patent
21 family and what it discloses about non-uniform grid points. And the overall
22 similarity here is that when the '104 patent family describes non-uniform
23 grid points, there is no requirement for evaluation. There is no requirement
24 for how the grid point needs to be generated in any particular manner.

1 JUDGE SCANLON: Okay, yeah, I guess what I'm really driving at is
2 that some of Patent Owner's other arguments are that the calibration point
3 and the non-uniform grid point can't be the same thing. And you may be
4 planning on addressing that argument later on in your presentation, but I
5 guess what I'm saying, does this have any relevance to that argument?
6 MR. LEE: Yes. So I would like to actually address that issue. I think
7 you raise an important point about some of the distinctions between the
8 terms that are relevant to these proceedings. My colleague Mr. Keane had
9 mentioned that the terms "calibration data," "calibration point," "grid point,"
10 and "non-uniform grid point," these are all terms that appear in various
11 claims across these proceedings.
12 And we want to explain -- I think it might be helpful to take a step
13 back and discuss how these mobile phone location methods work, in general.
14 And this is how the '104 patent family works, but this is also how the prior
15 art works that we've cited in our petition.
16 So, generally, when you're building a database for locating a mobile
17 phone, you obtain signal strengths at various locations. And each location
18 that corresponds to the signal strengths is a calibration point. The signal
19 strength component of that calibration point, that's the calibration data. And
20 when you take that calibration point and you add it to the database and now
21 that calibration point is used to locate a mobile phone, that calibration point
22 is a grid point.
23 The grid point represents an area in which the user may move, an area
24 -- the prior art describes this area as a "small area" in the Spain reference. It
25 discloses this area as a "predetermined proximity" in the Shkedi reference.

1 But the idea is the same, that you have a point, a location in the database,
2 with corresponding signal strength data. It's almost like a lookup table.
3 And when a user moves around in the area, when it comes within a
4 predetermined proximity or a small area of that point, that enables you to
5 locate where you are with respect to the use of that data.
6 JUDGE RANGE: This is Judge Range. I just had a clarification on
7 the terminology. Is calibration point, is it a physical point, like a physical
8 point on Earth? It's not data?
9 MR. LEE: No, it is data, Your Honor.
10 JUDGE RANGE: Okay.
11 MR. LEE: Yes, it's data. So a calibration point is data, and it's a
12 location associated with signal strength data.
13 JUDGE RANGE: Which calibration -- I thought that was calibration
14 data, was the signal strength data associated with the calibration point.
15 MR. LEE: Yes, so the calibration data relates to the signal strength
16 associated with the geographic location. And the calibration point refers to
17 the location and the signal strength together.
18 When that calibration point is used -- is added to a database for
19 locating a phone, that calibration point becomes a grid point representative
20 of an area.
21 JUDGE RANGE: Okay, so the point isn't, like, a physical place on
22 Earth; it's some data that referenced -- that corresponds to a physical place
23 on Earth.
24 MR. LEE: That's correct, that's correct. And so the idea is that as you
25 add more points, more calibration points or grid points, to the database, you

1 increase the resolution of the system so that you can obtain more accurate
2 location estimations when you're comparing the signal strength received by
3 the phone to the database.
4 JUDGE RANGE: Thank you. That helps.
5 MR. LEE: And so just to further elaborate on that point, the prior art,
6 we mention this in our papers, Shkedi, the Shkedi reference, talks about
7 extrapolating additional points to build up that database. Spain talks about
8 interpolating additional points to, again, build up that database. But the
9 whole idea is that, if you want to increase the accuracy of a mobile phone
10 location, all you need to do is add additional points, you add additional
11 points to the database. And so it increases the overall resolution, the overall
12 accuracy of the system.
13 And so, at one point I believe Patent Owner is attempting to argue that
14 there would be no reason to modify certain prior art to add additional points
15 to an existing database. For example, Patent Owner is arguing that there is
16 no reason to modify the Shkedi database to add additional interpolated
17 points that are disclosed by Spain. But that's not true.
18 As we discussed in our petition, there would have been ample reason
19 for why you would want to add additional points to the database, and that
20 reason is simply because it increases the accuracy of the mobile location
21 method.
22 If we can go to Slide 12, please. Patent Owner cites to column 2 of the
23 '753 patent, which discusses evaluation and argues that this is evidence that
24 evaluation must be required in the manner a grid point is made. Patent
25 Owner overlooks the fact that at line 51, column 2, as you can see in this

1 excerpt, that's just an embodiment. It's an embodiment of the present
2 subject matter. There is no explanation or justification for why a grid point
3 must be limited to this particular embodiment.
4 We can go to Slide 13, please. Much of Patent Owner's response is
5 devoted to explaining why evaluation or how evaluation is conducted by
6 determining whether the data is statistically very similar or statistically --
7 whether there's statistical similarity that exists between the calibration data
8 points. You can go to Slide 14.
9 In our reply, we explained that statistic similarity, while it's discussed
10 in the intrinsic evidence, it's clear that statistical similarity is really -- it's
11 merely one embodiment, one way in which a grid point might be generated.
12 And these are some excerpts from the underlying '379 provisional, as well as
13 the '753 patent that established this.
14 Faced with this intrinsic evidence, the Patent Owner, in its surreply at
15 page 10, conceded that "Patent Owner's construction does not mention or
16 require a statistical similarity." So Petitioner is confused as to why the
17 discussion of statistical similarity demonstrates that evaluation must be a
18 requirement, when Patent Owner itself admits that statistic similarity is just
19 an example.
20 If we can go to Slide 15, please. This is more along the same lines.
21 Patent Owner relies on Figure 6 of the '784 patent as purported evidence
22 demonstrating that "the non-uniform grid point, NUG, must have different
23 shapes and sizes;" that "they look nothing like any conventional notion of a
24 grid."

1 Patent Owner overlooks the fact that, in the '784 patent itself, it
2 explicitly describes Figure 6 as "an exemplary non-uniform grid region."
3 Again, these are examples, not requirements.
4 If you can go to Slide 16, please. Petitioner's expert was asked --
5 JUDGE RANGE: This is Judge Range again. It seems like the -- it's
6 confusing to me when the patents use the words -- the acronym NUG,
7 whether or not that refers to a non-uniform grid, or whether it refers to a
8 non-uniform grid point. Do you have thoughts on that? Does it depend on
9 where in the patent it's using the acronym, or so forth?
10 MR. LEE: Yes. So, we agree with you that the intrinsic evidence does
11 not use NUG consistently, and it is confusing at times as to whether it's
12 referring to a non-uniform grid or a non-uniform grid point. In the
13 provisional application, there's a section -- '379 provisional application,
14 there's a section that defines acronyms. And it says NUG stands for non-
15 uniform grid point. But I agree with you, Your Honor, that it is confusing.
16 What we've tried to do here is we've tried to -- Petitioner has tried to
17 address Patent Owner's arguments relying on an NUG as a non-uniform grid
18 point.
19 So, put differently, Patent Owner asserts, at times in the intrinsic
20 evidence the term NUG appears, that that's a non-uniform grid point.
21 Petitioners have just taken that allegation on its face and said, okay, even if
22 that's so, even if we assume that NUG appearing at the particular excerpt
23 that Patent Owner is asserting stands for a non-uniform grid point, that's just
24 an example, as shown in Figure 6 of the '784.
25 JUDGE RANGE: Thank you.

1 MR. LEE: Slide 16. Petitioner's expert was asked about analysis and
2 whether it's required. And Petitioner's expert, David Williams,
3 unequivocally answered: it would not require analysis; it could be just the
4 actual measurements.
5 You can go to slide -- for the same of time, I'm going to skip over to
6 Slide 18. So, the third bullet point is a quotation from the '753 patent that
7 we saw earlier: if the non-uniform grid point contains only a single
8 calibration point, the location of the NUG may be set as the location of the
9 calibration point.
10 The thing we want to note here was that, in the second bullet point,
11 Patent Owner has admitted that a non-uniform grid point can consist of a
12 single calibration.
13 I think there was some argumentation that was made in the related
14 litigation as to whether a non-uniform grid point must correspond or be
15 generated from multiple calibration points. But here in its surreply, the '104
16 surreply at page 7, the Patent Owner admits that a non-uniform grid point
17 can consist of a single calibration. We can go to Slide 19.
18 We covered this already. We believe that Patent Owner's arguments
19 for a "non-uniform grid" point stands or falls with its arguments for a grid
20 point. And we think that the intrinsic evidence does not support Patent
21 Owner's narrow reading or attempts to incorporate additional limitations.
22 We think that the District Court was correct in its analysis and its final claim
23 construction, and we agree with the Board in its finding in the Institution
24 Decisions.

1 We can go to Slide 20. Another problem with Patent Owner's
2 construction is that it fails to explain the metes and bounds of the term
3 "evaluation." And that's exemplified by Patent Owner's own expert, Mr.
4 Sturza, and the answers that he gave to questions under cross-examination.
5 So, when asked about how evaluation could be performed -- and now
6 I'm looking at the second point in the slide -- Mr. Sturza answered, "I
7 provided, you know, no opinion on how the evaluation could be performed."
8 Question: So you do not have any opinion on how the evaluation
9 under construction might be performed, is that correct? Answer: That's
10 correct.
11 And Mr. Sturza provided similar answers concerning statistically
12 similar, which, we've already seen in previous slides, Patent Owner has said
13 is not even a requirement of construction.
14 So, all this to say, the metes and bounds of the claim construction that
15 Patent Owner is attempting to advance here are very unclear. And Patent
16 Owner's own expert doesn't have an opinion on how evaluation could even
17 be performed. And so we believe this cannot possibly be the right
18 construction when there's so much uncertainty surrounding what evaluation
19 even means in Patent Owner's construction.
20 Now, if we can go to Slide 21. And this can be sort of a good
21 summary slide for the prior art issues that will follow.
22 Patent Owner has distilled its arguments in surreply to -- and
23 summarized its arguments in this statement at page 1 in the surreply, where
24 Patent Owner argues none of the prior art teaches non-uniform grid points
25 "under the appropriate construction."

