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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/165,789	10/19/2018	Shingo Sugimoto	22562-2687 / 2018-352	5663
96411	7590	04/18/2022	EXAMINER	
Dinsmore & Shohl LLP 255 East Fifth Street, Suite 1900 Cincinnati, OH 45202			BOOK, PHYLLIS A	
			ART UNIT	PAPER NUMBER
			2454	
			NOTIFICATION DATE	DELIVERY MODE
			04/18/2022	ELECTRONIC

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* SHINGO SUGIMOTO

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Appeal 2021-002435  
Application 16/165,789  
Technology Center 2400

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Before JEAN R. HOMERE, ST. JOHN COURTENAY III, and  
LARRY J. HUME, *Administrative Patent Judges*.

COURTENAY, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant<sup>1</sup> appeals under 35 U.S.C. § 134(a) from a final rejection of claims 1–22, which constitute all claims pending in this application. Claims App. We have jurisdiction over the pending claims under 35 U.S.C. § 6(b).

We affirm.

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<sup>1</sup> “Appellant” refers to “applicant” as defined in 37 C.F.R. § 1.42(a). According to Appellant, the real party in interest is Toyota Motor North America, Inc. *See* Appeal Br. 2.

STATEMENT OF THE CASE <sup>2</sup>

Embodiments of Appellant’s claimed subject matter relate generally to “recapturing under-utilized computational resources and, more specifically, using predictive analytics to determine expected use patterns of vehicles to recapture under-utilized computational resources of vehicles.” Spec. ¶ 1.

*Representative Independent Claim 1*

1. A distributed computing network comprising:
  - one or more vehicles, each vehicle configured to act as a node in the distributed computing network; and
  - a remote server comprising a processor and a memory module storing one or more nontransitory processor-readable instructions that when executed by the processor cause the remote server to:
    - establish a data connection with the one or more vehicles;
    - [L1] predict ***a pattern-of-use*** of the one or more vehicles;
    - [L2] *determine a predicted current use of the one or more vehicles*; and
    - [L3] *allocate a computational task to the one or more vehicles based on the predicted pattern-of-use and the predicted current use.*

Appeal Br. 10. Claims App. (Bracketing and emphasis added regarding disputed limitations L1 and L2).

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<sup>2</sup> We herein refer to the Final Office Action, mailed June 8, 2020 (“Final Act.”); the Appeal Brief, filed November 3, 2020 (“Appeal Br.”); the Examiner’s Answer, mailed December 31, 2020 (“Ans.”); and the Reply Brief (“Reply Br.”), filed February 22, 2021.

*Prior Art Evidence Relied Upon by the Examiner<sup>3</sup>*

<b>Name</b>	<b>Reference</b>	<b>Date</b>
Herz	US 2007/0008927 A1	Jan. 11, 2007
Duan	US 2015/0120087 A1	April 30, 2015
Shifman	US 2017/0228258 A1	Aug. 10, 2017
Nagao	US 2017/0257322 A1	Sept. 7, 2017
Moghe	US 2018/0063261 A1	Mar. 1, 2018
Adenwala	US 2019/0079659 A1	Mar. 14, 2019

*Rejections*

<b>Rejection</b>	<b>Claims Rejected</b>	<b>35 U.S.C. §</b>	<b>Reference(s)/Basis</b>
A	1–9	112(b)	Indefinite
B	1–3, 5, 10–12, 14, 18	102	Shifman
C	4, 7, 13, 16	103	Shifman, Adenwala
D	6, 15, 20	103	Shifman, Nagao
E	8	103	Shifman, Moghe
F	9, 17, 19	103	Shifman, Herz
G	21, 22	103	Shifman, Duan

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<sup>3</sup> All reference citations are to the first-named inventor only.

