

2023 Initial Report
Functional Claim Limitations in Software-related Inventions
-- Impact of the 2019 Section 112 Guidance

This 2023 Initial Report provides assessments of PTAB cases issued prior to and after the PTO's January 7, 2019 Guidance ("Guidance") for Examining Computer-Implemented Functional Claim Limitations for Compliance With 35 U.S.C. 112. PTAB cases were reviewed to assess impact of the Guidance to what specification description is viewed as clear, adequate and enabling for claimed functions under 35 U.S.C. 112(a) and 35 U.S.C. 112(b) to provide patent practitioners with relevant practice tips and takeaways.

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Background

Overview of 2019 § 112 Guidance Following an earlier examination guideline for determining the applicability of 35 U.S. C. 112(6) issued on June 21, 2000, on January 7, 2019, the USPTO has issued a Guidance for Examining Computer-Implemented Functional Claim Limitations for Compliance with 35 U.S.C. 112, 84 Fed. Reg. 57, pages. 57-63 ("2019 § 112 Guidance"). As of the effective date of January 7, 2019, the 2019 § 112 Guidance has provided a more specific examination procedure for determining whether a patent applications where functional language is used to claim computer-implemented inventions has met 35 U.S.C. 112(a) or (b) requirements.

The 2019 § 112 Guidance includes Part I and Part II. Part I addresses issues related to the examination of computer-implemented functional claims having means-plus function limitations. Part I focuses on claim interpretation under 35 U.S.C. 112(f) and compliance with the definiteness requirement of 35 U.S.C. 112(b). The 2019 § 112 Guidance uses a 2015 Federal Circuit opinion, *Williamson v. Citrix Online, LLC*, 792 F.3d 1339 (Fed. Cir. 2015) (en banc), to lay the basic rule for determining means-plus-function language under 35 U.S.C. 112(f).

Part II addresses written description and enablement issues related to the examination of computer-implemented functional claims, such as whether the claims recite not only the idea of a solution or outcome to a problem but also details of how the solution or outcome is accomplished. Part II focuses on the requirements of 35 U.S.C. 112(a) relative to written description and enablement. Part II also uses a 2015 Federal Circuit opinion, *Vasudevan Software, Inc. v. MicroStrategy, Inc.*, 782 F.3d 671 (Fed. Cir. 2015), to lay a basic rule for determining whether the written description requirement is met under 35 U.S.C. 112(a).

The 2019 § 112 Guidance has been fully incorporated into the ninth edition of MPEP in June 2020.

Discussion of Part I: To review issues related to the examination of computer-implemented functional claims having means-plus function limitations, **the first step** is to review how a claim limitation is interpreted under 35 U.S.C. 112(f). Referring to the Federal Circuit’s *en banc* decision *Williamson*, the 2019 § 112 Guidance recognizes some of Federal Circuit’s opinions prior to the year of 2015 established an unjustified heightened bar to overcoming the presumption that a limitation expressed in functional language without using the word “means” is not subject to 35 U.S.C. 112(f).

Accordingly, the 2019 § 112 Guidance recognizes the 3-prong analysis as the initial step in evaluating whether 35 U.S.C. 112(f) should be invoked, by determining whether: 1) the claim limitation uses the term “means” (or “step”) or a generic placeholder, 2) the term is modified by functional language, and 3) the term is not modified by sufficient structure, material or acts for performing the function.

Once the presumption has been made under the 3-prong analysis, a further step of analysis has to be performed to determine whether the presumption can be overcome. According to *Williamson*, when a claim limitation is presumed to invoke 35 U.S.C. 112(f), the presumption can be overcome when the limitation further includes the structure necessary to perform the recited function. By contrast, when a claim limitation is presumed not to invoke 35 U.S.C. 112(f), the presumption can be overcome when the claim term fails to recite sufficiently definite structure or else recites function without reciting sufficient structure for performing that function.

The 2019 § 112 Guidance mentioned the following as examples of non-structural generic placeholders that may invoke 35 U.S.C. 112(f): “mechanism for,” “module for,” “device for,” “unit for,” “component for,” “element for,” “member for,” “apparatus for,” “machine for,” or “system for,” citing *Welker Bearing Co., v. Ph.D., Inc.*, 550 F.3d 1090, 1096 (Fed. Cir. 2008); *Mass. Inst. of Tech. v. Abacus Software*, 462 F.3d 1344, 1354 (Fed. Cir. 2006); *Personalized Media Commc’ns, L LC v. Int’l Trade Comm’n*, 161 F.3d 696, 704 (Fed. Cir. 1998); *Mas-Hamilton Grp. v. LaGard, Inc.*, 156 F.3d 1206, 1214–15 (Fed. Cir. 1998).

The second step is to determine whether the functional limitation interpreted under 35 U.S.C. 112(f) meets the 35 U.S.C. 112(b) requirement. For a computer-implemented 35 U.S.C. 112(f) claim limitation, the 2019 § 112 Guidance specified that the specification must disclose an **algorithm** for performing the claimed specific computer function, or else the claim is indefinite under 35 U.S.C. 112(b). See *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1367 (Fed. Cir. 2008). An algorithm is defined, for example, as a finite sequence of steps for solving a logical or mathematical problem or performing a task. Applicant may express that algorithm in any understandable formula, in prose, or as a flow chart, or in any other manner that provides sufficient structure. *Finisar Corp. v. DirectTV Grp., Inc.*, 523 F.3d 1323, 1340 (Fed. Cir. 2008).

Moreover, the requirement for the disclosure of an algorithm **cannot be avoided by arguing that one of ordinary skill in the art is capable of** writing software to convert a general purpose computer to a special purpose computer to perform the claimed function. See *EON Corp. IP Holdings LLC v. AT&T Mobility LLC*, 785 F.3d 616, 623 (Fed. Cir. 2015) (re-emphasizing that a person of ordinary skill in the art plays no role whatsoever in determining whether an algorithm must be disclosed as structure for a functional claim element”).

Special purpose computer-implemented 35 U.S.C. 112(f) claim limitations are also indefinite under 35 U.S.C. 112(b) when the specification discloses an algorithm but **the algorithm is not sufficient to perform the entire claimed functions**. See *Media Rights Technologies, Inc. v. Capital One Financial Corp.*, 800 F.3d 1366, 1374 (Fed. Cir. 2015), in which the Federal Circuit determined that the term “compliance mechanism” is a means-plus-function limitation that performs four computer-implemented functions, and further determined that the specification fails to adequately disclose the structure to perform all four of the compliance mechanisms’ functions.

Discussion of Part II: To review a **written description issue** related to examination of computer-implemented functional claim limitations under 35 U.S.C. 112(a), the 2019 § 112 Guidance uses *Vasudevan Software, Inc. v. MicroStrategy, Inc.*, 782 F.3d 671 (Fed. Cir. 2015) to lay the basic rule. The test for the sufficiency of the written description is whether the disclosure of the application relied upon reasonably conveys to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date. See *Vasudev*

The level of detail required to satisfy the written description requirement varies depending on the nature and scope of the claims and on the complexity and predictability of the relevant technology. Information that is well known in the art need not be described in detail in the specification. However, sufficient information must be provided to show that the inventor had possession of the invention as claimed.

For computer-implemented functional claims, the determination of the sufficiency of the disclosure will require an inquiry into the sufficiency of both the disclosed hardware and the disclosed software, *i.e.*, **how** the claimed function is achieved,” *Vasudevan*. This requires the specification to disclose the computer and the algorithms that achieve the claimed function in sufficient detail that one of ordinary skill in the art can reasonably conclude that the inventor possessed the claimed subject matter at the time of filing. An algorithm is defined, for example, as a finite sequence of steps for solving a logical or mathematical problem or performing a task. Applicant may express that algorithm in any understandable terms including as a mathematical formula, in prose, or as a flow chart, or in any other manner that provides sufficient structure.” *Finisar*, 523 F.3d at 1340.

It is not enough that one skilled in the art could theoretically write a program to achieve the claimed function, rather the specification itself must explain how the claimed function is achieved to demonstrate that the applicant had possession of it. See, *Vasudevan*.

To review an **enablement issue** related to examination of computer-implemented functional claim limitations under 35 U.S.C. 112(a), the 2019 § 112 Guidance uses *Vasudevan Software, Inc. v. MicroStrategy, Inc.*, 782 F.3d 671 (Fed. Cir. 2015) to lay the basic rule. The test for enablement determination is whether the patent specification enabled a person of skill in the art to make and use the claimed invention. *Vasudevan*. The Federal Circuit explained that a claim is sufficiently enabled even if a considerable amount of experimentation is necessary, so long as the experimentation is merely routine, or if the specification in question provides a reasonable amount of guidance with respect to the direction in which the experimentation should proceed. On the other hand, if undue experimentation is needed, the claims are invalid. In determining whether experimentation is undue, *Wands* factors are used in consideration. See *In re Wands*, 858 F.2d 731, 737 (Fed. Cir. 1988). *Wands* factors include (1) the quantity of experimentation necessary, (2) the amount of direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims.

For computer-implemented inventions due to the high level of skill in the art and the similarly high level of predictability in generating programs to achieve an intended result without undue experimentation. In *Sitrick v. Dreamworks, LLC*, 516 F.3d 993 (Fed. Cir. 2008), the claims at issue were directed to “integrating” or “substituting” a user’s audio signal or visual image into a pre-existing video game or movie. While the claims covered both video games and movies, the specification only taught the skilled artisan how to substitute and integrate user images into video games. The Federal Circuit held that the specification did not enable the full scope of the asserted claims because one skilled in the art could not take the disclosure in the specification with respect to substitution or integration of user images in video games and substitute a user image for a pre-existing character image in movies without undue experimentation. *Sitrick*. With respect to the breadth of a claim, the relevant concern is whether the scope of enablement provided to one skilled in the art by the disclosure is commensurate with the scope of protection sought by the claims. In making this determination, examiners should consider (1) how broad the claim is with respect to the disclosure and (2) whether one skilled in the art could make and use the entire scope of the claimed invention without undue experimentation.

Instructions

Mappings:

The mappings table can be used to quickly index into PTAB cases analysis on various Section 112 legal issue or on the basis of technology (i.e., position in the software stack). Simply selecting the case name will jump you to the relevant portion of the discussion.

Four sections of cases from top to bottom:

"Yellow background" - Analysis of this section of cases focuses on section 112(b) issues in connection with section 112(f) interpretation.

"Light green background" - Analysis of this section of cases focuses on section 112(a) written description support issues.

"Pink background" - Analysis of this section of cases focuses on section 112(a) enablement issues.

"Light blue background" - Analysis of this section of cases focuses on section 112(b) indefiniteness issues not clearly related to section 112(f) interpretation.

Legend for "Legal Issues" column and sub-columns:

"x" - The particular legal issue is involved in the case.

"Affirmed," "Reversed," "Affirmed in Part, Reversed in Part," etc. - Position of the panel of the Administrative Patent Judges ("APJs") on the particular legal issue.

Legend for "Software Features" column:

"x" denotes the most related software features involved in the legal issues being reviewed.

Art Unit Tracker:

The Art Unit tracker table provides an eye chart of the PTO Art Units that were involved in each PTAB decision.

PTAB Decisions:

The tabs for the summaries of the relevant PTAB decisions.

This document was prepared by IPO's Software-Related Inventions committee.

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The views expressed by the contributors are their own views and not necessarily the views of the law firms and companies with which the contributors are associated.

Additional information:

USPTO Guidance regarding Functional Claim Limitations in Compliance with 35 USC 112

<https://s3.amazonaws.com/public-inspection.federalregister.gov/2018-28283.pdf>

Section 112 Issue	Case Name	Tribunal	Decision Date	Case Opinion Before/After Publication of the USPTO 2019 Section 112 Guidelines	Opinion Impacted by the 2019 Guidelines?	Legal Issues													Software Features				Contributor			
						\$112(f)+\$112(b)	Affirmed/Reversed	\$112(f)+written description support	Affirmed/Reversed	\$112(f)+enablement	Affirmed/Reversed	written description support stands alone	Affirmed/Reversed	enablement stands alone	Affirmed/Reversed	\$112(b) stands alone	Affirmed/Reversed	\$101	Affirmed/Reversed	User Interface	Data Transfer/Network Transfer	AI/Machine Learning		Data Processing/Other		
Section 112(b) Indefiniteness Issues in connection with Section 112(f) interpretation	Ex parte Ebel et al.	PTAB	2/14/2022	After	No	x	Reversed	x	Reversed								x	Affirmed				x	Jordan			
	Ex parte Melepora	PTAB	12/30/2021	After	No	x	Reversed	x	Reversed							x	Affirmed		x				Jordan			
	Ex parte Perlegos	PTAB	3/8/2023	After	No	x	Reversed												x			x	Jordan			
	Ex parte Calmes et al.	PTAB	6/28/2022	After	Yes	x	Affirmed															x	Jordan			
	Ex parte Liu et al.	PTAB	3/29/2022	After	No	x	Affirmed	x	Affirmed													x	Jordan			
	Ex parte Weast et al.	PTAB	6/27/2019	After	Yes	x	Reversed										x	Reversed					x	Jordan		
	Ex parte Korst et al.	PTAB	2/24/2021	After	No	x	Reversed	x	Reversed														x	Jordan		
	Ex parte Srinivas et al.	PTAB	8/3/2020	After	No	x	Reversed										x	Affirmed					x	Jordan		
	Ex parte Oberhofer	PTAB	9/17/2021	After	Yes	x	Affirmed	x	Affirmed														x	Jordan		
	Ex parte Wang et al.	PTAB	5/14/2019	After	No	x	Affirmed											x	Affirmed					x	Jordan	
Section 112(a) Written Description Support Issues	Ex parte Hyde et al.	PTAB	8/26/2020	After	Yes								x	Affirmed										Huang		
	Ex parte Helms et al.	PTAB	12/13/2022	After	Yes								x	Reversed			x	Reversed	x	Affirmed	x			Huang		
	Ex parte Khanna et al.	PTAB	2/19/2021	After	Yes								x	Affirmed			x	Reversed		x				Huang/Zumbulyadis		
	Ex parte Radu et al.	PTAB	7/1/2020	After	Yes								x	Affirmed			x	Reversed	x	Reversed				Huang		
	Ex parte Brewer et al.	PTAB	9/9/2020	After	No								x	Affirmed										Huang		
	Ex parte Martin et al.	PTAB	9/9/2021	After	No								x	Reversed					x	Reversed				Huang		
	Ex parte Cella et al.	PTAB	1/22/2019	After	No								x	Affirmed in Part, Reversed in Part								x		Yang		
	Ex parte Powers et al.	PTAB	5/16/2023	After	Yes								x	Affirmed								x		Yang		
	Ex parte Herstein et al.	PTAB	1/25/2019	After	Yes								x	Affirmed					x	Affirmed	x	x		Yang		
	Ex parte Brody et al.	PTAB	2/1/2021	After	No								x	Reversed					x	Affirmed				Yang		
Ex parte Morimoto et al.	PTAB	8/26/2021	After	Yes								x	Affirmed	x	Affirmed	x	Affirmed	x	Reversed			x	Yang			
Ex parte Seshasai	PTAB	1/24/2023	After	No								x	Reversed					x	Affirmed			x	Yang			
Section 112(a) Enablement Issues	Ex parte Sun et al.	PTAB	6/2/2023	After	No	x	Reversed						x	Affirmed	x	Affirmed							x	Bonner		
	Ex parte Wu et al.	PTAB	12/24/2020	After	No (Dissent Yes)								x	Reversed	x	Affirmed								x	Bonner	
	Ex parte Kilmer et al.	PTAB	8/25/2020	After	No								x	Affirmed	x									x	Bonner	
	Ex parte Annamalai	PTAB	7/6/2021	After	No										x	Reversed								x	Bonner	
	Ex parte Vivet et al.	PTAB	1/21/2022	After	No										x	Affirmed								x	Bonner	
	Ex parte Kedlagudde et al.	PTAB	10/13/2022	After	No										x	Affirmed	x	Affirmed							x	Bonner
	Ex parte Guiney et al.	PTAB	2/5/2021	After	No										x	New Grounds	x	New Grounds	x	New Grounds					x	Bonner
	Ex parte Mukund et al.	PTAB	8/24/2020	After	No										x	Reversed	x	Reversed	x	Reversed					x	Bonner
	Ex parte Tzveli et al.	PTAB	3/17/2020	After	No												x	Affirmed						x	Bonner	
	Ex parte Dykstra	PTAB	4/1/2022	After	No												x	Reversed	x	Reversed					x	Bonner
Ex parte Doyle	PTAB	5/24/2021	After	somewhat										x	Affirmed	x	Affirmed	x	Affirmed in Part, Reversed in Part					x	Bonner/Zumbulyadis	
Ex parte Frank et al.	PTAB	2/26/2021	After	No										x	Affirmed	x	Reversed	x	Reversed					x	Bonner	
112(b) alone	Ex parte Herf et al.	PTAB	3/19/2019	Before	No												x	Reversed	x	Reversed					x	Zumbulyadis
	Ex parte Pham et al.	PTAB	5/4/2020	After	No													x	Reversed					x	Zumbulyadis	
	Ex parte Priebsch	PTAB	1/2/2020	After	No													x	Reversed	x	Affirmed				x	Zumbulyadis
	Ex parte Ootjen	PTAB	3/18/2021	After	No	x	Reversed	x	Reversed										x	Affirmed in Part					x	Zumbulyadis
	Ex parte Toth et al.	PTAB	2/25/2022	After	No	x	Affirmed	x	Affirmed																x	Zumbulyadis
	Ex parte Metral	PTAB	11/9/2020	After	No														x	Affirmed in Part, Reversed in Part	x	Affirmed				x

	1600	1700	2100	2400	2600	2800	3600	3700	3900
Ex parte Ebel et al.							x		
Ex parte Melepura				x					
Ex parte Perlegos			x						
Ex parte Calmes et al.				x					
Ex parte Liu et al.								x	
Ex parte Weast et al.				x					
Ex parte Korst et al.			x						
Ex parte Srinivas et al.							x		
Ex parte Oberhofer								x	
Ex parte Wang at al.						x			
Sum	0	0	2	3	0	1	2	2	0
Ex parte Hyde et al.							x		
Ex Parte Helms et al.							x		
Ex Parte Khanna et al.			x						
Ex Parte Radu et al.							x		
Ex Parte Brewer et al.								x	
Ex Parte Martin et al.							x		
Ex parte Celia et al.				x					
Ex parte Powers et al.					x				
Ex parte Hertenstein							x		
Ex parte Brody et al.							x		
Ex parte Morimoto et al.			x						
Ex parte Seshasai							x		
Sum	0	0	2	1	1	0	7	1	0
Ex parte Sun et al.					x				
Ex Parte Wu et al.							x		
Ex Parte Kilmer et al.								x	
Ex Parte Annamalai					x				
Ex Parte Vivet et al.					x				
Ex Parte Kedalagudde et al.				x					
Ex Parte Guiney et al.								x	
Ex Parte Mukund									x
Ex parte Tzvieli et al.								x	
Ex parte Dykstra			x						
Ex parte Doyle					x				
Ex parte Frank et al.				x					
Sum	0	0	1	2	4	0	1	3	1
Ex Parte Herf et al.					x				
Ex Parte Pham et al.					x				
Ex Parte Priebatsch							x		
Ex Parte Ooijen	x								
Ex Parte Toth et al.	x								
Ex Parte Metral							x		
Sum	2	0	0	0	2	0	2	0	0
Total	2		5	6	7	1	12	6	1

Ex parte Ebel et al.