1 So it's our view that, after a round of briefing and discovery, expert
2 discovery, the issues have been distilled to Patent Owner's arguments all
3 stand or fall with its faulty construction. The arguments that we presented in
4 the petition, under the correct construction, the District Court's construction,
5 already demonstrate how the prior art discloses a grid point and a non-
6 uniform grid point under the right construction.
7 And Patent Owner has, in our view, given up on that issue, at least in
8 its surreply, and has turned to its construction. But, as we already explained
9 previously, that construction is just not correct.
10 We can go to Slide 22. These next few slides, they dive into the prior
11 art in more detail and they explain how the prior art satisfies a non-uniform
12 grid point, both under the District Court's construction, as well as even
13 Patent Owner's faulty construction.
14 And, in the sake of time, we are also going to discuss the '753 patent.
15 I'll pause here and I'll take any questions that Your Honors might have
16 concerning the '104 patent family.
17 And if there are none, I'll turn it over to my colleague, Mr. Keane, to
18 discuss the '753 patent.
19 JUDGE SCANLON: No further questions from me.
20 JUDGE MCSHANE: No questions. Thank you.
21 JUDGE RANGE: None.
22 MR. LEE: Thank you, Your Honors.
23 MR. KEANE: So, Your Honors, in the interest of time here -- I know
24 we scheduled an hour and reserved 30 minutes. We may run a little bit over
25 that; I'll try not to. But we did have that brief snafu with that technical issue

1 that maybe cost us a few minutes, so if I might ask your sympathies if we
2 run a few minutes over the hour. I don't think I will, though.
3 I want to just highlight a couple of the points we just heard. Patent
4 Owner's claim construction has been a moving target from pre-Markman,
5 into Markman, and now post-Markman. The District Court and this Board
6 have agreed on what a proper claim construction is. That claim construction
7 has not been appealed to the Court of Appeals for the Federal Circuit and is
8 clear and unambiguous.
9 And I do want to just briefly address one of the points that was raised
10 by Your Honor on calibration point. Just to be clear, as my colleague said, a
11 calibration point is calibration data, such as the calibration data of a network
12 measurement report. It's the signal strengths, a single signal strength or
13 several signal strengths from towers.
14 However, it's associated with a geographic point. So it is related to a
15 geographic point, and the two are combined to create, as my colleague said,
16 a data entry or a data that can then be added into the database and then used
17 for subsequent mobile phone location determinations by accessing that
18 database. So I just wanted to reiterate that.
19 I also wanted to mention --
20 JUDGE RANGE: Is the last thing you said, the combination, is that a
21 calibration point or is it a grid point?
22 MR. KEANE: It's a -- well, it's a calibration point. But, as my
23 colleague said, a grid point can be a single calibration point. So, when it's
24 entered into the database -- the way I think of this is, as I'm building my

1 database, it's completely empty. I'm going around a geographic area and
2 I'm obtaining signal strengths at discrete locations to populate my database.
3 Now, signal strengths are in electromagnetic fields that are varying
4 wildly. They're very ephemeral. They exist for a spot in time. So when you
5 take a network measurement report of calibration data and associate it,
6 you're standing next to a tower and you associate it with the geographical
7 coordinates of that tower, you've created a calibration point.
8 If you put that into your database, that calibration data is, for intents
9 and purposes in the real world, gone. The signals are changing, carriers
10 move up and down the amplitudes, the decibel levels of their signal
11 strengths. So the calibration data that was used to create the calibration
12 point that's stored in the database may disappear. But by putting it in the
13 database for the mobile phone location determinations, I've stamped it in
14 history.
15 And now if my phone that was sitting next to that tower when the
16 calibration point was created moves down the street a half a block and I
17 want to know where its unknown location is now, and I go -- my database
18 wants to know where the car is now, it looks to the database and says this is
19 a grid point that's somewhere in the serving cell area of where you were
20 when the calibration point was created. And now I can interpolate or use
21 mathematical determinations to figure out what I estimate your location to
22 be relative to that calibration point that was established into my database as a
23 grid point.

1 And as we know from the '753 patent, a single NMR, a single set of
2 calibration data, can be a calibration point, and a single calibration point can
3 be a grid point.
4 And what we're talking about for the '753 patent is not the signal
5 attenuations that can occur when you're trying to enter data into the database
6 to determine its mobile device location. What we're talking about now is,
7 my gosh, you've got all this vast amount of data -- and let's go to the slides
8 now and maybe just jump right to Slide 4.
9 You've created a large database. You want as many points in the
10 database as you can get for the most robust position location determination
11 you can have. Or maybe drop back one just we see the -- you know, here
12 we're dealing with Claims 1, 7, 9, 32, 38, 40. Effectively, Claims 1 and 32
13 are methods and system independent claims that track one another. And then
14 the dependent claims are basically -- 7 and 9 are basically identical to 38 and
15 40. These claims were held unpatentable in District Court in our own appeal
16 for invalidity under final judgment under Section 101. Next slide.
17 So the problem, jumping back to what '753 is, as I mentioned at the
18 onset, it's about this database and how you can effectively, efficiently search
19 all the grid points that you've loaded into the database from the calibration
20 that you've done. That searching is achieved through additions that you
21 make to the database, added information you put in the database, so that you
22 can efficiently process through the data in, basically, a two-tiered process.
23 So the problem here is, as it says in the upper right-hand, the '753
24 discloses there is a need to streamline the process in order to efficiently,
25 effectively handle the vast amount of data. This is effectively the data that

1 goes into the database. And then the lower paragraph says that the problem
2 identified in '753 is the significant volume of data that needs to be searched
3 during geolocation. So it's during mobile device locations to provide
4 efficient searching. Next slide.
5 And this is -- that was -- I'm sorry, that was slide 4. And here, in Slide
6 5, is the solution. It pretty much tracks the claim language. And the
7 language that's the focus of this oral argument will be the blue language.
8 Generate one or more sets of grid points for the calibration data.
9 This goes to the searching process of that database. What you -- and
10 by the way, Patent Owner has, for the most, waived arguments on the other
11 elements of this claim and are focusing on this generation step. And Patent
12 Owner has in some of their briefing dropped the one or more -- I'm sorry,
13 yeah, the "one or more sets" language out of the phrase and focused on
14 generating grid points.
15 This is not the generation of grid points, per se, although our prior art
16 discloses generating new grid points. But this is about generating sets of grid
17 points.
18 And as Your Honors correctly noted in the ID, the generation of sets
19 of grid points in our prior art can, for example, be taking two calibrated end
20 points and interpolating points between them. That becomes a set. And
21 those, all of those points –
22 (Simultaneous speaking.)
23 MR. KEANE: I'm sorry.
24 JUDGE MCSHANE: I'm sorry, Mr. Keane. I'm sorry, I was trying to
25 jump in, and you're a quick talker, so good for you. But on this limitation,

1 this Limitation 1b, I think you list it as, but when you're looking at that
2 phrase, and it says, "generating grid points for said calibration data." When
3 you look at the term "for," what is your interpretation as to what "for"
4 means?
5 MR. KEANE: So, as we said earlier, the generating the sets of grid
6 points, the grid points can be associated with the calibration data. So the
7 construction of a grid point is a point associated with representative
8 calibration data.
9 And so when you say, under the Court's construction, generating one
10 or more sets of grid points for the calibration data, effectively what you're
11 saying, I think, is that you have grid points associated with calibration data.
12 You're also generating sets of grid points that are going to be associated
13 during the search with the calibration data you receive from the mobile
14 phone as it's moving about from the NMR.
15 So, the calibration data, the construction of calibration data, modified
16 or unmodified network measurement data associated with a geographic
17 location, and the construction that the District Court and this Board have
18 adopted for grid point, a point associated with representative calibration data
19 for an area, I think that's reflective of that -- of the construction that the grid
20 points are associated with calibration data, and that they're going to be
21 compared during a mobile device location search process with calibration
22 data from a mobile device at an unknown location.
23 JUDGE MCSHANE: Thank you. And you can go back to your flow.
24 I'm sorry I interrupted.

1 MR. KEANE: No. And I'm sorry if I'm on a little flow. I feel like
2 with that time interruption, I maybe probably went a little quicker than I
3 would have otherwise. But let's go now to -- let's go to Slide 8.
4 So I just want to -- again, this is what I actually just said, is that the
5 final construction of the grid point is a point associated with representative
6 calibration data for an area.
7 As we talked about earlier, the grid point, once it's in the database and
8 used for mobile device location determinations, will be used in connection
9 with a mobile device that's in a small area. It may not necessarily be at the
10 calibration point from which the grid point was generated or produced. Next
11 slide.
12 I'm sorry, this is Slide 9; that was Slide 8. And I don't, I think I'm
13 going to skip this slide because my colleague went through our expert's
14 testimony. And I'm turning now to Slide 10.
15 I want to emphasize Slide 10 because it shows Figure 16 from the '753
16 patent and really what's in the database. We're not talking, as my colleague
17 said, about the methods of building the database. We're talking about what's
18 in the database so that you can do a mobile device location determination.
19 And what is in the database, if you see the upper righthand block, you
20 populate the database with geographical coordinates. The lower box says
21 that you also populate that database with -- and then the very lower
22 highlighted text says "network measurement report data," which would be,
23 for example, calibration data.
24 So you have paired geographic coordinate information with network
25 measurement report data or calibration data, i.e., a calibration point that's

1 placed into the database that becomes a grid point. But, importantly, what
2 you have here also is additional information, such as the middle-highlighted
3 area, which says "serving cell." And by adding something like the serving
4 cell, when you go into the database, you can group the points in the database
5 by serving cell information.
6 Let's go now to Slide 13. Let's actually just go right to 14. I just
7 want to emphasize, coming back to this claim construction issue, that during
8 testimony -- I'm sorry, during cross-examination of Patent Owner's expert,
9 the witness, Mr. Sturza, the expert for Patent Owner, was being questioned
10 about how the claims distinguish over the Spain reference. And what it
11 distilled to during expert testimony was that the claims only distinguish if
12 you adopt this new construction, this ephemeral concept of boundaries and
13 confused evaluation.
14 Basically, Mr. Sturza said, that's in the paragraph that's right in the
15 middle of the page in response to how Spain reads -- I'm sorry, how the
16 Plaintiffs distinguish on the Spain reference, the witness says, well, so, the
17 claims require generating or generate one or more sets of grid points for said
18 calibration.
19 And Spain talks about, you know, fingerprint measurements at
20 predefined locations and interpolating fingerprints at locations between
21 sample locations. And that's not the grid points that are claimed in the '753
22 patent.
23 Why? Why not? The answer: well, in the '753 patent the claimed
24 grid points are associated with representative calibration data for an area
25 whose boundaries are determined from evaluation of calibration data.

1 So the distinguishing characteristic that's a reflection of this pivoting
2 claim construction being proffered is that's the mechanism for trying to
3 overcome the prior art. But, in fact, the Court's construction, as I said, is
4 correct and has not been appealed.
5 Next slide is Slide 15, and let's go down -- let's go another slide
6 down. I'm not going to go through the testimony of the experts that my
7 colleague went through, in the interest of time. Let's go to Slide 19,
8 perhaps. Yeah.
9 Now, this is a very interesting slide. I'm on Slide 19. I've
10 reproduced, on the right, Figure 16, which is the one I talked about, the
11 information that's actually what the grid point is, what's in the database:
12 geographical coordinates and calibration data. That's a grid point in the
13 database.
14 The serving cell information I mentioned earlier is how you can
15 efficiently do a first-tier search of the database. And as you can see on the
16 left from the Spain reference, the primary reference we're relying upon in
17 our ground, the exact same information is in the database, which is why I
18 said at the onset of the hearings the database that's searched through this
19 new, or allegedly new, two-tier searching process is exactly what's disclosed
20 in the prior art.
21 The Spain database includes -- and let me just explain what this Table
22 1 is. This is a table from a page of the Spain that I can't see there on the
23 slide, from a page of the Spain patent. But what it's -- it's below column 70.
24 And ion the left there, under Location, it lists 1 through 60,000, basically,
25 grid point entries. So you have a database of 60,000 grid points. Each row is

