

No. 2021-1725

United States Court of Appeals for the Federal Circuit

DYFAN, LLC,

Plaintiff-Appellant,

v.

TARGET CORPORATION,

Defendant-Appellee.

*Appeal from the United States District Court for the Western District of Texas in
Case No. 6:19-cv-00179-ADA*

**APPELLEE TARGET CORPORATION'S COMBINED PETITION FOR
PANEL REHEARING AND PETITION FOR REHEARING *EN BANC***

May 2, 2022

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CERTIFICATE OF INTEREST

Counsel for Appellee Target Corporation certifies the following:

1. The full name of every party represented by me is: Target Corporation.
2. The name of the real party in interest represented by me is: None.
3. All of the parent corporations and any publicly held companies that own more than 10 percent or more of the stock of the party represented by me are: None.
4. The names of all law firms and the partners or associates that appeared for the party not represented by me in the trial court or are expected to appear in this court (and who have not or will not enter an appearance in this case) are:

Gilbert A. Greene of Duane Morris LLP.

Lauren M.W. Steinhäuser and Daniel M. Lechleiter of Faegre Drinker Biddle & Reath LLP.

5. The title and number of any case known to counsel to be pending in this or any other court or agency that will directly affect or be affected by this court's decision in the pending appeal:

Dyfan, LLC v. Target Corporation, Case No. 6:21-cv-00114-ADA (W.D. Texas)

6. Organizational Victims and Bankruptcy Cases. Provide any information required under Fed. R. App. P. 26.1(b) (organizational victims in criminal cases)

and 26.1(c) (bankruptcy case debtors and trustees). Fed. Cir. R. 47.4(a)(6): Not applicable.

May 2, 2022

/s/ Matthew S. Yungwirth
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STATEMENT OF COUNSEL – FEDERAL CIRCUIT RULE 35(B)

Based on my professional judgment, I believe the Panel decision is contrary to the statutory language of 35 U.S.C. § 112(6) (hereinafter “112(6)”), this Court’s precedential opinion in *Williamson v. Citrix Online, LLC*, 792 F.3d 1339 (Fed. Cir. 2015) and panel decisions of this Court, such as *Egenera, Inc. v. Cisco Sys.*, 972 F.3d 1367 (Fed. Cir. 2020). If the full Court disagrees that *Williamson* did not already establish precedential answers to one or more questions below, I believe an answer to one or more precedent-setting questions is of exceptional importance and should be resolved in this proceeding:

1. For claims that recite computer software for performing functions, what are the criteria for determining whether software-implemented functional claim language is subject to 112(6)?

1.a. Can the Court ignore parts of the recited software-implemented function, or ignore such function entirely, in making the determination as to whether the claim recites sufficiently definite structure?

1.b. If no, and if the software-implemented function cannot be performed by a general-purpose computer without special programming:

1.b.i. can 112(6) be avoided by claiming a general-purpose computer term (such as code or program or processor) and a software-

implemented result, if a person of ordinary skill in the art would understand how to write a program to achieve this result; or

1.b.ii. is the claim required to recite an algorithm to achieve the software-implemented result to avoid the application of 112(6)?

May 2, 2022

/s/ Matthew S. Yungwirth
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**POINTS OF LAW OR FACT OVERLOOKED OR MISAPPREHENDED BY
THE PANEL - FED. R. APP. P. 40(A)(2)**

1. The presumption against the application of 112(6) is overcome for a functional claim limitation that does not use the word “means” if the preponderance of the evidence demonstrates that the alleged structure for performing the function(s) is not sufficient to perform the entirety of the recited function(s).

2. The patent’s specification must be considered when making the determination as to whether a functional limitation in the claims of such patent is subject to 112(6).

3. Appellee’s expert’s testimony cannot (and did not) narrow the recited functions of the limitations-at-issue to merely “displaying the [received] [first/second] location-relevant information.”

ARGUMENT

The Panel misapplied the *Williamson v. Citrix Online* legal standard for determining whether functional claim language recites the requisite “structure, material or acts in support” of “performing [the] specified function” to avoid the application of 35 U.S.C. § 112(6) (hereinafter “112(6)”). 792 F.3d 1339, 1348-1349 (Fed. Cir. 2015); *Apple, Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1298 (Fed. Cir. 2014) (noting “software does not contain physical structures.”). Here, the claimed functions are to be performed by computer software lacking physical structure, *i.e.*, “code” and “application.” The Panel found that the word “‘code’ both alone and in the context of the recited claim limitation connotes sufficiently definite structure” to avoid 112(6) because:

1. the patentee used “code” and not “means;”
2. as “a bunch of software instructions,” “‘code’... connote[s] a class of structures;” and
3. skilled persons knew of “off-the-shelf code for displaying any desired information.”

(Opinion (“Op.”), 11-14; *id.*, 8-10). These findings are legally flawed in view of *Williamson* and the evidence (intrinsic and extrinsic) that “code” and “application” do not refer to “structure” sufficient to perform *the entirety* of the recited function of the limitation-at-issue. *Williamson*, 792 F.3d at 1349-1351; *Apple*, 757 F.3d at

1296-1297; *Rodime PLC v. Seagate Tech, Inc.*, 174 F.3d 1294, 1303-1304 (Fed. Cir. 1999) (test: does the claim “recite ‘sufficient’ structure to perform *entirely* the claimed function?”).

The Panel’s misapplication of the *Williamson* precedent to the software limitations-at-issue here may have far-reaching effects. As Judge Prost astutely warned prior to *Williamson*, if patentees can meet the “sufficient structure” test and avoid 112(6) by choosing the word “code,” instead of “software means” (or “software module”), for functionally claiming a software-implemented result, this minor drafting decision with no true structural distinction would result in claim scope encompassing *any* software for achieving the claimed result (by choosing “code”), rather than *only* those algorithms, if any, specifically disclosed in the specification (by choosing “software means” or “software module”). *Apple*, 757 F.3d at 1336-1337 (Prost, C.J., dissenting). This would encourage a proliferation of functional claiming that *Williamson* sought to rein in. 792 F.3d at 1349-1351. The Panel’s opinion likewise suggests an inherent conflict in the Patent Act in which the use of generic software terms (*e.g.*, code, application, program) in the specification is insufficient to satisfy the “corresponding structure” requirement of 112(6)—thus resulting in invalidity under 112(2)—but the use of the same terms in the claims avoids application of 112(6) entirely. *Id.*; *cf. Function Media, LLC v. Google, Inc.*, 708 F.3d 1310, 1318-1319 (Fed. Cir. 2013); *Noah Sys. Inc. v. Intuit Inc.*, 675 F.3d

1302, 1312, 1317-1319 (Fed. Cir. 2012); *Aristocrat Techs. Austral. Pty Ltd. v. Int'l Game Tech.*, 521 F.3d 1328, 1333 (Fed. Cir. 2008).

The Panel's finding that "the district court erred by ignoring... un rebutted deposition testimony from [Appellee's] own expert" and basing its decision solely on the intrinsic record also is legally flawed. (Op. 11-15). The district court's 112(6) analysis properly considered the intrinsic record. *Williamson*, 792 F.3d at 1350-1351. In contrast, the Panel ignored the specification and impermissibly used expert testimony to narrow the recited functions-at-issue and fill in holes in the claims. *Id.* Compounding this error, the Panel's finding is based on a misunderstanding of the expert testimony and an overly narrow characterization of the claimed functions at issue. (Section II.B.2 below).

Appellee respectfully requests that the Panel and/or the Court revisit the application of the *Williamson* precedent to the claimed "code"/"application" recited as performing a series of functions that require far more than merely "displaying information," *e.g.*,

after the first visual information is caused to be output based on the first location-relevant information; after the at least one mobile device is moved in the building; and in response to the receipt, from the at least one server and via the second wireless communications protocol, of the second response message including the second location-relevant information: cause to be output, via the at least one mobile device, the second visual information based on the second location-relevant information...

(Op. 4-5, *citing* '292 patent at 39:61–42:18). Under a proper application, Appellee respectfully submits that the Panel's decision should be vacated, and the district court's decision should be affirmed.