Overview: Appeal Examiner's rejection of claims 1-15 - Decided February 14, 2022

Appellant Alexander Ebel et al. (Siemens Aktiengesellschaft is real party in interest) appealed, inter alia, the rejection of claims 9-15 under 35 U.S.C. § 112(b) as being indefinite and under § 112(a) as lacking written description based on a means plus function interpretation under 35 U.S.C § 112(f). The application is generally directed to a system for providing data analytics results for a process performed in an industrial plant. The claim terms at issue were "repository" and "engine" in claim 9 and "controller" in claim 14. The Administrative Patent Judges found that none of these claim terms invoked a means plus function interpretation. The decision was based on a rejection of the Examiner finding that the term "controller" implies "a software construction" and the term "repository" is not precluded "from being software." Rather, the Administrative Patent Judges stated that "we are unaware of any per se rule that the recitation of software necessarily invokes the application of 35 U.S.C. § 112(f)." Because the indefiniteness rejection under § 112(b) and a written description rejection under § 112(a) were based solely on the determination that the claims invoke § 112(f), those rejections were reversed.

Discussion: In analyzing the "repository," "engine" and "controller" claim terms, the opinion states that "[w]e are persuaded that the Examiner erred in interpreting the claims as invoking the application of 35 U.S.C. § 112(f) at least because the Examiner fails to explain adequately why the terms at issue would be considered generic placeholders, in light of the evidence cited by Appellant." The opinion expressly rejects the notion of a per se rule that the recitation of software necessarily invokes the application of § 112(f) and reiterates that the Examiner must show that the claim limitation uses the term "means" or "step" or a term used as a substitute for "means" that is a generic placeholder for performing the claimed function. The opinion also points out that "Appellant provides further evidence showing that the Specification describes the structures at issue." Accordingly, both the indefiniteness rejection under § 112(b) and the written description rejection under § 112(a) are reversed.

Representative claim(s):	<p>9. (Previously Presented) A system for providing data analytics results for a process performed in an industrial plant, the system comprising:</p> <p>a knowledge model <i>repository</i> configured to store semantic knowledge models, the semantic knowledge models comprising:</p> <p>at least one semantic plant model of the industrial plant, the at least one semantic plant model describing semantically a configuration of the respective industrial plant and concrete storage locations of process data provided by data sources of the industrial plant when performing at least one process therein, the process data including an energy consumption of the at least one process; and</p> <p>at least one semantic process model of the process, the at least one semantic process model describing semantically respective process steps of the process performed within the industrial plant;</p> <p>a processor configured to process at least one analytics application that describes semantically at least one process step and at least one parameter required for accomplishing an analytics task and one or more instantiated semantic knowledge models to infer at least one concrete storage location of at least one data source of the industrial plant; and</p> <p>an execution <i>engine</i> configured to execute the selected data analytics application using accessed process data provided by the inferred at least one data source of the industrial plant to generate the data analytics results.</p>
Practice tips and takeaways:	<p>14. (Previously Presented) An industrial plant comprising:</p> <p>a central or distributed <i>controller</i> configured to generate control signals depending on data analytics results, provision of the data analytics results comprising:</p> <p>provision of semantic knowledge models stored in a knowledge model repository, the semantic knowledge models comprising:</p> <p>at least one semantic plant model of the industrial plant, the at least one semantic plant model describing semantically a configuration of the respective industrial plant and concrete storage locations of process data provided by data sources of the industrial plant when performing at least one process therein, the process data including an energy consumption of the at least one process;</p> <p>at least one semantic process model of the process, the at least one semantic process model describing semantically respective production and transformation process steps performed within the industrial plant;</p> <p>selection of at least one analytics application that describes semantically at least one process step and at least one parameter required for accomplishing an analytics task;</p> <p>process of the at least one selected analytics application and selected instantiated semantic knowledge models to infer at least one concrete storage location of at least one data source of the industrial plant;</p> <p>execution, by an execution engine, of the at least one selected analytics application using accessed process data provided by the inferred at least one data source of the industrial plant to generate the data analytics results, wherein the generated control signals control the process steps of processes performed by components of the</p> <p>Consider citing this opinion to Examiners who take the position that software per se invokes means plus function interpretations.</p>
Case link:	https://developer.uspto.gov/ptab-web/#/search/documents?proceedingNumber=2021001277
Art Unit, Examiner:	3624, Octavian Rotaru
Citations:	N/A
Administrative Patent Judges:	Schopfer, Hutchings, Silverman

Ex parte Melepura

Overview:	<p>Appeal from Examiner's final rejection of claims 1, 9, 10, 12, and 14-20 - Decided December 30, 2021</p> <p>Appellant Dev Melepura appealed, <i>inter alia</i>, the rejection of claims 1, 9, 10, 12, and 14-20 under 35 U.S.C. § 112(b) as being indefinite and under 35 U.S.C. § 112(a) as lacking written description based on a means plus function interpretation under 35 U.S.C § 112(f). The application is generally directed to a computer-implemented method for a social based online matchmaking system. The claim term at issue was "system". The Administrative Patent Judges found that the claim term did not invoke a means plus function interpretation. Accordingly, both the § 112(b) the indefiniteness rejection and the § 112(a) were reversed.</p>
Discussion:	<p>In analyzing the "system" claim term, the opinion notes that "the Examiner does not provide any explanation for why the recitation of 'system' in Appellant's method claim amounts to a 'nonce' word. As such, the Examiner has not sufficiently shown the limitations at issue invoke § 112(f)." Therefore, the § 112(b) the indefiniteness rejection and the § 112(a) are reversed.</p>
Representative claim:	<p>1. A computer-implemented method for a social based online matchmaking system matching users with a user having an online social networking account, the <i>system</i> comprising: enabling the user to register for a user account; linking the user account with the online social networking account; enabling the user an ability to input additional profile data into the social based online matchmaking system; enabling the user an ability to invite additional users to join the social based online matchmaking system, wherein the online social networking account includes a plurality of first degree connections such that if an additional user of the additional users is a first degree connection from the plurality of first degree connections or the additional user has already joined the social based online matchmaking system, the first degree connection will become a first degree connection on the social based online matchmaking system; wherein the second degree connections and the third degree connections are linked via at least one of a plurality of connected accounts on the social based online matchmaking system; wherein the user is operable to freely message the first degree connection on the social based online matchmaking system, and reply to any active messages provided in the user's message box; receiving the user's preference criteria for a match; receiving the user's click of interested for a match and a match's click of interested for the user, wherein the social based online matchmaking system is configured to determine a mutual interest between the user and the match, wherein the click of interested is an act of selecting an interested option on an electronic interface; receiving the user's mini-profile and matching-profile, wherein the mini-profile just includes a profile picture, a name, and a message button, and the matching-profile includes all profile data inputted into the social based online matchmaking system by the user; and wherein the user could either be a first degree connection, a shortlisted first degree connection, a second degree connection, a third degree connection or a beyond connection to another on the social based online matchmaking system, wherein the beyond connection is greater than and beyond the third degree connection.</p> <p><i>Disputed limitations in italics.</i></p>
Practice tips and takeaways:	<p>During prosecution, ensure that the Examiner provides a basis for "nonce" word determinations.</p>
Case link:	<p>https://developer.uspto.gov/ptab-web/#/search/documents?proceedingNumber=2020003047</p>
Art Unit, Examiner:	<p>2443, June Y. Sison</p>
Citations:	<p>N/A</p>
Administrative Patent Judges:	<p>Thomas, Baumeister, Bennett</p>

Ex parte Perlegos

Overview:	<p>Appeal from Examiner's final rejection of claims 1-26 - Decided March 8, 2023</p> <p>Appellant Nick John Perlegos (Pixured is real party in interest) appealed, <i>inter alia</i>, the rejection of claims 23-26 under 35 U.S.C. § 112(b) as being indefinite based on a means plus function interpretation under 35 U.S.C § 112(f). The application is generally directed to a method and system of managing posts for interacting with web based digital media items. The claim terms at issue were "one or more user interface devices each operating a user interface application" and a "database system." The Administrative Patent Judges found that neither claim term invoked a means plus function interpretation. The decision was based on both intrinsic evidence and extrinsic evidence. Accordingly, the Administrative Patent Judges did not reach the question of what structure corresponds to the claimed functions or whether adequate structure is disclosed to satisfy 35 U.S.C. § 112(b) and the indefiniteness rejection was reversed.</p>
Discussion:	<p>The opinion first notes that neither of the terms at issue use the word "means" and begins the claim construction analysis with a rebuttable presumption that the terms convey sufficiently definite structure and are not subject to § 112(f).</p> <p>In analyzing the "one or more user interface devices operating a user interface application" claim term, the opinion relies on dictionary definitions that identify "command-line interfaces, menu-driven interfaces, ... graphical user interfaces" and the "part of an interactive computer program that sends messages to and receives instructions from a terminal user" as "extrinsic evidence that a person of ordinary skill in the art would have understood that a user interface provides for user interaction with a computer system." Additionally, the opinion notes that <i>Zeroclick, LLC v. Apple Inc.</i> [1] found that the term "user interface," whether describing a type of device or an application, is not a nonce word. The opinion also notes that the specification provides further intrinsic evidence of sufficient structure by disclosing a display 111, memory 112, keyboard 113, browser, website, page viewer, action bar "and other information like user profile image, username, location, link, crawled information favorites, shares, comments and relating button" as types of user interfaces.</p> <p>In analyzing the "database system" claim term, the opinion relies on dictionary definitions, Federal Circuit caselaw [2], and the specification evidence that the recited "database" and "database system" are not nonce words. In particular, the opinion notes that the specification provides an example of user information and data that may be stored in a remote database or local storage in the Python coding language. The specification also discloses that "[d]atabase(s) 273 comprises of one or more databases to a collection and organization of data." In conclusion, the opinion finds that it is</p>
Representative claim:	<p>23. A system of managing posts for interacting with web based digital media items, comprising:</p> <p>[(i)] <i>one or more user interface devices each operating a user interface application</i> [(a)] for viewing web based digital media items including previously existing user created posts and [(b)] for creating new user created posts to be associated with the web based digital media items and the included previously existing user created posts;</p> <p>[(ii)] a <i>database system</i> for storing the new user created posts associated with the web based digital media items; an</p> <p>[(iii)] a programmed processing system in operative communication with the user interface devices and the database system for [(a)] creating programmed links</p> <p>[(1)] between the new user created posts and the web based digital media items and</p> <p>[(2)] to the included previously existing user created posts and</p> <p>[(b)] thereafter managing the programmed links</p> <p>[(1)] between the new user created posts and the web based digital media items and [(2)] the previously existing user created posts,</p> <p>[(iv)] wherein the user interface application</p> <p>[(a)] is adapted to display web based digital media items with tags indicating the presence of posts associated with the displayed web based digital item [(b)] whereby users can select the tags to view [(1)] the new user created posts and [(2)] included previously existing user created posts associated with the displayed web based digital media item.</p> <p><i>Bracketed labels added and disputed limitations in italics.</i></p>
Practice tips and takeaways:	<p>Consider providing examples of "user interface devices" and "user interface applications" in the specification. Also consider providing technical detail of the information and data that may be stored in a "database" in the specification. During prosecution and litigation, consider citing <i>Zeroclick, LLC v. Apple Inc.</i>, in defense of § 112(f) challenges to the term "user interface".</p>
Case link:	<p>https://developer.uspto.gov/ptab-web/#/search/documents?proceedingNumber=2021005056</p>

Art Unit, Examiner: 2156, Amanda Lynn Willis
Citations: [1] *Zeroclick, LLC v. Apple Inc.*, 891 F.3d 1003 (Fed. Cir. 2018).
[2] *In re Comiskey*, 554 F.3d 967 (Fed. Cir. 2009).

Administrative Patent Judges: Strauss, Zado, Engle

Ex parte Calmes et al.

Overview:

Appeal from Examiner's final rejection of claims 1-11 - Decided June 28, 2022

Appellant Sam Calmes et al. (IEE International Electronics & Engineering S.A. is real party in interest) appealed, inter alia, the rejection of claims 1-11 under 35 U.S.C. § 112(b) as being indefinite based on a means plus function interpretation under 35 U.S.C § 112(f). The application is generally directed to an automotive vehicle occupant monitoring device that measures the vital signs of occupants without requiring the exposure of areas of the skin. The claim terms at issue were "detection unit," "intensity evaluation module," "light compensation means" (claim 7) and "motion compensation means" (claim 8). The Appellant argued that the claimed "detection unit" and "intensity evaluation module" were art-recognized structures as permitted by the 2019 examination guidance issued by the USPTO regarding compliance with 35 U.S.C § 112. The Administrative Patent Judges rejected this argument and found that "'the corresponding structure and/or acts for performing the claimed enable[ing] measurement of vital signs of the one or more occupants without requiring exposing areas of skin of the one or more occupants to the projected pattern of radiation' are not shown to be well-known in the art." Accordingly, the Administrative Patent Judges affirmed the rejection of claims 1-11 under 35 U.S.C. § 112(b). The Appellant did not dispute the Examiner's determination that the "light compensation means configured to compensate" and "motion compensation means configured to compensate" were each a limitation that invokes 35 U.S.C § 112(f). The Administrative Patent Judges reversed the Examiner's determination that the specification lacked sufficient structure, material, or acts to perform the claimed compensation means.

Discussion:

In analyzing the § 112(f) interpretation of the "detection unit" and "intensity evaluation module" terms, the opinion agrees with the Examiner's determination that "unit" and "module" are generic placeholders. This finding is based on a rejection of Appellant's argument that detection units and intensity evaluation modules are well-known camera components. More particularly, the opinion notes that "detection unit" and "intensity evaluation module" are art-recognized structures "only to the extent that such an art-recognized structure is performing its art-recognized function." Because enabling the measurement of vital signs of occupants without requiring exposing areas of the skin of the occupants to the projected radiation is not an art-recognized function, the interpretation under 35 U.S.C § 112(f) stands. ***Of particular note is that the opinion also reverses a rejection 35 U.S.C § 103 on the grounds that the cited art does not teach or suggest measurement of vital signs of the one or more occupants without requiring exposing areas of the skin***. The opinion also finds that "detection" and "intensity evaluation" are not structural modifiers.

In analyzing the 35 U.S.C § 112(b) rejection based on the "detection unit" and "intensity evaluation module" terms, the opinion discusses thirteen items in the specification with regard to corresponding structure. Of the thirteen items, five are directed solely to light amplitude variation measurements to determine respiratory movement (i.e., breathing rate) of the chest (i.e., thorax) of an occupant by detecting movement of the occupant's clothing or blanket covering which does not require exposed skin, and which is the type of measurement claimed. The opinion does not find "corresponding structure, material or acts for how detecting movement of an object (not exposed skin) such as clothing (or a blanket) enables measurement of vital signs (i.e., is to be translated into respiratory movements). Rather, Appellant's detection of clothing movement is detection of all movement of the occupant's clothing from all sources (not solely respiratory, but also from speaking, singing, humming, rocking gently, etc.)." The opinion therefore affirms the 35 U.S.C § 112(b) rejection based on the "detection unit" and "intensity evaluation module" terms.

In analyzing the 35 U.S.C § 112(b) rejection based on the "light compensation means" and "motion compensation means" terms, the opinion rejects the Examiner's conclusion that Appellant's specification lacks sufficient structure, material, or acts so that one of ordinary skill in the art would recognize what structure, material, or acts performed the claimed compensation functions.

Representative claim:

1. An automotive vehicle occupant monitoring device, comprising:
[A.] at least one source of electromagnetic radiation, said source of electromagnetic radiation configured to generate electromagnetic radiation and to project said electromagnetic radiation in a projected pattern into a region of interest within an interior compartment of said automotive vehicle,
[B-] at least one imaging sensor configured to detect reflected radiation of said projected pattern, said reflected radiation being reflected or scattered from one or more occupants located within said region of interest; and
[C.] a *detection unit* operatively coupled to said at least one imaging sensor and configured to receive said reflection

radiation,
[i.] said detection unit comprising an *intensity evaluation module configured*
[a.] to evaluate
[1]] an intensity of said reflected radiation over
time,
[2]] an amplitude of said reflected radiation over
time, or
[3]] both,
[b.] *to detect variations in distance* between the at least one imaging sensor and the one or more occupants, *wherein the distance variations enable*
[1]] occupant detection and
[2]] *measurement of vital signs* of the one or more
occupants *without requiring exposing areas of skin* of the one or more occupants to the projected pattern of radiation.
Bracketed labels added and disputed limitations in italics.

Practice tips and takeaways: Be sure to provide sufficient technical detail surrounding any feature believed to be novel and/or non-obvious in view of the known art. During prosecution and/or assertions, confirm that functionally claimed features are "art-recognized structures" before characterizing them as such.