1 a grid point defined by its latitude and longitude, geographic coordinates,
2 and its fingerprint information. That is the signal strength calibration data.
3 Now, what Spain added to the database in advance of the filing
4 priority date of the '753 patent was serving cell information, so that you
5 could do an efficient database search, first tier, and know the database down
6 to just a few fingerprints from the same serving cell so that you could do a
7 more complex interpolation among the fingerprints that you've narrowed the
8 search to, and find a more exact estimation of the mobile device's unknown
9 location.
10 JUDGE MCSHANE: So, Mr. Keane, going to these just -- let's focus
11 specifically on the interpolated -- the grid points. So are you contending that
12 the interpolated grid points, that they also represent fingerprints or
13 calibration points? Is that what you're saying?
14 MR. KEANE: I would say, well, there's -- just to be clear, because I
15 just mentioned interpolation as a second step of a two-tier device location
16 process, there's an interpolation that happens, that's an interpolation that
17 happens, you know, among the few fingerprints you've narrowed it down to.
18 The interpolation that was referenced in the Petitioner's brief for the
19 generating step where you're adding interpolated points to the database,
20 those interpolated points are produced from calibration points, as Your
21 Honors correctly noted in the ID, and are added to the database.
22 So, I might have a calibration point at a tower at the end of King
23 Street, and I might have a calibration point over at the Patent Office. And I
24 might want to then say, you know, that's a big area, it has a lot of similar
25 data, but I'd rather have a little more granularity on my determination of

1 where my mobile phone is. So I'm going to just interpolate ten points
2 between the Patent Office and the King Street Metro. And those points,
3 when added to the database, then become representative points that can be
4 used for mobile device location determination. And they would have
5 exactly the same entries that you see here, for example, in Row 1.
6 So Row 1 could be a point, a grid point, that came from a calibration
7 point and then, you know, becomes a grid point when it's stored here and
8 used for device location determination because it represents a small area, as
9 Spain says in the text of Spain cited in our brief.
10 However, the 60,000th entry, that might have been an interpolated
11 entry. But you can see it would have all the same data. It would have
12 calibration data associated with it, even though it might not be a calibrated
13 point, per se, because it was interpolated from two calibrated points.
14 JUDGE MCSHANE: Right, but what you are saying is interpolated
15 points are interpolated physically, right? And, nevertheless, you're saying
16 that the calibration points can be -- the calibration data can be interpolated as
17 well, is that what you're saying?
18 MR. KEANE: Yes.
19 JUDGE MCSHANE: Okay. And --
20 (Simultaneous speaking.)
21 JUDGE MCSHANE: Yeah, and what I'd like to see on that one is --
22 and you can do this in your surreply -- I'd like to see your best cites on that,
23 if you would, from Spain, okay?
24 MR. KEANE: That the data that shows up at an interpolated point is
25 interpolated signal strengths?

1 JUDGE MCSHANE: Yeah. Mm-hmm.
2 MR. KEANE: Okay.
3 JUDGE MCSHANE: Thank you.
4 JUDGE SCANLON: Counsel, just to let you know, we will give you
5 a few more minutes because of the delay for technical issues. But you have
6 about a minute and a half before you go into your rebuttal time.
7 MR. KEANE: Okay. Thank you, Your Honor, for that. I'll wrap up,
8 actually. Let's go to Slide 20. I won't labor over this. It's from our briefing
9 and it just maps Figure 3 of the Spain patent and its method and device for
10 determining the location of a mobile device against Figure 67 of the '753
11 patent which is a figure that tracks to the independent claims. And it's a
12 figure that appears in the section of the patent that's dealing with mobile
13 device location determinations, not methods of how a grid point is
14 determined or what is done to arrive at a grid point, but rather the use of a
15 database of grid point information.
16 And, with that, I think I'll wrap up and I'll do some research during the
17 break.
18 JUDGE MCSHANE: Yeah, just a question here. And this would go
19 to -- what would be relevant would be your Slide 21. And so I just want to
20 clarify this. I read your papers, but what you're saying -- I believe in your
21 papers, I just want you to confirm this. You're saying that it's okay, under
22 the claim constructions, that the interpolated grid points, they can be on a
23 uniform grid. You're saying that's okay?
24 MR. KEANE: Yeah, I mean, I would say, once you add points to a
25 uniform grid, arguably, you make it a non-uniform grid. And that's exactly

1 what the '753 patent says. In this column that's highlighted here, column 51,
2 it refers to the fact that the methods and systems of the patent can be
3 effectively uniform, but you can add non-uniform points to them. You can
4 add -- you can have a very regular looking -- shapes don't really matter here.
5 What matters is the grid points that you're going to access for the mobile
6 device location. And adding a grid point into the database at a non-
7 uniformly spaced location, which has the adopted the Board's construction
8 of a non-uniform grid point, you're creating a point in the database that's
9 non-uniformly spaced so that you can perhaps get a more robust mobile
10 device location determination at that more random point.
11 And by the way, Spain's points are not on a predetermined grid. Spain
12 is just -- I think it's paragraph 100 that refers to it, 99 and 100, that refer to
13 the points can be at any various locations. There's no predetermined grid. I
14 know Patent Owner has characterized it that way, but it's not. It's points that
15 are defined at most by the accuracy of the measurement to produce the
16 calibration points.
17 JUDGE MCSHANE: Okay. Thank you. And one more. On Slide
18 22 --
19 (Simultaneous speaking.)
20 MR. KEANE: Okay. I'm sorry.
21 JUDGE MCSHANE: I'm just arbitrarily picking slides that may be
22 representative. So, anyway, here we talk about the representative calibration
23 data for an area. So I guess the question is, like, why exactly are the
24 interpolated grid points associated with "representative data"?

1 MR. KEANE: Why are the interpolated grid points, did you say? I'm
2 sorry.
3 JUDGE MCSHANE: Yeah, yes, the interpolated grid points.
4 MR. KEANE: Associated with?
5 JUDGE MCSHANE: Representative data.
6 MR. KEANE: Because all grid points, when they're placed into the
7 database and used for mobile device location, are going to be covering an
8 area. And that area is going to have calibration data within it because it's
9 places where the phone can go and provide a network measurement and
10 report back to the location determination database.
11 So all of the points that are -- if you've associated -- if you've placed it
12 into your location database as a grid point, it necessarily has calibration data
13 associated with it. And that calibration data is going to be represented for
14 the small area that the grid point is used to represent the database, the small
15 area that the Spain patent references.
16 JUDGE MCSHANE: Okay. Well, if you could do me a favor and
17 you can do this in your rebuttal. If you can point me to the best expert
18 testimony, the declaration or what have you, supporting that, I'd appreciate
19 it.
20 MR. KEANE: Okay. I will do so.
21 JUDGE MCSHANE: All right. And I don't have any more questions.
22 Thank you.
23 MR. KEANE: Your Honors, any questions from the Board?
24 JUDGE SCANLON: No further questions for me.

1 MR. KEANE: Okay. Thank you for the extra time. I appreciate your
2 indulgence.
3 JUDGE SCANLON: Okay. Now let's turn it over to Patent Owner.
4 And before you begin, if you would like to let us know how much time you
5 may want to reserve for surrebuttal.
6 MR. MCBRIDE: Thank you, Your Honor. Yes, the is Steve McBride
7 for Geoscope. Can I have 30 minutes for surrebuttal?
8 JUDGE SCANLON: Sure. You may begin when you're ready.
9 MR. MCBRIDE: Give me one second here. Thank you, Your Honor.
10 May it please the Court. We've got one slide for this consolidated hearing
11 going over all of the IPRs because the issues between the IPRs are all very
12 similar.
13 Apologies. Let me know -- I've a bit of a cold today. I've got a
14 cough. So if there are any problems hearing me, let me know. The
15 annotations in our set of demonstratives are to the -1209 IPR unless
16 otherwise stated.
17 So the issue in these IPRs is one of the prior art teaches NUGs. And I
18 think there was some confusion NUGs being non-uniform grid points. That
19 hasn't really been contested by the parties. We're treating them the same as
20 grid points. The issue here is Petitioner is conflating NUGs with calibration
21 points. And I think there was some confusion during --
22 JUDGE SCANLON: Sorry to interrupt you so early, but are you
23 saying Patent Owner's position is that a NUG and a grid point are the same
24 thing?

1 MR. MCBRIDE: No, they're different things. They're very different.
2 A NUG is a -- it's kind of an abstraction of a bunch of grid points. And I'll
3 explain that. One useful place to start with this explanation is Petitioner's
4 Demonstrative 4 for the -1212 IPR where it talks about the '753 problem.
5 And what it states in Slide 4 of Petitioner's -1212 demonstrative is the
6 '753 patent discloses there is a need to streamline the process in order to
7 efficiently and effectively handle the vast amounts of data being sent
8 between the wireless communication networks and the large number of
9 mobile devices for which locations are to be determined.
10 That's from the '753 patent. So that's the problem that we're laying out
11 here, right? And the problem is the significant volume of data that needs to
12 be searched during geolocation.
13 And if you read the rest of that paragraph from what Petitioner is
14 citing, it's going to talk about how to generate NUGs to solve that problem.
15 And the way to do it, a way to generate NUGs to solve the problem, is you
16 take all the calibration points, right?
17 And we're pretty much on the same page. Calibration data is system
18 measurement. It can be signal measurements. It can be a whole bunch of
19 stuff in a network measurement report. There can be a whole bunch of
20 different kinds of calibration data. But that's measurements of the mobile
21 phone about how the system -- signal strengths and things like that.
22 Calibration data is assigned to a calibration point. The calibration
23 point is a coordinate, right, a coordinate in a geographical region. That
24 geographical region calibration point represents the coordinate and

1 calibration data. So it has a signal strength and a latitude and a longitude,
2 right? And saves some more in the field.
3 What NUGs do to simplify this process is you look at all these
4 calibration points and you compare them to one another. And you say, okay,
5 I'm looking at one calibration point. I'm going to start at one, and I'm going
6 to look at its neighbor. And if his neighbor is similar, I'm going to aggregate
7 those two into one region. And I'm going to keep on doing that over and
8 over and over again for all of the different points in the calibration points in
9 the geographical region.
10 So the way this simplifies is there may be millions. If you're talking
11 about the Washington, D.C. area, Northern Virginia or something, there may
12 be millions or billions of different pieces of calibration data associated with
13 this region. And there may be thousands or tens of thousands of mobile
14 phones to a location at any time.
15 So what this does in aggregating the calibration points together, you
16 can aggregate hundreds of thousands of calibration points into one area, one
17 NUG. And I don't mean to imply a NUG is an area. It's a point in our
18 construction, but it's a point associated with this one large area.
19 So when you go through a search, when you go to do the actual
20 geolocation process, you save these NUGs somewhere and you just search
21 the NUGs. So instead of searching billions and billions and billions of
22 different points of calibration data, you can search maybe a couple hundred
23 or a couple thousand NUGs and speed up the process for everybody. And
24 that's what NUGs are. They're an aggregation of calibration points into on
25 wireless region.