I. IN *WILLIAMSON*, THIS COURT CONFIRMED THE IMPORTANCE OF EXAMINING THE RECITED FUNCTION, AND AVOIDING ASSIGNING SPECIAL STATUTORY SIGNIFICANCE TO A PATENTEE'S WORD CHOICE

In its *Williamson* decision, this Court recognized that its “means-plus-function” jurisprudence had drifted away from the “balanced analytical scale” of its statutory mandate, especially in the field of computer-implemented technology (which was nascent when Congress enacted 112(6) in 1952). 792 F.3d at 1347-1349. Because computer engineers can describe what *result* software is to achieve well before they can explain *how* the software *will* achieve it, this drifting jurisprudence had allowed many such engineers to obtain protection of desired results in a “plethora of software patents” that “circumvented the limits the 1952 Act places on functional claiming.” *Id.* at 1347-1351; *Apple*, 757 F.3d at 1336-1338 (Prost, C.J., dissenting); *Intellectual Ventures I LLC v. Symantec Corp.*, 838 F.3d 1307, 1327-1328 (Fed. Cir. 2016) (Mayer, J., concurring).

Compounding the danger posed by functional claiming being well-suited to computer-implemented technology is the reality that “software does not contain physical structures.” *Apple*, 757 F.3d at 1298. As this Court found, “a computer... cannot be relied upon to provide sufficiently definite structure for a software claim

lacking ‘means.’” *Id.* (internal citations omitted). On numerous occasions, this Court has answered the resulting question: why cannot a computer “be relied upon to provide sufficiently definite structure for a software claim lacking ‘means?’” *Id.* For software-implemented functions that are not run-of-the-mill computer functions (e.g., receiving/transmitting information, storing information, etc.), reciting **how** the function is achieved, e.g., a particular algorithm, is the only possible “**sufficient structure to perform** the function.” *Williamson*, 792 F.3d at 1349-1351; *Apple*, 757 F.3d at 1298-1299, 1337-1338; *cf. In re Katz Interactive Call Processing Patent Litigation*, 639 F.3d 1303, 1316-1317 (Fed. Cir. 2011). Indeed, to achieve a software-implemented result that requires more than “merely plugging in a general-purpose computer,” such general-purpose computer or software is not “**sufficient structure**” because it can be programmed to achieve this result via an almost infinite number of algorithms. *Williamson*, 792 F.3d at 1349-1352; *Apple*, 757 F.3d at 1298-1299, 1337-1338; *Ergo Licensing, LLC v. CareFusion 303, Inc.*, 673 F.3d 1361, 1365 (Fed. Cir. 2012); *Aristocrat*, 521 F.3d at 1333.

In *Williamson*, this Court heeded many calls-to-action from industry, academia, and several of its members when it overruled its decisions that had “blindly elevated form”— a patentee’s use of a word other than “means”— “over substance”— actually examining the entirety of the functional language— “when evaluating whether a claim limitation invokes [112(6)].” 792 F.3d at 1349-1351.

And the Court confirmed that 112(6) “*will* apply if the challenger demonstrates that the [non-‘means’] claim term fails to ‘recite sufficiently definite structure’ *or else recites ‘function without reciting sufficient structure for performing that function.’*” *Id.* (emphasis added).

Like the claim limitations-at-issue here, the limitations-at-issue in *Williamson* specified a series of functions requiring unrecited special programming to be implemented on a general purpose computer. *Id.* at 1344-1345, 1350-1351 (specifically “a distributed learning server... comprising... a distributed learning control module for receiving communications transmitted between the presenter and the audience member computer systems and for relaying the communications to an intended receiving computer system and for coordinating the operation of the streaming data module.”). The Court rejected the patentee’s attempt to use a generic computer term (“distributed learning control module”) rather than “means” to avoid 112(6) because the claim failed to recite the *quid-pro-quo* special programming to achieve the functionally claimed, computer-implemented result. *Id.* Unlike the Panel here, the Court in *Williamson* examined *the entirety* of the functional language and intrinsic and extrinsic evidence, and held that a claim that merely “describe[s] certain inputs and outputs at a very high level” and without “describ[ing] *how* the [non-‘means’ term] interacts with other components in the [computer]” to achieve the functionally-claimed-result is governed by 112(6). *Id.* at 1350-1351 (emphasis

added). And, in contrast to this Panel’s treatment of strikingly similar testimony from Appellee’s expert, the Court in *Williamson* held that “the fact that [skilled persons] *could* program a computer to perform the recited functions *cannot* create structure where none otherwise is disclosed.” *Id.* (emphasis added); *Apple*, 757 F.3d at 1299 (stating software’s “‘structure’... is more than just its function; it is *how the function is achieved* in the context of the invention.”) (emphasis added); Section II.B.2 below.

As precedent, *Williamson* affirmatively foreclosed any debate that, if a patentee recites a computer-implemented function requiring special programming, the claim shall be governed by 112(6), regardless of whether the patentee uses the word “means”, if the challenger shows that the claim does not recite *how* the particular function is achieved, *e.g.*, a particular algorithm to perform the function. 792 F.3d at 1347-1351. The instant Panel’s decision is contrary to *Williamson* and would encourage patentee game-playing that was endemic prior to *Williamson*, especially in the software field. *Id.*; *Apple*, 757 F.3d at 1336-1338.

II. THE PANEL MISAPPLIED THE *WILLIAMSON* LEGAL PRECEDENT GOVERNING FUNCTIONAL CLAIMING

A. Summary of the District Court and Panel Decisions

The district court initially presumed 112(6) did not apply because none of the limitations-at-issue (*see* Section II.B.1 below) recited “means.” However, applying

Williamson, the district court found that Appellee overcame this presumption because, “although the claim recites several components (e.g., ‘mobile device’, ‘code’...), none of these components constitute sufficient structure *to perform the recited function*.” Appx18-20 (emphasis added). Then, “[a]fter reviewing the specification and considering the parties’ arguments,” and noting that “Dyfan does not point to any algorithm in the specification,” the district court “conclude[d] that the specification does not disclose an algorithm... for the claimed special-purpose computer-implemented function[s],” and therefore held the claims indefinite. Appx21. The district court also “note[d] that it did not based[*sic*] its conclusion on any of Dr. Goldberg’s opinions.” Appx24.

The Panel reversed, and misapplied *Williamson* by relying dispositively on the invocation of 112(6) being “typically a choice left to the claim drafter” such that a patentee’s use of a non-means term can *only* overcome the resulting presumption against 112(6) if the “challenger demonstrates that the [non-‘means’] term ‘fails to recite sufficiently definite structure.’” (Op. 7-8; *id.*, 11-12; 11/6/21 Oral Hrg. at 28:35-29:00¹); *cf. Williamson*, 792 F.3d at 1349 (holding the same presumption is

¹ (Panel: “Why do I have to look at the function? I thought our cases said that you are supposed to look at the word that is the alleged substitute for ‘means’ and determine whether it’s a nonce term or whether a person of ordinary skill in art would understand that term to connote a class of structures.”); *cf. Williamson*, 792 F.3d at 1349-1350 (noting “the limitation-in-question is not merely the introductory phrase

“rebutted by showing that the claim element recited a function without reciting sufficient structure for performing that function.”). Relying on pre-*Williamson* panel decisions, the Panel held that “[i]n cases where it is clear that a [non-‘means’] term itself connotes *some* structure to [skilled persons], ‘the presumption that 112(6) does not apply is *determinative*’ in the absence of ‘*more compelling*’ evidence of the understanding of [skilled persons].” (Op. 9-10 (emphasis added) *citing Apex Inc., v. Raritan Comput., Inc.*, 325 F.3d 1364, 1373 (Fed. Cir. 2003)); *cf. Williamson*, 792 F.3d at 1349 (expressly overruling decisions “elevat[ing] form over substance when evaluating whether a claim limitation invokes [112(6)]”, and holding “[h]enceforth, we will apply the presumption... without requiring any heightened evidentiary showing and expressly overrule the characterization of that presumption as ‘strong.’”).

Much of the Panel’s focus was on testimony from Appellee’s expert—Dr. Goldberg—regarding how skilled persons would have understood the “code”/“application” limitations. (Op. 12). The Panel concluded “the district court erred by ignoring [Dr. Goldberg’s testimony]”, and that “the ‘code’/‘application’ limitations connote a class of structures to [skilled persons]” because he testified that

‘distributed learning control module’ but the entire passage [including all recited functions].”)

“‘code’ is ‘a bunch of software instructions’” and that “displaying information could be implemented using ‘off-the-shelf’ code or applications.” (Op. 12-13, 14-15, 18).