Also, note that the following changes were made to Section 2181 of the MPEP after the release of the 2019 Guidance: To determine whether a word, term, or phrase coupled with a function denotes structure, examiners ~~should~~may check whether: (1) the specification provides a description sufficient to inform one of ordinary skill in the art that the term denotes structure; (2) general and subject matter specific dictionaries provide evidence that the term has achieved recognition as a noun denoting structure; and or (3) the prior art provides evidence that the term ~~has~~is an art-recognized structure to perform the claimed function.

Case link: <https://developer.uspto.gov/ptab-web/#/search/documents?proceedingNumber=2021002316>

Art Unit, Examiner: 2487, Alison T. Slater

Citations: N/A

Administrative Patent Judges: MacDonald, Curcuri, Bennett

Ex parte Liu et al.

Overview:

Appeal from Examiner's final rejection of claims 1-20 - Decided March 29, 2022

Appellant Yifeng Liu et al. (Microsoft Technology Licensing is real party in interest) appealed, *inter alia*, the rejection of claims 1-20 under 35 U.S.C. § 112(b) as being indefinite and under 35 U.S.C. § 112(a) as lacking written description based on a means plus function interpretation under 35 U.S.C § 112(f). The application is generally directed to a computing system that uses machine learning to detect cheating in online game platforms. The claim term at issue was a "cheating detection module" configured to, for a game available on an online game platform, classify user instance records for the game as normal or outlying via a trained machine-learning classification function. The Administrative Patent Judges agreed with the Examiner that "module" is a well-known nonce word and the words "cheating detection" before the word "module" did not connote any particular structure distinguishing the combination of these words from a generic placeholder. With regard to the indefiniteness rejection under 35 U.S.C. § 112(b), the Administrative Patent Judges found that portions of the specification describing support vector machines and principal components analysis as example functions to classify user instance records did "not amount to the disclosure of a step-by-step process of classification generally, much less 'classify[ing] user instance records for a game as normal or outlying' as recited in claim 1." Therefore, the independent claims were deemed indefinite. In view of the lack of support in Appellant's specification and drawings, the Administrative Patent Judges sustained the written description rejection of the independent claims 35 U.S.C. § 112(a).

Discussion:

In analyzing the § 112(f) interpretation of the "cheating detection module" term, the opinion agrees with the Examiner's determination that "module" is a generic placeholder and "cheating detection" does not connote any particular structure to perform the function of classifying user instance records for the game as normal or outlying via a trained machine-learning classification function. The opinion therefore sustains the Examiner's determination that the claim term invokes an interpretation under § 112(f).

In analyzing the 35 U.S.C § 112(b) rejection based on the "cheating detection module" term, the opinion rejects Appellant's argument that support vector machines and principal components analysis are disclosed in the specification as examples of suitable machine learning functions that can be trained using labeled instance records to classify user instance records and that both of these techniques are algorithmic, and were well-known in the art prior to Appellant's filing date. Relying on *Triton Tech of Texas, LLC v. Nintendo of Am., Inc.* [1], the opinion states that "principal components analysis and support vector machines are *classes* of algorithms, not step-by-step procedures for accomplishing a given result." Failing to disclose how the cheating detection module classifies the user progress in the game as normal or outlying renders the independent claims indefinite. The opinion reverses, however, the indefiniteness rejection of the dependent claims as being insufficiently addressed by the Examiner.

In analyzing the written description rejection under 35 U.S.C § 112(a), the opinion affirms the Examiner's reliance on *LizardTech, Inc. v. Earth Resource Mapping, Inc.* [2] for the legal principle that "§ 112 precludes an inventor from reciting a claim scope far greater than what a person of ordinary skill in the art would understand the inventor to have possessed. Accordingly, the rejection of the independent claims is sustained on the alternative ground of failing to comply with the written description requirement. The opinion reverses, however, the written description rejection of the dependent claims as being insufficiently addressed by the Examiner.

Representative claim:

1. A computing system comprising:
a logic subsystem including a logic device; and a storage subsystem comprising a storage device, the storage subsystem comprising instructions executable by the logic subsystem to
implement an online game platform hosting a plurality of games, each game of the plurality of games configured to send notifications to the game platform;
implement a *cheating detection module configured to*, for a game available on the online game platform, classify user instance records for the game as normal or outlying via a trained machine-learning classification function, each user

instance record comprising information provided by the game to the online game platform regarding achievements earned by a user of the game, and for each achievement a total game time it took the user to earn the achievement, wherein user instance records classified as outlying represent possible cheating behavior, and
for the game available on the online game platform, receive for each player of a plurality of players information from the game regarding notifications related to user progress in the game, the notifications provided by the game to the online game platform for each user of a plurality of users;
for each user of the plurality of users,
store an instance record for the user, the instance record for the user comprising information regarding achievements earned by the user in the game and a total game play time it took the user to earn each achievement earned by the user in the game,
input the instance record for the user into the trained machine-learning classifying function to classify the instance record for the user as normal or as outlying,
based at least in part on the instance record for the user being classified as outlying, then take an action based upon classification as outlying, and
based at least in part on the instance record for the user not being classified as outlying, then not take the action.

Disputed limitations in italics .

Practice tips and takeaways: Take care in describing machine learning functions as a "black box" or relying on such functions as being "well-known." Rather, consider providing flowchart that describe how the machine learning functions operate, in a step-by-step fashion, in the context of the claim language.

Case link: <https://developer.uspto.gov/ptab-web/#/search/documents?proceedingNumber=2021004789>

Art Unit, Examiner: 3715, Ryan Hsu

Citations: [1] *Triton Tech of Texas, LLC v. Nintendo of Am., Inc.* , 753 F.3d 1375, 1379 (Fed. Cir. 2014).
[2] *LizardTech, Inc. v. Earth Resource Mapping, Inc.* , 424 F.3d 1336, 1346 (2005).

Administrative Patent Judges: Song, Martin, Stepina

Ex parte Weast et al.

Overview:	<p>Appeal from Examiner's final rejection of claims 1, 3-9, 11-17, and 19-27 - Decided June 27, 2019</p> <p>Appellant John C. Weast et al. (Intel Corporation is real party in interest) appealed, <i>inter alia</i>, the rejection of claim 1 under 35 U.S.C. § 112, second paragraph, as being indefinite based on a means plus function interpretation under 35 U.S.C § 112(f). The application is generally directed to a system for extension of trust in a body area network (BAN). The claim terms at issue were a "detector to identify" a device, a "selector to determine" that the device is worn on a body, and an "authenticator to promote" the device from potential participant to trusted participant in the BAN in response to the determination that the device is on the body. The Administrative Patent Judges disagreed with the Examiner regarding the "detector" term and found that the term has a well-known meaning to those of skill in the electrical arts connotative of structure. The Administrative Patent Judges agreed with the Examiner that "selector" and "authenticator" are nonce terms that are not generally understood to connote structure in the relevant art. Accordingly, the terms were found to invoke 112(f). In determining whether the "selector" and "authenticator" terms were indefinite, the Administrative Patent Judges determined that neither term was indefinite. Accordingly, the rejection of claims 1, 3-9, 11-17, and 19-27 under 35 U.S.C. § 112, second paragraph, was reversed. The Administrative Patent Judges also reversed the Examiner's rejection of claims 1, 3-9, 11-17, and 19-27 under 35 U.S.C. § 101 and affirmed the Examiner's rejection of claims 1, 3-9, 11-17, and 19-17 under 35 U.S.C. § 103.</p>
Discussion:	<p>The opinion acknowledges that the lack of the use of the phrase "means [for]" in the claims creates a rebuttable presumption that § 112(f) is not invoked. The opinion also notes that the USPTO guidance entitled "Examining Computer-Implemented Functional Claim Limitations for Compliance with 35 U.S.C. § 112" (hereinafter, the "Section 112 Memorandum") concluded that a "heightened burden is unjustified." In analyzing the § 112(f) interpretation of the "detector" term, the opinion relies on the Section 112 Memorandum and <i>Personalized Media Commc'ns, LLC v. Int'l Trade Comm'n</i> [1], in concluding that "detector" recites sufficient structure to avoid treatment under § 112(f). Accordingly, the opinion finds that "detector to identify" is not indefinite.</p> <p>In analyzing the § 112(f) interpretation of the "selector" and "authenticator" terms, the opinion notes that Appellants do not proffer any dictionary definition and provide only a "vague assertion that the terms include circuitry." Accordingly, the opinion finds that the terms are nonce words that are not generally understood to connote structure in the relevant art. In determining whether "selector" and "authenticator" are indefinite, the opinion finds that the "Examiner provides no explanation or specific reasoning for how the Specification is deficient," particularly since the Specification "describes the steps by which the 'selector' performs its recited function" and "provides an example by which the authenticator promotes the device by 'sharing a current BAN key with the device' and that 'the promotion may include the authenticator assigning a unique identifier (UID) to the device.'" Therefore, the opinion reverses the indefiniteness rejection.</p>
Representative claim:	<p>1. A system for extension of trust in a body area network; the system comprising: a <i>detector to identify</i> a device that is a potential participant of the body area network; a <i>selector to determine</i> that the device is worn on a body associated with the body area network based on a set of models of the body, the set of models including at least one of a motion model or a shape model; and an <i>authenticator to promote</i> the device from potential participant to trusted participant of the body area network in response to the determination that the device is on the body. <i>Disputed limitations in italics.</i></p>
Practice tips and takeaways:	<p>Be sure to provide technical detail in the specification for any term that may be interpreted as a nonce word. If an examiner fails to provide an explanation or specific reasoning for how the specification is deficient, argue that the rejection is improper on that basis. Additionally, "detector" may be safer to recite than "selector" or "authenticator" in the electrical arts.</p>
Case link:	<p>https://developer.uspto.gov/ptab-web/#/search/documents?proceedingNumber=2017008866 x</p>
Art Unit, Examiner:	<p>2438, Morshed Mehedi</p>
Citations:	<p>[1] <i>Personalized Media Commc'ns, LLC v. Int'l Trade Comm'n</i>), 161 F.3d 696, 704 (Fed. Cir. 1998).</p>
Administrative Patent Judges:	<p>Whitehead Jr., Pyonin, Bennett</p>

Ex parte Korst et al.

Overview:	<p>Appeal from Examiner's final rejection of claims 1 and 3-4 - Decided February 4, 2021</p> <p>Appellant Jan Korst et al. (Funke Digital TV Guide GmbH is real party in interest) appealed, <i>inter alia</i>, the rejection of claims 1 and 3-4 as being indefinite under 35 U.S.C. § 112, second paragraph, and as lacking written description under 35 U.S.C. § 112, first paragraph, based on a means plus function interpretation under 35 U.S.C § 112(f). The application is generally directed to a method and apparatus for generating a sorted list of items. The claim terms at issue were "a query generator for," "a relatedness determinator configured to," "a clustering engine configured to," "a list generator configured to," "a cluster creditor being configured," and "a relatedness based scoring means adapted to." The Administrative Patent Judges agreed with the Examiner that none of the terms had a well understood meaning in the computer technology field. As such, they did not connote sufficiently definite structure and invoked interpretation as means-plus-function terms. The Administrative Patent Judges found that the "Specification recites the algorithm used for each of the disputed claim terms and the Examiner has offered no explanation why the disclosed algorithms are inadequate." Accordingly, the written description requirement was met and the claims were found not indefinite. The Administrative Patent Judges also reversed an obviousness rejection of claims 1, 3-4 and 8-9 under 35 U.S.C § 103.</p>
Discussion:	<p>In analyzing the § 112(f) interpretation, the opinion finds that the terms "a query generator for," "a relatedness determinator configured to," "a clustering engine configured to," "a list generator configured to," "a cluster creditor being configured," and "a relatedness based scoring means adapted to" are "generic descriptions of software [or] hardware that performs a specific function." Accordingly, means-plus-function interpretation applies. The opinion then cites passages from the specification describing how a clustering engine clusters lists of items by decreasing relatedness. The opinion also cites passages from the specification describing two possible embodiments for performing clustering. Of particular note, the cited passages from the specification do not mention all of the disputed claim terms literally (e.g., "list generator," "cluster creditor"). Because the examiner offered no explanation why the disclosed algorithms are inadequate, the written description and indefiniteness rejections are reversed.</p>
Representative claim:	<p>1. An electronic device for automatic generation of a sorted list of items from further items related to a seed item, the electronic device comprising a <i>query generator for</i> generating multiple queries to be sent to item repositories and that are based on the seed item and for receiving results from the queries representing a plurality of further items;</p> <p>the electronic device further comprising a <i>relatedness determinator configured to</i> compare the seed item with the plurality of further items and to thus determine a relatedness value for each further item with respect to the seed item, the electronic device further comprising a <i>clustering engine configured to</i> cluster the further items by assigning the plurality of further items of each query to one respective cluster, and the electronic device further comprising a <i>list generator configured to</i> generate a sorted result list, wherein the list generator comprises a cluster creditor and an item selector, wherein the <i>cluster creditor is configured to</i> initially assign initial credits to the clusters and wherein the cluster creditor is configured in further iterative steps:</p> <p>to update the credits by adding added credit to the clusters while not amending the relatedness value of the items in the clusters, and wherein the item selector is configured in each of the further iterative steps:</p> <p>to select an item that is to be added to the sorted list that has the highest relatedness value in a cluster having the highest credit, to add the selected item to the sorted list, and to remove the selected item from the cluster it belonged to and wherein the cluster creditor is configured in each of the further iterative steps: to decrease the credit of the cluster from which the selected item that was added to the sorted list was removed.</p> <p><i>Disputed limitations in italics .</i></p>
Practice tips and takeaways:	<p>Note that claim terms such as "query generator," "relatedness determinator," and "list generator" may receive a means-plus-function interpretation.</p>
Case link:	<p>https://developer.uspto.gov/ptab-web/#/search/documents?proceedingNumber=2019005096</p>
Art Unit, Examiner:	<p>2158, Kristopher E. Andersen</p>
Citations:	<p>N/A</p>
Administrative Patent Judges:	<p>Morgan, Jurgovan, Schneider</p>

Ex parte Srinivas et al.

Overview: Appeal from Examiner's final rejection of claims 1-10, and 20 - Decided August 3, 2020

Appellant Srikanth Srinivas et al. (MEDECISION, INC.) appealed, *inter alia*, the rejection of claims 1-10, and 20 under 35 U.S.C. § 112(b) as being indefinite based on a means plus function interpretation under 35 U.S.C § 112(f). The application is generally directed to a care planning tool for medical analysis and treatment that does not require formalistic question and answer processes. The claim terms at issue were "engagement module," "assessment module," and "action plan module." The Administrative Patent Judges agreed with the Examiner that the "module" limitations recited in the claims are generic placeholders or nonce words. With regard to the indefiniteness rejection under 35 U.S.C. § 112(b), the Administrative Patent Judges cited two algorithms (flow charts) disclosed in the specification corresponding to the claimed functions. Given that the examiner "did not provide a rationale as to why the algorithms... do not provide sufficient structure corresponding to the claimed function," the rejected claims were deemed not indefinite. The Administrative Patent Judges also reversed a written description rejection of claims 1-20 under 35 U.S.C. § 112(a) on the grounds that the rejection should have been presented as an enablement rejection, affirmed an eligibility rejection of claims 1-20 under 35 U.S.C. § 101, reversed a non-statutory subject matter rejection of claims 1-10, and 20 under 35 U.S.C. § 101, and affirmed an anticipation rejection of claims 1-20 under 35 U.S.C. § 102(a)(1).

Discussion: In analyzing the § 112(f) interpretation of the "engagement module," the opinion addresses an argument of the Appellant that the rejected claims are distinguishable from *Williamson v. Citrix Online, LLC* [1] "because of the 'presence of controls' in the instant application claims". The opinion states that the "additional terms, including the presence of controls, do not impart structure to the term module." The opinion therefore sustains the Examiner's determination that the claim term invokes an interpretation under § 112(f).

In analyzing the 35 U.S.C § 112(b) rejection, the opinion cites two figures of the specification showing flow charts corresponding to the claimed functions. The algorithms of the flow charts are described in the specification as reducing "processor and communications system loading by omitting questions that are not relevant from a plan of care process and by providing suggested topics, goals, actions or barriers for an action plan prior to completion of an assessment process. The opinion also notes that the examiner "did not provide a rationale as to why the algorithms shown in the flow charts of Figures 3 and 4 do not provide sufficient structure corresponding to the claimed function. Accordingly, the rejection under 35 U.S.C § 112(b) rejection is reversed.

Representative claim: 1. A system implemented in a combination of hardware and software for reducing workload of a processor comprising:
[a] an *engagement module* operating on the processor and configured to generate one or more profile user interface controls in response to data received from a mapped clinical intelligence rule and to generate user profile data in response to user selection of the profile user interface controls;
[b] an *assessment module* operating on the processor and configured to generate one or more assessment user interface controls in response to data received from the mapped clinical intelligence rule and to generate assessment data in response to user selection of the assessment user interface controls; and
[c] wherein the mapped clinical intelligence rule includes one or more algorithms for generating a relevancy metric for the one or more profile user interface controls and the one or more assessment user interface controls.
Disputed limitations in italics .

Practice tips and takeaways: "Module" claim terms may invoke a means-plus-function interpretation even when modified by other terms such as "user interface controls."

Case link: <https://developer.uspto.gov/ptab-web/#/search/documents?proceedingNumber=2019002756>

Art Unit, Examiner: 3626, Mary Evangeline Barr

Citations: [1] *Williamson v. Citrix Online, LLC*, 792 F.3d 1339 (Fed. Cir. 2015).
Administrative Patent Judges: Whitehead Jr., Pinkerton, Khan

Ex parte Oberhofer

Overview: Appeal from Examiner's rejection of claims 1, 2, 5-8, 10-16, and 18 - Decided September 17, 2021

Appellant Johann Oberhofer (EOS GmbH Electro Optical Systems is real party in interest) appealed the rejection of claims 1, 2, 5-8, 10-16, and 18 under 35 U.S.C. § 112(b) as being indefinite and under 35 U.S.C. § 112(a) as lacking written description based on a means plus function interpretation under 35 U.S.C. § 112(f). The application is generally directed to a device for the making of a three-dimensional (3D) object by layer by layer consolidation of a construction material comprising powder particles, using electromagnetic radiation or particle radiation. The claim term at issue was a "control unit." The Administrative Patent Judges agreed with the Examiner that "control unit" is a well-known nonce word. The Administrative Patent Judges also found that the specification failed to disclose an algorithm to perform the claimed functions. Accordingly, the written description rejection under 35 U.S.C. § 112(a) and the indefiniteness rejection under 35 U.S.C. § 112(b) were affirmed.

