

IPR2024-00960
Patent 7,486,807

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC,
Petitioner

v.

138 EAST LCD ADVANCEMENTS LIMITED,
Patent Owner

Case No. IPR2024-00960
U.S. Patent No. 7,486,807

PATENT OWNER'S RESPONSE

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TABLE OF EXHIBITS

Number	Description
2001	Declaration of Nikolaos Papanikolopoulos, Ph.D.
2002	CV of Nikolaos Papanikolopoulos, Ph.D.
2003	Japanese Unexamined Patent Application, First Publication No. Hei 8-221547
2004	Translation of Japanese Unexamined Patent Application, First Publication No. Hei 8-221547 (“Wakayama”)
2005	Certificate of Translation for Japanese Unexamined Patent Application, First Publication No. Hei 8-221547
2006	Deposition Transcript of Robert Stevenson

I. Preliminary Statement

Pursuant to 37 C.F.R. § 42.120, 138 East LCD Advancements Limited (“Patent Owner”) submits the following Response regarding this inter partes review instituted against U.S. Patent No. 7,486,807 (“the ’807 patent”). Because, as set forth below, Petitioner Google LLC has not met its burden of proof, and because Patent Owner presents the Board with facts that demonstrate the patentability of the challenged claims, the claims must be confirmed.

The ’807 patent discloses and claims a novel image retrieving device, method, and computer readable medium storing a computer program for classifying and retrieving an image by detecting an object (for example, a human) in the image and adding a keyword that is associated with the object, which was previously stored in a database, to the image in which the object is detected. EX1001 at 1:13-22. The technology of the ’807 patent solved a critical problem in the prior art, which is to provide a way to improve the efficiency of adding keywords to an input image. *Id.* at 1:53-59. Further, the technology of the ’807 patent makes it possible to retrieve an image which contains a specific object among numerous images accurately and efficiently. *Id.* at 4:18-24. Evidence and argument presented by Petitioner falls short of showing that any of the challenged claims of the ’807 patent are invalid over any of the asserted grounds.

In Ground 1, Petitioner argues that U.S. Patent Application Publication No. 2002/0188602 to Stubler et al. (EX1005, “Stubler”) anticipates or, alternatively renders obvious claims 1-14¹ (the “Challenged Claims”) of the ’807 patent. In Ground 2, Petitioner argues that the combination of Stubler and U.S. Pat. No. 6,038,333 to Wang (EX1006, “Wang”) (collectively the “Asserted References”) renders dependent claims 2-5 and 9-12 of the ’807 patent obvious.

With respect to Ground 1, Petitioner fails to demonstrate that Stubler discloses “an image storing section for storing the image which is supposed to be classified and retrieved together with a keyword in a database and an object of the image being previously contained in the database,” as recited in claim 1. Additionally, Petitioner fails to demonstrate that Stubler discloses “an object information inputting section for confirming by the user, adding, and correcting the keyword which is proposed by the keyword proposing section when the inputted object acknowledged by the object acknowledging section is similar to the object of the image previously contained in the database” as recited in claim 1. Claims 7 and 8 contain similar limitations. *Compare* EX1001, Cls. 1, 7, 8. Thus, Petitioners have failed to demonstrate the relevant claims are unpatentable as anticipated or obvious.

¹ Claims 1, 7, and 8 of the ’807 patent are independent.

With respect to Ground 2, Petitioner only challenges the dependent claims of the '807 patent. Because Petitioner fails to demonstrate that any independent claim is unpatentable under Ground 1, Petitioner necessarily fails to demonstrate that any dependent claim is unpatentable under Ground 2.

For each of these reasons, Petitioner fails to meet its burden of showing unpatentability of any of the Challenged Claims by a preponderance of the evidence. Accordingly, the Board should find the claims of the '807 patent to be unobvious and patentable.

II. Factual Background of the '807 Patent

The '807 patent was originally applied for by Seiko Epson Corporation and titled "Image Retrieving Device, Method for Adding Keywords in Image Retrieving Device, and Computer Program Therefor." EX1001 at INID code (54), (73). The '807 patent issued on February 3, 2009, from a January 23, 2004 application, with Toshinori Nagahashi as the named inventor. EX1001 at INID code (45), (22), (75). The '807 patent claims priority to Japanese patent application 2003-020805, filed January 29, 2003. EX1001 at INID code (30).

A. Summary of the '807 Patent Inventions

The '807 patent claims improvements in the computing field of classifying and retrieving digital image files to facilitate adding and retrieving images using keywords. EX2001, ¶ 43. In particular, the inventions claimed in the '807 patent

improve the way that image retrieving devices associate and store manipulable keyword data characterizing digital image files. *Id.* The inventions claimed in the '807 patent improve the way that prior image retrieving devices operate and handle keywords. Specifically, the inventive image retrieving device stores objects or data representing objects in digital images with associated keywords in a database, detects data representing objects in new, incoming image data, proposes keywords for the new, incoming image data to the user based on the detected data representing objects in the incoming image data and the objects stored in the database, and updates the keyword metadata for stored images based on the user's response. *Id.* The '807 patent's implementation of a computing system with an improved data structure—particularly the way in which the inventions detect objects in new, incoming image data and propose associated keywords based on the detection and the user update operations—improve computing systems compared to other approaches. *Id.* The '807 patent's claimed inventions improve upon, for example, prior computing systems that required users to provide their own keywords to associate with, or describe, digital image data, which was laborious and could result in inconsistent keywords being associated with images containing the same objects.