As shown below, the Panel’s conclusions cannot be squared with *Williamson*, the claims themselves, or Dr. Goldberg’s actual testimony.

B. The Panel Ignored *Williamson*’s Dispositive Holding that Computer-Implemented Functional Claim Limitations, Requiring Unrecited Special Programming to be Achieved, are Subject to 112(6).

1. *The Functions-at-Issue are Not Run-of-the-Mill Software-Implemented Functions Achieved by Simply Plugging in a Computer*

The language of a representative limitation-at-issue is italicized below in the context of other portions of the representative claim analyzed by the Panel in its decision (Op. 3-4):

code configured to be executed by at least one of the plurality of mobile devices, the code, when executed, configured to:

cause display, via a display of the at least one mobile device, of an option for causing first visual information and second visual information to be output via the at least one mobile device...

said code, when executed, further configured to:

...receive, from the at least one server and via the second wireless communications protocol, the second response message including the second location-relevant information;

*after the first visual information is caused to be output **based on the first location-relevant information; after the at least one mobile device is moved in the building; and in response to the receipt**, from the at least one server and via the second wireless*

*communications protocol, of the second response message including the second location-relevant information: cause to be output, via the at least one mobile device, the second visual information **based on** the second location-relevant information...*

The functional language-at-issue does *not* simply recite run-of-the-mill software-implemented functions like, for example, “transmit information”, “receive location-relevant information,” or even “display the received location-relevant information.” (Section II.B.2 below); *cf. Katz*, 639 F.3d at 1316-1317. Rather, the language-at-issue recites a software-implemented result requiring special programming to achieve, namely “output, via the... mobile device, the second visual information **based on** the [received] second location-relevant information” with three additional prerequisites: (1) “***in response to the receipt...*** of the second response message including the second location-relevant information,” (2) “***after*** the first visual information is caused to be output **based on** the [received] first location-relevant information,” and (3) “***after*** the at least one mobile device ***is moved in the building.***” (Dkt. 16 at 24, 33-36, 39-42, 49-51; Appx905-906 (134:7-135:10, 137:12-138:1, 140:8-141:13); Appx906-907 (141:20-143:1); Appx909-910 (150:24-151:21, 155:16-157:10)). In other words, this series of interdependent functions, recited as being performed by “code,” requires far more than merely “displaying information,” which was the Panel’s narrow interpretation of the partial function on which it

focused (Op. 12-13, 14-15). (*Id.*; 11/6/21 Oral Hrg. at 30:03-30:33; Section II.B.2 below).

2. *The Panel Misapplied Williamson by Filling Holes in the Claims with a Characterization of Appellee’s Expert’s Testimony that Relates to Only the Last Step of the Recited Series of Functions and by Ignoring the Specification*

The Panel appears to have misunderstood Dr. Goldberg’s testimony. (Op. 14-15). When asked about the particular “**output**... the [first/second] visual information **based on** the [received] [first/second] location-relevant information” results implemented by the “code,” he testified:

Q. And would you agree that also applies **to outputting a message that’s based on information that’s received**?

A. Well, if the developer knows **exactly how they want to take information that’s been received and generate a message from that**, then the developer would know how to do that using a software library.

Appx924 (213:15-25) (emphasis added). In other words, if all a developer had was the desired result of “code” (the only thing claimed), and an off-the-shelf software library, the developer would still need to know “**exactly how** they want to take information that’s been received and generate a message from that” to achieve the recited software-based result of the representative limitations-at-issue. *Id.* Dr. Goldberg opined that these limitations “recited a function without the claim reciting sufficient structure to perform the function” based on the claim’s lack of recitation

of “*how* the recited function is achieved in the context of the invention.” *Id.*; *Williamson*, 792 F.3d at 1351.

In contrast, the Panel characterized Dr. Goldberg’s testimony as being “*the recited functions* can be performed by conventional off-the-shelf software.” (Op. 15 (emphasis added)). Based on that mischaracterization, the Panel used Dr. Goldberg’s testimony to narrow the scope of the recited functions-at-issue to simply “displaying the [received] [first/second] location-relevant information.” (Op. 12-13 (incorrectly characterizing his testimony as referring to “the claimed function of displaying information”); *id.*, 14-15 (concluding “the recited functions can be performed by conventional off-the-shelf software” based on his testimony that skilled persons “would have known of off-the-shelf code and applications for displaying any desired information.”)). But that is not Dr. Goldberg’s expert testimony. Dr. Goldberg repeatedly emphasized the breadth of the “causing to be output...” functions-at-issue in rejecting the notion that skilled persons knew of off-the-shelf software to perform such functions. (Appx905-906 (134:7-135:10 (“I understand ‘cause display via a display’ is to display whatever on the mobile device’s screen or their display, *whereas* ‘cause output via the mobile device of visual information’ seems to be broader... as long as the visual information is output somewhere... and somehow the mobile device is used, then that might satisfy this claim element... it’s tough to tell... because there’s no corresponding disclosure

in... the provisional or the applications or the patent specifications.”), 137:12-138:1 (repeating his output vs. display “caveat”); 140:8-141:13 (same)); Appx906-907 (141:20-143:1); Appx909-910 (150:24-151:21 (“this disputed claim... has the issue of the output via at least one mobile device... for which I don’t think there is structure.”); 155:16-157:10 (same “caveat”)).

Moreover, even if there was evidence to support the narrow construction of “*output*, via the mobile device” as “*display*, via *the display of* the mobile device” (which there is none), the developer would still need to determine, *on their own*, *how* to achieve this result considering the four prerequisite functions. (Appx924 (213:15-25); Section II.B.1 above). None of this “how” is described in the claims. *Id.* Indeed, like the claims in *Williamson*, and in contravention of the function-sufficient structure required to avoid 112(6) per *Williamson*, the claims-at-issue here do not recite *how* this software-implemented result, and its four prerequisite functions, are achieved. In other words, *how* is different (visual) information output *based on* received (location-relevant) information; *how* is this result achieved *after* the mobile device *is moved in the building*; etc.? *Id.*; *Williamson*, 792 F.3d at 1350-1351; *cf.* 11/6/21 Oral Hrg. at 28:35-29:00 (Panel incorrectly stating threshold determination does not involve “look[ing] at the function”); *id.*, 16:25-17:24, 20:37-20:43; 21:20-21:33; 22:15-22:49 (Panel rejecting arguments that it must consider the

entire recited function when determining whether 112(6) governs software-implemented, functional claim language).

In addition to misunderstanding the extrinsic evidence, the Panel appears to have improperly rendered its decision without considering the specification (except for the claim language). 11/6/21 Oral Hrg. at 18:54-19:15 (Panel: test is “not really something that you look to the specification for.”); *see generally* Op. 3-19 (not citing to specification); *cf. Williamson*, 792 F.3d at 1350-1351 (examining specification in performing same test). This error was not harmless because the Panel did not consider the specification’s explicit description that “mobile device” referred to any computer (including a “boat, car, plane, train, etc.”), “display” on such “mobile device” referred to any “interface... implemented in any desired manner”, and “code”, “application” and “logic” were words used interchangeably with each other. (*Id.*; Dkt. 16 at 13-15, 41-43 *citing, e.g.*, ’292 Pat., 6:39-24, 26:20-24, 5:32-37, 7:48-51; Appx 307-308 (original cls. 1, 14)). In other words, skilled artisans reading the specification would understand that these terms used in the limitations-at-issue do not refer to any particular structure.

These Panel errors warrant rehearing and vacatur.

3. *Zeroclick Does Not, and Cannot, Overrule Williamson, and Should be Limited to its Unique Facts*

Given the Panel’s misapplication of *Williamson* to the software-implemented functions-at-issue in this case and its reliance on *Zeroclick, LLC v. Apple Inc.* (Op. 14-15), Appellee petitions the Court to distinguish this case from *Zeroclick* and its unique facts to avoid future doctrinal divergence on this identical issue. 891 F.3d 1003 (Fed. Cir. 2018). In *Zeroclick*, the specification disclosed programs that it characterized as *prior art* and that detected the movement of a user’s finger, or mouse arrow, along a user interface, and when the program detected that the user “clicked” on a certain location on the interface (*e.g.*, on a displayed icon), either by the user pushing down on the interface or clicking a mouse button, the program activated the operation associated with that interface location. *Zeroclick* at 1008 (*citing* U.S. Pat. 7,818,691 (the “’691 Pat.”)); ’691 Pat., 1:36-59, 2:17-26, 3:3-11, 3:53-58. The specification-disclosed-problem with these conventional programs was that they required a physical click (on the mouse or interface). *Id.* The specification also disclosed *prior art* programs that similarly detected user finger movement along a user interface, but, when these programs detected the finger stopping at a certain location (*e.g.*, above a displayed icon) for a defined time period, the program activated the operation associated with that interface location without requiring this additional “click.” *Zeroclick* at 1008; ’691 Pat., 1:60-2:8, 3:45-53.