Discussion: In analyzing the § 112(f) interpretation of the "control module" term, the opinion finds the Federal Circuit's analysis in *Williamson v. Citrix Online LLC* [1] to be instructive. In particular, the opinion finds that "(i) the word 'unit' does not provide any indication of structure and is essentially equivalent to the use of the term 'means'; (ii) the prefix 'control' does not impart structure into the term 'unit; and (iii) the written description does not impart adequate structural significance to the term."

Additionally, the opinion states that the claimed functions of "controlling the irradiation device and the scanning apparatus"; "direct[ing] the selective heating device and establish[ing] the minimum distance dependent on the material parameter values stored in the data storage for the construction material being used"; and "generating a partial surface area of the construction field that is a predefined minimum distance *d* from an edge of the construction field" cannot be performed by a general-purpose computer or standard microprocessor without special programming. Citing the USPTO guidance entitled "Examining Computer-Implemented Functional Claim Limitations for Compliance with 35 U.S.C. § 112" (hereinafter, the "Section 112 Memorandum"), the opinion states that disclosure of an algorithm to achieve such special programming is required to satisfy both the written description requirement under 35 U.S.C. § 112(a) and the definiteness requirement under 35 U.S.C. § 112(b). Since the specification failed to disclose an algorithm for performing the claimed specific computer functions, the opinion affirms the written description and indefiniteness rejections. Indeed, the opinion also cites the Section 112 Memorandum for the premise that "even to the extent that the claimed 'control unit' is not construed as a means-plus-function limitation, Appellant's Specification would still fail to comply with the written description requirement." The opinion does note, however, that according to the Section 112 Memorandum, an "algorithm can be expressed in 'any understandable terms,' such as 'in prose' or 'as a flow chart.'"

Representative claim: 1. A device for the making of a three-dimensional object by layer by layer consolidation of a construction material comprising powder particles, utilizing electromagnetic radiation or particle radiation, the device comprising:
a height-adjustable carrier, on which the object is built, the carrier having a horizontal area which defines a construction field;
an irradiation device generating the electromagnetic radiation or particle radiation;
a scanning apparatus receiving the electromagnetic radiation or particle radiation and directing the electromagnetic radiation or particle radiation onto regions of an applied layer of the construction [*2] material within the construction field corresponding to a cross section of the object;
a *control unit* controlling the irradiation device and the scanning apparatus such that the powder particles of the construction material are bonded together at sites where the electromagnetic radiation or particle radiation impinges on the construction material,
the control unit generating a partial surface area of the construction field that is a predefined minimum distance from an edge of the construction field; and
a selective heating device having a directable heat source which heats the defined partial surface area of the construction field to a plateau temperature, the plateau temperature being higher than the temperature of at least a portion of the construction field outside the partial surface area,
wherein the control unit has a data storage that stores material parameter values regarding a thermal behavior of at least one construction material; and
wherein the control unit in operation directs the selective heating device and establishes the minimum distance dependent on the material parameter values stored in the data storage for the construction material being used.
Disputed limitations in italics .

Practice tips and takeaways: Computer-implemented functional claim language should be accompanied by the disclosure of algorithmic support (e.g., flow charts) in the specification regardless of whether means-plus-function language is recited in the claims.

Case link: <https://developer.uspto.gov/ptab-web/#/search/documents?proceedingNumber=2021001049>

Art Unit, Examiner: 3761, Joe E. Mills Jr.

Citations: [1] *Williamson v. Citrix Online, LLC*, 792 F.3d 1339 (Fed. Cir. 2015).

Administrative Patent Judges: Greenhut, Osinski, Plenzler

Ex parte Wang et al.

Overview:	<p>Appeal from Examiner's final rejection of claims 1-3, 5-9, and 18 - Decided May 14, 2019</p> <p>Appellant Xu Wang et al. (Ford Global Technologies LLC is real party in interest) appealed the rejection of claims 1-3, 5-9, and 18 under 35 U.S.C. § 101 as being directed to non-statutory subject matter and under 35 U.S.C. § 103 as being unpatentable over cited art. The Administrative Patent Judges indicated that they were unable to ascertain the metes and bounds of the claimed subject matter and entered a new ground of rejection of claims 6-9 under 35 U.S.C. § 112(b) based on a means plus function interpretation under 35 U.S.C § 112(f). The application is generally directed to a method of estimating a battery state of charge (SOC) in an electric vehicle. The claim term at issue was a battery energy control module (BECM). The Administrative Patent Judges found that the recitation of "BECM" invoked 35 U.S.C § 112(f) and the specification failed to provide sufficient corresponding structure. Accordingly, claims 6-9 were found to be indefinite under 35 U.S.C. § 112(b). The Administrative Patent Judges also procedurally reversed the rejections under 35 U.S.C. § 101 and § 103 on the grounds that review of the rejections would be inappropriate because such review would require considerable speculation as to the scope of the claims. Nonetheless, the Administrative Patent Judges proceeded with a substantive analysis and sustained the rejections under 35 U.S.C. § 101 and § 103 on the merits.</p>
Discussion:	<p>In formulating the § 112(f) interpretation of the "BECM" term, the opinion acknowledges that there is a rebuttable presumption that § 112(f) does not apply because the limitation at issue does not recite the word "means," but indicates that the "claim describes the functions the 'BECM' performs without reciting any structure for doing so."</p> <p>In formulating the 35 U.S.C § 112(b) rejection based on the "BECM" term, the opinion notes that the specification fails to provide structures for performing the functions of (1) monitoring power up and power down events; (2) estimating battery capacity in accordance with a state of charge (SOC) estimation based on an open circuit voltage (OCV); and (3) generating an output based on the estimated battery capacity at a power up utilizing a look up table (LUT). "The original Specification simply either repeat[s] the claim language or describe[s] generic computers or devices." Accordingly, claims 6-9 are deemed indefinite.</p>
Representative claim:	<p>6. A <i>Battery Energy Control Module (BECM)</i> comprising: a relax time look up table (LUT) of battery relaxation time based on predetermined root mean square (RMS) current and temperature, wherein the LUT provides a set of relaxation time values [*3] corresponding to RMS current and temperature, wherein the <i>BECM</i> monitors power up and power down events and estimates battery capacity in accordance with a state of charge (SOC) estimation based on an open circuit voltage (OCV), the <i>BECM</i> being further configured to generate an output based on the estimated battery capacity at power up if an elapsed time is greater than the relaxation time provided in the relax time LUT for a measured RMS current and measured temperature. <i>Disputed limitations in italics .</i></p>
Practice tips and takeaways:	<p>Note that the PTAB could potentially enter a new ground of rejection based on a means-plus-function interpretation even if the examiner fails to do so.</p>
Case link:	<p>https://developer.uspto.gov/ptab-web/#/search/documents?proceedingNumber=2018006161</p>
Art Unit, Examiner:	<p>2862, Ricky Go</p>
Citations:	<p>N/A</p>
Administrative Patent Judges:	<p>Smith, Franklin, Ren</p>

Ex parte Hyde et al.

Overview:	Appellant appeal from the Examiner's decision to reject claims 1-44 under 35 U.S.C. 112(a). Affirmed.
Discussion:	<p>Appellant's argument "that it is not necessary to disclose a particular algorithm to perform the claimed steps noted above in order to satisfy the written description requirement" is unpersuasive. Reply Br. 2. The "2019 §112 Guidance" [1] requires that:</p> <p>"If the specification does not provide a disclosure of the computer and algorithm(s) in sufficient detail to demonstrate to one of ordinary skill in the art that the inventor possessed the invention that achieves the claimed result, a rejection under 35 U.S.C. 112(a) for lack of written description must be made."</p>
Representative claim:	<p>1. A computer-implemented method performed by a server system, comprising:</p> <p>electronically receiving, by a network interface of a server system, data indicative of at least part of a healthcare service, wherein the healthcare service includes at least one of a diagnosis, treatment, or prevention of a particular disease, illness, injury, or other physical or mental impairment provided to a particular patient, the received data including image data indicative of an activity within a proximity of the patient and received from a mobile device of the patient, wherein the activity within the proximity of the patient is related to provision of the healthcare service to the patient, and wherein the activity within the proximity of the patient is indicative of a cost of providing the healthcare service to the patient;</p> <p>converting, by a processing unit of the server system, the received data into information indicative of one or more units of service provided to the patient;</p> <p>estimating, by the processing unit of the server system, probable fees and costs incurred to date in providing the healthcare service to the patient, the estimating responsive to the information indicative of units of service provided to the patient, wherein the estimating includes estimating with a prediction interval a range in which the probable fees and costs incurred to date will likely fall based on a probability, and wherein the prediction interval is selected based on the electronically received data;</p> <p>outputting, by the network interface of the server system, a notification to the mobile device of the patient in response to the probability being below a threshold probability, wherein the notification includes information indicative of the probable fees and costs incurred to date in providing the healthcare service; and</p> <p>activating a camera of the mobile device to capture and save an image of the activity occurring within the proximity of the patient.</p>
Practice tips and takeaways:	Appellant's argument "that it is not necessary to disclose a particular algorithm to perform the claimed steps noted above in order to satisfy the written description requirement" is unpersuasive.
Case link:	https://developer.uspto.gov/ptab-web/#/search/documents?proceedingNumber=2020002253
Art Unit, Examiner:	3686, John P. Go
Citations:	[1] <i>Examining Computer-Implemented Functional Claim Limitations for Compliance With 35 U.S.C. 112</i> , 84 Fed. Reg. 57, 61 (Jan. 7, 2019).
Administrative Patent Judges:	MacDonald, Branch, Ctitta II

Ex parte Helms et al.

Overview:	<p>Affirm: Claims 1, 2, and 4-23 are rejected under 35 U.S.C. § 101 as directed to a judicial exception without significantly more.</p> <p>Reversed: Claims 1, 2, and 4-23 are rejected under 35 U.S.C. § 112(a) as failing to comply with the written description requirement.</p> <p>Reversed: Claims 1, 2, and 4-23 are rejected under 35 U.S.C. § 112(b) as being indefinite.</p> <p>Overall affirmed, affirmed on 101, reversed on 112(a), reversed on 112(b).</p>
Discussion:	<p>The Examiner bears the initial burden of presenting a prima facie case of unpatentability. "Insofar as the written description requirement is concerned, that burden is discharged by 'presenting evidence or reasons why persons skilled in the art would not recognize in the disclosure a description of the invention defined by the claims.'" The Board agrees with Appellant that paragraph 87 of the Specification provides support for combining of the various embodiments. The Examiner has not addressed the disclosure in paragraph 87 to explain why this disclosure does not support the combination of embodiments recited in the claims.</p> <p>The Examiner finds that a person of ordinary skill in the art would not be able to ascertain whether claim 1 was directed to the computing system alone or the computing system and the client device. (Final Act. 29.) The Board agrees with Appellant's response to this rejection found on pages 19 to 20 of the Appeal Brief. In this regard, claim 1 in our view is directed to a medium having program instructions thereon that is executed by a computer system that causes the various steps to be performed by the computer system and the client computing device.</p>
Representative claim:	<p>1. A tangible, non-transitory, machine-readable medium storing program instructions that, when executed by a computing system, effectuate operations comprising:</p> <ul style="list-style-type: none">obtaining, with a computing system, via a network, a first web message from a client computing device;retrieving values of a profile from a database of profiles, the retrieving being based on the first web message;obtaining a first value of a first account and a second value of a second account, the obtaining being based on the values of the profile, wherein the first account is of a first account type, and wherein the second account is of a second account type that is different from the first account type;determining a numeric boundary based on the first value, the numeric boundary defining a limit to a range of values that the second value is permitted to assume;providing a user interface (UI) to the client computing device via a response to the first web message, the UI comprising a UI element that is movable from a first configuration to a second configuration, wherein:positioning the UI element in the first configuration causes a first limit associated with the first configuration to be displayed in the UI,positioning the UI element in the second configuration causes a second limit associated with the second configuration to be displayed in the UI, andthe second limit is determined based on the numeric boundary;obtaining a second web message comprising a third value determined from an updated configuration of the UI element, wherein the second web message is provided by the client computing device;adjusting the second value based on the third value, wherein the adjusting is associated with a first timestamp;encrypting the second value as an encrypted value;transmitting the encrypted value from a first memory device to a persistent storage for storage in a database of encrypted values, wherein the database of encrypted values is isolated from the first memory device;storing the encrypted value in the database of encrypted values;receiving an update request to update the encrypted value stored in the database of encrypted values, wherein the update request comprises an update value and is associated with a second timestamp;determining whether the first timestamp and the second timestamp satisfy a time interval;in response to a determination that the first timestamp and the second timestamp satisfy the time interval, determining a combined value based on the third value and the update value; andupdating the encrypted value stored in the persistent storage based on the combined value.
Practice tips and takeaways:	<p>The Examiner bears the initial burden of presenting a prima facie case of unpatentability.</p>
Case link:	<p>https://developer.uspto.gov/ptab-web/#/search/documents?proceedingNumber=2022003295</p>
Art Unit, Examiner:	<p>3685, Mamon A. Obeid</p>
Citations:	<p>N/A</p>
Administrative Patent Judges:	<p>Crawford, Fischetti, Shah</p>

Ex parte Khanna et al.

- Overview: Appellant appeals from the Examiner's final decision to reject claims 1-20 under 35 U.S.C. 112(a) and 112(b). Overall affirmed, reversed on 112(b), affirmed on 112(a).
- Discussion: A patent "specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor ... regards as the invention." 35 U.S.C. § 112 (b). "[A] claim is indefinite when it contains words or phrases whose meaning is unclear." *In re Packard* [1]. Breadth is not indefiniteness provided the skilled artisan is reasonably apprised of the meaning of the claim. *Metabolite* [2]. Although a computer-implemented means-plus-function claim limitation is indefinite under 35 U.S.C. § 112(b) if the specification fails to disclose an algorithm for performing the claimed specific computer function (see *Net Moneyin* [3]), such a rejection requires that the Examiner make an explicit determination whether the claim sets forth sufficient structure for performing the recited function and expressly state that the claim is being interpreted according to 35 U.S.C. § 112 (f). See 2019 §112 Guidance [4]. Because the Examiner has not explicitly determined the claims are properly interpreted according to 35 U.S.C. § 112(f) and clearly indicated as such, for purposes of this appeal, we do not consider whether the claims are indefinite for failure to disclose an algorithm for performing the argued computer functions discussed below. The board agrees with the Examiner that the Specification is inadequate to satisfy the written description requirement of the API of claim 1. Claim 1 recites the API is implemented by a processor causing the vehicle to operate based on the vehicle configuration profile.
- With respect to the indefiniteness issue, Three terms in claim 1 were identified as indefinite: "based on", "driving style", and "vehicle configuration profile". For each term, the Board found suitable clarity. For "based on", for 112(b) purposes, only the existence of a relationship is necessary, and was shown in the specification. For "driving style", the disclosure of categories of such styles provides sufficient meaning to the term. For "vehicle configuration profile", this was understood as a data structure containing vehicle information and thus found definite.
- Representative claim: 1. A system for managing and implementing a vehicle configuration, comprising:
[(a)] at least one processor;
[(b)] an interface component, implemented via the at least one processor, receiving one or more simulation inputs associated with an entity, wherein one or more of the simulation inputs is a vehicle type or an input driving style;
[(c)] a simulation component, implemented via the at least one processor:
[(c.1)] executing and rendering a simulation for the corresponding vehicle type within a simulation environment; and
[(c.2)] wherein the simulation component provides one or more simulation stimuli within the simulation environment;
[(d)] a capture component, implemented via the at least one processor, monitoring one or more driving parameters provided in response to one or more of the simulation stimuli;
[(e)] a configuration component, implemented via the at least one processor, building a vehicle configuration profile based on one or more of the driving parameters, wherein the vehicle configuration profile is associated with the entity, and
[(f)] an application program interface (API) component, implemented via the at least one processor, causing the vehicle to operate based on the vehicle configuration profile.
- Practice tips and takeaways: An API may require proper written description on algorithm in the specification.
- "Based on" is understood to be the use of facts to come to a decision, do a calculation, or develop a theory, and thus is clear. To the extent "based on" is not further explained in the claim or the disclosure, that is a 112(a) written description issue, and "based on" is typically not indefinite. Further, it is helpful to explain the contents of particular data structures that will be recited in the claims, to support interpretation and definiteness of those claims during prosecution.
- Case link: <https://developer.uspto.gov/ptab-web/#/search/documents?proceedingNumber=2019005868>
- Art Unit, Examiner: 2128, Saxena

- [1] *In re Packard*, 751 F.3d 1307, 1310, 1314-15 (Fed. Cir. 2014) (citing MPEP § 2173.05(e))
- [2] *Metabolite Labs., Inc. v. Lab. Corp. of Am. Holdings*, 370 F.3d 1354, 1366 (Fed. Cir. 2004)
- [3] *Net Moneyin, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1367 (Fed. Cir. 2008)
- [4] *Examining Computer-Implemented Functional Claim Limitations for Compliance With 35 U.S.C. 112*, 84 Fed. Reg. 57,61 (Jan. 7, 2019) ("2019 § 112 Guidance")

Citations:

Administrative Patent Judges: Strayss, Pyonin, Cutitta II

Ex parte Radu et al.