1 Now the point you -- the geographic point you assign to the NUG can
2 be anywhere in that region. But the geographic point itself represents a large
3 region. So it's not just collected data, and it's not just interpolated dated or
4 extrapolated data. It's not just talk because all interpolated or extrapolated
5 data is trying to estimate what a calibration point single value is.
6 Turning to our Patent Owner slides -- and all on this point, I want to
7 go to Slide 42. And this is a Zhu reference. Zhu Figure 2 is what Slide 42 is
8 showing.
9 But this illustrates the problem across all of the prior art, because all
10 the prior art is basically doing the same thing that Zhu is. It's just trying to
11 figure out what the signal strength is for a whole bunch of different
12 calibration points.
13 And that's what Zhu is showing in Figure 2. If you look at Figure 2 at
14 the bottom left, you have this grid type of measured points, right? That grid
15 represents a hundred different squares. Each square is 10 by 10 meters. The
16 grid is a geographical region. The darkened portion, the kind of winding
17 little path down through Zhu is an actually path. It's a road or a path that
18 somebody has walked down or driven down recording measurement and
19 storing that in the database.
20 So that's the starting point. That's just measured data. If you go to the
21 right of that graph, you see interpolated points. So what Zhu is saying is, we
22 only have measured data along this path. We don't actually know what the
23 values are of the other calibration points in this grid. So we're going to have
24 to estimate. We're going to estimate by interpolating the data. We're
25 estimating what from -- based on the measured points, we're going to

1 estimate in each one of the grayed-out blocks in the interpolated point grids.
2 We're going to estimate what that single value -- estimate of what the single
3 value is.
4 It's estimated calibration data assigned to a calibration point. If you
5 go to the right, that's model points. What they're saying there is we are
6 going to model the data. We're not even going to use the measured data as a
7 basis. We're going to model the data in order to -- not because the measured
8 data is just too far away. It's too unreliable.
9 So we're going to apply a propagation model or something like that in
10 order to guess what the value at these model points is. And then once we're
11 done, we're going to combine the grayed-out areas in each of these three
12 different grids into one single grid. And that will be one grid for every
13 single box. It has calibration data associated with some sort of calibration
14 data.
15 So that's what the prior art is doing. And sometimes it's uniform.
16 Sometimes it's not. That doesn't really matter. It's just collecting and
17 interpolating or extrapolating calibration data, signal measurements. That's
18 all the prior art is doing. What NUGs are is kind of an abstraction of this
19 process, too.
20 And we can turn to Slide 24 to illustrate what NUGs are. And you see
21 on Slide 24, you have NUG 1, NUG 2, and NUG 3. And they're these weird
22 random regions, right? They don't really seem to correspond to any
23 uniformity or any geographical borders or anything like that. And that's
24 because that NUGs are geographical areas organized based on similarity in

1 calibration data, similarity in signal strength. So into these regions, the
2 signal strength is more or less the same.
3 And to be very, very clear, looking at Slide 24, underneath this is a
4 geographical region R. And you see the R in the top with a purple box
5 around it. That geographical region R has calibration points and calibration
6 data. It can be in a uniform grid. It can be random measurements. It looks
7 like it's kind of random based on the example in Figure 6. But that region
8 has calibration points with associated calibration data.
9 And this NUG region is overlaid on top of that. You evaluate those
10 calibration points in order to determine what your NUGs are so you can
11 speed up the process of doing geolocation. So you can search hundreds of
12 thousands of NUGs instead of searching millions and billions of calibration
13 points across the region.
14 JUDGE SCANLON: Excuse me, Counsel. I am a little confused.
15 You said a NUG is a point. But you've referenced a NUG region at least
16 two or three times.
17 MR. MCBRIDE: The NUG point -- I'm sorry. Go ahead.
18 JUDGE SCANLON: If you can clarify what the difference between a
19 point and a region is when we're talking about NUGs, that would be helpful.
20 MR. MCBRIDE: Yes, Your Honor. And that was -- the District
21 Court claim construction, that was the main issue, whether NUGs are a
22 region or a point.
23 So I apologize about being loose with the term. The claim
24 construction that we're using from the District Court is it's a point associated
25 with representative calibration data for an area.

1 So if you look at Slide 24 and you look at NUG 1, there's one point,
2 right, within -- that NUG is one point. But it represents the entire region if
3 that makes sense.
4 JUDGE SCANLON: So you're saying a point is not the traditional
5 dimensionless geographic point. It refers to that area. Like, NUG 1 is that
6 blue area. But that's, in this context, a point. Is that what you're saying?
7 MR. MCBRIDE: No, the point represents the area under the District
8 Court's construction.
9 This is one thing that Patent Owner disagreed with at the District
10 Court we adopted here. But the point represents the geographical area. I
11 think one way we could maybe explain that a little bit different and a little
12 bit better is if you take a look at the '379 provisional which incorporated by
13 reference explicitly into every one of these patents.
14 So it is part of the intrinsic record here. If you look at page 8 of 40, a
15 '379 provisional, that's Google Exhibit 1005 in the '1209 IPR. So if you look
16 at page 8 of 40, about a third of the way down the page, it says, for each
17 obtained NUG, a variety of parameters and functions are generated and
18 stored to describe that NUG.
19 Okay. So the NUG is a point itself. But it has a whole bunch of
20 parameters and functions that are generated to describe it. Am I answering
21 your question, Your Honor?
22 JUDGE SCANLON: Yeah, I mean, that helps. It still seems that a
23 NUG can encompass several points. So it's not more than one point.
24 MR. MCBRIDE: Yeah, that's getting to the claim construction issue
25 because the issue with the claim construction of the District Court was

1 whether a NUG was area which is what Patent Owner argued or a point
2 which is what Petitioner argued.
3 The District Court chose a point. So we're operating under the point,
4 a rubric here, if that makes sense. And that's one of the reasons that we are
5 trying to clarify what that District Court claim construction actually means
6 because the issue here is different than it was in the claim construction.
7 It's just the issue here is what is the difference between one claim term
8 which is the calibration data or calibration points and NUGs or grid points,
9 right? What are the differences between those two terms? Because it's two
10 different terms and they have to have some sort of different meaning.
11 So that's what our claim construction is trying to grapple with. Now
12 again, at the '379, this is Exhibit 1005, '379 provisional at page 8 of 40 -- it's
13 actually page 4 of the text -- but 8 of 40 of the PDF, it involved each NUG
14 being associated with a variety of parameters and functions.
15 One of those functions is it is -- it gives a list of A through L, different
16 things that the NUGs can be associated with. One is subcomponent J, a
17 compact and efficient representation that enables retrieval of the calibration
18 data and MR vectors.
19 That's basically the calibration points in the calibration data. So what
20 that J is saying is there is an area, right? We're going to associate this NUG
21 with a particular representation of an area of a whole bunch of calibration
22 points. Does that make sense?
23 JUDGE SCANLON: Yeah, yeah. I get that. I don't know how well
24 that comports with the actual disclosure of the patents involved. I know, as
25 you pointed out, they incorporate this by reference. But there seems to

1 potentially be some inconsistencies between what's in the specifications and
2 what's in this provisional application.
3 MR. MCBRIDE: Well, Your Honor, I would state -- I'm sorry. Go
4 ahead.
5 JUDGE SCANLON: Yeah, I see what you're pointing us to. And that
6 addresses the question.
7 MR. MCBRIDE: Thank you, Your Honor.
8 JUDGE RANGE: This is Judge Range. While we're on this page 4 of
9 the provisional which is Exhibit 1005, it seems like this A through L, it
10 seems like they're -- it doesn't seem like any of them are necessary for NUG.
11 They're all things that optionally could be a NUG characteristic or it could
12 be something else. This is not limited to those things.
13 MR. MCBRIDE: Yeah, I don't think this is necessarily an exclusive
14 list, Your Honor. I don't think all these things have to be in there. I think it
15 would have to be on a case-by-case basis.
16 So, for example, for a compact and efficient representation that
17 enables retrieval of the calibration data and MR vectors, if there was one
18 calibration point, right, that wasn't like any of its neighbors, it was totally
19 different, you would've assigned that its own NUG.
20 So you wouldn't necessarily need representation. You just need
21 latitude and longitude to go find it or some sort of representation. You still
22 have to evaluate that calibration point against the neighbors to make that
23 determination, if that makes sense.
24 So, yeah, I mean -- and I'm not sure. I don't know that we have --
25 anybody has -- or we need to go through this entire list and figure out what

1 would necessarily be -- what would be necessary to include in NUG, if that
2 makes sense. Does that answer your question, Your Honor?
3 JUDGE RANGE: Yeah, that's helpful. I have a little bit different
4 topic. I'm not sure when is a good time to bring it up, so I'm just going to do
5 it.
6 MR. MCBRIDE: Well, can I just real quickly, before we get off of
7 the '379 --
8 JUDGE RANGE: Yeah, that's fine.
9 MR. MCBRIDE: -- to make one point that I think that these patents
10 make a lot more sense if you start at page 5 of the '379 provisional which is
11 Invention 1 and read through page 8 of the '379 provisional which is page 4.
12 That's describing Invention 1 which is describing NUGs, generating
13 NUGs. And that makes it very clear what a NUG is and what the distinction
14 between calibration points and calibration data are.
15 Obviously, that is incorporated by reference specifically into every
16 single patent. So it is part of the intrinsic record. And that's kind of the
17 baseline for figuring out what a NUG is because each of the inventions is a
18 little bit different obviously.
19 And, with that, Your Honor, I'm sorry I interrupted. What was your
20 question?
21 JUDGE RANGE: That's helpful. Okay. So focusing in on the '104,
22 '358, and '494 patents in particular, I don't know if you have Petitioner's
23 slides handy. But Petitioner Slide 6 has kind of key claim language.
24 MR. MCBRIDE: Yes, Your Honor.

1 JUDGE RANGE: Okay. So I asked Petitioner a similar question.
2 The nonuniform grid point isn't in the independent claims. It appears here in
3 these dependent claims. And, here, it says the method of claim whatever
4 wherein said database comprises previously gathered calibration data. So I
5 take that to mean the database has to include the calibration data. And then
6 it says, for one or more non-uniform grid points within said region.
7 So my question is: what does the "for" do there? And how does this
8 "for one or more non-uniform grid points within said region" modify the
9 calibration data that has to be in the database?
10 MR. MCBRIDE: It associates it with non-uniform grid points. So it's
11 saying the calibration data has to be associated with NUGs. So this is --
12 JUDGE RANGE: What do you mean by associated with?
13 MR. MCBRIDE: Right, so we can go back to the '379 provisional.
14 Again, we're talking about what each NUG can contain, right?
15 JUDGE RANGE: Right.
16 MR. MCBRIDE: And one thing there is the NUG contains a
17 representation that enables retrieval of calibration data and MRs vectors. So
18 that's saying it's got something in there that points you to the calibration data
19 that is associated with it --
20 (Simultaneous speaking.)
21 MR. MCBRIDE: -- or something like that.
22 JUDGE RANGE: Do you read Claim 2 as requiring the database
23 include non-uninform grid points?
24 MR. MCBRIDE: Let me pull up Claim 2.