The specification-disclosed-problem with these other conventional programs was accidental activation of unwanted operations. *Zeroclick* at 1008; '691 Pat., 2:9-16.

Critically, the disclosed (and claimed) invention in *Zeroclick* used the ***exact same conventional*** programs but, instead of clicking or stopping to activate the operation associated with that interface location, the user continued to move his finger, or the mouse arrow, proximate that location to activate the same operation. *Zeroclick* at 1008-1009 (*citing* '691 Pat., 3:3-20, 6:15-19, 11:12-40); '691 Pat., 3:61-67. In other words, the disclosed invention in *Zeroclick* was just a new way of using ***the same conventional*** programs that existed at the time of the invention to achieve ***the same*** result. *Id.* Accordingly, the Court noted that “the basic concept behind both of the patents-in-suit is relatively simple.” *Zeroclick* at 1009. The Court also found that the *Zeroclick* claim language, in view of the *Zeroclick* specification, ***expressly limited*** the corresponding structure (*e.g.*, algorithms) of the two software-implemented functional limitations-at-issue to ***only*** those “***existing***” programs that already achieved the ***identical*** results recited in such limitations and disclosed in the specification. *Zeroclick* at 1008-1009.

The Panel’s misguided reliance on *Zeroclick* is significant because, unlike *Zeroclick*—where that panel determined that the intrinsic evidence, without applying 112(6), still limited the claim scope to only those conventional/existing programs disclosed in the specification (*Zeroclick* at 1008-1009)—the instant Panel’s decision

arguably permits the claims-at-issue to broadly cover *any* code to achieve the claimed results, without the claims or specification reciting or disclosing even one way to do so. (Section II.B.2 above; Appx924 (213:15-25); Dkt. 16 at 24-25, 34-35, 42; 11/6/21 Oral Hrg. at 30:34-34:00); *In re Fuetterer*, 319 F.2d 259, 263 (C.C.P.A. 1963) (noting that claiming desired results, without reciting, let alone disclosing, how to achieve such results, has been forbidden for centuries) *citing O'Reilly v. Morse*, 56 U.S. 62 (1854). Moreover, in *Zeroclick*, the challenger “provided *no evidentiary support* for [its] position” that the 112(6) presumption was rebutted (*Zeroclick* at 1009), whereas here, Appellee provided substantial intrinsic and extrinsic evidence establishing that the claims did not recite sufficient structure to perform the entirety of the representative software-implemented functions (much of which the Panel misunderstood, ignored, and/or applied the incorrect legal standard while evaluating).

III. CONCLUSION

Appellee respectfully requests that the Panel and/or the Court grant this petition, vacate the Panel’s opinion, and affirm the district court’s judgment.

Respectfully submitted,

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CERTIFICATE OF COMPLIANCE – FED. R. APP. P. 32(G)

The foregoing combined petition complies with the type-volume limitation of the Fed. R. App. P. 35(b)(2)(A), Fed. R. App. P. 40(b), and Fed. Cir. R. 35(d) because the combined petition does not exceed 3,900 words; rather, it contains 3,894 words, excluding the parts of the combined petition exempted by Fed. R. App. P. 32(f) and Fed. Cir. R. 32(b)(2), as calculated by the “Word Count” feature of Microsoft Word 2016, the word processing program used to create this combined petition. This combined petition complies with the typeface requirements of Fed. R. App. P. 32(a) and Fed. R. App. P. 32(c) because this combined petition has been prepared in a proportionally spaced typeface using Microsoft Word 2016 in fourteen-point Times New Roman font.

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CERTIFICATE OF SERVICE

I hereby certify that the foregoing combined petition was filed today with the Court of Appeals for the Federal Circuit via the CM/ECF system which sent an electronic notification to all counsel of record.

Dated: May 2, 2022

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ADDENDUM

Opinion of Panel and Statute at Issue

**United States Court of Appeals
for the Federal Circuit**

DYFAN, LLC,
Plaintiff-Appellant

v.

TARGET CORPORATION,
Defendant-Appellee

2021-1725

Appeal from the United States District Court for the
Western District of Texas in No. 6:19-cv-00179-ADA, Judge
Alan D. Albright.

Decided: March 24, 2022

DEREK DAHLGREN, Devlin Law Firm LLC, Wilmington,
DE, argued for plaintiff-appellant. Also represented by
TIMOTHY DEVLIN, NADIA LOIZIDES.

CHRISTOPHER JOSEPH TYSON, Duane Morris LLP,
Washington, DC, argued for defendant-appellee. Also rep-
resented by MATTHEW YUNGWIRTH, Atlanta, GA.

Before LOURIE, DYK, and STOLL, *Circuit Judges*.

STOLL, *Circuit Judge*.

Dyfan, LLC appeals from the United States District Court for the Western District of Texas’s final judgment of invalidity of the asserted patent claims. The district court held the claims invalid as indefinite under 35 U.S.C. § 112 ¶ 2 based on its view that certain claim limitations are in means-plus-function format under § 112 ¶ 6 and that the specification does not disclose sufficient structure corresponding to the recited functions. Because we conclude that the disputed claim limitations are not drafted in means-plus-function format, we reverse the district court’s judgment of invalidity and remand for further proceedings.

BACKGROUND

I

U.S. Patent Nos. 9,973,899 and 10,194,292 (the “patents-in-suit”)¹ are titled “System for Location Based Triggers for Mobile Devices.” The patents-in-suit describe improved systems for delivering messages to users based on their locations. For example, the shared specification discloses a communications system that provides users with information tailored to their particular interests or needs based on their presence within a specified location, such as a shopping center that has different retail stores within it. ’292 patent col. 5 l. 40–col. 6 l. 11. Exemplary systems include “a building” having “broadcast short-range communications unit[s]” at fixed locations that broadcast messages to mobile devices within communications range of the respective units. *Id.* at col. 39 l. 61–col. 42 l. 18. The mobile devices execute “applications” or “code” to receive

¹ The ’292 patent is a continuation of the ’899 patent and the two share a common specification, so we generally cite only the ’292 patent.

and process the broadcast messages. *Id.*; see also '899 patent col. 29 l. 9–col. 30 l. 63. A server communicates with the mobile devices via the internet to provide location-relevant information. '292 patent col. 39 l. 61–col. 42 l. 18.

Claim 15 of the '292 patent is representative of the claims on appeal:

15. A system, comprising:

a building . . . including:

a first broadcast short-range communications unit. . .

a second broadcast short-range communications unit. . .

code configured to be executed by at least one of the plurality of mobile devices, the code, when executed, configured to:

cause display, via a display of the at least one mobile device, of an option for causing first visual information and second visual information to be output via the at least one mobile device . . .

receive an indication of a receipt, from the first broadcast short-range communications unit and via the first wireless communications protocol, of the one or more first broadcast messages including the at least one first value,

in response to the indication of the receipt, from the first broadcast short-range communications unit and via the first wireless communication protocol, of the one or more first broadcast messages including the at least one first value: cause to be sent, from the at least one mobile device and via a second wireless communications protocol and an Internet Protocol over the Internet at least in part, at least one first message . . .

at least one server that is configured to communicate with the at least one mobile device via the Internet . . .

said code, when executed, further configured to:

receive, from the at least one server and via the second wireless communications protocol, the first response message including the first location-relevant information,

in response to the receipt, from the at least one server and via the second wireless communications protocol and the Internet Protocol over the Internet at least in part, of the first response message including the first location-relevant information: cause to be output, via the at least one mobile device, the first visual information based on the first location-relevant information,

receive, from the at least one server and via the second wireless communications protocol, the second response message including the second location-relevant information,

after the first visual information is caused to be output based on the first location-relevant information; after the at least one mobile device is moved in the building; and in response to the receipt, from the at least one server and via the second wireless communications protocol, of the second response message including the second location-relevant information: cause to be output, via the at least one mobile device, the second visual information based on the second location-relevant information;

wherein the system is configured such that the first visual information is automatically caused to be output without requiring communication of the at least one first message with the first broadcast short-range communications unit after the receipt

of the indication of the receipt of the one or more first broadcast messages, and the second visual information is automatically caused to be output without requiring communication of the at least one second message with the second broadcast short-range communications unit after the receipt of the indication of the receipt of the one or more second broadcast messages.