Overview:	Appellant appeals from the Examiner's decision to reject claims under 35 U.S.C. 101 (reversed), 112(a) (affirmed), 112(b) (reversed), 102 (reversed), 103 (reversed). Overall affirmed.
Discussion:	<p>The Federal Circuit has explained that: "The test for determining compliance with the written description requirement is whether the disclosure of the application as originally filed reasonably conveys to the artisan that the inventor had possession at that time of the later claimed subject matter, rather than the presence or absence of literal support in the specification for the claim language." <i>In re Kaslow</i> [1].</p> <p>Appellant's Specification does not sufficiently describe how the retrieving, deriving, and decrypting are performed. While it is true "a single claim covering both an apparatus and a method of use of that apparatus" has been held indefinite, our reviewing court has repeatedly drawn a distinction between such claims, and claims that "merely use permissible functional language to describe capabilities of the claimed system" and are, therefore, not indefinite.</p>
Representative claim:	<p>1. A mobile computing device configured for performing payment transactions, the mobile computing device comprising: a processor; and a memory associated with the processor; the memory storing a local database, the local database including a plurality of entries, each of said entries including: (a) an index, (b) an application sequence counter value; and (c) an encrypted parameter; the memory storing program instructions, the processor controlled by the program instructions to perform functions as follows: retrieving the index and the application sequence counter value from one of the entries contained in the local database; deriving an entry-specific key K_z- based on (i) a system key K_m, (ii) the retrieved index, and (iii) the retrieved sequence counter value; said system key K_m having been included in embedded form in said program instructions; and using the derived entry-specific key K^* to decrypt the encrypted parameter included in said one of the entries contained in the local database; the memory further storing a mobile transaction application, the processor controlled by the mobile transaction application such that the mobile computing device performs a payment transaction using the decrypted parameter.</p>
Practice tips and takeaways:	The Federal Circuit has explained that: "The test for determining compliance with the written description requirement is whether the disclosure of the application as originally filed reasonably conveys to the artisan that the inventor had possession at that time of the later claimed subject matter, rather than the presence or absence of literal support in the specification for the claim language." <i>In re Kaslow</i> , 707 F.2d 1366, 1375 (Fed. Cir. 1983) (citations omitted).
Case link:	https://developer.uspto.gov/ptab-web/#/search/documents?proceedingNumber=2020001837
Art Unit, Examiner:	3685, Sima Asgari
Citations:	[1] <i>In re Kaslow</i> , 707 F.2d 1366, 1375 (Fed. Cir. 1983).
Administrative Patent Judges:	Dixon, Kohut, Jurgovan

Ex parte Brewer et al.

Overview:	Applicant appeals from the Examiner's decision to reject claims 1-3, 6-8, 10-13, 15-19 under 112(a) and 101. The Board affirmed, including affirming for 112(a) rejections
Discussion:	Appellant responds by arguing the purportedly missing descriptive content relates to subject matter well-known in the art and submits evidence purporting to demonstrate that in the form of a web page allowing a user to calculate a ventilation index. App. Br. 9-13. Appellant is certainly allowed to rely on common knowledge in the art for satisfaction of the written description requirement. See, e.g., <i>LizardTech, Inc. v. Earth Resource Mapping, Inc.</i> 424 F.3d 1336, 1345-47 (Fed. Cir. 2005) ("[T]he patent specification is written for a person of skill in the art, and such a person comes to the patent with the knowledge of what has come before. Placed in that context, it is unnecessary to spell out every detail of the invention in the specification; only enough must be included to convince a person of skill in the art that the inventor possessed the invention.") (citations omitted). Here, however, the Examiner, after conducting a prior-art search concluded that it was not known in the art how to derive the ventilation index based on the recited parameters, which include: a breathing parameter, a repertory rate, an apnea metric, and an end tidal carbon dioxide metric.
Representative claim:	1. A respiration monitoring system, comprising: one or more gas parameter sensors configured to generate output signals conveying information related to one or more gas parameters in a respiratory circuit, wherein the respiratory circuit comprises a subject interface appliance configured to communicate with the airway of a subject; and a processor configured to execute computer program modules, the computer program modules comprising: a breathing parameter module configured to determine breathing parameters of the respiration of the subject based on the output signals, the breathing parameters comprising (i) a first parameter related to breath length, and (ii) a second parameter related to end tidal carbon dioxide; a respiratory rate monitor module configured to determine, in an ongoing manner, a respiratory rate metric based on a comparison of the first parameter for a first set of breaths by the subject with the first parameter for a first subset of one or more breaths, wherein the one or more breaths in the first subset of one or more breaths are also in the first set of breaths by the subject; an apnea monitor module configured to determine, in an ongoing manner based on the output signals, an apnea metric that represents whether the subject is currently experiencing an apnea, and, responsive to the subject currently experiencing an apnea, a severity and/or duration of the apnea; an end tidal carbon dioxide monitor module configured to determine, in an ongoing manner, an end tidal carbon dioxide metric based on a comparison of the second parameter for a second set of breaths by the subject with the second parameter for a second subset of one or more breaths, wherein the one or more breaths in the second subset of one or more breaths are also in the second set of breaths by the subject; a ventilation index module configured to determine, in an ongoing manner, a ventilation index for the subject by inputting inputs including the respiratory rate metric, the apnea metric, and the end tidal carbon dioxide metric into a lookup table mapping the inputs to a value of the ventilation index, such that the ventilation index at a given time represents respiratory stability and/or effectiveness for the subject at the given time; and an alarm module configured to compare the ventilation index with a score threshold and to generate, based on the comparison, alarms that indicate instability in the respiration of the subject, an interface being controlled by the processor to generate the alarm.
Practice tips and takeaways:	It is important to provide descriptions with respect to how to do the calculation.
Case link:	https://developer.uspto.gov/ptab-web/#/search/documents?proceedingNumber=2020001406
Art Unit, Examiner:	3791, Charles Alan Marmor II
Citations:	[1] <i>LizardTech, Inc. v. Earth Resource Mapping, Inc.</i> , 424 F.3d 1336 (Fed. Cir. 2005)
Administrative Patent Judges:	Song, Greenhut, Fitzpatrick

Ex parte Martin et al.

Overview:	Appellant appeals from the Examiner's decision to reject claims under 35 U.S.C. 101 (reversed), 112(a) (reversed), and 103 (reversed). Overall affirmed.
Discussion:	<p>Appellant's invention relates to power management in an unmanned air vehicle (UAV). Appellant directs our attention to a number of passages from the Specification that disclose a variety of mission scenarios and how the power management system may use fuzzy logic to monitor system status and prioritize among power consuming subsystems. Appeal Br. 19.</p> <p>In response, the Examiner, once again, decries the lack of disclosure of an algorithms or more concrete disclosure of "what is actually being done." Ans. 13. In reply, Appellant merely reiterates its position from the Appeal Brief. Reply Br. 3. The level of detail required to satisfy the written description requirement varies depending on the nature and scope of the claims and on the complexity and predictability of the relevant technology. <i>Ariad Pharms</i> [1]. With respect to generic claims, the Federal Circuit has set forth a number of factors for evaluating the adequacy of the disclosure, including the existing knowledge in the particular field, the extent and content of the prior art, the maturity of the science or technology, and the predictability of the aspect at issue. <i>Id.</i></p> <p>The written description requirement is separate from the enablement requirement. <i>Id.</i> Although a specific example or perhaps an algorithm might have been helpful, we take into account the maturity of technology in the aviation and electrical power management industries. The passages of the Specification cited by Appellant at page 19 of the Appeal Brief provide enough disclosure to demonstrate possession of the invention. Appeal Br. 19. More particularly with respect to the maturity of technology, we note that each of the Examiner's four prior art references relied on in Section 103 grounds of rejection, are derived from the aviation (Calvignac, Peverill, Duggan) and electrical power (Rivers) industries.</p>
Representative claim:	<p>22. An Unmanned Air Vehicle (UAV), comprising: a plurality of onboard subsystems; at least one power source; and a power management system configured to receive at least one pre-defined mission parameter to implement during performance of a mission,</p> <p>the power management system is configured, repetitively during performance of the mission, to:</p> <ul style="list-style-type: none">check an available energy status of the at least one power source;check power requirements of each of the plurality of onboard subsystems; andautomatically calculate and assign priorities to electrical loads of the plurality of onboard subsystem based on the at least one pre-defined mission parameter, the available energy status of the at least one power source, and the power requirements of each of the plurality of onboard subsystems.
Practice tips and takeaways:	The written description requirement depends on maturity of the technology. The Examiner's cited references under 103 can be used for demonstrate such maturity.
Case link:	https://developer.uspto.gov/ptab-web/#/search/documents?proceedingNumber=2021000844
Art Unit, Examiner:	3669, Jess G. Whittington
Citations:	[1] <i>Ariad Pharms., Inc. v. Eli Lilly& Co.</i> , 5 98 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc).
Administrative Patent Judges:	Greennut (dissenting on 112(a)), Martin, Capp

Ex parte Cellia et al.

- Overview: Appealed from Examiner's rejection of claims 1, 5-9, 11-24 and 26-30 - Decided March 8, 2023
- Appellants (S.I.SV.EL Societa' Italiana Per Lo Sviluppo Dell'Elettronica S.P.A. was the real party in interest) appealed the rejection of claims 23-24 and 28 under 35 U.S.C. § 112(a) as lacking adequate written description. Features reviewed for the written description issue included:
- "[a] device for generating composite images (C), comprising a disassembler module for receiving a right image and a left image and an assembler module for generating a composite image (C) comprising information about said right image and said left image . . ." of claim 23 and a similar feature of claim 24, and
- "[a] method according to claim 1, wherein at least a part of a boundary of said regions aligns with an edge of a macroblock" of claim 28.
- The APJ Panel reviewed the arguments from Appellants and the Examiner, and concluded that Appellants were in possession of the device of claims 23 and 24, but not in possession of the method of claim 28. Affirmed in Part and Reversed in Part.
- Discussion: The APJ Panel acknowledged the Examiner's interpretation that the claim language of claims 23 and 24 was supposed to cover all ways of generating a composite image (C) comprising information about a right image and a left image, and generating the right image and the left image with a processor. The Panel further acknowledged the Examiner's assertion that the specification lacked an algorithm to perform the specialized programmed functions and did not sufficiently identify how the inventor had devised the function to be performed or result achieved. The Panel reviewed Fig. 1, description in the Specification and the last paragraph of claim 1, and decided that the disclosure expressly provided a method of generating a composite image from left and right images and implicitly recites receiving the left and right images. As a result, the Panel concluded that the Specification showed that Appellants were in possession of the device recited in claims 23 and 24.
- With respect to claim 28, the Panel reviewed the feature "at least a part of a boundary of the regions aligns with an edge of a macroblock." Appellant contended that because of the manner in which right and left images were inserted into the composite frame was disclosed and because macroblocks were discussed in the Specification and known to one of skill in the art, the recitation that "at least a part of said boundary area aligns with an edge of a macroblock" was inherently described when one accounted for the sizes of the regions and the size of a macroblock. The Panel found Appellants' contentions, however, failed to demonstrate that the macroblocks described in the Specification must have a required size or the edge alignment recited in claim 28. As a result, the Panel found that the Specification did not show expressly or inherently that Appellants were in possession of the methods recited in claim 28.
- Representative claim: 1. A method for generating a stereoscopic video stream comprising composite images (C), said composite images (C) comprising information about a right image (R) and a left image (L), wherein selecting pixels of said right image (R) and pixels of said left image (L), and entering said selected pixels into a composite image (C) of said stereoscopic video stream, wherein all the pixels of said right image (R) and all the pixels of said left image (L) are entered into said composite image (C) by leaving one of said two images unchanged and breaking up the other one into regions (R1, R2, R3) having a rectangular shape and comprising a plurality of pixels and entering said regions into said composite image (C), in different areas of said composite image (C) not occupied by said unchanged image, a ratio between horizontal and vertical resolution of said left and right images being unchanged, said composite image (C) being a frame of said stereoscopic video stream having a number of pixels equal to or greater than a sum of the pixels of said left and right images,
- and
- dividing vertically said other image (R) into two equally sized portions; and then dividing horizontally one of said two equally sized portions into two further equally sized portions (R2, R3), the other (R1) of said two equally sized portions being not further divided.*
- Disputed limitations italicized***
- Practice tips and takeaways: Consider describing the computer and the algorithms that achieve the claimed function in sufficient detail that one of ordinary skill in the art can reasonably conclude that the inventor possessed the claimed function. Be careful that for any claimed function, adequately description of the structure/method for performing the function in the original disclosure is required to show that the inventor had possession of the claimed function.

Case link: <https://developer.uspto.gov/ptab-web/#/search/documents?proceedingNumber=2018005338>
Art Unit, Examiner: 2489, Stefan J. Gadowski

Citations: N/A

Administrative Patent Judges: Homere, Arpin, Branch

Ex parte Powers et al.

Overview:

Appeal from Examiner's rejection of claims 1, 4-5 and 21-30 - Decided May 16, 2023

Appellants (Signs & Wonders Unlimited, LLC. was the real party in interest) appealed the rejection of claims 1, 4-5 and 21-30 under 35 U.S.C. § 112(a) as lacking adequate written description. Features reviewed for the written description issue included:

1. "derive metadata based on the metadata associated with the obtained digital image" as recited in claims 1 and 28;
2. "capturing an unaltered digital image" as recited in claim 29; and
3. "wherein individual pixels in the plurality of pixels are encoded with RGB color information, and do not include other embedded information" as recited in claim 29.

The APJ panel reviewed the arguments from Appellants and the Examiner, and concluded that the disclosure failed to provide sufficient written description support for these features. Affirmed.

Discussion:

With respect to "derive metadata" of claim 1, Appellants argued that the Specification described "derived metadata may be calculated using a nonhuman external information source. Derived metadata may include location from GPS, facial recognition, speech recognition, automatic transcription, and/or other metadata."

In a reply, the Examiner argued that the above disclosure consisted of statements of **what** may be used for calculating derived metadata, but did not disclose the **how**, such as an algorithm for such a calculation.

The Panel found that the narrative in the Specification was insufficient because it did not explain what steps were to be performed to constitute an adequate disclosure of an algorithm. The Panel further noted that with respect to arguments such as a step-by-step algorithm for deriving metadata was not necessary because one skilled in the art would have known how to obtain the claimed derived metadata, this type of arguments was not persuasive because obviousness was not a substitute for satisfying the written description requirement.

With respect to "capturing an unaltered digital image" of claim 29, the Panel focused on usage of the term "unaltered digital image" and concluded that without further clarification of **what** was an "unaltered digital image" in the Specification, there was insufficient written description to support a finding that Appellants had possession of an invention which included capturing an unaltered image.

With respect to "do[es] not include other embedded information" of claim 29, the Panel confirmed that merely because the Specification did not discuss including "other embedded information" did not provide support for its exclusion. The Panel reemphasized that there must be explicit support in the specification for a negative limitation such as a reason to exclude the relevant element.

Representative claim:

1. A system configured for encoding a digital image to facilitate subsequent authentication, the system comprising:
 - [(i)] one or more hardware processors configured by machine- readable instructions to:
 - [(a)] obtain a digital image comprising a plurality of pixels and metadata associated with the obtained digital image;
 - [(b)] *derive metadata based on the metadata associated with the obtained digital image*, the derived metadata comprising expected properties of the digital image determined based on the metadata associated with the obtained digital image;
 - [(c)] perform one or more sanity checks prior to encoding the digital image in order to eliminate a limited set of

possibilities of adulteration of the digital image;

[(d)] wherein performing the one or more sanity checks includes evaluating a coherence of metadata associated with the digital image, the evaluation of the coherence of the metadata comprising determining an extent to which a plurality of properties of the metadata associated with the obtained digital image agree with corresponding expected properties for the digital image in the derived metadata to determine when the digital image has been altered or spoofed;

[(e)] determining, based on the extent to which the plurality of properties of the metadata associated with the obtained digital image agree with the corresponding expected properties in the derived metadata, that the digital image has not been altered or spoofed; and

[(f)] responsive to determining that the digital image has not been altered or spoofed:

(1) partition the digital image into two or more working areas, the two or more working areas including a first working area having a first set of one or more pixels and a second working area having a second set of one or more pixels;

(2) generate a first code from the first set of one or more pixels;

(3) overlay the second set of one or more pixels with an image representing the first code; and

(4) encode the first code into the second set of one or more pixels, wherein the digital image is overlaid with identifying information and/or embedded with metadata.

29. A method for encoding a digital image, comprising:

[(i)] *capturing an unaltered digital image* comprising a plurality of pixels, wherein individual pixels in the plurality of pixels are [(a)] encoded with RGB color information, and [(b)] *do not include other embedded information*. . .

Bracketed labels added and disputed limitations in italics .

Practice tips and takeaways:

With respect to a method step such as deriving, calculating, determining, etc., it is important to provide an adequate algorithm in the original disclosure regarding how a result is determined/calculated. Merely disclosing what is determined/calculated, such as the final results, is not sufficient to satisfy the written description requirement.

When an unusual term is used, such as "an unaltered image" used in this case, it is important to define the term. Otherwise, a common step of "capturing an unaltered image" can be considered as lacking of written description support because it is unclear what "an unaltered image" means, rendering it unclear about how to capture the unaltered image.

Case link:

<https://developer.uspto.gov/ptab-web/#/search/documents?proceedingNumber=2022001858>

Art Unit, Examiner:

2661, Jiangeng Sun

Citations:

N/A

Administrative Patent Judges:

Chen, Strauss, Pyonin

Ex parte Hertenstein

Overview:

Appeal from Examiner's rejection of claims 1-20 - Decided January 25, 2019

Appellant (International Business Machines Corporation was the real party in interest) appealed the rejection of claims 1-20 under 35 U.S.C. § 112(a) as lacking adequate written description. Features reviewed for the written description issue included:

"comparing . . . a historical insurance data . . . with the insurance claim incident data to identify a discrepancy including a missing data or an incorrect data within the insurance claim incident data" of claim 1, and

"generating ... a calculated score indicating a degree of confidence in the insurance claim incident data according to the missing data or the incorrect data" of claim 1.

The APJ Panel reviewed the arguments from Appellant and the Examiner, and concluded that the disclosure failed to provide sufficient written description support for both features. Affirmed.

Discussion:

With respect to "comparing . . . a historical insurance data . . . with the insurance claim incident data to identify a discrepancy including a missing data or an incorrect data within the insurance claim incident data" of claim 1, the Appellant argued that "incident data can be analyzed to determine missing information, incorrect data, false information, and the like" in the Specification supported this feature. The APJ Panel found that the Specification merely described a desired result of identifying a discrepancy, but **failed to show how to achieve** the claimed functionality of identifying a discrepancy by comparing data. The Panel concluded that there was no support for describing the claimed genus other than providing broad functional language, and no support for showing that any of the species in the genus were in the inventor's possession, *citing LizardTech* [1].

