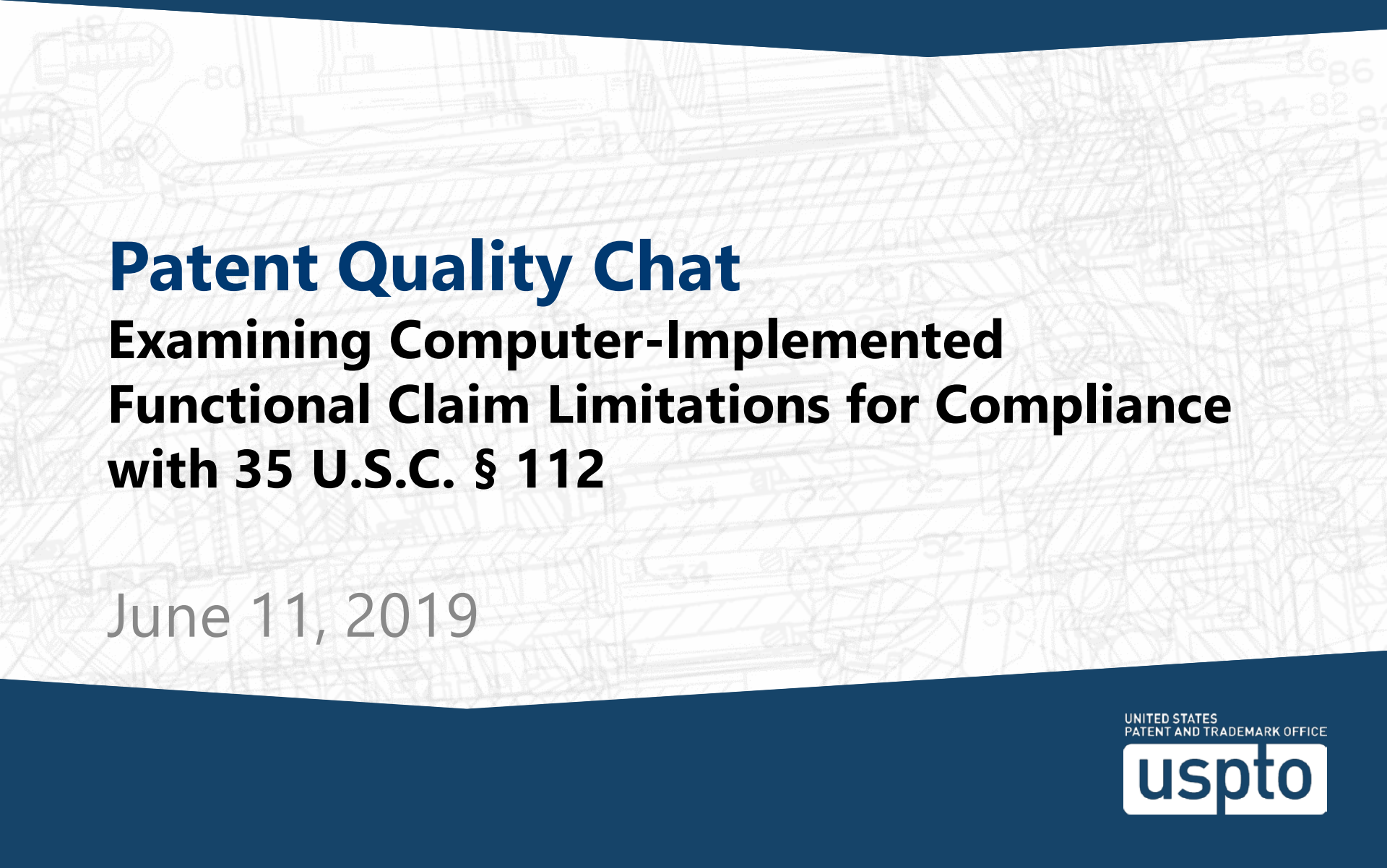UNITED STATES
PATENT AND TRADEMARK OFFICE

uspto

Patent Quality Chat

Examining Computer-Implemented Functional Claim Limitations for Compliance with 35 U.S.C. § 112