B. Technical Problems Addressed by the '807 Patent Inventions

The '807 patent addresses several technical problems known in the field of

classifying and retrieving digital image files with characterizing data. *Id.*, ¶ 44. The '807 patent describes five known devices and techniques for manipulating characterization-based metadata in a database for storing digital images, but notes the limitations of each of these prior art systems. *Id.*; EX1001 at 3:1-48. The '807 patent identifies a need for new, improved devices and techniques for computing systems that associate and store manipulable keyword metadata with digital image files. *Id.*

As one example, finding a class of objects is different from finding a particular instance of this class of objects. EX2001, ¶ 45. Finding a class of objects, for instance, involves training computer vision systems to recognize general categories like “table,” “chair,” or “car” based on shared visual characteristics across many examples. *Id.* These object detection systems learn to identify common features that defined the class regardless of variations in size, color, or style. *Id.* This approach may rely on large datasets containing thousands of labeled examples to create models that could generalize well to new instances of the class. *Id.* In such class identification systems, the system did not need to know anything about specific individual objects - it simply needed to recognize the visual patterns that make, for example, a table distinguishable from other furniture. *Id.* Another example is the detection of objects like vehicles in traffic images. *Id.* Classes of objects are nearly infinite. *Id.*

A face is an example of an object of interest in the '807 patent. *Id.*, ¶ 46. Finding a specific face like “Jiro’s face” in the '807 patent represents a fundamentally different challenge than identifying a general object in the “face” class. Finding “Jiro’s face” requires instance recognition (far more complex than class recognition). *Id.* This task demanded that the system identify one particular face that was seen before and was part of the database with unique characteristics that distinguished it from all other faces. The system must learn the distinctive visual features of Jiro’s specific face - perhaps its unique texture, structure, skin color, or identifying marks - rather than the general “face.” *Id.*

C. Technical Solutions and Benefits Provided by the '807 Patent Inventions

The '807 patent claims a technical solution to these problems: a new, improved computing system including a database component and related techniques for associating and storing manipulable keyword metadata with digital image files and objects appearing in the digital image files. *Id.*, ¶ 47. The improved device stores, in a database, digital images and associated keywords describing objects in the images, detects objects (such as people) in the image when the image is classified, and efficiently proposes keywords for a newly inputted image by detecting and matching an object in the newly inputted image with an object stored in the database. *Id.*; EX1001 at 3:51-4:4.

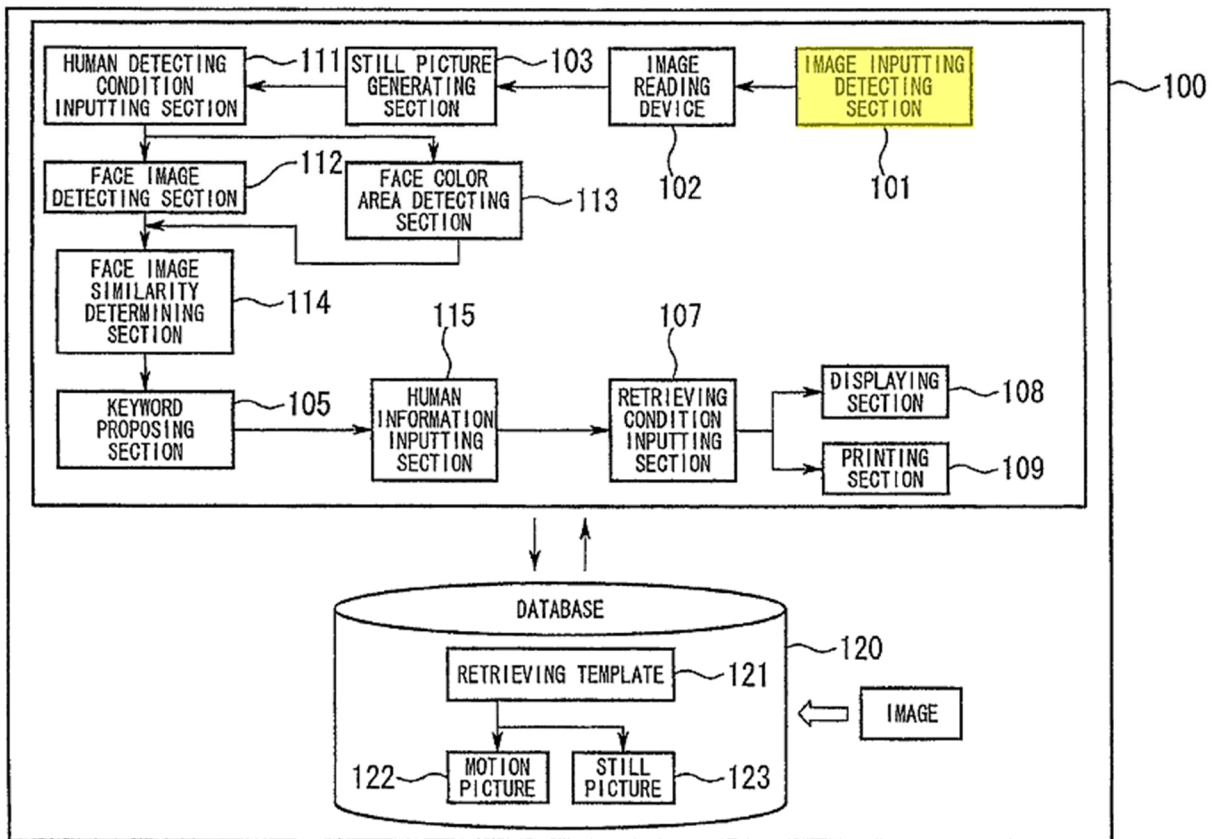
According to the '807 patent, “images which are supposed to be classified and detected are saved in [a] database together with the[ir] keywords by the image storing section.” EX1001 at 4:5-7; EX2001, ¶ 48. An exemplary database entry is shown in Fig. 6 of the '807 patent:

FIG.6

SUPERIOR KEYWORD 1	SUBORDINATE KEYWORD 2	NAME	BIRTHDAY	IMAGE
FAMILY	SECND ELDEST BROTHER	JIRO	JANUARY 1, 2003	IMAGE 1:TAKEN ON JANUARY 1, 2003 IMAGE 2:TAKEN ON FEBRUARY 1, 2003 IMAGE 3:TAKEN ON MARCH 1, 2003

In general, the system can acknowledge “a new predetermined object which is inputted” as part of a new image, for example, a human or a car. *Id.* at 4:7-10; EX2001, ¶ 49. Image detection may be performed by an image inputting detection section (annotated in yellow, below), as shown in Fig. 2.