*Issues and Analysis*

We have considered all of Appellant’s arguments and any evidence presented. We review appealed rejections for reversible error based upon the arguments and evidence Appellant provides for each issue identified by Appellant. *See* 37 C.F.R. § 41.37(c)(1)(iv); *Ex parte Frye*, 94 USPQ2d 1072, 1075 (BPAI 2010) (precedential) (*cited with approval in In re Jung*, 637 F.3d 1356, 1365 (Fed. Cir. 2011) (explaining that even if the Examiner failed to make a prima facie case, “it has long been the Board’s practice to require an applicant to identify the alleged error in the examiner’s rejections.”)). “[A]ll that is required of the office to meet its prima facie burden of production is to set forth the statutory basis of the rejection and the reference or references relied upon in a sufficiently articulate and informative manner as to meet the notice requirement of [35 U.S.C.] § 132.” *Jung*, 637 F.3d at 1363.

To the extent Appellant has not advanced separate, substantive arguments for particular claims, or other issues, such arguments are forfeited or waived.<sup>4</sup> *See, e.g.*, 37 C.F.R. § 41.37(c)(1)(iv) (2019).

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<sup>4</sup> *See In re Google Tech. Holdings LLC*, 980 F.3d 858, 862 (Fed. Cir. 2020) (some internal citation omitted):

It is well established that “[w]aiver is different from forfeiture.” *United States v. Olano*, 507 U.S. 725, 733 (1993).<sup>□</sup> “Whereas forfeiture is the failure to make the timely assertion of a right, waiver is the ‘intentional relinquishment or abandonment of a known right.’” *Id.* (quoting *Johnson v. Zerbst*, 304 U.S. 458, 464 (1938)) (additional citations omitted). The two scenarios can have different consequences for challenges raised on appeal, *id.* at 733–34, and for that reason, it is worth attending to which label is the right one in a particular case.

Regarding all rejected claims on appeal, to the extent that the scope of any claims on appeal is being construed broader by the Examiner or the Board than the interpretation imputed by Appellant's arguments in the Briefs, we emphasize that, because "applicants may amend claims to narrow their scope, a broad construction during prosecution creates no unfairness to the applicant or patentee." *In re ICON Health & Fitness, Inc.*, 496 F.3d 1374, 1379 (Fed. Cir. 2007) (citation omitted). Throughout this opinion, we give the claim limitations the broadest reasonable interpretation ("BRI") consistent with the Specification. *See In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997).

We highlight and address specific findings and arguments for emphasis in our analysis below.

*Rejection A of Independent Claim 1  
under 35 U.S.C. § 112(b)*

**Issue:** Under 35 U.S.C. § 112(b), did the Examiner err by concluding that the claim 1 language, "*A distributed computing network comprising: one or more vehicles, each vehicle configured to act as a node in the distributed computing network,*" is indefinite?

The Examiner concludes the above claim language is indefinite because "no processors, memory, network interface, or instructions are recited for the vehicles, which are required to **enable** them to act as nodes in a network." Final Act. 3 (citing claim 1) (emphasis added). The Examiner concludes that Applicant must amend claim 1 to include the components

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(Internal citations omitted).

(e.g., processors) that are necessary to enable vehicles to act as network nodes. *Id.*

However, Appellant’s Specification describes that “a vehicle . . . includes network interface hardware, a processor, and a memory module.” Spec. ¶ 4. Moreover, paragraph 12 of the Specification expressly describes that “[v]ehicles include computational resources, such as central processing units (CPUs) or graphics processing units (GPUs) as components in an electronic control unit (ECU).” (emphasis added).

The Examiner appears to be setting forth a rejection under the guidance of MPEP § 2172.01 (e.g., “Depending on the specific facts at issue, a claim which *omits matter disclosed to be essential to the invention* as described in the specification or in other statements of record may be rejected under 35 U.S.C. 112(a) or pre-AIA 35 U.S.C. 112, first paragraph, as *not enabling* (see, e.g., *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976))”) (emphasis added).

However, the Examiner conflates enablement with indefiniteness Rejection A under 35 U.S.C. § 112(b) that is before us on appeal. *See* Final Act. 3 (because “no processors, memory, network interface, or instructions are recited for the vehicles, which are required to **enable** them to act as nodes in a network.”) (emphasis added).

Nor do we conclude that claim 1 fails to *interrelate essential elements*, under MPEP § 2172.01 (“If a claim fails to interrelate essential elements of the invention as defined by applicant(s) in the specification, the claim may be rejected under 35 U.S.C. 112(b) or pre-AIA 35 U.S.C. 112, second paragraph, as indefinite.”) (citing *In re Venezia*, 530 F.2d 956 (CCPA 1976)) (emphasis added).