June 11, 2019

To send in questions or comments during the webinar, please email:

PatentQuality@uspto.gov

http://www.uspto.gov/patentquality

Patent Quality

Providing high-quality, efficient examination of patent applications is paramount to our mission at USPTO. To ensure we continue to issue high-quality patents that will fuel innovation well into the future, the Office of the Deputy Commissioner for Patent Quality, along with our partners across the Patents organization, promotes and supports the continuous improvement of patent products, processes and services through collaboration with internal and external stakeholders of the intellectual property community.

Highlights

Patent Quality Chat
Our next Patent Quality Chat will be on June 11th discussing "Examining Computer-Implemented Functional Claim Limitations for Compliance with 35 U.S.C. § 112".
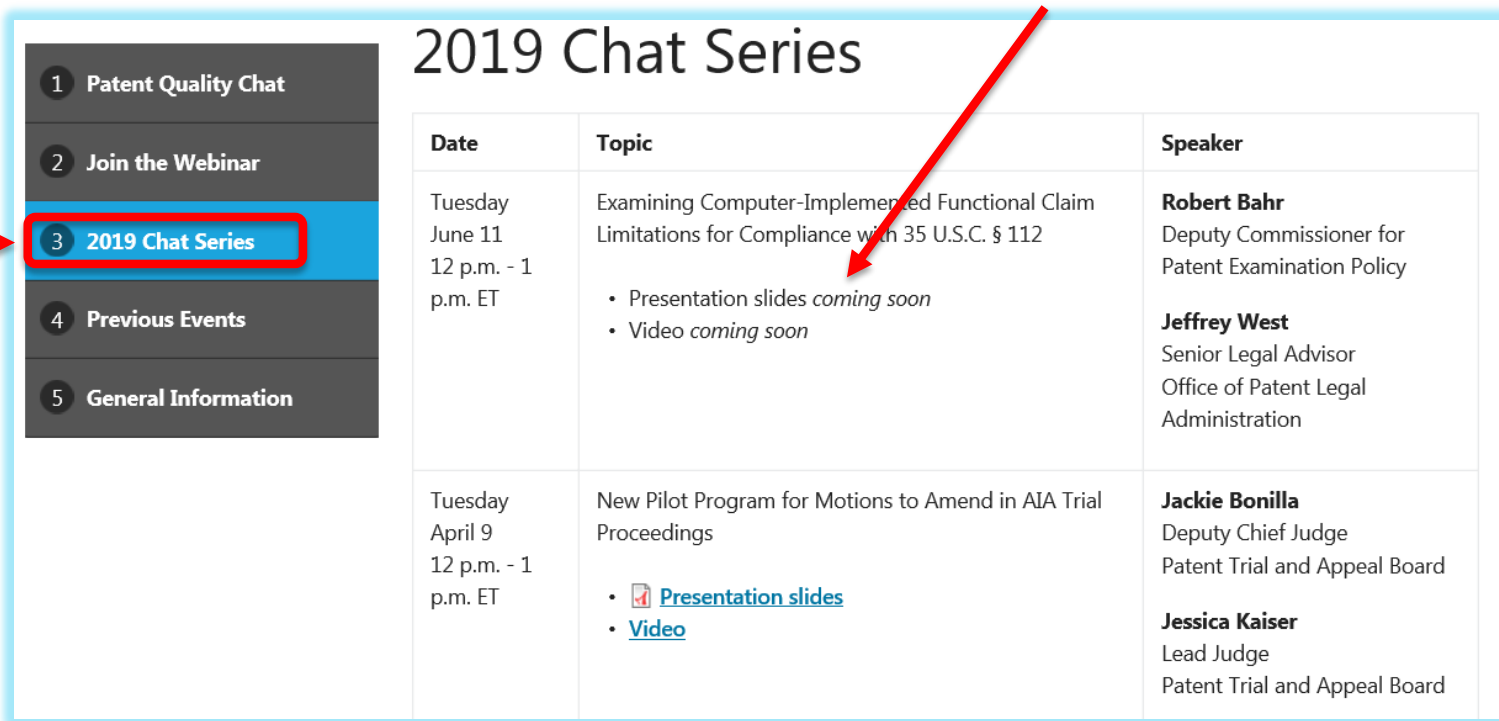
Quality Metrics
See our new metrics approach, categorizing into product, process and perception indicators.