1 JUDGE RANGE: Claim 2 of the '104 patent, for example. But it's
2 the same language in all four of these claims at issue.
3 MR. MCBRIDE: I think it's requiring that the calibration data is
4 associated with NUGs, right? So I think it's requiring an association
5 between the calibration data and NUGs. Does that answer your question?
6 JUDGE RANGE: No. So there's a database. There has to be
7 calibration data in the database, right?
8 MR. MCBRIDE: That's correct.
9 JUDGE RANGE: Okay. Does there also have to be non-uniform grid
10 points in the database?
11 MR. MCBRIDE: I don't think so, Your Honor. I think that it just has
12 to be associated. The calibration data has to be associated with non-uniform
13 grid points.
14 JUDGE RANGE: Okay. If the calibration data was sufficient to
15 calculate non-uniform grid points, would that meet the claim language?
16 MR. MCBRIDE: Pardon me, Your Honor. Let me pull up the claim
17 language.
18 No, because the non-uniform grid points already exist, right? It's not
19 saying we're going to generate. You can generate one or more non-uniform
20 grid points the same for the non-uniform grid points. Did I answer your
21 question, Your Honor?
22 JUDGE RANGE: Yeah, I think so. I'm thinking about it. You can
23 go ahead.
24 MR. MCBRIDE: At any rate, the term non-uniform grid point is
25 entitled patentable weight regardless. And we address that in our paper.

1 JUDGE RANGE: I think I understand your position.
2 MR. MCBRIDE: Okay. Bear with me one second. All right. So let's
3 jump into Slide 14. We'll start getting into the claim construction. This is
4 calibration data.
5 Petitioner proposed several terms for construction. I think I heard Mr.
6 Lee say the proposed construction for non-uniform grid in the petition. I
7 didn't see that. I just saw grid point, although the institution decision did
8 provide provisional -- preliminary construction without any additional
9 briefing.
10 Several terms for construction, we agree with Petitioner that only
11 calibration data and non-uniform grid points are really at issue here.
12 Calibration data -- the phrase, calibration data, should be construed as
13 modified or unmodified network measurement data associated with a
14 geographic location.
15 So that calibration, at any time you're talking about signal strength,
16 whether it's measured or -- whether it's modified or unmodified. So whether
17 it's measured or interpolated or extrapolated or modeled, that network
18 measurement data is calibration data.
19 It's not a NUG. And that's the primary difference between what the
20 patents are claiming and what the prior art is doing. It's just estimating
21 calibration data.
22 Non-uniform grid points is Slide 16. As discussed in Petitioner's
23 Slide 20 for the '1209 and the '1210 and '1211 IPRs, the grid point or non-
24 uniform grid point is not a term of art. It's a term specific through these
25 Geoscope add-ins that can only be interpreted with respect to the intrinsic

1 record. So we have to look at the intrinsic record to try to figure out what a
2 NUG is.
3 Now, the parties in District Court have generally agreed grid point and
4 non-uninform grid point should be interpreted synonymously. And that's in
5 various places in the record, and I think Petitioner said that as well.
6 Patent Owner believes -- and this is reflected in the institution
7 decision and the briefing -- that when the District Court said representative
8 calibration data for an area in its construction, representative meant that the
9 boundaries of the areas are determined from the evaluation of the calibration
10 data.
11 It meant that you've got one grid point, one NUG. And it has a whole
12 bunch of calibration data spread out in one area that is associate that
13 represents. That's what we meant. And the portioned area has variable
14 boundaries and things like that.
15 And you have to evaluate that calibration data against other
16 calibration points --
17 JUDGE RANGE: Counsel?
18 MR. MCBRIDE: Yes.
19 JUDGE RANGE: Counsel, this is Judge Range. So your position is
20 that the non-uniform grid points are derived from the calibration data?
21 MR. MCBRIDE: Yes, that's correct.
22 JUDGE RANGE: Right. And so it's not the other way around. It's
23 not the case that the calibration data is derived from non-uniform grid
24 points?
25 MR. MCBRIDE: No, no.

1 JUDGE RANGE: Thank you.
2 MR. MCBRIDE: But I did want to emphasize that we still do believe
3 under the District Court's construction the prior art here, which is just talking
4 about calibration data and calibration points, would not teach a NUG.
5 JUDGE RANGE: Understood.
6 MR. MCBRIDE: So Patent Owner's position is that the ordinary
7 meaning of representative calibration data for an area in light of the intrinsic
8 record is that the calibration data has to be evaluated to form the NUG. But
9 obviously the Institution Decision went a different direction. So we've
10 provided a clarifying construction if it's necessary.
11 And that construction is a point associated with representative
12 calibration data for an area -- that's the District Court's construction -- whose
13 boundaries are determined from evaluation of the calibration data.
14 And I do want to emphasize again that the District Court was
15 considering very different issues when it was considering its construction
16 here. The primary difference was whether -- as Your Honor pointed out,
17 was whether a NUG is point or an area.
18 Obviously, in Figure 6, it's shown as an area. And that was what was
19 the primary point of dispute into two constructions. Patent Owner's
20 construction in the District Court was markedly different than the
21 construction here.
22 Here, we've adopted what the District Court did and try to clarify what
23 they're saying to fit the fact that what the prior art is teaching is just
24 calibration data. It's not teaching NUGs.

1 JUDGE MCSHANE: Mr. McBride, just a quick question. Going
2 back to this idea about your position on the claim construction, right, and for
3 grid point or non-uniform grid point or what have you. You had your day in
4 court at District Court, right? You had all the claims. You could argue
5 dependency. You could argue all that, right? And the claim construction is
6 the claim construction regardless of the prior art, right?
7 So I guess -- and you didn't appeal the claim construction or you didn't
8 argue it in your appeal, okay, so the District Court claim construction stands.
9 So, effectively, you're re-arguing the issue again, right? And meanwhile,
10 the District Court claim construction stands, and I guess will stand, as-is. So
11 why should we take this issue up again?
12 MR. MCBRIDE: Well, Your Honor, a few points I'd like to make.
13 Thank you for the question. The first is that the District Court, obviously,
14 claim construction is not binding on the Court.
15 The second point is that the issues being addressed here are different.
16 Now, claims can be further construed through District Court trials or at the
17 PTAB or whatever, depending on what the issues in front of the Court are.
18 The issue again being disputed -- the two constructions being disputed
19 at District Court was whether or not a NUG is an area or a point, a point
20 associated with calibration data for an area.
21 Petitioner obviously won that at the District Court. But here the issue
22 is that now Petitioner is trying to take that construction and encompass
23 calibration data, a calibration point with it. So it's addressing a different
24 issue than the District Court ruled on or that was presented to the District
25 Court.

1 Now, obviously, some of the same portions of the specification were
2 cited. At the same time, it's addressing different issues. And the issues it's
3 addressing we feel like in the District Court order and also in Petitioner's
4 claim construction briefing is completely consistent with the way we are
5 interpreting non-uniform grid point.
6 So we have a position where the District Court and Petitioner has said
7 certain things during claim construction. And we just want that to be
8 reflected in the way that we are interpreting the claim term NUG.
9 And one other point on that is we are construing the entire term, non-
10 uniform grid point, whereas the District Court was only construing grid
11 point, the non-uninform portion obviously, as it makes the point the grid
12 points have to be -- that they are going to be non-uninform when you create
13 the NUG region.
14 JUDGE MCSHANE: Thank you.
15 MR. MCBRIDE: And we see some of that in the following slides. If
16 we move to Slide 17, one of the things the District Court said in its order is
17 that defendant's use of representative calibration data is intended to reflect
18 that the defining characteristics of a NUG region as explained in the
19 specifications of the '753 patent, '104 patent, and District Court '784 patent is
20 that the data points within an area are all statistically very similar such that
21 each of the grid points within the NUG region can represent the overall
22 NUG.
23 So District Court is saying this statistically very similar is the defining
24 characteristic of a NUG region, right? So you have to evaluate the different
25 calibration points to determine whether they are statistically very similar.

1 That's the defining characteristic of a NUG region. And that's one of
2 the reasons -- as I was telling Judge McShane, that's one of the reasons we
3 believe we need to clarify what the District Court or how the District Court
4 claim construction is being interpreted here.
5 We'll move on to Slide 18. This is one of the slides that Petitioner had
6 up as well. And it has the quote, the calibration data for these locations is
7 gathered and analyzed so that the particular grid points within the
8 geographic region can be determined and associated with a particular set or
9 sets of calibration data from, for example, one or more NMRs.
10 So it's telling you that you're gathering the calibration data and you're
11 analyzing or evaluating it so that the grid points within the region can be
12 determined associated. And the District Court here said the italicized
13 language from which claim construction is directed more towards what must
14 be done to arrive at a grid point or a set of grid points rather than what a grid
15 point is.
16 And there are two points here to make, one of which is the District
17 Court is agreeing this is how NUGs are generated. This is what makes
18 NUGs.
19 The second point is during the claim construction, the gist there again
20 is whether NUGs were an area on location or a point.
21 So the District Court is viewing that claim construction, those two
22 competing claim constructions, and saying, okay, well, the question is
23 whether a grid point is a point or any area. And they're making the claim
24 construction based on that analysis primarily.

1 So that's the reason we think the District Court used that language.
2 It's not that you can't construe a term based on how you created or what it's
3 made up of. We think the District Court is just trying to construe the two
4 terms in front of it and choose between them.
5 One of the arguments you heard about, moving on to Slide 21, is that
6 evaluating the statistical similarity of calibration points is not supported
7 here. This is an incorrect argument from Petitioner. For one thing, we
8 haven't actually proposed any constructions that require evaluation of
9 statistical similarity. We just require that the calibration data for the area
10 whose boundaries are determined from un-evaluation of the calibration data.
11 So we haven't acquired that in there. We haven't taken a position on
12 whether statistical similarity needs to be evaluated or not.
13 However, Petitioner has taken a position on that in their claim
14 construction briefing. And what Petitioner said is once the NUG is defined,
15 the system can score a single point within the NUG because that point is by
16 definition representative of, i.e., statistically similar to the other points
17 within the NUG.
18 So what the Petitioner is saying here is that representative of means
19 statistically similar to. It's very clear from the briefing. Now how do you
20 determine -- how do you figure out whether a single point is statistically
21 similar for thousands and thousands of calibration data points?
22 You have to evaluate the calibration data. Slide 19 and Slide 20 have
23 similar quotes from Petitioner. Slide 19, the claimed grid points represent an
24 area for which calibration data is sufficiently similar that they can be

1 represented by a single point for the entire area. Defendant's proposal
2 captures that essence of a grid point. Claimant's does not.
3 So, again, Petitioner is saying that the essence of a grid point is it has
4 to represent a large area of calibration data. How do you get there? You
5 have to evaluate the calibration data to do it.
6 On Slide 20, same, describes again from Petitioner's claim
7 construction brief. It describes systems for only one point for a given NUG
8 because the NUG represents an area for which all the points within it would
9 be similar if measured.
10 So each point is representative of the area. So again, they're saying all
11 the points within the NUG have to be similar. How do you determine
12 whether they are similar? You have to look at the calibration points and
13 compare them or evaluate them.
14 Slide 22, one more quote. This is relating to the fact that grid points
15 are associated with calibration data for an area with boundaries. And
16 Petitioner here says the natural obstacles can form a grid point boundary
17 further confirms that the grid point represents an area with defined
18 boundaries.
19 So, over and over again, they're making statements in their claim
20 construction briefing that are completely consistent with what Patent Owner
21 is arguing now.
22 And I'll encourage Your Honors to go back and read Petitioner's claim
23 construction briefing on the term grid point because it is very consistent with
24 the arguments being advanced by Patent Owner today and inconsistent with
25 the arguments Petitioner is making today.