Here, we find the Specification (e.g., paragraphs 4, 12) sufficiently describes the claim language “each vehicle configured to act as a *node* in the *distributed computing network*” as including processors, memory, and a network interface, such that we conclude claim 1 is not indefinite under a broad but reasonable interpretation of the claim language that is consistent with the Specification (emphasis added). Accordingly, we are constrained on this record to reverse the Examiner’s Rejection A of claims 1–9 under 35 U.S.C. § 112(b).

*Rejection B of Independent Claim 1  
under 35 U.S.C. § 102(a)(2) over Shifman*

Based on Appellant’s arguments and our discretion under 37 C.F.R. § 41.37(c)(1)(iv), we decide the appeal of anticipation Rejection B of grouped claims 1–3, 5, 10–12, 14, 18, on the basis of representative claim 1.<sup>5</sup>

A finding that a claim is anticipated under 35 U.S.C. § 102 involves two analytical steps. First, we must interpret the claim language, where necessary. Because the PTO is entitled to give claims their broadest reasonable interpretation, a court’s review of the Board’s claim construction is limited to determining whether it was reasonable. *Morris*, 127 F.3d at 1055. Secondly, the Board must compare the properly construed claim to a

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<sup>5</sup> “Notwithstanding any other provision of this paragraph, the failure of appellant to separately argue claims which appellant has grouped together shall constitute a waiver of any argument that the Board must consider the patentability of any grouped claim separately.” 37 C.F.R. § 41.37(c)(1)(iv). In addition, when Appellant does not separately argue the patentability of dependent claims, the claims stand or fall with the claims from which they depend. *In re King*, 801 F.2d 1324, 1325 (Fed. Cir. 1986).



prior art reference and make factual findings that “each and every limitation is found either expressly or inherently in [that] single prior art reference.” *In re Crush*, 393 F.3d 1253, 1256 (Fed. Cir. 2004). Anticipation of a patent claim requires a finding that the claim at issue “reads on” a prior art reference. *See Atlas Powder Co. v. IRECO, Inc.*, 190 F.3d 1342, 1346 (Fed Cir. 1999).

Based upon Appellant’s arguments, we focus our analysis on the argued claim 1 limitations copied below. Appellant’s arguments in the Briefs present the following issues:

**Issues:** Did the Examiner err by finding under 35 U.S.C. § 102(a)(2) that Shifman expressly or inherently discloses the disputed limitations L1, L2, and L3:

[L1] predict ***a pattern-of-use*** of the one or more vehicles;

[L2] ***determine a predicted current use of the one or more vehicles***; and

[L3] ***allocate a computational task to the one or more vehicles based on the predicted pattern-of-use and the predicted current use.***

Claim 1 (emphasis added).

Appellant contends limitations L1, L2, and L3 are not expressly or inherently disclosed by the cited Shifman reference. *See* Appeal Br. 7–8; Reply Br. 4–5.

For the reasons discussed below, on this record, and based upon a preponderance of the evidence, we are not persuaded of error regarding the Examiner’s finding of anticipation for independent claim 1 over Shifman.

*Disputed Limitations L1, L2, and L3 of Claim 1*

As an initial matter of claim construction for the limitations L1, L2, and L3, we turn to Appellant’s Specification for context. Under the “Summary of the Claimed Subject Matter” section of the Appeal Brief (p. 4), Appellant points to support found in paragraphs 3, 41–42; 308, 310, 312, and Figure 3 of the Specification.

We particularly note that Appellant’s Specification, at paragraph 41, describes, in pertinent part:

At step 308, the remote server 102 may determine *a predicted current use* based on the *predicted pattern-of-use* and other information. The *predicted current use* is *a prediction of the current usability of the vehicle for computational tasks* based on the *predicted pattern-of-use* and *one or more other factors*. For example, the *predicted current use* may be determined based on the *predicted pattern-of-use*, the current location, speed, or acceleration of the vehicle, the active *or* inactive status of one or more systems on the vehicle, and *other various factors*.

(emphasis added).