FIG. 2

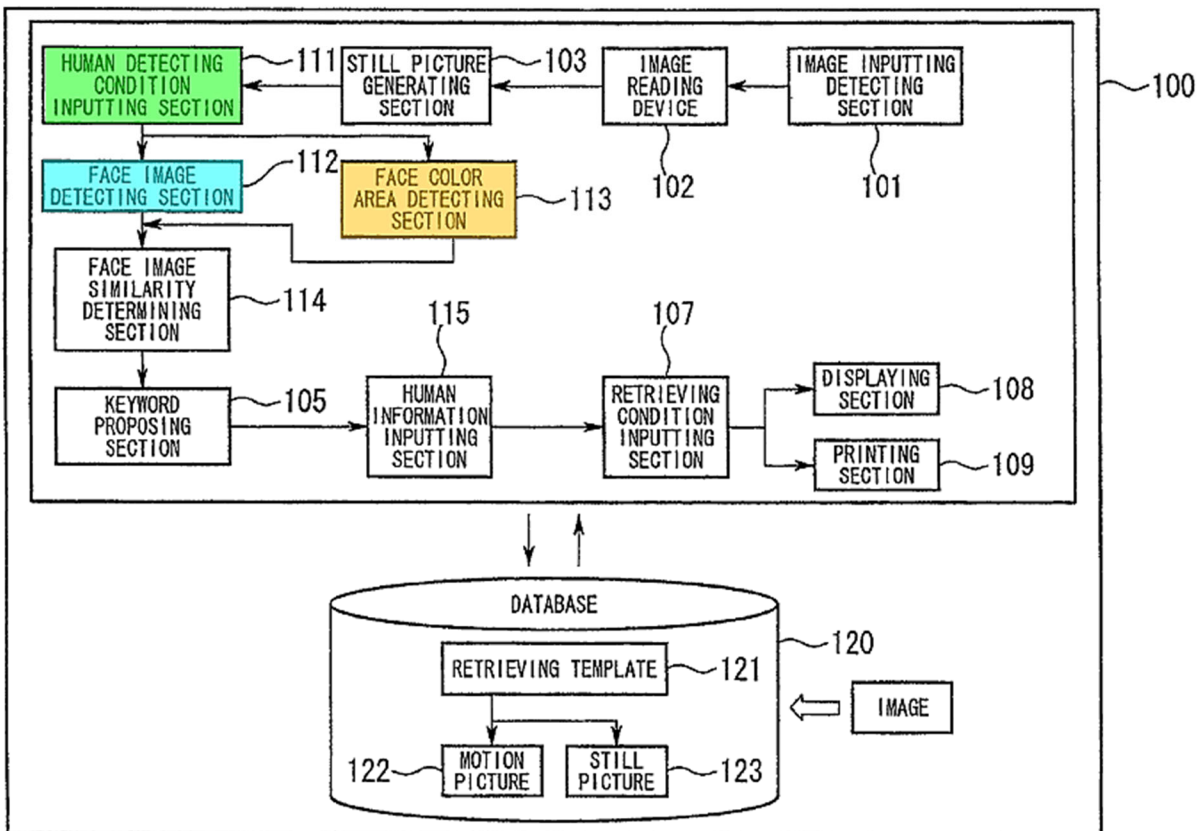


After detecting an image, the system's human detecting condition inputting section "sets up a condition for determining whether or not a human is contained in an image" (annotated in green below) *Id.* at 8:15-17; EX2001, ¶ 50. For example, the system detects the presence of a human face either by detecting a face image (annotated in blue below) or face color (annotated in orange below). *Id.* at 8:17-20; EX2001, ¶ 50. The face image detecting section "detects . . . whether or not a face image is contained in the image by analyzing the image." *Id.* at 8:23-25; EX2001, ¶ 50. The '807 patent describes particular rules for carrying out the face detection,

including through frequency analysis or matching with pre-stored patterns. *Id.* at 8:25-31; EX2001, ¶ 50. As a specific example, the '807 patent discloses that detecting the presence of a face may be done by using skin color detection as disclosed in Japanese Unexamined Patent Application, First Publication No. Hei 8-221547 (“Wakayama”).² *Id.* at 11:22-30; EX2001, ¶ 50.