Stakeholder Training on Examination Practice and Procedure (STEPP)
Sign up for an upcoming training developed for those interested in a better understanding of the examination process at the USPTO.

Email questions to **PatentQuality@uspto.gov**

http://www.uspto.gov/patent/initiatives/patent-quality-chat

2019 Chat Series

1 Patent Quality Chat	
2 Join the Webinar	
3 2019 Chat Series	
4 Previous Events	
5 General Information	

Date	Topic	Speaker
Tuesday June 11 12 p.m. - 1 p.m. ET	Examining Computer-Implemented Functional Claim Limitations for Compliance with 35 U.S.C. § 112 • Presentation slides *coming soon* • Video *coming soon*	**Robert Bahr** Deputy Commissioner for Patent Examination Policy **Jeffrey West** Senior Legal Advisor Office of Patent Legal Administration
Tuesday April 9 12 p.m. - 1 p.m. ET	New Pilot Program for Motions to Amend in AIA Trial Proceedings • **Presentation slides** • **Video**	**Jackie Bonilla** Deputy Chief Judge Patent Trial and Appeal Board **Jessica Kaiser** Lead Judge Patent Trial and Appeal Board

Email questions to **PatentQuality@uspto.gov**

Patent Quality Chat

Examining Computer-Implemented Functional Claim Limitations for Compliance with 35 U.S.C. § 112

Bob Bahr
Deputy Commissioner for Patent Examination Policy

Jeffrey West
Senior Legal Advisor, Office of Patent Legal Administration

UNITED STATES
PATENT AND TRADEMARK OFFICE

uspto

Federal Register notice published January 7, 2019

- Addresses issues under 35 U.S.C. § 112 related to the examination of computer-implemented functional claims

- Reinforces good practices in claim interpretation and evaluation of the § 112 requirements

    – Emphasizes that problems with functional claiming can be effectively addressed using long-standing, well-understood principles under § 112

    – Reinforces examination practice with respect to claim interpretation and does not alter any guidance provided in the MPEP

    – Provides a refresher on these topics, in order to enhance the quality of examination

Email questions to **PatentQuality@uspto.gov**

uspto

Training purpose

- Ensure that computer-implemented functional claim limitations are properly treated under 35 U.S.C. § 112(f)

  – Additionally, ensure that functional claim limitations treated under 35 U.S.C. § 112(f) are sufficiently definite under 35 U.S.C. § 112(b) and meet the requirements of 35 U.S.C. § 112(a), as appropriate

- Ensure that computer-implemented functional claim limitations have proper written description and enablement support under 35 U.S.C. § 112(a) in the disclosure of the application

uspto

Background

- The U.S. Court of Appeals for the Federal Circuit ("Federal Circuit") has recognized a problem with broad functional claiming without adequate structural support in the specification in the context of 35 U.S.C. § 112(f).

- The Federal Circuit has also criticized improper functional claiming in the context of 35 U.S.C. § 101.

- Problems with functional claiming can be effectively addressed using long-standing, well-understood principles under 35 U.S.C. § 112.

Email questions to **PatentQuality@uspto.gov**

Review of issues under 35 U.S.C. § 112(f) and 35 U.S.C. § 112(b) related to examination of computer-implemented functional claim limitations

Claim construction

- If a claim limitation recites a term and associated functional language, the examiner should determine whether the claim limitation invokes § 112(f).

- Application of § 112(f) is driven by the claim language, not by the applicant's intent or mere statements to the contrary included in the specification or made during prosecution.