As an initial matter of claim construction, we consider Appellant’s supporting descriptions in the Specification of the disputed claim 1 terms as being non-limiting and exemplary, and not as a definitions, per se (*id.*). Given the breadth of Appellant’s exemplary support in the Specification for the claim 1 term “*predicted current use*,” we conclude it is unclear exactly how this term is meaningfully distinguishable from the described exemplary embodiments of the claim 1 term “*the predicted pattern-of-use*.” Spec. ¶41. It is our view that the respective supporting exemplary descriptions in the

Specification blur the broadest reasonable interpretations of these claim terms.<sup>6</sup>

In support of the rejection, the Examiner finds the claim 1 limitation L1 (“*predict a pattern-of-use of the one-or-more vehicles*”) is disclosed by Shifman’s description of a “future state” that comprises a “*time and location at which the vehicle or the computing platform is expected to be.*” Final Act. 5–6 (citing Shifman ¶¶ 23, 26) (emphasis added).

The Examiner finds limitation L2 (*determine a predicted current use of the one or more vehicles*”) is disclosed by Shifman’s description of:

Once the times and locations are known (current use of the one or more vehicles), the availability of resources at the locations, and optionally the times, can be predicted, using predefined or pre-collected data (*determine a predicted current use of the one*

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<sup>6</sup> In the event of further prosecution, we leave it to the Examiner to consider a rejection under 35 U.S.C. § 112(b) for different reasons than the Examiner set forth under Rejection A. The Examiner should consider the *McAward* indefiniteness test as applicable to patent application claims. *See Ex parte McAward*, Appeal No. 2015-006416 (PTAB Aug. 25, 2017) (precedential) at \*8–11 (explaining that PTAB continues to follow *Packard* (for patent applications) after the Supreme Court’s decision in *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898 (2014):

[W]hen the USPTO has initially issued a well-grounded rejection that identifies ways in which language in a claim is ambiguous, vague, incoherent, opaque, or otherwise unclear in describing and defining the claimed invention, and thereafter the applicant fails to provide a satisfactory response, the USPTO can properly reject the claim as failing to meet the statutory requirements of § 112(b).

*In re Packard*, 751 F.3d 1307, 1311 (Fed. Cir. 2014) (per curiam). Although the Board is authorized to reject claims under 37 C.F.R. § 41.50(b), no inference should be drawn when the Board elects not to do so. *See Manual of Patent Examining Procedure* § 1213.02 (9<sup>th</sup> Ed., Rev. 10.2019 (June 2020)).

*or more vehicles*). Network management engine 117 of the vehicle 105A automatically monitors and, responsively, controls interconnected devices for optimization, including a multitude of sensors 114 (*determine a predicted current use of the one or more vehicles*) engine 110 obtains a prediction about the resource availability at one or more future state, such as what is the available bandwidth at a particular location (*determine a predicted current use of the one or more vehicles*).

Final Act. 6 (citing Shifman ¶¶ 28, 43, 130; Fig. 1, elements 105A, 110, 1114, 117).

The Examiner finds “allocate” limitation L3 (“*allocate a computational task to the one or more vehicles based on the **predicted pattern-of-use and the predicted current use***”) is disclosed by Shifman at paragraphs 129, 28, 130, 128, 131; Fig. 1, elements 105A, 110, 116) (emphasis added).

Appellant disagrees with the Examiner’s finding of anticipation, and contends: “the predicted **current** use of a vehicle as recited in claim 1 does not read upon anything in Shifman, which discloses **only** future-looking predicted resource availability.” Appeal Br. 8.

But our reviewing court guides that any special meaning assigned to claim terms “must be sufficiently clear in the specification that any departure from common usage would be so understood by a person of experience in the field of the invention.” *Multiform Desiccants Inc. v. Medzam Ltd.*, 133 F.3d 1473, 1477 (Fed. Cir. 1998); *see also Helmsderfer v. Bobrick Washroom Equip., Inc.*, 527 F.3d 1379, 1381 (Fed. Cir. 2008) (“A patentee may act as its own lexicographer and assign to a term a unique definition that is different from its ordinary and customary meaning; however, a patentee must clearly express that intent in the written description.”).