With respect to "generating ... a calculated score indicating a degree of confidence in the insurance claim incident data according to the missing data or the incorrect data" of claim 1, the Appellant argued that the disclosure "the verification value can indicate the degree of validation of the insurance claim" in the Specification supported this feature. The Panel found the Specification **does not discuss how the missing data or incorrect data is assessed** to calculate a score indicating a degree of confidence.

Representative claim:

1. A method for verifying insurance claim submissions comprising:
receiving, by a server computer coupled to a network and including a processor executing software instructions within a memory, an insurance claim incident data from a software application executing within a mobile computing device, the insurance claim incident data including a vehicle registration data, a driver identification data or an address data;
executing, by the server computer, a query selecting a verified data stored within a database coupled to the network;
comparing, by the server computer:
a historical insurance data, within the verified data and associated with an operator of the mobile computing device, with the insurance claim incident data to identify a discrepancy including a missing data or an incorrect data within the insurance claim incident data; or
a second insurance claim incident data, within the verified data and received from a second mobile computing device operated by a second user, with the insurance claim data to identify the discrepancy;
flagging, by the server computer, the discrepancy, when identified, as inconsistent data between the insurance claim incident data and the historical insurance data or the second insurance claim incident data;
generating, by the server computer, a verification report, including an electronic document including:
an insurance claim identifier; and
a calculated score indicating a degree of confidence in the insurance claim incident data according to the missing data or the incorrect data; and
transmitting, by the server computer, the verification report to a second server computer operated by an insurance carrier.

Practice tips and takeaways: It is important to again lay the basic rule for written description support for claimed functions - when the claims define the invention in functional language specifying **a desired result** but the specification does not sufficiently describe **how** the function is performed or the result is achieved, the claimed function may lack written description. For software, this can occur when the algorithm or steps/procedure for performing the computer function are not explained at all or are not explained in sufficient detail to allow one of ordinary skill in the art to understand how the inventor intended the function to be performed.

Note that it is not enough that one skilled in the art could write a program, to achieve the claimed function because the specification must explain how the inventor intends to achieve the claimed function to satisfy the written description requirement. See *Vasudevan Software* [2].

Case link: <https://developer.uspto.gov/ptab-web/#/search/documents?proceedingNumber=2017010781>

Art Unit, Examiner: 3692, David P. Sharvin

Citations: [1] *LizardTech, Inc. v. Earth Resource Mapping, Inc.*, 424 F.3d 1336, 1345 (Fed. Cir. 2005).
[2] *Vasudevan Software, Inc. v. MicroStrategy, Inc.*, 782 F.3d 671, 681—683 (Fed. Cir. 2015).

Administrative Patent Judges: MacDonald, Lentivech, Cutitta II

Ex parte Brody et al.

Overview:	<p>Appeal from Examiner's rejection of claims 1, 4-5 and 21-30 - Decided May 16, 2023</p> <p>Appellants (Ernst & Young U.S. LLP and Ernst & Young Services (UK) Ltd. were the real party in interest) appealed the rejection of claims 1, 4-5 and 21-30 under 35 U.S.C. § 112(a) as lacking adequate written description. Features reviewed for the written description issue included:</p> <p>“causing storage, in a non-transitory, processor-readable memory, of a hierarchical hash-linked tree structure having a plurality of nodes” in claim 1 and a similar feature in claim 33,</p> <p>"determining that an assembly of a second tangible sub-asset with the first tangible sub-asset has occurred" in claims 5 and 21,</p> <p>“determining that a modification to the tangible asset has occurred" in claim 6 and 34,</p> <p>“modifying the hierarchical hash-linked tree structure, in response to the determination that the tangible asset has been destroyed, to cause the hierarchical hash-linked tree structure to include an indication that an asset token associated with the tangible asset can no longer be transacted” in claim 20, and</p> <p>“determining that a modification to a tangible asset has occurred” in claim 21.</p> <p>The APJ Panel reviewed the arguments from Appellants and the Examiner, and concluded that the disclosure failed to provide sufficient written description support for these features. Reversed.</p>
Discussion:	<p>The APJ Panel referred to multiple sections in the Specification and figures referred to in Appellants' arguments, and noted that specification need not re-describe known prior art concepts, citing <i>Immunex Corp.</i> [1]. As a result, the Panel concluded that the original disclosure was sufficient to convey to a skilled artisan that Appellants possessed the claimed features as of the filing date of the present application.</p>
Representative claim:	<p>1. A processor-implemented method, comprising: generating, via the processor and for a tangible asset, a root node associated with a tangible asset, the root node having (1) a first hash value that represents a storage location of the root node, (2) data associated with the tangible asset, and (3) a second hash value that represents a storage location of a subsidiary node; and</p> <p>causing storage, in a non-transitory, processor-readable memory, of a hierarchical hash-linked tree structure having a plurality of nodes including:</p> <p>the root node; and</p> <p>the subsidiary node, having (1) the second hash value, and (2) data associated with a tangible sub-asset of the tangible asset.</p>
Practice tips and takeaways:	<p>It is important to always ask during drafting whether a claim method/function is known prior art concepts, not only what the method/function is, but also how the method is performed/how the function is achieved, and any aspects that are not known need to be disclosed adequately.</p> <p>It is useful to review claimed language whenever claims are amended, and verify whether any added method/function is adequately described in the original disclosure regarding what the method/function is and how the method is performed/how the function is achieved.</p>
Case link:	<p>https://developer.uspto.gov/ptab-web/#/search/documents?proceedingNumber=2021001262</p>
Art Unit, Examiner:	<p>3685, Sima Asgari</p>
Citations:	<p>[1] <i>Immunex Corp. v. Sandoz Inc.</i>, 964 F.3d 1049, 1064 (Fed. Cir. 2020)</p>
Administrative Patent Judges:	<p>Lorin, Fetting, Calve</p>

Ex parte Morimoto et al.

Overview:

Appeal from Examiner's rejection of claims 1, 6-8,16, and 20-23 - Decided August 26, 2021

Appellants (Denso Corporation was the real party in interest) appealed the rejection of claims 1, 6-8, and 16-22 under 35 U.S.C. § 112(a) as lacking adequate written description. Features of claim 1, e.g., "an increasing quantity computation that computes a heating output-increasing quantity that is added to the heating required output, based on the temperature of the main battery, the temperature of the compartment, and the battery residual of the main battery," were reviewed for the written description issue.

Appellants also appealed the rejection of claims 1,6-8, and 16-22 under 35 U.S.C. § 112(b) as indefinite. Features of claim 1, such as "the control device being further programmed to perform . . . an increasing quantity computation that computes a heating output-increasing quantity that is added to the heating required output," were reviewed for the indefiniteness issue.

The APJ Panel reviewed the arguments from Appellants and the Examiner, and concluded that both the lacking of written description rejection and indefiniteness rejection were sustained. Affirmed.

Discussion:

The APJ Panel acknowledged Appellants' arguments that multiple sections of the Specification disclosed a control device controlling the temperature of the main battery and providing specific steps for the warming up system. However, the Panel found that sections of the Specification cited by the Appellants merely made reference to general relationships between the battery temperature, compartment temperature, and power residual (SOC) and the heat output-increasing quantity. Specifically, the Panel noted that "the control device 600 computes the heat output-increasing quantity by a map previously stored in the control device 600" in the Specification provided insufficient detail as to **how such a map is generated**, and as a result one skilled in the art would not have understood Appellants to be in possession of the necessary algorithms to provide the heat output-increasing quantity recited in claim 1.

With respect to the indefiniteness rejection, the control unit was recited to be programmed to perform an increasing quantity computation that a computes a heat output- increasing quantity. The Panel discussed that although claim 1 recited this computation being based on the main battery's temperature, the compartment's temperature, and the battery residual of the main battery, claim 1 did not set out and circumscribe a particular area with a reasonable degree of certainty, because the metes and bounds of the heat output-increasing quantity were unclear, and also the Specification provided insufficient detail as to how the computation was carried out. The Panel found that the claimed feature was indefinite.

Representative claim:

1. A battery warming-up system comprising:
a main battery mounted to a vehicle to supply an electric power to drive the vehicle, the main battery warmed by a heat generation of an inner resistance of the main battery according to an input and output of the electric power;
an electric heating portion configured to heat a compartment of the vehicle by using the electric power supplied from the main battery; and
a control device programmed to control a temperature of the main battery by executing a battery output-increasing control to control the electric power, that is greater than a heating required output that is required by the electric heating portion, and
is supplied from the main battery to the electric heating portion, the control device being further programmed to perform:
a battery temperature acquisition that acquires the temperature of the main battery by receiving a signal from a battery temperature sensor,
a compartment temperature acquisition that acquires a temperature of the compartment by receiving a signal from a compartment temperature sensor,
a battery residual acquisition that acquires a battery residual of the main battery by receiving a signal from a battery residual sensor,
an increasing quantity computation that computes a heating output-increasing quantity that is added to the heating required output, based on the temperature of the main battery, the temperature of the compartment, and the battery residual of the main battery, by receiving the temperature of the main battery from the battery temperature acquisition, the temperature of the compartment from the compartment temperature acquisition and the battery residual of the main battery from the battery residual acquisition,
and a command value computation that computes a value by adding the heating output-increasing quantity to the heating required output as an electric heating command value by receiving the heating output-increasing quantity from the increasing quantity computation, and
the control device being programmed to cause the main battery to output the electric power based on the electric heating command value.

Practice tips and takeaways: *Morimoto et al.* reminded us that an application must convey both “known and unknown” aspects of the invention in order to demonstrate applicant's possession of the invention and satisfy the written description requirement.

Case link: <https://developer.uspto.gov/ptab-web/#/search/documents?proceedingNumber=2020004211>

Art Unit, Examiner: 1723, Stephen J. Yanchuk

Citations: N/A

Administrative Patent Judges: Franklin, Robertson, Best

Ex parte Seshasai

Overview:	<p>Appeal from Examiner's rejection of claims 49-63 - Decided January 24, 2023</p> <p>Appellant (International Business Machines Corporation is the real party in interest) appealed the rejection of claims 49-63 under 35 U.S.C. § 112(a) as lacking adequate written description. Features reviewed for the written description issue included “automatically searching” and “searching, using a searching module” in claim 49. The APJ Panel reviewed the arguments from Appellant and the Examiner, and concluded that the disclosure fails to provide sufficient written description support for both features. Reversed.</p>
Discussion:	<p>The APJ Panel followed <i>Vas-Cath</i> [1] that the disclosure must convey with reasonable clarity to those skilled in the art that the inventor was in possession of the invention. One skilled in the art, reading the original disclosure, must immediately discern the limitation at issue in the claims, citing <i>Waldemar Link</i> [2]. The Panel further stated that because the sufficiency of the written description is evaluated by one of ordinary skill in the art, details that would be known by the skilled artisan need not be included in a patent specification, citing <i>Hyatt</i> [3]. The Opinion does not provide details of Appellant's arguments. Nevertheless, it is clear <u>what the disclosure provided was sufficient to support</u> “automatically searching” and “searching, using a searching module” of claim 49. Further details were not needed because one of skill in the art would understand <u>how</u> the inventor intended the function to be performed.</p>
Representative claim:	<p>49. A computer-implemented method within a computer hardware system configured to create content within a multi-user and collaborative wiki, comprising:</p> <p>automatically searching, by the computer hardware system, a parent document to identify a wiki identifier contained within the parent document, the wiki identifier having an associated phrase within the parent document;</p> <p>searching, using a searching module within the computer hardware system, a set of documents identified using access rights of an author of the parent document for a document having a name corresponding to the phrase;</p> <p>replacing, within the parent document, the phrase with a source anchor, wherein the source anchor is associated with a universal resource locator of the document having the name.</p>
Practice tips and takeaways:	<p>Although the portion of the opinion regarding the written description issue is short, this case is useful in showing that although a disclosure needs not recite verbatim the claimed invention but must do more than merely disclose that which would render the claimed invention obvious. <i>See, also, ICUMed</i> [4].</p>
Case link:	<p>https://developer.uspto.gov/ptab-web/#/search/documents?proceedingNumber=2021005140</p>
Art Unit, Examiner:	<p>3685, Dante Ravetti</p>
Citations:	<p>[1] <i>Vas-Cath Inc. v. Mahurkar</i>, 935 F.2d 1555, 1563-64 (Fed. Cir. 1991)</p> <p>[2] <i>Waldemar Link GmbH & Co. v. Osteonics Corp.</i>, 32 F.3d 556, 558 (Fed. Cir. 1994)</p> <p>[3] <i>Hyatt v. Boone</i>, 146 F.3d 1348, 1353 (Fed. Cir. 1998)</p> <p>[4] <i>ICUMed., Inc. v. AlarisMed. Sys., Inc.</i>, 558 F.3d 1368,1377 (Fed. Cir. 2009)</p>
Administrative Patent Judges:	<p>Crawford, Wieder, Shah</p>

Ex parte Sun et al.

Overview:	Examiner rejected claims of application number 16/299,062, directed to training a neural network to patch together video clips under 35 U.S.C. 112(a) - Written Description; 112(a) - Enablement; and 112(b)/(f) - Written description.
Discussion:	<p>112(a) Written Description - PTAB argued that the Appellant has not shown how the four corners of the application actually or inherently disclose "training a neural network to predict an intermediate image based, at least in part, on portions of two or more views of two or more images of an object or scene"</p> <p>112(a) Enablement - PTAB argued that Examiner used six of the Wands factors for determining enablement. Specifically, determining whether any necessary experimentation is undue involves considering many relevant factors, such as (A) the breadth of the claims; (B) the nature of the invention; (C) the state of the prior art; (D) the level of one skilled in the art; (E) the level of predictability in the art; (F) the amount of direction or guidance provided by the inventor; (G) the existence or absence of working examples; and (H) the quantity of experimentation needed to make or use the invention based on the content of the disclosure. The Examiner used six of the <i>Wands</i> factors [1] and found that "training a neural network to predict an intermediate image based, at least in part, on portions of two or more views of two or more images of an object or scene," as recited in claim 1, failed all.</p> <p>112(b) Indefiniteness with 112(f) - PTAB argued that with the magic word "means," the presumption is that 112(f) is invoked. Without the magic word, the presumption is that 112(f) is not invoked.</p>
Representative claim:	1. A method comprising: training a neural network to predict an intermediate image based, at least in part, on portions of two or more views of two or more images of an object or scene, wherein the portions are less than the entire two or more images.
Practice tips and takeaways:	With training neural networks, make sure to provide details on how the training occurs.
Case link:	https://developer.uspto.gov/ptab-web/#/search/documents?proceedingNumber=2022003964
Art Unit, Examiner:	2661, John M. Villecco
Citations:	[1] <i>In re Wands</i> , 858 F.2d 731, 737 (Fed. Cir. 1988).
Administrative Patent Judges:	Hoff, Shiang, Silverman

Ex parte Wu et al.

Overview:	Examiner rejected claims of application number 15/134,443 directed to testing an automotive vehicle. The claims included a driving mode vector. The claims were not amended during prosecution. The claims were also rejected for lack of enablement, because such a person would not know, absent undue experimentation, how to obtain the driving mode vector.
Discussion:	<p>The PTAB argued that, since the claims were not amended, they fulfill the written description requirement. Regarding the enablement requirement, the claims recite "calculating a target acceleration by multiplying the acceleration vector by a driving mode vector." Because the Examiner met the initial burden to argue enablement was not met, it was Appellant's burden to explain how this disclosure from Rose allegedly shows "how to obtain" a "driving mode vector" for use in Appellant's claimed invention. The Appellant cited Rose and argued that the disclosure of Rose shows the subject matter is known to one of ordinary skill in the art. The PTAB agreed with the Examiner that "it is unclear what specific element(s) in the Rose reference correspond to the coefficients 'k' of the current invention."</p> <p>Greenhut dissented as to the written description reversal. Arguing that the Examiner used the proper analysis and that the claims are distinct from the written description.</p>
Representative claim:	<p>1. A method of testing an automotive vehicle comprising: estimating a vehicle signal, wherein the signal is a vehicle speed; setting a control parameter of a driver model for the vehicle by estimating, as functions of the vehicle speed and a test speed, a vector of accelerations for multiple time windows, wherein each of the time windows has a different length of time; calculating a target acceleration by multiplying the acceleration vector by a driving mode vector, the driving mode vector having a coefficient for each of the time windows; [and] summing feedforward and feedback values, wherein the feedforward value is a function of a test cycle and the target acceleration and the feedback value is a function of the test cycle and vehicle speed; [and] controlling a powertrain of the vehicle in accordance with the parameter.</p>
Practice tips and takeaways:	Make sure that the written description adequately discloses each claim element. Reciting the claim language might not be enough.
Case link:	https://developer.uspto.gov/ptab-web/#/search/documents?proceedingNumber=2020002186
Art Unit, Examiner:	3665 Aaron C. Smith
Citations:	N/A
Administrative Patent Judges:	Greenhut (dissenting in part), Martin, Fitzpatrick

Ex parte Kilmer et al.