- Apply § 112(f) to a claim limitation if it meets the 3-prong analysis set forth in MPEP § 2181(I).

uspto

3-Prong analysis for identifying § 112(f) claim limitations

A. The claim limitation uses the term, "means" or a term used as a substitute for "means" that is a generic placeholder (also called a nonce term or a non-structural term having no specific structural meaning) for performing the claimed function.

B. The term "means" or the generic placeholder is modified by functional language, typically, but not always linked by the transition word "for" (e.g., "means for") or another linking word or phrase, such as "configured to" or "so that."

C. The term "means" or the generic placeholder is not modified by sufficient structure, material, or acts for performing the claimed function.

See MPEP § 2181(I).

Presumption that § 112(f) applies

- A claim limitation that explicitly uses the term "means" and includes functional language triggers the presumption that § 112(f) applies.

  – Presumption is overcome when the claim further includes the structure necessary to perform the recited function.

uspto

Presumption that § 112(f) does not apply

- A claim limitation that does **not** use the term "means" triggers the presumption that § 112(f) does **not** apply.
  - Presumption is overcome when "the claim term fails to 'recite sufficiently definite structure' or else recites 'function without reciting sufficient structure for performing that function.'"
    - See MPEP § 2181(I) (quoting *Williamson*).
  - A substitute term can act as a generic placeholder for the term "means" where that term would **not** be recognized by one of ordinary skill in the art as being sufficiently definite structure for performing the claimed function.

uspto

Non-structural generic placeholders

- There is no fixed list of generic placeholders that always result in § 112(f) interpretation.

  - Examples of non-structural generic placeholders that may invoke § 112(f) in some situations include: "mechanism for," "module for," "device for," "unit for," "component for," "element for," "member for," "apparatus for," "machine for," or "system for."

- There is no fixed list of words that always avoid § 112(f) interpretation.

- Every case will turn on its own unique set of facts.

Structural modifiers

- A limitation will **not** invoke § 112(f) if a structural modifier further describes the term "means" or the generic placeholder.

- To determine whether a word, term, or phrase coupled with a function denotes structure, check whether:
  - The specification provides a description sufficient to inform one of ordinary skill in the art that the term denotes structure.
  - General/subject matter specific dictionaries provide evidence that the term has achieved recognition as a noun denoting structure.
  - The prior art provides evidence that the term has an art-recognized structure to perform the claimed function.

Making the record clear

- A determination that a claim limitation is being interpreted under § 112(f) should be expressly stated in the office action.

- If applicant does not want to have the claim limitation interpreted under § 112(f), applicant may:

  – Present a sufficient showing to establish that the claim limitation recites sufficient structure to perform the claimed function so as to avoid interpretation under § 112(f), or

  – Amend the claim limitation in a way that avoids interpretation under § 112(f) (e.g., by reciting sufficient structure to perform the claimed function).

Broadest reasonable interpretation (BRI) of a § 112(f) claim limitation

- The BRI of a claim limitation that is being interpreted under § 112(f) is the structure, material, or act described in the specification as performing the entire claimed function and equivalents to the disclosed structure, material, or act.

- If a claim limitation is being interpreted under § 112(f), the specification must be consulted to determine the corresponding structure, material, or act for performing the claimed function.

Computer-implemented § 112(f) claim limitations

- For a computer-implemented § 112(f) claim limitation that performs a specific computer function, the specification must disclose an algorithm for performing the claimed specific computer function.
  - An algorithm is defined, e.g., as a finite sequence of steps for solving a logical or mathematical problem or performing a task. MPEP § 2181(II)(B).
  - 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. MPEP § 2181(II)(B).

- The corresponding structure is not simply a general purpose computer by itself but a computer specially programmed to perform the disclosed algorithm.

uspto

Indefiniteness of computer-implemented § 112(f) claim limitations under § 112(b)

- A computer-implemented § 112(f) claim limitation will be indefinite when the specification:

  - Fails to disclose any algorithm to perform the claimed function.