Here, based upon our review of the above supporting portions of the Specification (e.g., paragraph 41), and for the reasons indicated above, we find no limiting definitions for the claim 1 terms “*predicted current use*” and “*predicted pattern-of-use*” in the Specification, or in the claim. (emphasis added).

Instead of clear definitions, we merely find non-limiting descriptions of exemplary embodiments in the Specification, as cited by Appellant for written description support. *See* Appeal Br. 4. *See* Specification, e.g., at paragraph 41:

For example, the *predicted current use* may be determined based on the *predicted pattern-of-use*, the current location, speed, or acceleration of the vehicle, the active or inactive status of one or more systems on the vehicle, *and other various factors*.

(emphasis added).

Given the absence of limiting definitions in the Specification or in the claim for the disputed claim terms “*predicted current use*” and “the *predicted pattern-of-use*,” on this record, we are not persuaded the Examiner’s claim interpretation is overly broad, unreasonable, or inconsistent with the Specification. *See Morris*, 127 F.3d at 1054 (emphasis added).

Thus, to the extent consistent with our analysis above, we adopt as our own: (1) the findings and reasons set forth by the Examiner in the action from which this appeal is taken (Final Act. 4–7), and (2) the reasons set forth by the Examiner in the Examiner’s Answer in response to Appellant’s

Appeal Brief 7. *See* Ans. 7–9.

Therefore, based upon a preponderance of the evidence in *Shifman*, as cited by the Examiner, and as discussed above, on this record, we are not persuaded the Examiner erred regarding the finding of anticipation for the disputed limitations L1, L2, and L3 of claim 1.

Accordingly, we sustain the Examiner’s anticipation Rejection B of independent representative claim 1 over the cited *Shifman* reference. Regarding the remaining grouped claims 2, 3, 5, 10–12, 14, and 18, as also rejected under Rejection B, we sustain the anticipation rejection of these claims (not argued separately) for essentially the same reasons found and explained by the Examiner, consistent with our discussion above, and based upon the legal doctrines of waiver or forfeiture. *See, e.g.*, 37 C.F.R. § 41.37(c)(1)(iv); *see also Google Tech. Holdings*, 980 F.3d at 862.

*Rejection G of Dependent Claim 21  
under 35 U.S.C. § 103 over Shifman and Duan*

Claim 21 recites:

The distributed computing network of claim 1, wherein the predicted current use of the one or more vehicles is determined based on *one of the one or more vehicles being at an expected location* as determined by *comparing the actual location of the vehicle* against the *predicted pattern-of-use*.

Appeal Br. 13. Claims App. (emphasis added).

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<sup>7</sup> *See Icon Health & Fitness, Inc. v. Strava, Inc.*, 849 F.3d 1034, 1042 (Fed. Cir. 2017) (“As an initial matter, the PTAB was authorized to incorporate the Examiner’s findings.”); *see also In re Brana*, 51 F.3d 1560, 1564 n.13 (Fed. Cir. 1995) (upholding the PTAB’s findings, although it “did not expressly make any independent factual determinations or legal conclusions,” because it had expressly adopted the examiner’s findings).

The Examiner rejects dependent claim 21 under 35 U.S.C. § 103 over the combined teachings and suggestions of Shifman and Duan. *See* Final Act. 22–23.

Appellant contends Duan’s predictions “are in relation to where a vehicle may travel at a future time, which is fundamentally different from determining a vehicle’s predicted *current use* based upon the vehicle being at an expected location at the present time, rather than at *some point in the future*.” Appeal Br. 9.

We are not persuaded by Appellant’s arguments, given the lack of a clear limiting definition for the claim term “*predicted pattern-of-use*,” as per our discussion of claim 1 above.

In particular, we find Duan’s embodiment, as described in paragraph 34, in which the future location of a vehicle is predicted (“such as a road section which the vehicle might travel through in [the] next N minutes”) teaches, or at least suggests, “one of the one or more vehicles being at an expected location as determined by comparing the actual location of the vehicle against the against the *predicted pattern-of-use*,” within the meaning of dependent claim 21. (emphasis added).

Therefore, on this record, we find a preponderance of the evidence supports the Examiner’s underlying factual findings and ultimate legal conclusion of obviousness for claim 21. Accordingly, we sustain the Examiner’s Rejection G of dependent claim 21 over the cited Shifman and Duan references.

