

SUBJECT MATTER ELIGIBILITY WORKSHEET:

This worksheet can be used to assist in analyzing a claim for “Subject Matter Eligibility” (SME) under 35 U.S.C. 101 for any judicial exception (law of nature, natural phenomenon, or abstract idea) in accordance with the [2014 Interim Eligibility Guidance](#). As every claim must be examined individually based on the particular elements recited therein, a separate worksheet should be used to analyze each claim.

For purposes of simplicity in this workshop, the questions below only refer to *abstract ideas* and will be used to walk through several of the [abstract ideas examples](#) published on the website. (A blank generic worksheet is available on the training website.) It is suggested that the worksheet be used with the [2014 Interim Eligibility Guidance Quick Reference Sheet](#), which includes an overview of the analysis, along with the flowchart and form paragraphs referenced herein.

Worksheet Summary: Section I is designed to address the first activity in examination, which is to determine what applicant invented and to construe the claim in accordance with its broadest reasonable interpretation (BRI). Next, referring to the eligibility flowchart reproduced in the *Quick Reference Sheet*, Section II addresses *Step 1* regarding the four statutory categories of invention. Section III addresses *Step 2A* by determining whether the claim is directed to an abstract idea. Section IV addresses *Step 2B* by identifying additional elements to determine if the claim amounts to significantly more than an abstract idea.

Application/Example No. and claim: Example 3, claim 1

I. What did applicant invent?

Review the disclosure to identify what applicant considers as the invention. (MPEP 2103(I))

Halftoning is an image processing technique used to enable certain binary printing or display devices (e.g., fax machines, newspaper printers) to reproduce color or gray scale images.

Applicant invented: An improved halftoning mask called a “blue noise mask” for converting a gray scale image into a binary image.

This can be a brief description and should not merely reproduce the claim. The take away here is that the inventor's masking technique seeks to improve the ability of certain printing or display devices to represent the original color or gray scale image.

Establish the broadest reasonable interpretation (BRI) of the claim.

II. Does the claimed invention fall within one of the four statutory categories of invention (process, machine, manufacture or composition of matter) (Step 1)?

Choose A or B:

A. Yes, the claimed invention is a series of steps, which is a process.

Continue with the SME analysis.

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- B. No, the claimed invention is not one of the four statutory categories. Make a rejection of the claim as being drawn to non-statutory subject matter. Use *Form Paragraphs 7.05 and 7.05.01 available in Custom OACs*.

If the claim could be amended to fall within one of the statutory categories, it is recommended to **continue with the SME analysis** under that assumption. Make the assumption clear in the record if a rejection is ultimately made under *Step 2*, and consider suggesting a potential amendment to applicant that would result in the claim being drawn to a statutory category.

If no amendment is possible, **conclude the SME analysis** and continue with examination under each of the other patentability requirements.

III. Is the claim directed to an abstract idea (Step 2A)?

Courts have found certain concepts to be “abstract ideas”, for example fundamental economic practices, certain methods of organizing human activity, ideas themselves (standing alone), or mathematical relationships/formulae. Assistance in identifying such abstract ideas can be obtained by referring to the [case law chart](#) available on the website and the court case discussions in the 2014 Interim Eligibility Guidance. A claim is “directed” to an abstract idea when the abstract idea is recited (*i.e.*, **set forth** or **described**) in the claim.

Choose A, B, or C:

- A. No, the claim does not recite a concept that is similar to those found by the courts to be abstract. **Conclude SME analysis** and continue with examination under each of the other patentability requirements. If needed, the record can be clarified by providing remarks in the Office action regarding interpretation of the claim (*for example*: the broadest reasonable interpretation of the claim is not directed to an abstract idea.)
- B. Yes, but the streamlined analysis is appropriate as the eligibility is self-evident, and a full eligibility analysis is not needed. Applicant’s claimed invention, explained in Section I above, is not focused on the abstract idea, and the claim clearly does not attempt to tie up an abstract idea such that others cannot practice it. (Refer to the [February 2015 Training Slides](#) for information and examples of a streamlined analysis.) **Conclude SME analysis** and continue with examination under each of the other patentability requirements.

- C.** Yes, identify the limitation(s) in the claim that recite(s) the abstract idea and explain why the recited subject matter is an abstract idea. After identifying the abstract idea, **continue with SME analysis**.

The limitation(s) in the claim that set(s) forth or describe(s) the abstract idea is (are):

The claim recites the step of “generating...a blue noise mask by encoding changes in pixel values across a plurality of blue noise filtered dot profiles at varying gray levels.”

The reason(s) that the limitation(s) are considered an abstract idea is (are):

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As explained in the background, the blue noise mask is generated through an iterative mathematical operation of blue noise filtering various dot profiles and encoding them in an array. The courts have found that mathematical relationships are abstract ideas (See, e.g. Benson and Mackay Radio).