1 Moving to Slide 23, this is in the intrinsic record. The claim language
2 requires Patent Owner's construction. Here we have Claim 2 of the '104
3 patent again. They use the term non-uninform means the area covered by
4 each grid point is not going to be uniform. The boundaries of the non-
5 uniform grid point can be different for different areas.
6 And I want to bring up Petitioner has argued you can have a uniform
7 grid of NUGs. And they're kind of asking Patent Owner to prove a negative
8 there. Anything is possible. You could have a geographic region with
9 measurements that are completely different somehow. But, in practice, it
10 doesn't have it. You have areas and regions where signal measurements
11 from a site are very similar and will be aggregated together and
12 differentiates the sizes of NUGs.
13 One of the ways we kind of think about this process of taking the
14 calibration data and putting it into NUGs is something similar to
15 gerrymandering where you gerrymander a district, you're taking each of the
16 different -- you're organizing regions based on voter preference to create
17 geographic regions that don't have any basis. If they're not uniform, they
18 have no basis in the geographic realities of the area that's being
19 gerrymandered.
20 NUGs are kind of similar to that in some ways because they're doing
21 that for signal strength. They're taking areas that are not uniform and are not
22 otherwise -- they're don't otherwise correspond to a particular geographic
23 region. And they're organizing them based on similar signal strengths. So
24 you can have all kinds of different regions. A couple regions could be the

1 same. It's possible. But in reality, you can get all kinds of regions of
2 different shapes and sizes based on a whole bunch of factors.
3 One other point about Claim 2, it was brought up previously, is that
4 the calibration database comprises previously gathered calibration data for
5 one or more non-uniform grid points within said region, unless the claims
6 require assigning the calibration data gathered over a predetermined region
7 to one or more non-uniform grid points. Then we talked about that a little
8 bit earlier.
9 JUDGE RANGE: So this is Judge Range again. So you said before
10 that the non-uniform grid points are generated based on the calibration data,
11 right?
12 MR. MCBRIDE: Right.
13 JUDGE RANGE: Here, you're saying that the calibration data has to
14 be assigned. Like, the calibration data that's in the database has to be
15 assigned to a grid point. What would that entail?
16 MR. MCBRIDE: So, again, there's a couple of different processes
17 going on. And I'm sorry if I misspoke or said something to confuse the
18 matter. Calibration data is just signal strength. It's through signal
19 measurements where your mobile phone measures 40 decibels or 40 decibels
20 or 50 decibels, whatever.
21 That's your calibration data. That calibration data is assigned to points
22 right when it's collected, latitude and longitude. Points themselves, latitude
23 and longitude, and the calibration data combined create a calibration point.
24 NUGs are a layer of abstraction above that. NUGs look at all the
25 calibration data and all the various different calibration points. And they

1 look at a piece of one calibration point and say, is this similar to the
2 neighbor? Is it the same signal strength or a similar signal strength? If it is,
3 we're going to call that one NUG. We're going to combine those two.
4 Aggregate those two points into one NUG.
5 And then we'll do it over and over and over again. The NUG itself
6 can be stored in various different places. It can be stored at a different
7 database or --
8 JUDGE RANGE: All that makes sense. I guess what I'm trying to
9 figure out is exactly what needs to be in this database of Claim 2 because I
10 read it as requiring the calibration data be stored. And maybe the "for one or
11 more" language describes something about that calibration data.
12 But I don't understand -- I guess I'm struggling to understand what
13 that language says about the calibration data that would differentiate it from
14 the other calibration data.
15 MR. MCBRIDE: Bear with me, Your Honor, while I find the full
16 claim language here.
17 JUDGE RANGE: It was on your Slide 23.
18 MR. MCBRIDE: Yes, the calibration data has to be associated with
19 grid points. You have to have taken the additional step of generating grid
20 points for the calibration data. So it's a limitation on what the calibration
21 data -- what the calibration data is.
22 JUDGE RANGE: Okay. So you're reading Claim 2 is requiring
23 generation of grid points as part of the method?
24 MR. MCBRIDE: That's correct, Your Honor.

1 JUDGE MCSHANE: But Mr. McBride, okay, let's say the NUG --
2 and I think everybody has acknowledged this. A NUG can be one point,
3 right? So you have the calibration data. You have a calibration point. Why
4 isn't the NUG just the calibration point?
5 MR. MCBRIDE: Well, I think to explain that -- to back up and try to
6 explain that is the evaluation process has to happen because you have to
7 determine whether each calibration point is similar to a neighbor. That's
8 how you generate the NUGs is an evaluation of whether all these calibration
9 points are similar to one another.
10 Now, it may be. It's possible that you can have a calibration point that
11 has received a signal strength that is totally different than anything around it.
12 In that case, that would be the root of an individual NUG and by itself.
13 But the evaluation has already occurred because you've looked at the
14 calibration point and said, this is different than anything around it. Does that
15 answer your question, Your Honor?
16 JUDGE MCSHANE: Yes. So, okay. So, all right. So you're saying
17 -- and that -- what you're saying is where that comes in is this
18 "representative" word in the claim construction?
19 MR. MCBRIDE: Correct.
20 JUDGE MCSHANE: Okay.
21 MR. MCBRIDE: Calibration data is representative across an area
22 because it's already been analyzed, right? It's been analyzed. It's been
23 looked at. Again, the NUG is not itself the calibration points.
24 The NUG is something different. And it's built on and you can assign
25 the NUG that represents the area to anywhere on the grid you want to. And

1 you can assign it to -- depending on how you're evaluating the similarity of
2 the NUGs, you can assign it to one calibration point or millions of
3 calibration points.
4 JUDGE MCSHANE: Okay. Thank you. I understand that. Thanks.
5 MR. MCBRIDE: And one thing, going back to Claim 2, the for
6 language in here must be given patentable weight because it is the only thing
7 added by the dependent claims on Petitioner's Slide 6. Ignoring the "for"
8 phrase would vitiate 112D, the further limitation and the doctrine of claim
9 differentiation.
10 So those are further, Your Honor, responding to the intended use
11 argument. Those are further arguments with respect to Claim 2.
12 Moving to Slide 24, again, just reinforcing again. Keep in mind, Your
13 Honor, this is the NUG region, right? There is calibration data underneath
14 that. Figure 6 attempts to show that with the mobiles 2, 4, 6, and 8, 14, 12.
15 Each of those mobiles has calibration data that's being combined into the
16 various NUGs here.
17 So that's what Figure 6 is showing. There were some arguments about
18 Figure 6 being exemplary. I don't think we've argued anywhere that this is
19 the only representation of a NUG that could be out there. We haven't
20 argued, disavow, or disclaim or anything like that based on Figure 6. But it
21 illustrates exactly what NUGs are. And I do want to point out that Petitioner
22 itself in this claim construction briefing pointed to Figure 6 as confirming
23 that each grid point, i.e. NUG, represents an area, not a specific location.
24 So they're using Figure 6 when it suits them as well. Moving on to
25 Slide 26, with the '379 provision on '753 patent, it has some helpful language

1 here in understanding what NUGs are and that the NUGs fully cover the
2 region R and each NUG has statistically similar data accumulated into itself.
3 The geometric shape and the amount of data accumulated into such
4 NUGs seem to be variable since these are determined by the statistical
5 similarity of the data allocated to a NUG, again, emphasizing that you have a
6 statistical similarity evaluation that occurs at some point.
7 And we haven't taken the position that's required by the claim
8 construction. But there is an evaluation of some sort of similarity required.
9 But you have to look at two different -- you have to look at your calibration
10 data and determine whether it's similar or not in order to create the NUG.
11 I'm going to move to Slide 27. With respect to the evaluation,
12 Petitioner has argued that evaluation is not required. Here, we're looking at
13 Exhibit 1005. Again, this is '379 provisional, paragraph 6.
14 This is the section that describes in great detail how notes are formed
15 and what notes are. And what the provisional says is the evaluation of the
16 data vectors is of great importance since it is fundamental to the method.
17 So the provisional describing Invention 1, the generation of NUGs, is
18 saying that evaluation of data vectors is of great importance and fundamental
19 to the method. That's the intrinsic record there. There's nothing else to look
20 at. It's saying evaluation is fundamental The data, by the way, are
21 calibration data vectors, essentially the calibration points.
22 Slide 28 additionally made some 112 arguments about evaluating
23 statistical similarity. Again, these weren't present in their claim construction
24 arguments. They weren't present in the petition itself. They've come up for
25 the first time in the reply.

1 They pointed to some of our experts' testimony. What they left out is
2 when he asked his question, the expert said, I haven't formed an opinion on
3 how the evaluation should occur. But there are examples of clustering tests
4 and things like that in the intrinsic record.
5 And here's one example, '379 provisional, page 6, talking about
6 various tests made to determine NUG allocation, NUG generation. And I do
7 want to point out also that the questions of Petitioners relying on in their
8 quotes for the most part are talking about questions about the 101 issues
9 from District Court, not the evaluation itself.
10 Touching quickly on the prior art, there are a few things here, the
11 predetermined proximity on Slide 30 of our presentation. Petitioner is
12 arguing that Shkedi's predetermined proximity is disclosing a NUG but it's
13 really not doing anything like that.
14 The data in Shkedi is all just calibration data that somebody has gone
15 out and measured a geographic region. And then they've estimated some of
16 the data in other regions possibly. And that's what the system is relying on.
17 When they're talking about predetermined proximity, somebody has called
18 9-1-1 or whatever.
19 They've called a mobile phone. They want to geolocate. They want
20 to figure out where they're at. For whatever reason, they don't have their
21 location. So in that instance, Shkedi has gone to look for the calibration data
22 that is the most like signal strength as receiving from the current phone call.
23 And it's going to assume that the mobile phone that made the current call is
24 in the same location -- is in the general predetermined proximity of the
25 existing measurement.

1 It's not saying anything about the area itself being representative of
2 the stored signal strengths. So, to put in another way, Shkedi isn't saying
3 that every signal strength within a predetermined proximity of a stored
4 signal strength is similar. It's just saying that you measure a signal strength
5 that is the same as an already stored signal strength, the system will assume
6 that you are somewhere within a predetermined proximity or the stored
7 signal strength. It's not evaluating the aggregating calibration points into
8 NUGs.
9 Slide 31, Shkedi signal strengths are not in NUGs again. This just
10 goes back to the fact that this is just measurements. They're just measuring
11 calibration data. They're measuring signal strength. Going back to the
12 calibration data construction, it's just network measurement signals. And
13 that's what they're talking about here is stored signal strengths.
14 Slide 32, we're talking about Shkedi's extrapolated locations.
15 Extrapolating is just taking a known measured signal strength and using that
16 to estimate a signal strength somewhere else. So it's just estimating
17 calibration data and assigning that to a calibration point.
18 Again, it's not doing anything generating NUGs. The point itself is
19 not necessarily representative of calibration data for the area. It's just
20 whatever happens to be measured at that location. This talks about never
21 registered locations. But these are places where they've never collected data
22 before. These are places where they're trying to estimate what the data is,
23 what the signal strength is.
24 Moving on to Slide 33, again, Shkedi doesn't disclose boundaries
25 either. What's shown on Slide 33 is Shkedi, column 17, lines 43 through 47.