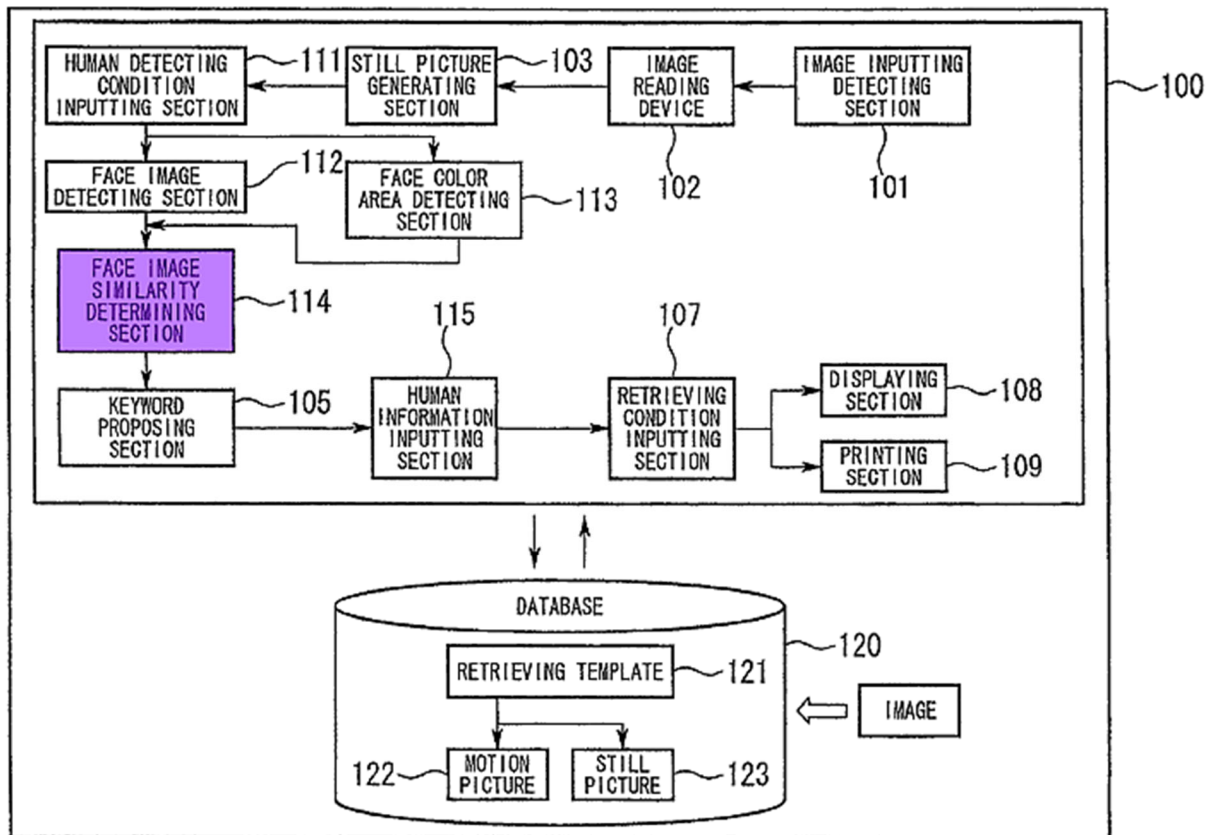
² A copy of Japanese Unexamined Patent Application, First Publication No. Hei 8-221547 is submitted as EX2003. A certified translation of Japanese Unexamined Patent Application, First Publication No. Hei 8-221547 is submitted as EX2004.

FIG. 2



If the system detects a face, it applies further rules to “check whether or not a similar face image to the detected face image is contained” in the database; for instance, the system may match images using image density information. *Id.* at 8:60-67; EX2001, ¶ 51. This is operation is performed, in the example of Figure 2, by the face image similarity determining section, highlighted in purple below.

FIG. 2



According to the '807 patent, the face image similarity determining section may generate a mosaic pattern of the face image (*e.g.*, a representation of an object) which can then be compared to other mosaic patterns (*e.g.*, representations of an object) stored in the database to identify specifically similar faces. *Id.* at 11:58-67; EX2001, ¶ 52. The '807 patent states “it is possible to employ a method which is disclosed in Japanese Unexamined Patent Application, First Publication No. Hei. 8-221547 for determining such similarity by forming a density image of a face so as to classify the category.” *Id.* at 8:63-67; EX2001, ¶ 52; *See* EX2003, EX2004.

Thus, the invention of the '807 patent engages in a two-step process of first acknowledging or detecting the presence of an object in an input image, and then comparing the acknowledged object to other objects stored in the database to identify similar objects. EX2001, ¶ 53. According to the '807 patent, by this process “it is possible to retrieve the image which contains a *specific person* accurately and efficiently among numerous images.” EX1001 at 4:51-54 (emphasis added); *see also, id.* at 4:22-24 (“thus, it is possible to retrieve the image which contains a *specific object* among numerous images accurately and efficiently.” (emphasis added)); EX2001, ¶ 53. In other words, the comparison in the '807 patent is a separate step (*e.g.*, step 114 in Fig. 2) and goes beyond the generic similarity (*e.g.*, broad categorical similarities such as “person” or “car”) between objects determined in the first step (*e.g.*, steps 112 and 113 in Fig. 2). EX2001, ¶ 53. The image similarity determining step uses object similarity determination to expand the generic characterization to identify *specific* objects across images. *Id.* In the parlance of the '807 patent, a “similar” object is a specific object such as a specific person or a specific car (*etc.*) and include those objects within images previously contained in the database that “coincide” with or are “very similar” to the object identified in the detected image. EX1001 at 9:18-22; EX2001, ¶ 53.

If the system acknowledges a similar, specific object (*e.g.*, a face of a specific person) in an input image, the system uses a priority-based ruleset to

retrieve keyword metadata associated with that specific object from the database to present to the user for confirmation or modification. *Id.* at 9:2-6; EX2001, ¶ 54.

When prompted with specific proposed keywords retrieved from the database, the user can select or correct an existing keyword or add a new one associated with the input image. *Id.* at 12:5-10; EX2001, ¶ 54.