Id. at col. 39 l. 61–col. 42 l. 18 (emphases added to representative disputed limitations).

II

On February 28, 2019, Dyfan sued Target Corp. for infringement of various claims of the patents-in-suit. During claim construction proceedings, Target argued that each of the asserted claims included limitations that should be construed as means-plus-function limitations. Moreover, according to Target, the specification failed to disclose structure corresponding to these means-plus-function limitations and thus the claims were invalid as indefinite.

On December 19, 2019, the district court held a claim construction hearing. On November 24, 2020, the district court issued a claim construction order in which it concluded that the disputed (1) “code”/“application” limitations and (2) “system” limitations were invalid as indefinite.² *Dyfan, LLC v. Target Corp.*, No. W-19-CV-

² The district court addressed the 11 disputed limitations containing “code” or “application,” (“the ‘code’/‘application’ limitations”) and 14 disputed limitations containing “system,” (“the ‘system’ limitations”) by analyzing a representative “code” limitation and a representative “system” limitation because the parties made “the same arguments” for each of the limitations in the respective groups. *Claim Construction Order*, 2020 WL 8617821, at *7–9. As the parties have not challenged this approach

00179-ADA, 2020 WL 8617821 (W.D. Tex. Nov. 24, 2020) (*Claim Construction Order*).

The district court held that § 112 ¶ 6 applied to the “code”/“application” limitations and assigned a “special-purpose computer function” as the corresponding structure. *Id.* at *6. Finding no “algorithm for the claimed special-purpose computer-implemented function” in the specification, the district court concluded that the relevant claims were “indefinite for failing to disclose corresponding structure.” *Id.* at *7. The district court likewise held that the “system” limitations were subject to § 112 ¶ 6 because they recited “purely functional language without sufficient structure,” and proclaimed it was “unclear which of the recited components perform the specified function.” *Id.* at *7. The district court concluded that those relevant claims were “indefinite for lack of corresponding structure” as well. *Id.* at *8.

Based on the district court’s claim construction order, the parties stipulated to final judgment that the asserted claims are invalid as indefinite under § 112 ¶ 2. The district court entered judgment accordingly.

Dyfan appeals. We have jurisdiction under 28 U.S.C. § 1295(a)(1).

DISCUSSION

I

“Regarding questions of claim construction, including whether claim language invokes 35 U.S.C. § 112 [¶] 6, the district court’s determinations based on evidence intrinsic to the patent as well as its ultimate interpretations of the patent claims are legal questions that we review de novo.”

on appeal, we will do the same here. We note that our analysis with respect to the “code” limitations applies reciprocally to the “application” limitations.

Williamson v. Citrix Online, LLC, 792 F.3d 1339, 1346 (Fed. Cir. 2015). If the district court, “in construing the claims, makes underlying findings of fact based on extrinsic evidence, we review such findings of fact for clear error.” *Id.*

II

Section 112 governs the specification of a patent. Section 112 ¶ 6 provides:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

Section 112 ¶ 6 offers patent applicants two options: (1) recite, in the claim, a function without reciting structure for performing the function and limit the claims to the structure, materials, or acts disclosed in the specification (or their equivalents), in which case § 112 ¶ 6 applies, or (2) recite both a function and the structure for performing that function in the claim, in which case § 112 ¶ 6 is inapplicable. *Williamson*, 792 F.3d at 1347–48 (en banc in relevant part). Limitations that invoke § 112 ¶ 6 are generally known as “means-plus-function” or “step-plus-function” limitations.

The overall means-plus-function analysis is a two-step process. *See id.* at 1349–51. The first step is to determine whether a claim limitation is drafted in means-plus-function format, which requires us to construe the limitation to determine whether it connotes sufficiently definite structure to a person of ordinary skill in the art. *Id.* at 1349. If the limitation connotes sufficiently definite structure, it is not drafted in means-plus-function format, and § 112 ¶ 6 does not apply. If, however, we conclude that the limitation

is in means-plus-function format, we perform the second step of determining “what structure, if any, disclosed in the specification corresponds to the claimed function.” *Id.* at 1351.

Because invoking § 112 ¶ 6 is typically a choice left to the claim drafter, we presume at the first step of the analysis that a claim limitation is subject to § 112 ¶ 6 when the claim language includes the term “means.” *Id.* at 1348 (noting that this court has “long recognized the importance of the presence or absence of the word ‘means’”). The inverse is also true—we presume that a claim limitation is not drafted in means-plus-function format in the absence of the term “means” *Id.* We have made clear, however, that this presumption is rebuttable. The presumption can be overcome if a challenger demonstrates that the claim term “fails to ‘recite sufficiently definite structure.’” *Id.* at 1349. We have also held that “nonce words that reflect nothing more than verbal constructs may be used in a claim in a manner that is tantamount to using the word ‘means,’” and can invoke § 112 ¶ 6. *Id.* at 1350. We have emphasized that “the essential inquiry is not merely the presence or absence of the word ‘means,’ but whether the words of the claim are understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure.” *Id.* at 1348; *accord Zeroclick, LLC v. Apple Inc.*, 891 F.3d 1003, 1007 (Fed. Cir. 2018). “What is important is . . . that the term, as the name for structure, has a reasonably well understood meaning in the art.” *Greenberg v. Ethicon Endo-Surgery, Inc.*, 91 F.3d 1580, 1583 (Fed. Cir. 1996).

Intrinsic evidence, such as the claims themselves and the prosecution history, can be informative in determining whether the disputed claim language recites sufficiently definite structure or was intended to invoke § 112 ¶ 6. *Apple Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1299 (Fed. Cir. 2014); *see also Phillips v. AWH Corp.*, 415 F.3d 1303, 1317 (Fed. Cir. 2005) (en banc) (The prosecution history “often

inform[s] the meaning of the claim language by demonstrating how the inventor understood the invention.”). In addition, because this inquiry turns on the understanding of a person of ordinary skill in the art, we often look to extrinsic evidence when determining whether a disputed limitation would have connoted structure to a person of ordinary skill. *Linear Tech. Corp. v. Impala Linear Corp.*, 379 F.3d 1311, 1320 (Fed. Cir. 2004) (noting expert witness testimony and technical dictionaries “help determine whether a claim term” would have had an “understood meaning in the art”) (quoting *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1369 (Fed. Cir. 2002)).

Claim terms “need not connote a single, specific structure,” and may instead “describe a class of structures” and still recite “sufficiently definite structure” to not invoke § 112 ¶ 6. *Apple*, 757 F.3d at 1300. In *Apple*, we explained that structure can be recited in various ways, including through the use of “a claim term with a structural definition that is either provided in the specification or generally known in the art,” or a description of the claim limitation’s operation and “how the function is achieved in the context of the invention.” *Id.* at 1299.

In cases where it is clear that a claim term itself connotes some structure to a person of ordinary skill in the art, “the presumption that § 112, ¶ 6 does not apply is determinative” in the absence of “more compelling evidence of the understanding of one of ordinary skill in the art.” *Apex Inc. v. Raritan Comput., Inc.*, 325 F.3d 1364, 1373 (Fed. Cir. 2003). For example, in *Apex*, the disputed claim limitations included a set of “circuit” limitations. *Id.* at 1369. Raritan relied on district court decisions addressing the definition of “circuit means”; expert testimony that the term “circuit” would have been “understood by one of ordinary skill in the art as a very broad term”; and the description of preferred embodiments in the specification to establish that “circuit” did not connote sufficiently definite structure to a person of ordinary skill. *Id.* at 1373–74. We disagreed, however, and

found that “this evidence [was] not sufficient to rebut the § 112, ¶ 6 presumption” because it “fail[ed] to show by a preponderance of the evidence that one of ordinary skill in the art believes the term does not recite sufficiently definite structure.” *Id.* at 1373. Relying on a dictionary definition that defined “circuit” as a “combination of a number of electrical devices and conductors that, when interconnected to form a conducting path, fulfill some desired function,” we determined that “‘circuit,’ by itself connotes some structure.” *Id.* (quotation omitted).