Overview:	Claims of application number 14/625,430 were directed to a doctor/patient software that includes an emotional recognition algorithm. The Examiner rejected the claims as lacking written description support, as well as being directed to an abstract idea under 35 U.S.C. 101.
Discussion:	<p>The PTAB affirmed the rejections. Regarding Written Description, the PTAB cited MPEP § 2161.01 which is entitled “Computer Programming, Computer Implemented Inventions, and 35 U.S.C. 112(a) or Pre-AIA35 U.S.C. 112, First Paragraph.” Sub-section “I” addresses how to determine whether there is adequate written description support for computer- implemented functional claim limitation. As expressed therein, “[t]he purpose of [the written description requirement] is to ensure that the scope of the right to exclude, as set forth in the claims, does not overreach the scope of the inventor’s contribution to the field of art as described in the patent Specification.”</p> <p>The PTAB additionally stated that an express listing of computer source code may not be required but Appellant’s Specification must provide a detailed enough algorithm to explain “how the inventor[s] intended the function to be performed.” MPEP § 2161.01 (I). The PTAB found that the claims of the present application did not meet this burden.</p> <p>Regarding the rejection under 35 USC 101, the PTAB argues that given the absence of a written description of the purported advanced functionality of the claimed algorithm, Appellant’s arguments that the emotional recognition algorithm can identify, record, and alert a therapist’s computer to minor facial clues that might be missed by a therapist even in a face-to-face session is not commensurate with the scope of claim 1. Even if the Specification describes improvements to computers or software, those features are not recited in claim 1 and thus cannot effect an integration into a practical application.</p>
Representative claim:	<p>1. A computer system, comprising: a patient’s computer and a remotely-located therapist’s computer; software installed in said patient’s computer encoding steps for execution by said patient’s computer to provide an interactive, real-time computer-to-computer link for remote communication between said patient’s computer and said therapist’s computer, said software comprising: instructions for establishing two-way audio/visual communication between said patient’s computer and said therapist’s computer; an emotional recognition algorithm including steps for facial motion amplification correlated with changes in facial structures and movements over time for recognizing said patient’s emotional state, and instructions for transmitting data generated by the emotional recognition algorithm indicating the patient’s emotional state over said computer-to-computer link to the therapist’s computer.</p>
Practice tips and takeaways:	Functional claiming may result in written description rejections, as well as subject matter rejections. Make sure that the specification teaches the novel concept in detail.
Case link:	https://developer.uspto.gov/ptab-web/#/search/documents?proceedingNumber=2018008730
Art Unit, Examiner:	3793, Jonathan Cwern
Citations:	N/A
Administrative Patent Judges:	Greenhut, Hoelter, Calve

Ex parte Annamalai

Overview:	Claims of application number 15/811,581 directed to locating a mobile device. The Examiner has rejected claims 2, 10, and 18 because the limitation “location fails to satisfy a desired accuracy” is not enabled by Appellant’s Specification.
Discussion:	The PTAB reversed the rejection for at least the reason that the Examiner did not list any of the <i>Wands</i> factors [1].
Representative claim:	<p>1. At least one non-transitory, computer-readable medium carrying instructions, which when executed by at least one data processor, performs operations to determine a location of a mobile device, the operations comprising:</p> <p>determining, by communicating with a wireless macronetwork, that a geographic location of the mobile device provided via the macronetwork fails to satisfy a location determination criterion;</p> <p>following the determination that the geographic location of the mobile device provided via the macronetwork would fail the location determination criterion:</p> <p>obtaining data related to a wireless micronetwork after the mobile device has broadcast a distress message; and</p> <p>maintaining, at the mobile device, a communication session with the macronetwork while obtaining the data related to the micronetwork;</p> <p>wherein location information is obtainable regardless of whether a two-way communication session is established between the mobile device and the micronetwork;</p> <p>determining updated location information for the mobile device based on the data related to the micronetwork, wherein the data related to the micronetwork is provided by the mobile device via the macronetwork.</p>
Practice tips and takeaways:	If faced with a rejection for enablement, argue that the <i>Wands</i> factors [2] are not met. Specifically, the <i>Wands</i> factors include determining whether any necessary experimentation is undue involves considering many relevant factors, such as (A) the breadth of the claims; (B) the nature of the invention; (C) the state of the prior art; (D) the level of one skilled in the art; (E) the level of predictability in the art; (F) the amount of direction or guidance provided by the inventor; (G) the existence or absence of working examples; and (H) the quantity of experimentation needed to make or use the invention based on the content of the disclosure.
Case link:	https://developer.uspto.gov/ptab-web/#/search/documents?proceedingNumber=2020001712
Art Unit, Examiner:	2647, Muthuswamy G. Manoharan
Citations:	[1] [2] <i>In re Wands</i> , 858 F.2d 731, 737 (Fed. Cir. 1988).
Administrative Patent Judges:	Nappi, Busch, and Shiang

Ex parte Vivet et al.

Overview:	The claims of application number 15/068,899 are directed to a crm that causes an integrated circuit manufacturing system to manufacture a processing module. The Examiner cited the <i>Wands</i> factors [1] and found that all failed, except #8 (breadth of the claims). Appellant then argued the Wands factors primarily in the Reply Brief.
Discussion:	The PTAB took note (a) that not all <i>Wands</i> factors [2] were argued (only 2); and (b) that the Appellant only brought those arguments in the Reply Brief and not in the Appeal Brief. The PTAB refused to consider arguments only presented in the Reply Brief because the Examiner did not have a chance to respond. The PTAB cited <i>Freedlander</i> the court states that this is the general rule: We have many times held that the general rule is that in passing upon the rejection of a claim by the Patent Office we will not consider allowed claims in other applications or patents.
Representative claim:	20. A non-transitory computer readable storage medium having stored thereon a computer readable description of an integrated circuit that, when processed in an integrated circuit manufacturing system, causes the integrated circuit manufacturing system to manufacture a processing module comprising: [A.] alignment logic configured to: [i.] apply respective transformations to at least some of a set of images to bring them closer to alignment with a reference image from the set of images, [ii.] wherein the transformations are determined using multiple kernel tracking to initialize a Lucas Kanade Inverse algorithm that is used on said at least some of the images to bring them closer to alignment with said reference image; and [B.] combining logic configured to: [i.] combine a plurality of images including said one or more of the transformed images to form a reduced noise image.
Practice tips and takeaways:	Make sure to provide all arguments in the Appeal Brief.
Case link:	https://developer.uspto.gov/ptab-web/#/search/documents?proceedingNumber=2021000397
Art Unit, Examiner:	2668, David F. Dunphy
Citations:	[1] [2] <i>In re Wands</i> , 858 F.2d 731, 737 (Fed. Cir. 1988).
Administrative Patent Judges:	MacDonald, Engle, Ahmed

Ex parte Kedalagudde et al.

Overview:	Claims of application number 15/323,505 are directed to determining a location of a mobile device. Claims rejected for lack of enablement.
Discussion:	The PTAB indicated that the Examiner did not provide any of the <i>Wands</i> factors and thus reversed the rejection.
Representative claim:	1. An information handling system to manage resources in a network having a mobility management entity (MME) pool to perform load balancing, comprising circuitry configured to: receive performance measurements for at least one MME in the MME pool; forward the performance measurements from a network functions virtualization network manager (NFV NM) to a network virtual functions orchestrator (NFV orchestrator) to allow the NFV orchestrator to determine if at least one of the performance measurements exceeds at least one predetermined threshold, [2]4 5 wherein the NFV orchestrator validates a sender authorization for the performance measurements,; if the NFV orchestrator determines that at least one of the performance measurements exceeds at least one predetermined threshold, receive a request from the NFV orchestrator to instantiate a new mobility management entity virtual network function (MME VNF); instantiate the new MME VNF in response to the request; and connect one or more user equipment (UE) devices managed by the MME pool to the new MME VNF.
Practice tips and takeaways:	Articulating <i>Wands</i> factors [1] is important to both Appellant and Examiner.
Case link:	https://developer.uspto.gov/ptab-web/#/search/documents?proceedingNumber=2021005206
Art Unit, Examiner:	2463, Chi Tang P. Cheng
Citations:	[1] <i>In re Wands</i> , 858 F.2d 731, 737 (Fed. Cir. 1988).
Administrative Patent Judges:	Chen, Arpin, Bui

Ex parte Guiney et al.

Overview:	Claims of application number 14/655,927 directed to a defibrillator system. The examiner rejected the claims under 103. The PTAB found new grounds under 112a and 112b.
Discussion:	The claims recite a "single core processor" and a "single processor." Under 112a and 112b, the PTAB indicated that it is on the Applicant to precisely draft the claims.
Representative claim:	1. An integrated monitor defibrillator telemedicine server, comprising: a monitor defibrillator including a patient monitoring circuit configured to sense medical parameters of a patient, and a defibrillation therapy circuit configured to provide at least one of a defibrillation therapy and a pacing therapy to the patient; a telemedicine server including a clinical processor configured to collect patient data from the patient monitoring circuit and the defibrillation therapy circuit, the patient data derived from the medical parameters of the patient and the at least one of defibrillation therapy and pacing therapy to the patient, a memory configured to receive the patient data from the clinical processor and to store the received patient data in a generic file format, a communications interface disposed in read-only communication with the memory and further configured to transmit the patient data in the generic file format to a remote station, and a firewall circuit disposed between the memory and the communications interface and configured to prevent a writing of any data received from the communications interface to the memory; and a unitary defibrillator housing containing all the patient monitoring circuit, the defibrillation therapy circuit, the clinical processor, the memory, the communications interface, and the firewall circuit.
Practice tips and takeaways:	Make sure the claims are precisely written.
Case link:	https://developer.uspto.gov/ptab-web/#/search/documents?proceedingNumber=2020004222
Art Unit, Examiner:	3792, Michael J. Dabreu
Citations:	N/A
Administrative Patent Judges:	Greenhut, Scanlon, Plenzler

Ex parte Mukund

Overview:	Examiner rejected claims of 14/660,689 under enablement, written description, and indefiniteness related to the claim language “separating the two audio signals within the composite SSA signal into two mono audio signals by performing a first instance of directed source separation (DSS).” Examiner used the <i>Wands</i> factors [1] to show undue experimentation to find lack of enablement.
Discussion:	Regarding enablement, the PTAT showed that the Examiner applied <i>Wands</i> factors [2] correctly, but disagreed with the logic used and conclusions made. Regarding written description, the PTAB said because that ’554 patent discloses that BSS algorithm is “discussed in the academia” and “referred in literature,” such BSS algorithm need not be disclosed. PTAB reversed indefiniteness for the same reasons.
Representative claim:	<p>1. A method for network transmission of voice captured through a plurality of microphones spatially disposed in a first group and a second group, comprising:</p> <p>combining two digital audio signals into a composite source separable audio (SSA) signal, each digital audio signal of the two digital audio signals representing an independent mixture of a target source voice and an ambient noise, wherein outputs of the plurality of microphones within the first group are summed together as a first digital audio signal of the two digital audio signals and outputs of the plurality of microphones within the second group are summed together as a second digital audio signal of the two digital audio signals, thereby defining a first virtual microphone and a second virtual microphone, respectively, and wherein the combining comprises interleaving the two digital audio signals to generate the composite SSA signal; and</p> <p>separating the two digital audio signals within the composite SSA signal into two mono audio signals by performing a first instance of directed source separation (DSS) on the composite SSA signal, the DSS comprising:</p> <p>generating one or more control signals indicating an instantaneous signal-to-noise ratio, in the composite SSA signal, between the target source voice and the ambient noise;</p> <p>under direction of the one or more control signals, separating the target source voice of the composite SSA signal into a first mono audio signal; and</p> <p>under direction of the one or more control signals, separating the ambient noise of the composite SSA signal into a second mono audio signal.</p>
Practice tips and takeaways:	It appears that by admitting that something is known in the art helps to alleviate the written description requirement. Regarding <i>Wands</i> factors [3], if the Appellant can show that the examiner's arguments are conclusory, there is a better chance for reversal.
Case link:	https://developer.uspto.gov/ptab-web/#/search/documents?proceedingNumber=2020001136
Art Unit, Examiner:	3992, Stephen Ralis
Citations:	[1] [2] [3] <i>In re Wands</i> , 858 F.2d 731, 737 (Fed. Cir. 1988).
Administrative Patent Judges:	McDonald, Chen, McKeown

Ex parte Tzviele

Overview:	Examiner rejected claims of 15/832,871 under enablement, written description, and indefiniteness, as well as under 35 U.S.C. 101. Examiner used the <i>Wands</i> factors [1] to show breadth of claims, state of the art, Level of ordinary skill in the art, amount of direction or guidance in the specification, existence of working example, and quantity of experimentation to find lack of enablement.
Discussion:	Regarding enablement, the PTAB showed that the Examiner applied <i>Wands</i> factors [2] correctly. Regarding breadth of claims, neither Examiner or Appellant discussed this <i>Wands</i> factor, but PTAB found "Given the lack of implementation details in this limitation, one of ordinary skill would need to look to the written disclosure for guidance in order to make and use the full scope of the invention." Regarding state of prior art, the PTAB states "Specification does not appear to refer to any prior art evidence showing or suggesting a particular model or models that may be used to further guide one of ordinary skill in the art in making and using the claimed invention." Regarding level of skill, the PTAB agrees with Appellant that one of ordinary skill would understand what is required for a nostril to be "dominant" based on the Specification. Regarding amount of guidance in the specification, the PTAB found that this portion of the Specification does not provide any specific implementation details beyond suggesting that certain factors may be used with a machine learning model to produce a prediction. Further, coupled with the lack of any working examples (see below), one of ordinary skill is left mostly in the dark regarding what model and factors may be used to produce a suitable result, i.e. a result that provides a prediction and suggestion as claimed. The PTAB agreed with the Examiner that there are no working examples. Regarding quantity of experimentation, the PTAB indicated that the lack of sufficient implementation details in the Specification indicates that a significant amount of experimentation would be required to perform the tasks listed by the Examiner.
Representative claim:	1. A system configured to suggest activities according to the dominant nostril, comprising: a sensor configured to take measurements of a user; wherein the measurements are indicative of the user's dominant nostril; and a computer configured to: predict, based on the measurements, which of the user's nostrils will be the dominant nostril at a future time; and responsive to predicting that the right nostril will be dominant at the future time, suggest having at the future time a first activity, which is more suitable for a right dominant nostril than a second activity.
Practice tips and takeaways:	The PTAB addressed one of the <i>Wands</i> factors [3] that was not addressed by either the Examiner or the Appellant. Practice tip is to address all <i>wands</i> factors. Also draft applications with "working examples."
Case link:	https://developer.uspto.gov/ptab-web/#/search/documents?proceedingNumber=2019002405
Art Unit, Examiner:	3793; Carolyn Pehlke
Citations:	[1] [2] [3] <i>In re Wands</i> , 858 F.2d 731, 737 (Fed. Cir. 1988).
Administrative Patent Judges:	Fischetti, Murphy, Schopfer

Ex parte Dykstra

Overview:	Examiner rejected claims of 14/911,373 under enablement and written description. The claims are directed to "geosteering in hydrocarbon reservoirs and, more specifically, to a drilling assembly steering system designed to control drill bit orientation such that a pathway is followed that minimizes tortuosity." Examiner did not use the <i>Wands</i> factors [1], but argued several instances of where the specification did not enable various aspects of the claims. The Applicant provided arguments and an affidavit showing where the specification enables a POSITA to practice the claims. The Examiner placed himself in the position of the POSITA with no evidence to support he is a POSITA.
Discussion:	<p>According to the Examiner, "[t]he Application does not describe how the alternative correction paths are generated from the modeled deviated path. The description does not provide an algorithm or a step-by-step procedure to generate alternative correction paths from the deviated path." Final Act. 21. The Examiner also reasons that "[m]inimizing the differences between the predetermined and deviated paths and minimizing the differences between the curvatures of the predetermined and deviated paths do not result in the selection of an optimal correction path." Id. The Examiner further determines "[t]he specification is not enabling due to the lack of direction provided and lack of existence of working examples in the application at the time of filing. Final Act. 22.</p> <p>The Examiner's rejection is based on the alleged lack of disclosure of how to generate and evaluate correction paths and select the optimal path. See, e.g., Final Act. 21-22; Ans. 14. However, as discussed above, the Examiner fails to consider the disclosed mathematical optimization process. The Examiner improperly considers the <i>Wands</i> factors [2]. See, e.g., Appeal Br. 8-9; Reply Br. 7-8. For example, the Examiner merely repeats that a skilled artisan would not know how to calculate a cost function or select an optimal path for the state of the prior art, the level of one of ordinary skill in the art, and the level of predictability in the art. Ans. 18. Without proper consideration of each relevant factor, we are constrained by the record to determine that the Examiner erred in determining that the claimed invention is not enabled.</p>
Representative claim:	1. A computer-implemented method to steer a downhole drilling assembly, the method comprising: drilling a wellbore along a predetermined path using the drilling assembly; receiving, using a computer system, data indicative of a deviation from the predetermined path; generating, using the computer system, drilling parameters that correspond the deviated path; modeling, using the computer system, the deviated path of the drilling assembly based upon the drilling parameters; determining, using the computer system, a correction path of the drilling assembly using a cost function that takes into account both: a difference between the predetermined and deviated paths; and a difference between curvatures of the predetermined and deviated paths; and steering the drilling assembly along the correction path.
Practice tips and takeaways:	Rely on the <i>Wands</i> factors [3]. Affidavit regarding POSITA is also helpful.
Case link:	https://developer.uspto.gov/ptab-web/#/search/documents?proceedingNumber=2020005189
Art Unit, Examiner:	2148, Kandasamy Thangavelu
Citations:	[1] [2] [3] <i>In re Wands</i> , 858 F.2d 731, 737 (Fed. Cir. 1988).
Administrative Patent Judges:	Hume, Busch, McKeown

Ex parte Doyle

- Overview: Examiner rejected claims of 14/495,926 under enablement, written description, and indefiniteness. The claims are directed to rendering 3D computer graphics by dividing a scene into geometric shapes or "patches," assigning tessellation factors that define how finely each patch is to be rendered, using a tessellator to define multiple domain points within the patch, and sending the output of the tessellator to a domain shader that converts domain points into vertices and tessellated patches into a set of 3D topologies. In particular, the invention is directed to an efficient tessellation cache to improve the performance of the domain shader by selecting a sequence that increases likelihood of shared domain points being encountered while shading regions within the tessellated patch. The Examiner applied the *Wands* factors [1] in issuing the rejection.
- Discussion: The PTAB works through the *Wands* factors [2]. The PTAB notes that the claims use functional language. When using functional language, the specification must describe how the function is performed. The PTAB further stated that providing one or even two alleged working examples does not guarantee sufficiency for enabling the claimed functional genus.
- With respect to the indefiniteness issue, the Examiner found that the specification does not support sequencing elements in the claims, particularly how to select the order increasing the likelihood of shared domain points being encountered, or how it ensures that shading data is identified as shared. The Board affirmed this rejection based on the 112 Guidance, noting that the claim scope exceeded the specification's disclosure of an individual example. The claims were similarly found not to be enabled based on similar analysis. With regard to indefiniteness, the Examiner argues that the claims use relative language ("increase a likelihood") without distinguishing the increase or how it is achieved. The Board affirmed the Examiner, noting that the specification does not provide a reference or benchmark for characterizing such increases. Additionally, the Examiner also argued that dependent claims directed to "twice a maximum number of domain points along a region edge" is indefinite as there was no bases for the maximum number, however the Board reversed this rejection based on the disclosure regarding the models used and argument that this could support the determination of the maximum and therefore render the limitation to be definite.