The '807 patent therefore recites a new, improved computing system and related techniques to associate and store manipulable keyword metadata with digital image files. EX2001, ¶ 55. In particular, the novel structure of the image input and retrieval system provides a specific, technical solution to recognized shortcomings in prior computing systems that required users to provide their own keywords to associate with digital image data. EX2001, ¶ 55. The system improves on these prior computing systems through a particular arrangement of components that (1) detect specific objects in images when they are first input to the system, (2) retrieve and propose associated keywords from a database based on similarities between the acknowledged objects and stored objects, and (3) propose, update, and/or correct the keywords according to user input as more images containing the same objects) are input to the system. EX2001, ¶ 55.

III. Claim Construction

“Claim terms are generally given their plain and ordinary meanings to one of skill in the art when read in the context of the specification and prosecution

history.” *Hill-Rom Servs., Inc. v. Stryker Corp.*, 755 F.3d 1367, 1371 (Fed. Cir. 2014) (citing *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-13 (Fed. Cir. 2005) (*en banc*)); *see also* 37 C.F.R. § 42.100(b). “Importantly, the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.” *Phillips*, 415 F.3d at 1313.

A. “Similar to the object of the image previously contained in the database” means “sufficiently similar to identify the specific object of the image previously contained in the database.”

Claim 1 of the ’807 patent recites “an object information inputting section for confirming by the user, adding, and correcting the keyword which is proposed by the keyword proposing section when the inputted object acknowledged by the object acknowledging section is *similar to the object of the image previously contained in the database.*” EX1001 at Cl. 1 (emphasis added). Independent claims 7 and 8 contain similar limitations. *See id.* at Cls. 7, 8. A POSITA would have understood the phrase “similar to the object of the image previously contained in the database,” when read in light of the claims, specification, and prosecution history, to mean “sufficiently similar to identify the specific object of the image previously contained in the database.” EX2001, ¶ 56.

1. The Specification of the '807 Patent Supports the Construction.

The specification of the '807 patent supports the construction of “similar to the object of the image previously contained in the database” to mean “sufficiently similar to identify the specific object of the image previously contained in the database.” EX2001, ¶ 57. In particular, the '807 describes the invention in such a way that makes clear that the invention requires *more* than generic similarity between objects. *Id.*

First, the specification describes “similarity” using language that makes clear to a POSITA that the level of “similarity” is higher than generic similarity; it is similarity to the level of a *specific object*. EX2001, ¶ 58. The '807 patent explains that according to the invention “it is possible to retrieve the image which contains a *specific object* among numerous images accurately and efficiently.” EX1001 at 4:22-24 (emphasis added); EX2001, ¶ 58. The exemplary embodiment related to detecting/classifying pictures of humans further supports the understanding that the invention relates to determining similarity of *specific persons*. EX2001, ¶ 58. The '807 patent explains that, according to the invention, “it is possible to retrieve the image which contains a *specific person* accurately and efficiently among numerous images.” *Id.* at 4:51-53 (emphasis added); EX2001, ¶ 58. A POSITA would readily understand that references to a “specific object”

and a “specific person” means more than high-level, categorical similarity.

EX2001, ¶ 58.

The specification reinforces this construction by stating that the image retrieving device determines whether “the face image *coincides* to the face image which is contained previously” or whether “the face image is *very similar* to the face image which is contained previously.” *Id.* at 9:18-20; EX2001, ¶ 59. By using words like “coincides” and “very similar,” the specification makes clear to a POSITA that the ’807 patent uses the term “similar” to mean more than just generic, categorical similarity. EX2001, ¶ 59.

Consistent with the above, the specification further supports the construction by consistently describing a two-step process by which incoming images are analyzed to identify similar (*i.e.*, specific) objects to those previously stored in the database. EX2001, ¶ 60. In the first described step, the image retrieving device detects a *general* type of object, such as a human face.³ EX1001 at 8:14-21; *see also id.* at Fig. 2, reference numerals 111, 112, and 113; EX2001, ¶ 60. As

³ The specific exemplary embodiments of the ’807 patent are presented in the context of human detection. Accordingly, this Patent Owner Response also discusses the invention in that context. The ’807 patent makes clear, however, that the invention is not limited to the human object embodiment. EX1001 at 13:13-20.

explained with reference to Fig. 3, “when a new image is contained in the image retrieving device 100, the image retrieving device 100 tries to detect a human in the contained image. If a human is detected, the image retrieving device 100 expedites a user to input the human information by a display form.” *Id.* at 9:8-13; EX2001, ¶ 60. Similarly, as explained with respect to Fig. 1, “[t]he object acknowledging section 104 acknowledges whether or not a *specific object* is contained in an image by analyzing the image.” *Id.* at 7:29-31; EX2001, ¶ 60.

Once a human is detected, the system proceeds to the second step where the detected human face is compared to determine whether a similar (*i.e.*, specific or “very similar”) human face has previously been stored in the database. *Id.* at 8:60-67; *see also id.* at Fig. 2, reference numeral 114; EX2001, ¶ 61. Specifically, the ’807 patent teaches “[i]f it is determined that the face image *coincides* to the face image which is contained previously or that the face image is *very similar* to the face image which is contained previously, the information for such a human is proposed so as to expedite the user to confirm.” *Id.* at 9:18-22 (emphasis added); EX2001, ¶ 61. A specific method for determining similarity is Wakayama, cited in the ’807 patent. EX1001 at 8:63-67; EX2001, ¶ 61.