1 All it's talking about is that what Shkedi is teaching is a way to try to
2 estimate your location. And you don't have GPS signals because you're in a
3 building or something like that. It's not talking about anything related to
4 actual boundaries.
5 JUDGE SCANLON: Excuse me, Counsel. You have about five
6 minutes before you start going into your rebuttal time.
7 MR. MCBRIDE: Thank you, Your Honor. Slide 35, Spain does not
8 teach NUGs either. I want to make clear Spain does use the term "grid
9 points." But what it's talking about with grid points are just signal
10 measurements associated location. And I think Petitioner's counsel put up
11 some slides to that point where you see a latitude and a longitude associated
12 with a signal measurement.
13 That's just a calibration point. It's just a signal measurement
14 associated with a point. These aren't disclosed as non-uniform, as having
15 different shapes or sizes as representative of calibration data for an area
16 where it's based on an evaluation of calibration data.
17 JUDGE SCANLON: Counsel, a question on that. I think maybe in a
18 different context, but Petitioner argued that with respect to the challenged
19 patents, grid points were, I guess, a subset of the calibration points. How do
20 you respond to that statement?
21 MR. MCBRIDE: Well, I think -- yeah, again, Spain uses the term
22 grid points. But it's using it in a different way than NUGs.
23 JUDGE SCANLON: I'm sorry. I meant that the Petitioner was
24 referring to the challenged patents. One of their arguments is that some of
25 the claims, not the challenged claims of the patents recite a calibration point.

1 And I don't want to put words in your mouth. But I understood your
2 argument to be that the grid point had to be different than a calibration point.
3 Petitioner seemed to take a different approach to that or they argued that the
4 grid points were really a subset of the calibration points. I wondered if you
5 had any response to that.
6 MR. MCBRIDE: Right. No, Your Honor. That's not our
7 understanding. Thank you for the question. That's not our understanding.
8 Grid points are not a subset of the calibration point. They're points that are
9 representative of calibration data across an area. The points are
10 representative of many different calibration points. It's a level of extraction
11 above just a calibration point, doing something with the calibration points.
12 The '379 provisional actually discusses this at page 6 of 40 about --
13 the second full paragraph starts a NUG generator could begin the NUG
14 generation operate and using, A, a fixed uniform grid, B, random grid points
15 to define the start of each, or see combinations of A and B.
16 So you can start with a fixed uniform grid of calibration points when
17 you're generating the NUGs. But you're going to create a different kind of --
18 you're going to create a different kind of data with the NUGs. It's going to
19 be different data objects. They're going to be combining many different
20 calibration points.
21 I don't know if that answers your question or not. Does that answer
22 your question, Your Honor?
23 JUDGE SCANLON: Yes, it does. Thank you.
24 MR. MCBRIDE: All right. So again, and you could put -- there's
25 language in these patents that you can assign a NUG point itself wherever

1 you want to. And if you want to do that, one of the calibration points, the
2 calibration points are the roots of the NUG, right?
3 You start with one calibration point and you look at nearby calibration
4 points. So they are -- you know, I want to respect the root of the NUGs. But
5 the NUG point itself could be anywhere in the region. And that kind of goes
6 back to Slide 24 with Figure 6 where you see the NUGs are all -- they have
7 all different shapes and sizes.
8 This is, again, over a geographic region with calibration points and
9 calibration data associated with it. So it's taking that stuff and it's creating a
10 NUG which is this point with these associated areas around it.
11 And, again, as we discussed at the beginning, if we go to Slide 42,
12 Zhu shows what the underlying region could look like. And we just talked
13 about the '379 provisional. It says you can use a uniform grid like this as the
14 basis for generating NUGs. Or you can use random data measurements
15 across the geographic region.
16 But, either way, that's what's underlying the NUG itself. You start
17 with calibration data and calibration points. You look to see which ones are
18 similar. You evaluate that. And then you create the NUGs.
19 Slide 35, I just want to touch on fingerprints. I'm sorry. Slide 37, I
20 just wanted to touch on fingerprints very quickly. Spain Figure 10 is the
21 illustration of what fingerprints are. They're just geographic locations.
22 They're a latitude and a longitude with a fingerprint associated. The
23 fingerprint field by the way if you look at Spain, what that's talking about is
24 calibration data, some sort of measurement data for an area.

1 And one of Petitioner's arguments is the grid points can be assigned,
2 right? Spain's grid points can be assigned to small areas. But it's just
3 saying, okay, if we have calibration point, pretty much assume that there's an
4 area around it that the signal is similar.
5 It's not actually making the determination like NUGs where you're
6 looking at each calibration point to make sure that the NUGs all have similar
7 calibration data. It's just a --
8 JUDGE MCSHANE: But let me ask you this, Counsel. So you have
9 calibration data at a certain point. Okay? And let's say you're going -- can
10 you hear me okay by the way?
11 MR. MCBRIDE: I can hear you, Your Honor. Yes.
12 JUDGE MCSHANE: Okay. Thank you. So let's say that you say,
13 okay, well, I'm going to set some area. Okay? And I'm going to make it a
14 small area. Okay? Just for the sake of argument.
15 And by setting that area, isn't that -- can it be effectively saying --
16 again, by setting a small area, wouldn't that calibration point serve as
17 analogous because it is representative of the small area.
18 MR. MCBRIDE: Thank you for the question, Your Honor. Yes, I
19 think there's a couple points we'd like to address with that argument.
20 First of all, what this is doing is backwards to saying, okay, we're
21 going to assign small areas wherever we get a measurement. What NUGs are
22 saying, we're going to take measurements and then we're going to use the
23 similarity between measurements to create larger areas.
24 So it's kind of backwards from the process of generating NUGs. The
25 second thing is you're not -- when you're assigning -- just taking an area and

1 assigning it to a grid point, you're not doing that evaluation to make sure that
2 it's consistent, right? You're just assuming that measurement is going to be
3 the same. And it's not going to be a reality.
4 A lot of times you may be walking down the street beside a building
5 and have one measurement. And then you step in a door and three feet away
6 you have a vastly different signal strength measurement, right?
7 So what the Geoscope patents are talking about doing is in that
8 situation, you look at both of those calibration points and you see if they're
9 similar to anything in the area. And what you're probably going to find is
10 that when you're inside the building, a lot of those single strengths are
11 similar.
12 And when you're outside, a lot are similar. So you make two different
13 NUGs. But, in this example where you're just assigning small areas, you're
14 going to miss stuff like that because you're just assuming I've taken one
15 measurement. I'm going to assume that this entire area has similar
16 measurements. We're going to assume that this one measurement is
17 representative of the entire small area. But you haven't made that
18 determination. You haven't evaluated that.
19 Does that answer your question, Your Honor?
20 JUDGE MCSHANE: Yes, it does answer my question. But it sort of
21 brings in a claim construction element, in my mind, anyway. And so we
22 have to go back to kind of what we believe is the proper -- the claim
23 construction and work with the prior art disclosures within that. So when
24 you talk about how the patent operates, to some degree, that's bringing stuff
25 into the claim construction perhaps.

1 So, anyway, that's my only point on that. But I know time is tight.
2 But you answered my question. I appreciate it. Thanks.
3 MR. MCBRIDE: Thank you, Your Honor. I appreciate it very much.
4 Just a couple follow-up points I was reiterating what I've already said
5 is one. A NUG is not a term of art. It's something we have to look at the
6 intrinsic record to figure out what it is.
7 And, secondly, the '379 provisional is part of the intrinsic record. And
8 in the first couple pages, it talks about Invention 1, generation of a NUG.
9 And it explains very clearly how NUGs are generated consistent with what
10 we have laid out here.
11 And a third thing I would urge Your Honors to do is go back and look
12 at Petitioner's claim construction briefing for the term grid point because it is
13 also consistent with the positions we believe we're taking in these IPRs.
14 And, with that, I'll reserve the rest of my time. Thank you.
15 JUDGE SCANLON: All right. Thank you.
16 MR. MCBRIDE: Sorry. Does anybody have any further questions?
17 JUDGE RANGE: I do not.
18 JUDGE MCSHANE: No questions.
19 JUDGE SCANLON: I do not. Okay. All right. Thank you very
20 much. I have you down as 25 minutes of rebuttal remaining.
21 So let's now turn back to Petitioner. And we have 28 minutes for
22 Petitioner's rebuttal.
23 MR. KEANE: Thank you, Your Honors. Can you hear me okay?
24 JUDGE SCANLON: Yes, I can.

1 MR. KEANE: Okay, excellent. I think that last conversation with
2 Patent Owner demonstrated, Your Honors, really excellent technical
3 understanding of this case.
4 And I think that the claim constructions that were set forth in the ID
5 and in the Markman order are absolutely spot on with the varied
6 embodiments that are described throughout the various patents we've been
7 discussing here. And I didn't really hear anything that warrants changing
8 them to encompass embodiments -- specific embodiments.
9 With that said, I would like to answer Judge McShane's question
10 about what's the nature of these interpolated points. And for that, I don't
11 really have a demonstrative specific to the interpolated points. But I did
12 have my demonstrative on Slide 19 which showed the database entries. And
13 the interpolated points are, in fact, new entries to the database.
14 And so to that end, I would turn Your Honor's attention to the Spain
15 Exhibit 1006 document, primary reference of our ground in paragraph 55.
16 And in that paragraph, in line 6, it's referring to the building of a new grid
17 through interpolation.
18 And it states, the following list summarizes the major advantages of
19 learning training techniques. Number one, they offer a way to interpolate
20 between grid points and reconstruct the grid together with metrics to relate
21 measurements and expected fingerprints.
22 So, Your Honor, that's a representation that adds flavor to the sentence
23 right before it which talks about a machine -- the machine building the
24 database is retrained and a new grid is generated for the database. So the
25 points that -- there's interpolated points are, in fact, points added to that

1 database, one of those 60,000 points that's illustrated on Slide 19 of
2 Petitioner's demonstratives.
3 And I would like to tie into this, Judge Scanlon, your question
4 regarding, do our grid points, I think was the way you characterized it,
5 encapsulated within calibration points?
6 I just want to make clear that's not how we see it exactly. I think that
7 was a reference to this interpolation and perhaps I didn't state it clearly when
8 I made my initial arguments. I just want to clarify my initial argument
9 because it ties to this interpolation.
10 What I said was that when you're building the database, you might be
11 right next to a tower where you have a clear set of geocoordinates and you're
12 going to have signal strength. The signal strength is the calibration data.
13 The geocoordinates when combined with that signal strength create a
14 calibration.
15 That space and time represents a calibration point. When I take that
16 calibration point and I add it into my database, it becomes a grid point. And
17 to the extent the grid point is from the calibration point, it can be the same
18 data. It could be. But then when I interpolate from that grid point that's
19 been calibrated to another grid point and I add grid points in between, they
20 are grid point entries in my database and they have a geographic coordinate.
21 And they have a signal strength that's been constructed
22 mathematically from the calibrated points so I can build out my database
23 that way.
24 So I hope that clarifies. It doesn't bear at all on the claim
25 constructions that are of record. And as I said, that explanation is absolutely

1 consistent with the claim construction and the application of those claim
2 construction to the claims that are before this court in these IPRs.
3 I don't really have a lot more to add. I will offer Your Honors the
4 opportunity to ask myself or my colleague, Mr. Lee, questions if there were
5 arguments presented by Patent Owner that created any confusion that we can
6 clarify.
7 JUDGE RANGE: This is Judge Range. I'm going to go -- I keep
8 circling back on this. But I think it's your Slide 6.
9 MR. KEANE: We had two sets of demonstratives.
10 JUDGE RANGE: Oh, for the -- the one with the three patents.
11 MR. KEANE: Oh, that's -- I'm going to refer to my --
12 JUDGE RANGE: The '104 family.
13 MR. KEANE: That's the '104 family that my colleague, Mr. Lee,
14 argued on.
15 So I'll turn it to him. But I'm happy to step back up if I can be of
16 further assistance.
17 JUDGE RANGE: Yeah, so this is Slide 6. So Patent Owner's counsel
18 was arguing that these claims require -- essentially, they require creation of
19 non-uniform grid points because the -- at least the way I understand it, the
20 calibration data that's in this recited database has to be for -- "for" being the
21 key word -- one or more non-uniform grid points.
22 In other words, I guess the non-uniform grid point would've had to
23 have been generated from that calibration data. I was wondering if you
24 could respond to that position.