We have also explained, however, that even in the absence of terms such as “means,” claims are nevertheless subject to § 112 ¶ 6 when the limitation in question has “no commonly understood meaning and is not generally viewed by one skilled in the art to connote a particular structure.” *Media Rights Techs., Inc. v. Capital One Fin. Corp.*, 800 F.3d 1366, 1372 (Fed. Cir. 2015). For example, in *Rain Computing, Inc. v. Samsung Electronics America, Inc.*, we determined that the claim limitation “user identification module” did not “provide any indication of structure” and that the surrounding claim language failed to provide “any structure for performing the claimed function,” thus invoking § 112 ¶ 6 without reciting “means.” 989 F.3d 1002, 1006 (Fed. Cir. 2021).

III

With these legal principles in mind, we turn to the claim limitations at issue. The district court concluded that the disputed limitations are subject to § 112 ¶ 6 and indefinite under § 112 ¶ 2 for lack of corresponding structure in the specification. We disagree with this conclusion.

The means-plus-function analysis asks two questions. First: Is the disputed claim limitation drafted in means-plus-function format? *Williamson*, 792 F.3d at 1349. Second, if and only if the answer to the first question is “yes”: What, if any, is the structure corresponding to the claimed function? *Id.* at 1351. As we explain below, only the first

question of the means-plus-function analysis is relevant in this case.³

A

We begin with the “code”/“application” limitations. The representative limitation analyzed by the parties and the district court is:

said code, when executed, further configured to . . . after the first visual information is caused to be output based on the first location-relevant information; after the at least one mobile device is moved in the building; and in response to the receipt, from the at least one server and via the second wireless communications protocol, of the second response message including the second location-relevant information: cause to be output, via the at least one mobile device, the second visual information based on the second location-relevant information

'292 patent col. 41 l. 47–col. 42 l. 6.

The district court correctly “start[ed] with the presumption that § 112, ¶ 6 does not apply” because “means” does not appear in the limitation. *Claim Construction Order*, 2020 WL 8617821, at *6. To overcome this presumption, Target had to show, by a preponderance of the evidence, that persons of ordinary skill in the art would not have understood the “code”/“application” limitations to

³ We note that under the second step of the means-plus-function analysis, the district court looked to the specifications of the '292 and '899 patents and did not find sufficient structure corresponding to the recited functions of the disputed limitations to avoid the application of § 112 ¶ 6. Because we end the analysis at the first step, we need not reach or address errors with respect to the second step.

connote structure in light of the claim as a whole. *Apex*, 325 F.3d at 1372–73 (“From a procedural standpoint, this presumption imposes on [the party challenging the presumption] the burden of going forward with evidence to rebut . . . the presumption” by showing that a person of ordinary skill in the art “believes the term does not recite sufficiently definite structure.”) (quotation omitted); *Linear Tech.*, 379 F.3d at 1319–20. The district court concluded that it did. But the district court erred by ignoring key evidence—unrebutted deposition testimony from Target’s own expert, Dr. Goldberg—regarding how a person of ordinary skill would have understood the “code”/“application” limitations. *Claim Construction Order*, 2020 WL 8617821, at *8.

Dr. Goldberg testified that here, “application” is “a term of art” that a person of ordinary skill in the art would have understood as a particular structure. *See, e.g.*, J.A. 886 (Goldberg Dep. 58:4–6). More specifically, Dr. Goldberg testified that the term “application” would have been commonly understood to mean a “computer program intended to provide some service to a user,” and that developers could have, at the relevant time, selected existing “off-the-shelf software” to perform specific services and functions. J.A. 884–86 (Goldberg Dep. 53:21–58:21); J.A. 924 (Goldberg Dep. 211:1–212:1).

Additionally, Dr. Goldberg testified that persons of ordinary skill would have understood that the word “code,” when coupled with language describing its operation, here connotes structure. *See, e.g.*, J.A. 882–83 (Goldberg Dep. 44:16–48:16); J.A. 884–85 (Goldberg Dep. 52:25–54:18); J.A. 886 (Goldberg Dep. 59:25–62:14). Dr. Goldberg explained that a person of ordinary skill would understand that “code” is “a bunch of software instructions.” J.A. 909 (Goldberg Dep. 152:10–25). Dr. Goldberg also testified that a person of ordinary skill would have known that the claimed function of displaying information could be

implemented using “off-the-shelf” code or applications. J.A. 884–85 (Goldberg Dep. 53:21–54:18).

None of this testimony is rebutted. Dr. Goldberg’s testimony thus demonstrates that, contrary to the district court’s unsupported assertion, the claim limitations do not recite “purely functional language.” *Claim Construction Order*, 2020 WL 8617821, at *6. Instead, Dr. Goldberg’s unrebutted testimony demonstrates that the “code”/“application” limitations here connote a class of structures to a person of ordinary skill. *Id.*

The district court also erred by not following our court’s recent decision in *Zeroclick*. There, the district court determined that the claim limitations “program” and “user interface code” invoked § 112 ¶ 6. *Zeroclick*, 891 F.3d at 1006–07. We reversed, explaining that the district court erred by “not giving effect to the unrebutted presumption against the application of § 112, ¶ 6.” *Id.* at 1008. We further explained that a person of ordinary skill in the art would have been able to “reasonably discern from the claim language” that the disputed limitations “program” and “user interface code” were references to conventional programs or code “existing in [the] prior art at the time of the invention[]” and were not used as “generic terms or black box recitations of structure or abstractions.” *Id.* Because the disputed limitations were references to conventional structures known to persons of ordinary skill in the pertinent art, and because the district court failed to properly apply the presumption and “made no pertinent finding that compel[led] the conclusion” that the limitations “user interface program” or “code” were used “in common parlance as substitute for ‘means,’” we rejected the district court’s determination that the claims were subject to § 112 ¶ 6 and vacated judgment of invalidity. *Id.* at 1009. That same rationale applies here, particularly in view of Dr. Goldberg’s unrebutted testimony that “code” and “application” would have connoted structure to a person of ordinary skill

and given the availability of off-the-shelf code to perform the recited claim functions.

Unlike in the mechanical arts, the specific structure of software code and applications is partly defined by its function. *Apple*, 757 F.3d at 1298–99. In determining whether software limitations like those at issue here recite sufficient structure, we can look beyond the initial “code” or “application” term to the functional language to see if a person of ordinary skill would have understood the claim limitation as a whole to connote sufficiently definite structure. *Zeroclick*, 891 F.3d at 1008 (concluding that the disputed terms are used “not as generic terms or black box recitations of structure or abstractions, but rather as specific references to conventional . . . code, existing in prior art at the time of the inventions.”); *Linear Tech.*, 379 F.3d at 1320 (“[W]hen the structure-connoting term . . . is coupled with a description of the [term’s] operations, sufficient structural meaning generally will be conveyed to persons of ordinary skill in the art, and § 112 ¶ 6 presumptively will not apply.”); *Apple*, 757 F.3d at 1298–99. Dr. Goldberg explained that here, “code” and “application” (which themselves connote structure) in combination with the recitation of the code or application’s operation would have connoted structure to persons of ordinary skill.

Reviewing the alleged means-plus-function limitation in full, the claim requires code configured to be implemented on a mobile device to display information via a display of the mobile device, receive information (including location-relevant information) via a wireless communications protocol, and display visual information based on the received location-relevant information after certain conditions are met. *See* J.A. 906 (Goldberg Dep. 140:23–141:13). Dr. Goldberg testified that persons of ordinary skill in the art would have known of off-the-shelf code and applications for displaying any desired information. He explained: “[I]f the developer knows what he wants to display, then there are software modules he can use to generate the display of

the content that he wants to display. . . . [I]f the developer knows exactly how they want to take information that's been received and generate a message from that, then the developer would know how to do that using a software library." J.A. 924 (Goldberg Dep. 213:4–213:25). As Dr. Goldberg further explained, wireless communication "protocol[s]" were terms of art well-understood by persons of ordinary skill, J.A. 876 (Goldberg Dep. 18:17–21:10), and conventional off-the-shelf "code" on a mobile device "would implement the [communication] protocols," J.A. 882 (Goldberg Dep. 43:10–45:9). Accordingly, because the recited functions can be performed by conventional off-the-shelf software, a person of ordinary skill in the art would have understood the alleged means-plus-function "code" limitations in the asserted claims to connote structure. *See Zero-click*, 891 F.3d at 1008.