The specification’s description of this two-step process further supports the construction because the second step would be unnecessary if “generic” similarity was all that was required. EX2001, ¶ 62. If mere “generic” similarity was all that

“similar” means, then one could stop after detecting a human in the first step and simply present the information for all pictures in the database that also contain a human, regardless of whether or not those pictures contain the same or a very similar human. *Id.* A user would then need to manually add and/or sort through keyword information for potentially hundreds or thousands of persons to determine which specific keywords should be added to the newly input picture. *Id.* Such a process would be highly inefficient in contravention of the ’807 patent’s stated goal of “add[ing] keywords *efficiently* by detecting the object (such as a human) in the image.” EX1001 at 3:32-34 (emphasis added); EX2001, ¶ 62. Thus, a POSITA would understand based on the two-step process of identifying an object generally and then comparing it to previously stored objects to determine whether it is similar to any of the previously stored objects to support the construction of “similar to the object of the image previously contained in the database” to mean “sufficiently similar to identify the specific object of the image previously contained in the database.” EX2001, ¶ 62.

The specification further supports the construction of “similar to the object of the image previously contained in the database” to mean “sufficiently similar to identify the specific object of the image previously contained in the database” through the exemplary database entry described with respect to Figure 6. *Id.*, ¶ 63. As shown below, in Figure 6, database records are detailed to the level of

identifying specific people. In Figure 6, the record is for “Jiro,” the second eldest brother:

FIG.6

SUPERIOR KEYWORD 1	SUBORDINATE KEYWORD 2	NAME	BIRTHDAY	IMAGE
FAMILY	SECND ELDEST BROTHER	JIRO	JANUARY 1, 2003	IMAGE 1:TAKEN ON JANUARY 1, 2003 IMAGE 2:TAKEN ON FEBRUARY 1, 2003 IMAGE 3:TAKEN ON MARCH 1, 2003

According to the two-step process discussed above, when a new image of “Jiro” is detected and ready to be classified, the image retrieving device must first conclude that the image (1) contains an image of a human and (2) contains the *specific person*, “Jiro,” before recommending that that the new image be categorized as containing “Jiro.” *Id.*, ¶ 64. As discussed above, the ’807 patent presents the information for “Jiro,” only “if it is determined . . . that the face image is *very similar* to the face image which is contained previously.” *Id.* at 9:18-22 (emphasis added); EX2001, ¶ 64.

Accordingly, the specification of the ’807 patent consistently uses words and examples that convey to a POSITA that “similar to the object of the image previously contained in the database” means “sufficiently similar to identify the specific object of the image previously contained in the database.” EX2001, ¶ 65.

2. The Claims of the '807 Patent Support the Construction.

The claims of the '807 patent further support the construction of “similar to the object of the image previously contained in the database” to mean “sufficiently similar to identify the specific object of the image previously contained in the database.” *Id.*, ¶ 66.

For example, dependent claim 2 recites that the object acknowledging section includes “a face image similarity determining section” that “detect[s] a similar face image stored in the database.” *Id.*, ¶ 67. This recitation must go beyond mere generic similarity because substantially *all* faces share *generically* similar features (*e.g.*, two eyes, a nose, a mouth, all features placed in roughly the same location, within a certain range of color tones, etc.). *Id.* Thus, if mere generic similarity were all that the claim required, every single face in the database would be determined to be “similar” to every other face. *Id.*

The claims make clear, however, that the claimed device must be able to tell that some faces are *not* similar to others because dependent claim 5, for example, provides additional operations for when just such a determination is made. *Id.*, ¶ 68. Specifically, claim 5 recites that “in a case in which the similar face image *is not detected* by the face image similarity determining section” then the device proposes “the keyword to the image which was inputted last.” EX1001 at Cl. 5; EX2001, ¶ 68. In other words, if the device does not determine that the newly

detected image contains a *specific* face that has previously been stored in the database, then the device will simply propose the same keywords as were entered for the most recently categorized image. *Id.*; EX2001, ¶ 68.

Because all faces are generically similar, and the claims explicitly encompass embodiments in which the device determines that two faces are *not* similar, then the claim term “similar to the object of the image previously contained in the database” must mean more than generic similarity. EX2001, ¶ 69. Thus, the claims further support the conclusion that a POSITA would understand “similar to the object of the image previously contained in the database” to mean “sufficiently similar to identify the specific object of the image previously contained in the database.” *Id.*

IV. Summary of the Asserted References

A. Stubler

Stubler describes a method for generating “semantic labels” for an image based on similarities between metadata of the image and the metadata of previously stored images. EX1005 at ¶ [0009]; EX2001, ¶ 70. Specifically, Stubler recites “a) acquiring an image . . . ; b) automatically extracting metadata from the acquired image . . . ; c) automatically selecting one or more stored images having metadata similar to the extracted metadata . . . ; and d) generating one or more captions or labels for the acquired image from one or more preexisting captions or

labels associate with the selected stored images. *Id.*; EX2001, ¶ 70

Stubler identifies three different types of metadata that can be extracted. “Capture metadata” is information captured at the time the image captured, such as time/date information, GPS data, etc. *Id.* at ¶[0029]; EX2001, ¶ 71. “Global metadata” includes “whole image measurements based on color histograms [or] texture features.” *Id.*; EX2001, ¶ 71 “Region metadata” includes “detected regional features, such as face, skin, sky, grass, open space [or] background vs. foreground.” *Id.* at ¶[0030]; EX2001, ¶ 71. Although Stubler does not itself set forth any detailed algorithm for detecting region metadata, it does incorporate by reference certain other references that purportedly disclose methods of detecting region metadata. *See id.*; EX2001, ¶ 71

According to Stubler, “acquired images are clustered or grouped by metadata similarity (120) based upon one or more of the foregoing objectively measurable or determinable features.” *Id.* at ¶[0031]; EX2001, ¶ 72. Notably, this clustering is done with respect to the “acquired images” **before** any comparison between the acquired images and stored images. *Id.* (“acquired images are clustered Once the data is clustered or grouped, the presence of any similarities are evaluated (130) between the clusters and groups and the images within the database.”); EX2001, ¶ 72. According to Stubler, the clustering (**not** the similarity determinations) may be based on unprocessed metadata or on processed

metadata. *Id.* at ¶[0034] (“For other [sic] types of metadata, the data may already be represented in a form suitable for clustering In other cases, for example that of region metadata, the data may need to be processed for similarity by known algorithms. As an example, determination of facial Similarity is described in M. Turk and A. Pentland, “Eigenfaces for Recognition”, J. Cognitive Neurosci. 3(1) 1991 [(“Turk”).]”)⁴; EX2001, ¶ 72.