  - Discloses an algorithm, but the algorithm is not sufficient to perform the entire claimed function(s).

- The sufficiency of the algorithm is determined in view of what one of ordinary skill in the art would understand as sufficient to define the structure and make the boundaries of the claim understandable.

  - Disclosure of an algorithm cannot be avoided by arguing that one of ordinary skill in the art is capable of writing software to perform the claimed function.

Related issues under § 112(a)

- Written description

  - When a claim containing a computer-implemented § 112(f) claim limitation is found to be indefinite under § 112(b) for failure to disclose sufficient corresponding structure (e.g., the computer and the algorithm) in the specification that performs the entire claimed function(s), it will also lack written description under § 112(a).

- Enablement

  - In such situations, consider further whether the disclosure contains sufficient information regarding the subject matter of the claims as to enable one skilled in the pertinent art to make and use the full scope of the claimed invention in compliance with the enablement requirement of § 112(a).

Review of issues under 35 U.S.C. § 112(a) related to examination of computer-implemented functional claim limitations

Written description and enablement support for claims not interpreted under § 112(f)

- Even if a claim is not construed under § 112(f), computer-implemented functional claim language must still be evaluated for sufficient disclosure under the written description and enablement requirements of § 112(a).

- The written description and enablement requirements of § 112(a) are separate and distinct.

Written description requirement of § 112(a)

- The specification must describe the claimed invention in sufficient detail such that one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention at the time of filing.

    - The specification must provide a sufficient description of an invention, not an indication of a result that one might achieve.

- The level of detail required varies depending on the nature and scope of the claims and on the complexity and predictability of the relevant technology. See MPEP § 2163(II)(A)(2).

    - 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.

uspto

Scope of written description

- Compare the scope of the claim with the scope of the description to determine whether applicant has demonstrated possession of the claimed invention.
  - There is no special rule for supporting a genus by the disclosure of a species.
    - Disclosure of the species must be sufficient to convey to one skilled in the art that the inventor possessed the subject matter of the genus.
    - Whether a genus is supported depends upon the state of the art, the nature, and breadth of the genus.

uspto

Written description for result-oriented limitations

- Determine whether the specification discloses the computer and the algorithm(s) 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.

  – Determine whether the specification describes **how** the claimed function is achieved.

  – 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. See MPEP § 2161.01(I).

Enablement requirement of § 112(a)

- The specification must teach those skilled in the art how to make and use the full scope of the claimed invention without **undue experimentation**.

- In determining whether experimentation is undue, *Wands* lists a number of factors to consider:

  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
  8. The breadth of the claims

Email questions to **PatentQuality@uspto.gov**

Scope of enablement

- 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.
    - Consider how broad the claim is with respect to the disclosure, and
    - Whether one skilled in the art could make and use the entire scope of the claimed invention without undue experimentation.

- Determine exactly what each claim recites and what subject matter is encompassed by the claim when the claim is considered as a whole, not when its parts are analyzed individually.

- A rejection for lack of enablement must be made when the specification does not enable the full scope of the claim.

uspto

Scope of enablement (cont.)

- Not everything necessary to practice the invention need be disclosed.

  - A specification need not disclose what is well known in the art.

  - However, applicant cannot rely on the knowledge of one skilled in the art to supply information that is required to enable the novel aspect of the claimed invention when the enabling knowledge is in fact not known in the art.

- This is of particular importance with respect to 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.

Let's chat about...

Examining Computer-Implemented Functional Claim Limitations for Compliance with 35 U.S.C. § 112

Email your questions to PatentQuality@uspto.gov

Bob Bahr
Deputy Commissioner for Patent Examination Policy

Jeffrey West
Senior Legal Advisor, Office of Patent Legal Administration

UNITED STATES
PATENT AND TRADEMARK OFFICE

uspto

Thank you!

Patent Quality Chat

Webinar Series 2019

PatentQuality@uspto.gov

www.uspto.gov