1 MR. LEE: So we don't understand how calibration data would differ
2 if it's used to generate one or more non-uniform grid points. We don't
3 understand how that would be some kind of distinguishing feature or in part
4 some structural limitation to the previously gathered calibration data. Based
5 on Patent Owner's arguments, it seems like any calibration data could be
6 used to generate any non-uniform grid point.
7 And, indeed, the '753 patent had called 12, lines 59 to 61 disclose that
8 very point. And it says that a single calibration point may be set as the grid
9 point.
10 And so, again, we don't understand how the intended use phrase,
11 quote, for one or more non-uniform grid points, somehow structurally limits
12 the recited previously gathered calibration data which again appears in the
13 disclaimed claims.
14 (Simultaneous speaking.)
15 JUDGE RANGE: I guess at least if we understand Patent Owner is
16 that the one or more non-uniform grid points would have to be essentially
17 stored somewhere in order for the calibration data to be for it.
18 MR. LEE: So I don't see a requirement in the claim that the grid point
19 be stored anywhere.
20 So we find that argument a bit confusing as well. That being said, as
21 my colleague, Mr. Keane, explained, the prior art does disclose a generation
22 of grid points using evaluation such as interpolation or extrapolation. And
23 those points are used to populate the database to create a more robust set of
24 points that can be compared to the data received by the mobile.

1 So regardless of whether the trays, quote, for one or more non-
2 uniform grid points is construed as limiting or non-limiting, it's our view that
3 the prior art discloses it under either understanding of that phrase.
4 JUDGE RANGE: Thank you. That's helpful.
5 MR. LEE: Your Honors, I'm happy to answer any other questions.
6 JUDGE SCANLON: No further questions from me. It doesn't look
7 like anyone else on the panel at this point.
8 JUDGE MCSHANE: No questions. Thank you.
9 MR. LEE: Thank you, Your Honors.
10 JUDGE SCANLON: All right. Thank you very much.
11 (Simultaneous speaking.)
12 JUDGE MCSHANE: Oh, hold on. I'm sorry. I misspoke. I just
13 thought of one. I think -- counsel, Mr. Keane, I think I -- and I'm sorry if I
14 mispronounce your name. Yeah, it is Keane.
15 I think I asked you about expert testimony on the issue as to whether
16 Spain discloses that the interpolated data is representative of an area. And I
17 was wondering if you had a response to that.
18 MR. KEANE: Yes, I did, Your Honor. And I'm sorry. I thought --
19 that was kind of encapsulated in my prior answer.
20 JUDGE MCSHANE: Okay. So again, it's the reference to paragraph
21 55. That's what you're relying on. But any expert testimony on that as well?
22 MR. KEANE: Yes, sorry. In the question from my colleague, Mr.
23 Lee, I forgot to mention that, yes, the expert testimony supporting that is
24 Exhibit 1008, David Williams' testimony, paragraphs 75 to 80. And within
25 that testimony is a reference to that paragraph 55 that I mentioned there.

1 And to answer this question to the extent I didn't appreciate it earlier
2 about does an interpolated point represent an area, my answer would be that,
3 yes, every time you put an entry into that database of Slide 19 and you're
4 conducting a mobile phone location determination operation, we're
5 constructing the system to do that.
6 When you access those grid points, they're associated with a latitude
7 and a longitude. But the mobile device may not be at that exact latitude and
8 longitude. And so that, but yet it may be paired with that grid point or that
9 interpolated grid point for purposes of location determination.
10 So the area that mobile device is moving in, in an unknown area, the
11 small area that's reference in Spain is also associated with those interpolated
12 points to the same extent a small area would be associated with the
13 calibrated point. And that, when I made the reference to the new grid, the
14 new grid is then used for a mobile device location determination.
15 So those interpolated points versus the points they were created from
16 are used equally in the mobile device location process. So they would
17 perform exactly like a traditional grid point.
18 JUDGE MCSHANE: Well, I guess I'm going to ask the question. Is
19 that argument contained in your papers anywhere?
20 MR. KEANE: Yeah, I would cite to those portions of our expert.
21 And it's in our petition which is paper 1 at 24 to -- I'm sorry to disappear
22 from the screen -- but 24 to 26. And that's citing to those portions of our
23 expert, Mr. David Williams' testimony and then the excerpts from the 1006
24 Spain document we've been discussing.

1 JUDGE MCSHANE: Thank you. I appreciate it. No further
2 questions.
3 MR. KEANE: Thank you, Your Honors.
4 JUDGE SCANLON: Thank you. So let's turn back over to Patent
5 Owner now for a surrebuttal. Patent Owner has 25 minutes of time
6 remaining.
7 MR. MCBRIDE: Thank you, Your Honor. Just a couple things.
8 Petitioner was just arguing that Spain's interpolation teaches grid points.
9 Again, all he talked about was the latitude and longitude. That's a position,
10 that’s not an area, that’s a calibration point.
11 To the extent you have the small area around it, there's not
12 determination that everything in that area -- everything in that small area is
13 going to be same as the measurement you got.
14 So you're not actually making a determination that all of the
15 calibration data in that area is representative of the area. You're just making
16 an assumption. And from what it sounds like in Spain, it's a uniform grid
17 they're talking about where they would assign a small area for every single
18 measurement they have.
19 Moving on to the portion about -- I'm sorry, does somebody have a
20 question?
21 (No response.)
22 MR. MCBRIDE: Okay. Moving back to Petitioner Slide 6, I did
23 want to reiterate a couple points here. First of all, this is an argument that
24 came up the first time in the reply, so we think it's a new argument.

1 Second of all, a couple legal issues here. The dependent claim
2 provides a further limitation on the independent claim. And that is (audio
3 interference) so it's 35 USC 112, paragraph 4. The subject of the following
4 paragraph, a claim in dependent form shall contain a reference to a claim
5 previously set forth and then specify a further limitation of the subject matter
6 claimed.
7 So this is a further claim limitation to the rest of the claim. The
8 second issue I want to bring up is that under the doctrine of claim
9 differentiation, obviously non-uniform grid points must be something
10 different than just calibration data.
11 Finally, in terms of the structure of the claims, again, if we go to '379
12 provisional at page 8 of 40, it talks about when you create a NUG, you
13 create different NUG characteristics. And again, one of those NUG
14 characteristics is a representation that enables retrieval of calibration data
15 and MR vectors assigned to the NUG. So there's an association between
16 calibration data and the NUGs themselves that the patent talks about.
17 And one final point is just to, again, contrast to Slide 42 where you're
18 gathering calibration data and assigning calibration points across a grid with
19 Figure 6 of the '784 patent which shows the NUGs that have been generated
20 from that grid. And that's the difference between the NUGs calibration data.
21
22 Are there any further questions?
23 JUDGE MCSHANE: Mr. McBride, I'm going to bring up something
24 that I didn't ask you before. And if it causes a problem and Mr. Keane wants
25 to respond, I think we'll let him because I didn't ask this previously. And so

1 I apologize to both of you. But in the claim limitation in the '753 case --
2 sorry, for the '753 patent, in limitation B where it's also called 1.2, that's the
3 generating limitation, right?
4 So you're generating the grid points for said calibration data. In that
5 limitation, what do you interpret for to mean?
6 MR. MCBRIDE: So, right. So, under Limitation A, you're providing
7 calibration data for one or more calibration points in a geographic region.
8 Then you use that. You evaluate that calibration data to generate the grid
9 point.
10 JUDGE MCSHANE: Okay. So you're saying it's -- so okay. So the
11 "for" there, give me an interpretation of "for" based on that.
12 MR. MCBRIDE: Generating one or more set of grid points, the grid
13 points are associated with certain groups of calibration data, right? So the
14 "for" means it's an association between a particular NUG that's been
15 generated by evaluating the calibration data and the calibration data itself.
16 JUDGE MCSHANE: Okay. Thank you.
17 MR. MCBRIDE: Thank you. I hope I answered your question there.
18 JUDGE MCSHANE: You did, yeah. And Mr. Keane, sorry to -- oh,
19 I'm sorry. Did you have other things you wanted to talk about, Mr.
20 McBride? I'm sorry.
21 MR. MCBRIDE: I did not, Your Honor. That's all we have. Thank
22 you.
23 JUDGE MCSHANE: And I'm going to ask my colleagues if you have
24 any other questions.
25 JUDGE SCANLON: I do not have any questions for Mr. McBride.

1 JUDGE MCSHANE: Okay. Thank you. And I'm sorry, Judge
2 Scanlon, for taking this over here at this moment.
3 But I messed up. Mr. Keane, do you have a response to Mr.
4 McBride's position?
5 MR. KEANE: Your Honor, my response would be the same one that
6 it was earlier. And I think the claim constructions in Mr. McBride's
7 response are consistent with the claim constructions that the District Court
8 and this court has adopted. It'll be first of the association of grid points with
9 calibration data.
10 And I want to just emphasize that claim limitation is generating one or
11 more sets of grid points because you're generating and creating sets of grid
12 points for the calibration of data. But it's the association that Mr. McBride
13 referenced that is in the claim construction already that the Board has
14 already adopted.
15 JUDGE MCSHANE: Okay. And Mr. McBride, just quickly,
16 anything else in response to that?
17 MR. MCBRIDE: One second, Your Honor. Yeah, I just want to
18 reiterate that with respect to this patent, the District Court only construed
19 grid point, not non-uniform grid points. So keep that in mind.
20 MR. KEANE: That's not the term we're talking about here.
21 JUDGE MCSHANE: All right. Well, we're not getting into
22 argument. Okay. Thank you very much, and I'll turn it back to you, Judge
23 Scanlon. Sorry again.
24 JUDGE SCANLON: All right. Thank you. Very good. So thank
25 you, counsel, for the helpful presentations on both sides.

1 And, with that, we conclude the hearing for these proceedings. And
2 we can now go off the record.
3 (Whereupon, the above-entitled matter went off the record at 3:42 p.m.)

IPR2023-01209 (Patent 7,561,104 B2)
IPR2023-01210 (Patent 8,400,358 B2)
IPR2023-01211 (Patent 8,786,494 B2)
IPR2023-01212 (Patent 8,406,753 B2)

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