After the acquired images are clustered, the acquired images are compared with stored images in the database to determine whether there are any similarities between the clustered images and the images within the database. *Id.* at ¶[0031];

⁴ Contrary to the Petition, Turk is ***not*** incorporated by reference in Stubler because Subler “does not affirmatively incorporate any information” from Turk, nor does it “identify with detailed particularity what specific material it incorporates and clearly indicate where that material is found in the various documents.” *See Apple Inc. v. Int’l Trade Comm’n*, 725 F.3d 1356, 1362 (Fed. Cir. 2013). Therefore, Turk is not considered part of Stubler for determining anticipation. *Id.* Further, Petitioner did not include Turk in the specific grounds of unpatentability, and therefore may not rely on Turk to show that a claim feature was known. *See Bank of America, N.A. v. Nant Holdings IP, LLC*, IPR2021-01332, Paper 40 at 58 (P.T.A.B. Jan. 9, 2023).

EX2001, ¶ 73. Although Stubler states that the database is searched based on “perceptually significant features,” Stubler does not identify any particular method for comparing the acquired images with the stored images in the database to determine whether they are similar or not. Stubler states, in relevant part:

If captioning or semantic labeling of the acquired images based on region metadata is desired (256), the database is searched (258) for any images with region metadata (e.g., face, sky, grass, skin, open space, etc.) similar to that of the acquired images, and repeated as needed (260) for similar regions until all images are analyzed.

Id. at ¶[0040]; EX2001, ¶ 73. While this passage states that the database is searched for images with “similar” region metadata, it does not explain what “similar” means, what level of similarity is required, or the particular methods of determining similarity used. EX2001, ¶ 73.

B. Wang

Wang describes a “person identifier and management system.” EX1006 at Title. The person identifier and management system includes an input/output system, an analysis system, and a profile database. *Id.* at 4:11-13; EX2001, ¶ 74. The input/output system includes a variety of input/output devices, including, for example, a display, a camera, a scanner, and a text input device. *Id.* at 5:13-26; EX2001, ¶ 74. The analysis system includes a face detection and feature extraction system to detect whether an image contains a face and to detect the eye locations of the face to compute face feature data. *Id.* at 6:35-42; EX2001, ¶ 74. The profile

database stores a number of face images and associated face-identifying or person-identifying data. *Id.* at 3:37-39; EX2001, ¶ 74. When the analysis system detects a face and extracts face feature data from an image, it then uses the face feature data to search the profile database for matching face feature data. *Id.* at 5:53-60; EX2001, ¶ 74. If a matching face is found, then the system retrieves the person-identifying information data associated with the matching face feature data. *Id.* at 5:60-64; EX2001, ¶ 74. If no matching face feature data is found, the system presents the user with the option to input the new face in the profile database along with person-identifying information. *Id.* at 6:1-7; EX2001, ¶ 74.

V. Legal Standard

A. Standard for Anticipation

Anticipation requires that a single reference “describe the claimed invention with sufficient precision and detail to establish that the subject matter existed in the prior art.” *Verve, LLC v. Crane Cams, Inc.*, 311 F.3d 1116, 1120 (Fed. Cir. 2002) (emphasis added). For this reason, it has long been understood that ambiguous references do not, as a matter of law, anticipate a claim. *See, e.g., W.L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1554 (Fed. Cir. 1983) (refusing to find claims anticipated when the prior art references were “unacceptably vague”); *see also Wasica Fin. GmbH v. Cont’l Auto. Sys., Inc.*, 853 F.3d 1272, 1284 (Fed. Cir. 2017) (refusing to find claims as anticipated where the prior art reference was

“ambiguous as to whether it discloses the pertinent features” of the challenged claim.).

B. Standard for Obviousness

A claimed invention is obvious “if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person of ordinary skill in the art.” 35 U.S.C. § 103(a). As set out by the Supreme Court, the framework for an obviousness inquiry requires determining “the scope and content of the prior art,” the “differences between the prior art and the claims at issue,” and “the level of skill in the pertinent art.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007) (citing *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17-18 (1966)). “[O]bviousness requires a suggestion of all limitations in a claim.” *CFMT, Inc. v. Yieldup Int’l Corp.*, 349 F.3d 1333, 1342 (Fed. Cir. 2003) (citing *In re Royka*, 490 F.2d 981, 985 (CCPA 1974)). Further, obviousness determinations must be made without “any hint of hindsight.” *Star Sci., Inc. v. R.J. Reynolds Tobacco Co.*, 655 F.3d 1364, 1375 (Fed. Cir. 2011). The patent-in-suit may not be used “as a guide through the maze of prior art references, combining the right references in the right way so as to achieve the result of the claims in suit.” *In re NTP, Inc.*, 654 F. 3d 1279, 1299 (Fed. Cir. 2011).

It is Petitioner’s “burden to demonstrate both that a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success in doing so.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1381 (internal citation and quotation omitted); *see also KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007). Petitioners cannot satisfy their burden through “mere conclusory statements,” but “must instead articulate specific reasoning, based on evidence of record” that supports an obviousness determination. *In re Magnum Oil Tools*, 829 F.3d at 1380; *see also KSR*, 550 U.S. at 418 (“[T]here must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.”).