IV. Does the claim as a whole amount to significantly more than the abstract idea (Step 2B)?

- A. Are there any additional elements (features/limitations/step) recited in the claim beyond the abstract idea identified above?

Choose 1 or 2:

1. No, there are no other elements in the claim in addition to the abstract idea.
Conclude SME analysis by making a § 101 rejection and continue with examination under each of the other patentability requirements. Use Form Paragraphs 7.05 and 7.05.015 available in Custom OACs.

Are there elements in the disclosure that could be added to the claim that may make it eligible? Identify those elements and consider suggesting them to applicant:

2. Yes, the claim elements (features/limitations/steps) in addition to the abstract idea are:

The claim additionally recites using a processor to generate the blue noise mask and compare the pixels of a received gray scale image to produce a binary image array. The binary image array is converted to a halftoned image. A first memory location stores the blue noise mask, and a second memory location stores the gray scale image.

Continue with the SME analysis.

- B. Evaluate the significance of the additional elements. Identifying additional elements and evaluating their significance involves the search for an “inventive concept” in the claim. It can be helpful to keep in mind what applicant invented (identified in Section I above) and how that relates to the additional elements to evaluate their significance.

Consider all of the identified additional elements individually and in combination to determine whether the claim as a whole amounts to significantly more than the abstract idea identified above. Reasons supporting the significance of the additional elements can include one or more of the following:

- improves another technology or technical field
- improves the functioning of a computer itself
- applies the abstract idea with, or by use of, a particular machine

Many of these considerations overlap, and more than one can often be applied to describe an element.

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The additional elements must show an "inventive concept". It is not important how the elements are characterized or how many considerations apply from this list. It is important to evaluate the significance of the additional elements relative to applicant's invention.

- *not* a generic computer performing generic computer functions
- *not* adding the words "apply it" or words equivalent to "apply the abstract idea"
- *not* mere instructions to implement an abstract idea on a computer
- effects a transformation or reduction of a particular article to a different state or thing
- adds a specific limitation other than what is well-understood, routine and conventional in the field
 - *not* appending well-understood, routine, and conventional activities previously known to the industry, specified at a high level of generality
 - *not* a generic computer performing generic computer functions
- adds unconventional steps that confine the claim to a particular useful application
 - *not* adding insignificant extrasolution activity, such as mere data gathering
- adds meaningful limitations that amount to more than generally linking the use of the abstract idea to a particular technological environment

Complete (1) or (2) below:

1. Yes, the additional elements, taken individually or as a combination, result in the claim amounting to significantly more than the abstract idea because

The steps of comparing the image to the blue noise mask and converting the resulting binary image array to a halftoned image are combined in the claim with the step of generating the blue noise mask to go beyond the mere concept of simply retrieving and combining data using a computer. In particular, using a processor to compare the blue noise mask to a gray scale image to transform the gray scale image to a binary image array and converting the array to a halftoned image ties the mathematical operation to the processor's ability to process digital images so as to meaningfully limit the blue noise mask operations to digital image processing techniques.

Further, the additional limitations integrate the abstract idea into a practical application that allows the computer to use less memory than required for prior masks, resulting in faster computation time without sacrificing the quality of the

Note that the generic computer components in the claim (i.e. "processor," "first memory," and "second memory") do not alone confer or preclude eligibility.

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Note the improvement does not need to be explicitly recited in the claim.

resulting image as occurred in prior processes, and produces an improved digital image. These are not only improvements to the functioning of the claimed computer itself, but also improvements in the technology of digital image processing.

An explanation of why the claim is eligible is not necessary in the Office action unless there would be a question as to the reasoning such that the record would benefit from clarification.

The claim is eligible.

If any elements, individually or as a combination, amount to the claim reciting significantly more than the abstract idea, **conclude SME analysis** and continue with examination under each of the other patentability requirements. If needed, the record can be clarified by providing remarks in the Office action regarding interpretation of the claim (*for example*: the claim recites the abstract idea of “x”, but amounts to significantly more than the idea itself with the additional element “y” because “abc”.)

2. No, the additional elements, taken individually and as a combination, do not result in the claim amounting to significantly more than the abstract idea because

If no elements, taken individually and as a combination, amount to the claim reciting significantly more than the abstract idea, **conclude the SME analysis** by making a § 101 rejection and continue with examination under each of the other patentability requirements. *Use Form Paragraphs 7.05 and 7.05.015 available in Custom OACs.*

Are there elements in the disclosure that could be added to the claim that may make it eligible? Identify those elements and consider suggesting them to applicant:

Sample Rejection:

Use Form Paragraphs 7.05 and 7.05.015

Claim __ is rejected under 35 U.S.C. 101 because the claimed invention is directed to a judicial exception (i.e., a law of nature, a natural phenomenon, or an abstract idea) without significantly more. Claim __ is directed to

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The claim does not include additional elements that are sufficient to amount to significantly more than the judicial exception because