For all these reasons, we conclude that the "code"/"application" limitations are not written in means-plus-function format because they would have connoted sufficiently definite structure to persons of ordinary skill in the art.

B

We turn next to the disputed "system" limitations. Although "system" in representative claim 15 of the '292 patent also appears in the preamble, the disputed "system" limitation appears in the "wherein" clause:

15. A system, comprising:
 - a building . . .
 - a first broadcast short-range communications unit . . .
 - a second broadcast short-range communications unit . . .
 - code . . .
 - said code, when executed, further configured to . . .

. . . cause to be output, via the at least one mobile device, the first visual information based on the first location-relevant information. . .

. . . cause to be output, via the at least one mobile device, the second visual information based on the second location-relevant information. . .

at least one server . . .

wherein *the system is configured such that the first visual information is automatically caused to be output without requiring communication of the at least one first message with the first broadcast short-range communications unit after the receipt of the indication of the receipt of the one or more first broadcast messages, and the second visual information is automatically caused to be output without requiring communication of the at least one second message with the second broadcast short-range communications unit after the receipt of the indication of the receipt of the one or more second broadcast messages.*

'292 patent col. 39 l. 61–col. 42 l. 18 (emphasis added to disputed limitation).

At the outset, we presume that § 112 ¶ 6 does not apply here because the disputed limitation does not recite “means.” *Williamson*, 792 F.3d at 1348. The district court did not properly apply this presumption for the “system” limitations. In the absence of the word “means,” Target bore the burden of demonstrating by a preponderance of the evidence that the “system” limitation in the wherein clause fails to recite sufficiently definite structure. *See Apex*, 325 F.3d at 1373; *Linear Tech.*, 379 F.3d at 1319–20.

We conclude that Target did not satisfy this burden. Both Target and the district court suggest that “system” may be a nonce word” used as a substitute for the word “means.” The district court noted that it had, in other

cases, found that “system” functioned as a “verbal construct that is not recognized as the name of structure.” *Claim Construction Order*, 2020 WL 8617821, at *8 (citing *Joao Control & Monitoring Sys., LLC v. Protect Am., Inc.*, No. 1-14-cv-134-LY, 2015 WL 4937464, at *5 (W.D. Tex. Aug. 18, 2015)). We agree that, in a vacuum, the term “system” may well be a nonce term. But in this case, the claim language itself defines the “system” to include specified structure. The “system” limitation in the wherein clause derives antecedent basis from the “system” recited in the preamble, which the claim states comprises “a building” having “a first broadcast short-range communications unit,” “a second broadcast short-range communications unit,” “code” executed by at least one “mobile device,” and “at least one server.” ’292 patent col. 39 l. 61–col. 42 l. 18. Each of these limitations recited in the claims are structural components of the “system.”⁴

Target and the district court further assert that, even if “system” connotes some structure in the context of this claim, “the claims do not specify which of the components in the system perform [the recited] function” in the wherein clause. *Claim Construction Order*, 2020 WL 8617821, at *7. According to the district court, it is possible that “an unspecified black box component in lieu of the recited components performs the specified function.” *Id.* We disagree.

As noted above, the claim states that the “system” includes “a building” having “a first broadcast short-range communications unit,” “a second broadcast short-range communications unit,” “code” executed by at least one “mobile device,” and “at least one server.” ’292 patent col. 39 l. 61–col. 42 l. 6. The wherein clause at issue further

⁴ Dr. Goldberg admitted that “system,” as recited in the wherein clause, “is referring to, in total, all the components of the system already laid out” previously in the claim. J.A. 917 (Goldberg Dep. 184:14–185:21).

specifies that “the system is configured such that the first visual information is automatically caused to be output . . . and the second visual information is automatically caused to be output . . .” *Id.* at col. 42 ll. 7–18.

The claim limitations preceding the wherein clause make clear that the “code” causes the output (or display) of visual information based on “location-relevant information.” *Id.* at col. 39 l. 61–col. 42 l. 6. In particular, the claim limitations specify that “said code, when executed . . . cause[s] to be output, via the at least one mobile device, the first visual information based on the first location-relevant information” and “cause[s] to be output, via the at least one mobile device, the second visual information based on the second location-relevant information.” *Id.* The message is transmitted via a wireless communications protocol different from the protocol over which the broadcast message was received. *Id.* In response to receiving the message, the server retrieves and transmits “location-relevant information” to the mobile device. *Id.* Building on the earlier limitations, the wherein clause of representative claim 15 establishes that the previously recited function—outputting visual information—performed by the “code” component of the “system” is performed automatically without the reinvolvement of the short-range communication units. *Id.* at col. 42 ll. 7–18. Although the wherein clause does not expressly refer to the previously recited “code,” it references specific functions that are defined or introduced in the code limitations and thus demonstrates that it is the code that performs the function recited in the wherein clause. Furthermore, as we explained above in Section III.A, here, “code,” both alone and in the context of the recited claim limitation, connotes sufficiently definite structure to a person of ordinary skill in the art.

For the reasons above, we conclude that the “system” limitations are not written in means-plus-function format because they connote sufficiently definite structure to persons of ordinary skill in the art.

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* * *

We recognize that the asserted claims are not models of clarity, but poor claim drafting does not allow courts to bypass the presumption that a claim does not invoke § 112 ¶ 6 in the absence of the word “means.” Nor does it relieve courts of their duty to evaluate whether that presumption has been overcome.

CONCLUSION

We have considered the parties’ remaining arguments and find them unpersuasive. For the foregoing reasons, we disagree with the district court’s claim constructions and therefore reverse the district court’s judgment of invalidity and remand for further proceedings.

REVERSED AND REMANDED

COSTS

No costs.

EFFECTIVE DATE OF 1999 AMENDMENT

Amendment by section 1000(a)(9) [title IV, §4732(a)(10)(A)] of Pub. L. 106-113 effective 4 months after Nov. 29, 1999, see section 1000(a)(9) [title IV, §4731] of Pub. L. 106-113, set out as a note under section 1 of this title.

Amendment by section 1000(a)(9) [title IV, §4801(a)] of Pub. L. 106-113 effective Nov. 29, 1999, and applicable to any provisional application filed on or after June 8, 1995, see section 1000(a)(9) [title IV, §4801(d)] of Pub. L. 106-113, set out as a note under section 119 of this title.

EFFECTIVE DATE OF 1994 AMENDMENT

Amendment by Pub. L. 103-465 effective 6 months after Dec. 8, 1994, and applicable to all patent applications filed in the United States on or after that effective date, with provisions relating to earliest filed patent application, see section 534(b)(1), (3) of Pub. L. 103-465, set out as a note under section 154 of this title.

EFFECTIVE DATE OF 1982 AMENDMENT

Amendment by Pub. L. 97-247 effective six months after Aug. 27, 1982, see section 17(c) of Pub. L. 97-247, set out as an Effective Date note under section 294 of this title.

EMERGENCY RELIEF FROM POSTAL SITUATION AFFECTING PATENT, TRADEMARK, AND OTHER FEDERAL CASES

Pub. L. 92-34, June 30, 1971, 85 Stat. 87, provided that a patent or trademark application would be considered filed in the United States Patent Office on the date that it would have been received by the Patent Office except for the delay caused by emergency situation affecting postal service from Mar. 18, 1970 to Mar. 30, 1970, if a claim was made.

§ 112. Specification

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

A claim may be written in independent or, if the nature of the case admits, in dependent or multiple dependent form.

Subject to the following paragraph, a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.

A claim in multiple dependent form shall contain a reference, in the alternative only, to more than one claim previously set forth and then specify a further limitation of the subject matter claimed. A multiple dependent claim shall not serve as a basis for any other multiple dependent claim. A multiple dependent claim shall be construed to incorporate by reference all the limitations of the particular claim in relation to which it is being considered.

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of struc-

ture, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

(July 19, 1952, ch. 950, 66 Stat. 798; Pub. L. 89-83, §9, July 24, 1965, 79 Stat. 261; Pub. L. 94-131, §7, Nov. 14, 1975, 89 Stat. 691; Pub. L. 112-29, §4(c), Sept. 16, 2011, 125 Stat. 296.)