Representative claim:	<p>1. A computing system comprising:</p> <p>a data interface including one or more of a network controller, a memory controller or a bus, the data interface to obtain an untessellated patch and one or more tessellation factors associated with a three dimensional (3D) scene;</p> <p>a tessellator, implemented at least partly in one or more of configurable logic or fixed-functionality logic hardware using circuit technology, to generate a tessellated patch and one or more domain points based on the untessellated patch and the one or more tessellation factors; and</p> <p>a domain shader, implemented at least partly in one or more of configurable logic or fixed-functionality logic hardware using circuit technology, including:</p> <p>an intra-region cache,</p> <p>an inter-region cache, and</p> <p>a cache controller, implemented at least partly in one or more of configurable logic or fixed-functionality logic hardware using circuit technology, coupled to the intra-region cache and the inter-region cache, the cache controller to [*3] conduct a region determination of whether the one or more domain points are shared between multiple region sets of the tessellated patch, interrogate the intra-region cache for non-shared shading data if the one or more domain points are not shared between multiple region sets of the tessellated patch, and interrogate the interregion cache for shared shading data if the one or more domain points are shared between multiple region sets of the tessellated patch,</p> <p>wherein the multiple region sets each include an interregion and an intra-region,</p> <p>wherein the inter-region is assigned a higher tessellation factor of the tessellation factors than assigned to the intra-region,</p> <p>wherein the inter-region includes a greater number of the domain points than the intra-region based on the higher tessellation factor,</p> <p>wherein the region sets are sequenced through in an order to increase a likelihood of shared domain points being encountered across regions of the tessellated patch,</p> <p>wherein the tessellator sequences through each of the region sets, including at least a first region set and a second region set, and for each region set, tessellates each region including the inter-region and the intraregion,</p> <p>wherein the order of sequencing includes tessellation of a first region and thereafter tessellation of a next region adjacent to a previously [*4] tessellated region,</p> <p>wherein the tessellator passes the tessellated regions of each of the region sets to the intra-region cache and the interregion cache, respectively,</p> <p>wherein the order of sequencing ensures that shading data for at least one of the domain points to be identified as shared resides in one or more of the intra-region cache or the interregion cache at all times during the sequence.</p>
Practice tips and takeaways:	<p>With respect to the enablement issue, if using functional claim language, how the function is performed must be present in the specification.</p> <p>With respect to indefiniteness issue, relative terms (increase, etc.) should be supported by reference or benchmark values in at least the specification. Values for relative terms can be established based on the understanding of persons having ordinary skill in the art and disclosure that could lead such a person to those values.</p>
Case link:	https://developer.uspto.gov/ptab-web/#/search/documents?proceedingNumber=2019002647
Art Unit, Examiner:	2619, Robert N. Bader
Citations:	[1] [2] <i>In re Wands</i> , 858 F.2d 731, 737 (Fed. Cir. 1988).
Administrative Patent Judges:	Tierney, Repko, Cass

Ex parte Frank et al.

Overview:	Examiner rejected claims of 15/225,040 under enablement, written description, and indefiniteness. The claims are directed to Light Detection and Ranging (LIDAR) sensors and cameras mounted in the side view mirror housing to detect the environment around a vehicle. The Examiner rejects claim 12-17 for lack of enablement because the Specification allegedly does not describe "controlling the autonomous vehicle according to the images of the area surrounding the side view mirror housing included in the three dimensional model generated" sufficiently to enable a person of skill in the art to practice this feature, as claimed.
Discussion:	The PTAB argues that the Examiner, who bears the initial burden, fails to explain adequately why the disclosure, as filed, is not sufficiently complete to enable one of ordinary skill in the art to make and use the invention of claims 12-17 without undue experimentation. The PTAB also indicated that the rejection does not include adequate discussion of the <i>Wands</i> factors [1] to provide the Appellant or the Board with an indication as to why one would have to engage in undue experimentation to practice the claimed invention.
Representative claim:	12. A method, comprising: receiving data from a first LIDAR sensor disposed in a side view mirror housing of an autonomous vehicle, the first LIDAR sensor having a first field of view and pointed in a first direction; receiving data from a second LIDAR sensor disposed in the side view mirror housing, the second LIDAR sensor having a second field of view and pointed in a second direction different from the first direction; generating a three dimensional model including images of an area surrounding the side view mirror housing, wherein the three dimensional model is generated from the data received from the first LIDAR sensor having the first field of view and the data received from the second LIDAR sensor having the second field of view; and controlling the autonomous vehicle according to the images of the area surrounding the side view mirror housing included in the three dimensional model generated.
Practice tips and takeaways:	The Examiner has the initial burden to establish lack of enablement. There might be an argument, if the practitioner does not believe this burden has been met.
Case link:	https://developer.uspto.gov/ptab-web/#/search/documents?proceedingNumber=2019005600
Art Unit, Examiner:	2483, Mikhail Itskovich
Citations:	[1] <i>In re Wands</i> , 858 F.2d 731, 737 (Fed. Cir. 1988).
Administrative Patent Judges:	MacDonald, Arpin, Cutitta II

Ex parte Herf et al.

Overview:	Appeal from Final Rejection
Discussion:	The terms "background process" and "insomnia-causing effect" were found to be indefinite in the rejection. The Board determined that "background process" is sufficiently defined in the relevant technical field, and further the specification discloses exemplary pseudocode mentioning the background process. Accordingly, "background process" was found to be definite by the Board. Regarding "insomnia-causing effect", the Board found that while the term provides a broad genus, this does not render the term itself to be unclear, and possesses plain and ordinary meaning.
Representative claim:	<p>1. A method for automatically correcting a color temperature of an electronic visual display, said method comprising:</p> <ul style="list-style-type: none">determining, for the electronic visual display, time of day in a vicinity of the electronic visual display;determining target color conditions for said electronic visual display;adjusting color correction for said electronic visual display by selecting a color temperature for the electronic visual display that is based on the time of day in the vicinity of the electronic visual display, and that corresponds to the determined target color conditions;setting at least one or more graphics sub-systems to produce color transforms through the one or more graphics subsystems to correct colors consistent with said selected color settings for said electronic visual display; andchanging from an initial state of said electronic visual display to the selected color temperature for said electronic visual display, wherein the adjusted color correction is selected to have warmer color temperature later in the evening than during the day, such that said electronic visual display automatically displays adjusted colors according to said determined target color conditions, <p>wherein the target color conditions are determined automatically by a background process of a computing device that has the electronic visual display, the background process programmed to adjust color correction to be responsive to current ambient conditions in a location around the display.</p>
Practice tips and takeaways:	Broad scope does not mean uncertain scope; when the Examiner appears to be basing their rejection on breadth as opposed to a lack of clarity, present typical indefiniteness arguments (such as, as used in this case, plain meaning or definitions in the art) and note that breadth alone is not indefiniteness.
Case link:	https://developer.uspto.gov/ptab-web/#/search/documents?proceedingNumber=2017006022
Art Unit, Examiner:	2625, William Boddie
Citations:	N/A
Administrative Patent Judges:	Busch, Dejmek, Szpondowski

Ex parte Pham et al.

Overview:	Appeal from Final Rejection
Discussion:	The indefiniteness rejection is based on recitation of "a calibration factor representing relationship between a first distance ... and a second distance." The Examiner's argument is that the scope of the relationship is unclear and the relationship is not defined. The claim further recites that the calibration factor is multiplied by an estimated distance to modify the estimated distance. The Board concluded that the multiplication step made it clear that the calibration factor was a number, in order to be capable of multiplication. Further, while the relationship was not specified in the claim, the claim only required that the calibration factor "represent a relationship," and thus such further specificity was not required.
Representative claim:	1. A method comprising: receiving, by a processor included in a mobile device to be carried by a user, an estimated distance between a starting location and an ending location; determining, by the processor, a calibration factor based on a location of the mobile device on a user's body and a movement pace of the user, the calibration factor representing a relationship between a first distance between the starting location and the ending location determined based on a plurality of Global Navigation Satellite System (GNSS) and a second distance between the two locations determined based, in part, on the location of the mobile device on the user's body and the movement pace; modifying, by the processor, the estimated distance between the starting location and the ending location by multiplying the estimated distance and the determined calibration factor resulting in a modified estimated distance; determining, by the processor, an estimated time to arrive (ETA) at the ending location based, in part, on the modified estimated distance and a movement speed of the user; and providing, by the processor, the ETA as an output.
Practice tips and takeaways:	References to and uses of claim terms subsequently within the claim can be helpful for providing meaning to a claim term such that an indefiniteness rejection can be overcome.
Case link:	https://developer.uspto.gov/ptab-web/#/search/documents?proceedingNumber=2019000169
Art Unit, Examiner:	2647, Marcos Torres
Citations:	N/A
Administrative Patent Judges:	Dixon, Busch, Shaw

Ex parte Priebatsch

Overview:	Appeal from Final Rejection
Discussion:	<p>In the rejection, the Examiner found a step including "upon verification of the tokens" and "information in the tokens" to be indefinite where there is no step of verifying the tokens, and the information in the tokens is not expressly stated in the same terms as content of the tokens recited elsewhere in the claim. Regarding "upon verification of the tokens", the Board confirmed that no verification step would be necessary, and verification of the tokens is broad, but clear, in allowing any means of verifying the tokens. Further, the reference to "information in the tokens" was understood by the Board to mean any information included in the tokens, even if different from constituents of the token described earlier in the claim, and thus was clear.</p>
Representative claim:	<p>22. A method for facilitating an electronic payment transaction between a consumer and a resource provider, the method comprising:</p> <ul style="list-style-type: none">electronically receiving, from a request-manager device, a request for permission to act on behalf of a consumer;electronically providing, to a consumer device, a request for approval of a user-access token identifying the consumer, said approval comprising information concerning the request for permission;electronically providing, to the request-manager device, the user-access token following approval thereof by the consumer;electronically receiving, from the request-manager device, the consumer-approved user-access token, a facilitation token comprising permissions for the request-manager device to act with respect to a resource provider, and a request for a payment transaction;upon verification of the tokens, electronically submitting for authorization to a payment processing device, in accordance with the request for a payment transaction and information in the tokens, a charge to a payment instrument associated with the received user-access token; andelectronically providing to a resource-provider device and to the request-manager device information concerning the payment transaction by the consumer.
Practice tips and takeaways:	<p>Active steps or particular content do not need to be expressly recited for 112(b) purposes so long as the plain meanings can be understood. These can provide significant breadth in some aspects of the claim, and this case further confirms that breadth is not indefiniteness.</p>
Case link:	https://developer.uspto.gov/ptab-web/#/search/documents?proceedingNumber=2019000118
Art Unit, Examiner:	3685, James Nigh
Citations:	N/A
Administrative Patent Judges:	Busch, Shiang, Bain

Ex parte Ooijen

Overview:	Appeal from Final Rejection
Discussion:	In the rejection, the Examiner argued that claims directed to a computer-implemented method for determining nuclear factor-Kappa B was directed to ineligible subject matter, not supported by the written description, and also indefinite. Regarding indefiniteness, the Examiner interpreted the claims as means-plus function claims and that there was not sufficient structure for performing the functions recited in the claims. The Board found that the claims were not means-plus-function claims and simply used functional language and the drawings and specification support the performance of the different steps using a computer and a computer program.
Representative claim:	<p>1. A computer implemented method for determining an activity level of a NFkB cellular signaling pathway in a subject performed by a computerized device having a processor comprising:</p> <p>determining an activity level of NFkB transcription factor element in a sample isolated from the subject, wherein the activity level of NFkB transcription factor element in the sample is determined by:</p> <p>obtaining data on the expression levels of at least six target genes derived from the sample, wherein the NFkB transcription factor element controls transcription of the at least six target genes, and wherein the at least six target genes are selected from BCL2L 1, BIRC3, CCL2, CCL3, CCL4, CCL5, CCL20, CCL22, CX3CL 1, CXCL 1, CXCL2, CXCL3, ICAM1, IL 1 B, IL6, IL8, IRF1, MMP9, NFkB2, NFkBIA, NFkBIE, PTGS2, SELE, STAT5A, TNF, TNFAIP2, TNIP1, TRAF1, and VCAM1;</p> <p>determining the activity level of the NFkB transcription factor element in the sample using a calibrated pathway model, wherein the calibrated pathway model compares the expression levels of the at least six target genes in the sample with expression levels of the at least six target genes in the model which define an activity level of NFkB transcription factor element;</p> <p>and, determining the activity level of the NFkB cellular signaling pathway in the sample based on the determined activity levels of NFkB transcription factor element in the sample.</p>
Practice tips and takeaways:	This case expressly reminds that functional language is not inherently means-plus-function. Reciting a computer and a program can provide sufficient disclosure of structure for performing the acts and thereby overcome 112(b) rejections when there is means-plus-function language, however this was also problematic for the applicant with regard to the subject matter eligibility issues.
Case link:	https://developer.uspto.gov/ptab-web/#/search/documents?proceedingNumber=2020004801
Art Unit and Examiner	1631 Erik De Jong
Citations:	N/A
Administrative Patent Judges:	Grimes, Prats, Schneider

Ex parte Toth et al.

Overview:	Appeal from Final Rejection
Discussion:	In the rejection, the Examiner raised, among other issues, written description and indefiniteness rejections relating to the "conditioning circuit" being a means-plus-function limitation. The Board affirmed the rejections based on the specification supplying the data inputs and expected results, but not providing explanation of how the processor manipulates the data to achieve the specific results, which pertain to removal of artifacts from physiological signals. Accordingly, the specification does not provide sufficient structure for providing the recited function of the conditioning circuit.
Representative claim:	<p>1. A patch interface, comprising:</p> <ul style="list-style-type: none">a substrate with a surface;an adhesive coupled to the substrate, the adhesive being formulated for attachment to the skin of a subject;an interconnect embedded into or coupled to the substrate, the interconnect being configured for attachment of the patch interface to a microcircuit; anda plurality of microelectrodes attached to or embedded into the surface of the substrate and electrically coupled with the microcircuit via the interconnect; andone or more macroelectrodes electrically coupled with the microcircuit via the interconnect; <p>wherein the patch interface is configured to monitor neural activity from the skin of the subject;</p> <p>wherein the microcircuit comprises two or more processing banks, a first one of the two or more processing banks being coupled to:</p> <ul style="list-style-type: none">at least a first one of the one or more macroelectrodes; anda first subset of the plurality of microelectrodes; <p>wherein the first processing bank comprises a first preamplifier bank and a first switch bank, the first switch bank being configured to selectively connect one or more of the microelectrodes in the first subset of the plurality of microelectrodes and the first macroelectrode to the first preamplifier bank, the first preamplifier bank comprising one or more conditioning circuits configured to utilize signals measured by the first macroelectrode to remove at least one of one or more stretch artifacts and one or more movement artifacts from signals measured by the connected one or more microelectrodes in the first subset of the plurality of microelectrodes; and</p> <p>wherein the signals measured by the first macroelectrode comprise macroelectrophysiological signals from the subject and the signals measured by the connected one or more microelectrodes comprise neural activity signals from the subject.</p>
Practice tips and takeaways:	To provide sufficient structure supporting a means-plus-function limitation, inputs and expected outputs are likely insufficient; some algorithm or discussion of how the data is manipulated should be shown to provide corresponding structure to the function of a processor.
Case link:	https://developer.uspto.gov/ptab-web/#/search/documents?proceedingNumber=2021003191
Art Unit and Examiner	1631, Marie Archer
Citations:	N/A
Administrative Patent Judges:	Adams, Grimes, Schneider

Ex parte Metral

Overview:	Appeal from Final Rejection
Discussion:	In the rejection, the Examiner raised, among other issues, written description issues relating to the scope of the claims versus the specification, particularly regarding sources of requests. Additionally, the Examiner raised indefiniteness issues regarding antecedent basis and duplicative language regarding "separate" blockchains. The Examiner also raised indefiniteness rejections for system and product claims due to the inclusion of function language that took the form of method steps. The Board reversed the written description rejection based on the understanding of persons of ordinary skill in the art. The Appellant conceded the rejection based on duplicative language and indicated that this would be remedied through subsequent amendments. The Board also reversed the indefiniteness of the alleged hybrid claims, reiterating that functional language can be present in system and product claims and does not render such to be hybrid claims.
Representative claim:	<p>7. A method for providing a distributed crypto currency reputation, comprising:</p> <ul style="list-style-type: none">[a] monitoring, by one or more system provider devices over a network, a distributed crypto currency blockchain;[b] detecting, by the one or more system provider devices over the network, a confirmation of a current crypto currency transaction in the distributed crypto currency blockchain;[c] creating, by the one or more system provider devices based on the detecting of the confirmation of the current crypto currency transaction, a first amount of reputation markers in a distributed reputation marker blockchain that is a separate blockchain from the distributed crypto currency blockchain;[d] allocating, by the one or more system provider devices on the distributed reputation marker blockchain to a first payer reputation marker public address controlled by a payer that is involved in the current crypto currency transaction with a payee, the first amount of reputation markers;[e] monitoring, by the one or more system provider devices, the distributed reputation market blockchain and detecting a transfer of at least one of the first amount of reputation markers from the first payer reputation marker public address to a first payee reputation marker public address controlled by the payee;[f] receiving, by the one or more system provider devices over the network, a first request for reputation information for the payee; and[g] providing, by the one or more system provider devices over the network based on receiving the first request, payee reputation information over the network for the payee that includes first reputation marker transfer information associated with the transfer of the at least one of the first amount of reputation markers on the distributed reputation marker blockchain from the first payer reputation marker public address to the first payee reputation marker public address.
Practice tips and takeaways:	The understanding of one skilled in the art can support the express disclosures in the specification and not every detail needs to be spelled out in the specification. Duplicative language regarding separate items can render the claim unclear and should be avoided through claim amendments. System claims and product claims can include functional language without becoming indefinite hybrid claims.
Case link:	https://developer.uspto.gov/ptab-web/#/search/documents?proceedingNumber=2022003964
Art Unit and Examiner	3685 Dennis Keritsis
Citations:	N/A
Administrative Patent Judges:	Fischetti, Shah, Meyers