*Rejection G of Dependent Claim 22  
under 35 U.S.C. § 103 over Shifman and Duan*

Claim 22 recites:

The distributed computing network of claim 21, wherein the predicted current use of the one or more vehicles is further based on *how much longer the vehicle is expected to remain at the expected location*.

Appeal Br. 14. Claims App. (emphasis added).

The Examiner rejects dependent claim 22 over the combined teachings and suggestions of Shifman and Duan. *See* Final Act. 23–24 (citing paragraph 34 of Duan).

Appellant contends “predicting where a vehicle might travel in the future, such as a road section where the vehicle may be at a certain time in the future, does not teach or reasonably suggest *how much longer* the vehicle is expected *to remain at the expected location*.” Appeal Br. 9.

We are not persuaded by Appellant’s argument, and agree with the Examiner’s underlying factual findings, because we find Duan’s prediction of the future location that a vehicle may travel to in the next N minutes also teaches, or at least suggests, the disputed language of dependent claim 22. Final Act. 24 (citing Duan ¶ 34). Our reviewing court emphasizes that “the question under 35 USC 103 is not merely what the references expressly teach but what they would have *suggested* to one of ordinary skill in the art at the time the invention was made.” *Merck & Co. v. Biocraft Labs., Inc.*, 874 F.2d 804, 807 (Fed. Cir. 1989) (emphasis added) (quoting *In re Lamberti*, 545 F.2d 747, 750 (CCPA 1976)). *See also* MPEP § 2123 (9th ed. Rev. 10.2019, rev. June 2020).



Moreover, with respect to all claims before us on appeal, the Supreme Court guides that a combination of familiar elements according to known methods that would do no more than yield predictable results is obvious. *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007).

Therefore, on this record, we find a preponderance of the evidence supports the Examiner's underlying factual findings and ultimate legal conclusion of obviousness for claim 22. Accordingly, we sustain the Examiner's Rejection G of dependent claim 22 over the cited Shifman and Duan references.

*Rejections C, D, E, and F of Remaining  
Dependent Claims 4, 6, 7, 8, 9, 13, 15, 16, 17, 19, and 20*

Appellant advances no arguments rebutting the Examiner's legal conclusion of the obviousness for the remaining dependent claims 4, 6, 7, 8, 9, 13, 15, 16, 17, 19, and 20, as rejected under Rejections C, D, E, and F over the collective teachings and suggestions of the cited references. Arguments not made are waived or forfeited. *See, e.g.*, 37 C.F.R. § 41.37(c)(1)(iv); *see also Google Tech. Holdings*, 980 F.3d at 862.

## CONCLUSIONS

The Examiner erred in concluding that claims 1–9 are indefinite.

The Examiner did not err in finding that claims 1–3, 5, 10–12, 14, and 18 are anticipated by Shifman under 35 U.S.C. § 102(a)(2).

The Examiner did not err in concluding that claims 4, 6–9, 13, 15–17, and 19–22 are obvious over the cited combinations of references.

Because we have sustained at least one ground of rejection with respect to each claim on appeal, we affirm the Examiner’s decision to reject all claims on appeal. *See* 37 C.F.R. § 41.50(a)(1).

DECISION SUMMARY

In summary:

<b>Claim(s) Rejected</b>	<b>35 U.S.C. §</b>	<b>Reference(s)/ Basis</b>	<b>Affirmed</b>	<b>Reversed</b>
1–9	112(b)	Indefinite		1–9
1–3, 5, 10–12, 14, 18	102(a)( 2)	Shifman	1–3, 5, 10–12, 14, 18	
4, 7, 13, 16	103	Shifman, Adenwala	4, 7, 13, 16	
6, 15, 20	103	Shifman, Nagao	6, 15, 20	
8	103	Shifman, Moghe	8	
9, 17, 19	103	Shifman, Herz	9, 17, 19	
21, 22	103	Shifman, Duan	21, 22	
<b>Overall Outcome</b>			1–22	

TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv). *See also* 37 C.F.R. § 41.50(f).

**AFFIRMED**