AMENDMENT OF SECTION

Pub. L. 112-29, §4(c), (e), Sept. 16, 2011, 125 Stat. 296, 297, provided that, effective upon the expiration of the 1-year period beginning on Sept. 16, 2011, and applicable to any patent application that is filed on or after that effective date, this section is amended:

(1) in the first undesignated paragraph—

(A) by striking “The specification” and inserting “(a) IN GENERAL.—The specification”; and

(B) by striking “of carrying out his invention” and inserting “or joint inventor of carrying out the invention”;

(2) in the second undesignated paragraph—

(A) by striking “The specification” and inserting “(b) CONCLUSION.—The specification”; and

(B) by striking “applicant regards as his invention” and inserting “inventor or a joint inventor regards as the invention”;

(3) in the third undesignated paragraph, by striking “A claim” and inserting “(c) FORM.—A claim”;

(4) in the fourth undesignated paragraph, by striking “Subject to the following paragraph,” and inserting “(d) REFERENCE IN DEPENDENT FORMS.—Subject to subsection (e),”;

(5) in the fifth undesignated paragraph, by striking “A claim” and inserting “(e) REFERENCE IN MULTIPLE DEPENDENT FORM.—A claim”; and

(6) in the last undesignated paragraph, by striking “An element” and inserting “(f) ELEMENT IN CLAIM FOR A COMBINATION.—An element”.

See 2011 Amendment note below.

HISTORICAL AND REVISION NOTES

Based on Title 35, U.S.C., 1946 ed., §33 (R.S. 4888, amended (1) Mar. 3, 1915, ch. 94, §1, 38 Stat. 958; (2) May 23, 1930, ch. 312, §2, 46 Stat. 376).

The sentence relating to signature of the specification is omitted in view of the general requirement for a signature in section 111.

The last sentence is omitted for inclusion in the chapter relating to plant patents.

The clause relating to machines is omitted as unnecessary and the requirement for disclosing the best mode of carrying out the invention is stated as generally applicable to all types of invention (derived from Title 35, U.S.C., 1946 ed., §69, first defense).

The clause relating to the claim is made a separate paragraph to emphasize the distinction between the description and the claim or definition, and the language is modified.

A new paragraph relating to functional claims is added.

AMENDMENTS

2011—Pub. L. 112-29 designated first to sixth pars. as subsecs. (a) to (f), respectively, inserted headings, in subsec. (a), substituted “or joint inventor of carrying

out the invention” for “of carrying out his invention”, in subsec. (b), substituted “inventor or a joint inventor regards as the invention” for “applicant regards as his invention”, and in subsec. (d), substituted “Subject to subsection (e),” for “Subject to the following paragraph.”

1975—Pub. L. 94-131 substituted provision authorizing the writing of claims, if the nature of the case admits, in dependent or multiple dependent form for prior provision for writing claims in dependent form, required claims in dependent form to contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed, substituted text respecting construction of a claim in dependent form so as to incorporate by reference all the limitations of the claim to which it refers for prior text for construction of a dependent claim to include all the limitations of the claim incorporated by reference into the dependent claim, and inserted paragraph respecting certain requirements for claims in multiple dependent form.

1965—Pub. L. 89-83 permitted a claim to be written in independent or dependent form, and if in dependent form, required it to be construed to include all the limitations of the claim incorporated by reference into the dependent claim.

EFFECTIVE DATE OF 2011 AMENDMENT

Amendment by Pub. L. 112-29 effective upon the expiration of the 1-year period beginning on Sept. 16, 2011, and applicable to any patent application that is filed on or after that effective date, see section 4(e) of Pub. L. 112-29, set out as a note under section 111 of this title.

EFFECTIVE DATE OF 1975 AMENDMENT

Amendment by Pub. L. 94-131 effective Jan. 24, 1978, and applicable on and after that date to patent applications filed in the United States and to international applications, where applicable, see section 11 of Pub. L. 94-131, set out as an Effective Date note under section 351 of this title.

EFFECTIVE DATE OF 1965 AMENDMENT

Amendment by Pub. L. 89-83 effective three months after July 24, 1965, see section 7(a) of Pub. L. 89-83, set out as a note under section 41 of this title.

§ 113. Drawings

The applicant shall furnish a drawing where necessary for the understanding of the subject matter sought to be patented. When the nature of such subject matter admits of illustration by a drawing and the applicant has not furnished such a drawing, the Director may require its submission within a time period of not less than two months from the sending of a notice thereof. Drawings submitted after the filing date of the application may not be used (i) to overcome any insufficiency of the specification due to lack of an enabling disclosure or otherwise inadequate disclosure therein, or (ii) to supplement the original disclosure thereof for the purpose of interpretation of the scope of any claim.

(July 19, 1952, ch. 950, 66 Stat. 799; Pub. L. 94-131, § 8, Nov. 14, 1975, 89 Stat. 691; Pub. L. 106-113, div. B, § 1000(a)(9) [title IV, § 4732(a)(10)(A)], Nov. 29, 1999, 113 Stat. 1536, 1501A-582; Pub. L. 107-273, div. C, title III, § 13206(b)(1)(B), Nov. 2, 2002, 116 Stat. 1906.)

HISTORICAL AND REVISION NOTES

Based on Title 35, U.S.C., 1946 ed., § 34, part (R.S. 4889, amended Mar. 3, 1915, ch. 94, § 2, 38 Stat. 958).

The requirement for signature in the corresponding section of existing statute is omitted; regulations of

the Patent Office can take care of any substitute. A redundant clause is omitted.

AMENDMENTS

2002—Pub. L. 107-273 made technical correction to directory language of Pub. L. 106-113. See 1999 Amendment note below.

1999—Pub. L. 106-113, as amended by Pub. L. 107-273, substituted “Director” for “Commissioner”.

1975—Pub. L. 94-131 substituted provisions respecting drawings requiring necessary-for-understanding drawings and submission of drawings within prescribed time period and limiting use of drawings submitted after filing date of application for prior provision requiring the applicant to furnish a drawing when the nature of the case admitted it.

EFFECTIVE DATE OF 1999 AMENDMENT

Amendment by Pub. L. 106-113 effective 4 months after Nov. 29, 1999, see section 1000(a)(9) [title IV, § 4731] of Pub. L. 106-113, set out as a note under section 1 of this title.

EFFECTIVE DATE OF 1975 AMENDMENT

Amendment by Pub. L. 94-131 effective Jan. 24, 1978, and applicable on and after that date to patent applications filed in the United States and to international applications, where applicable, see section 11 of Pub. L. 94-131, set out as an Effective Date note under section 351 of this title.

§ 114. Models, specimens

The Director may require the applicant to furnish a model of convenient size to exhibit advantageously the several parts of his invention.

When the invention relates to a composition of matter, the Director may require the applicant to furnish specimens or ingredients for the purpose of inspection or experiment.

(July 19, 1952, ch. 950, 66 Stat. 799; Pub. L. 106-113, div. B, § 1000(a)(9) [title IV, § 4732(a)(10)(A)], Nov. 29, 1999, 113 Stat. 1536, 1501A-582; Pub. L. 107-273, div. C, title III, § 13206(b)(1)(B), Nov. 2, 2002, 116 Stat. 1906.)

HISTORICAL AND REVISION NOTES

Based on Title 35, U.S.C., 1946 ed., § 34, part (R.S. 4890 and 4891).

The change in language in the second paragraph broadens the requirement for specimens.

AMENDMENTS

2002—Pub. L. 107-273 made technical correction to directory language of Pub. L. 106-113. See 1999 Amendment note below.

1999—Pub. L. 106-113, as amended by Pub. L. 107-273, substituted “Director” for “Commissioner” in two places.

EFFECTIVE DATE OF 1999 AMENDMENT

Amendment by Pub. L. 106-113 effective 4 months after Nov. 29, 1999, see section 1000(a)(9) [title IV, § 4731] of Pub. L. 106-113, set out as a note under section 1 of this title.

§ 115. Oath of applicant

The applicant shall make oath that he believes himself to be the original and first inventor of the process, machine, manufacture, or composition of matter, or improvement thereof, for which he solicits a patent; and shall state of what country he is a citizen. Such oath may be made before any person within the United States authorized by law to administer oaths,