Moreover, Petitioner cannot satisfy its burden with unsupported and conclusory expert testimony. *See* 37 C.F.R. § 42.65(a) (“[e]xpert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight”).

VI. Petitioner Fails to Demonstrate that Any Claim Is Unpatentable under Ground 1.

In Ground 1, Petitioner asserts that Stubler anticipates claims 1-14 or, alternatively, that Stubler alone renders claims 1-14 obvious. Petitioner fails to demonstrate anticipation or obviousness because Stubler does not disclose or

render obvious multiple claim limitations of independent claims 1, 7, and 8.

A. Stubler fails to disclose “an image storing section for storing the image which is supposed to be classified and retrieved together with a keyword in a database and an object of the image being previously contained in the database.”

Stubler fails to disclose the claimed image storing section because Stubler does not disclose storing an image to be classified together with a keyword and “an object previously contained in the database.” As explained in detail below, the claimed “object previously contained in the database” must be usable to determine whether the image to be classified includes an object that is “similar to the object of the image previously contained in the database,” as a POSITA would understand that phrase. EX2001, ¶ 76. As explained above with respect to claim construction, a POSITA would understand “similar to the object of the image previously contained in the database” to mean “sufficiently similar to identify the specific object of the image previously contained in the database.” *Id.* Stubler does *not* disclose such an object. *Id.* Stubler discloses “region metadata” which merely consists of high-level textual descriptions of particular regions of an acquired image without semantic connections. *Id.* These high-level textual descriptions lack sufficient information to determine whether a region in one image is sufficiently similar to region in another image to identify the *specific* objects in the region. *Id.* In other words, while Stubler may be able to identify high-level, generic similarity

(such as determining that two regions both generally contain images of human beings), Stubler's region metadata lacks the necessary information to identify *specific* objects across images (such as determining that two images both contain the photographer's eldest brother, "Jiro"). *Id.* Because Stubler fails to disclose "an object of the image being previously contained in the database" as a POSITA would understand that term, Stubler fails to anticipate or render obvious this element. *Id.*

1. "An Object of the Image" Must be Usable to Determine Whether the Image to be Classified Includes an Object that is "Similar to the Object of the Image Previously Contained in the Database," as a POSITA would Understand that Phrase.

Claim 1 of the '807 patent requires "an image storing section" that stores three pieces of information. EX1001 at Cl. 1. *First*, the image storage section stores "the image which is supposed to be classified and retrieved." *Id.* *Second*, the image storing section stores "a keyword in a database." *Id.* *Third*, the image storing section stores "an object of the image being previously contained in the database." *Id.*

According claim 1, the "object of the image being previously contained in the database" is compared to an object detected in an acquired image to determine whether the acquired image contains an object that "is similar to the object of the image previously contained in the database." *Id.*; EX2001, ¶ 80. As discussed

above (*supra*, Section III.A), a POSITA would understand the phrase “similar to the object of the image previously contained in the database” to mean “sufficiently similar to identify the specific object of the image previously contained in the database.” EX2001, ¶ 80. This understanding is based on the fact that this phrase must be understood in light of the specification, which repeatedly and consistently states that the invention identifies “specific objects” or “specific persons.” EX1001 at 4:22-24, 4:51-53; EX2001, ¶ 80; *see also, supra*, Section III.A. This understanding is further based on the specifications statements that the invention of the ’807 patent determines whether faces “coincides with” or is “very similar” to an object (*e.g.*, a face image) that was previously stored in the database. *Id.* at 9:18-20; EX2001, ¶ 80; *see also, supra*, Section III.A.

The object stored in the database may be an image of the object itself, or, alternatively, a representation of the object that includes sufficient information about the object to determine whether it is “sufficiently similar to identify the specific object of the image previously contained in the database.” EX2001, ¶ 81. Wakayama, cited by the ’807 patent, provides an example of a representation of an object. EX2001, ¶ 81. Specifically, Wakayama teaches extracting “facial region mosaic feature data.” EX2004 at Abstract; EX2001, ¶ 81. Wakayama discloses extracting such mosaic data at a variety of granularities. For example, Wakayama teaches:

a head portion rough search step of searching for the general position of the head portion in roughly mosaicked human facial image data using a head portion rough search mosaic dictionary to obtain position information near the center of the head portion; a specific portion detailed search step of finely mosaicking a specific portion of the facial image data of a person based on the position information near the center of the head portion . . . and a facial region mosaicking step of accurately determining the position of the facial region on the facial image data based on the face-centered detailed position information, mosaicking the facial region of the facial image data using the obtained facial region position information.

EX2004 at ¶[0008]. By extracting increasingly detailed and finely-tuned mosaic data, the method of Wakayama builds a representation of a face object. *Id.*; EX2001, ¶ 81.

An example is instructive. Fig. 6 (shown below) shows an exemplary database entry for a specific person: “Jiro,” the second eldest brother. EX1001 at Fig. 6, 9:47-54; EX2001, ¶ 82.

FIG.6

SUPERIOR KEYWORD 1	SUBORDINATE KEYWORD 2	NAME	BIRTHDAY	IMAGE
FAMILY	SECND ELDEST BROTHER	JIRO	JANUARY 1, 2003	IMAGE 1:TAKEN ON JANUARY 1, 2003 IMAGE 2:TAKEN ON FEBRUARY 1, 2003 IMAGE 3:TAKEN ON MARCH 1, 2003

The '807 patent teaches “if a record which is shown in FIG. 6 is added such that

images which relate to the ‘second eldest brother’ are contained, it is necessary to produce a keyword for the ‘second eldest brother’ as a subordinate keyword under the superior keyword ‘family’.” *Id.* at 9:58-62; EX2001, ¶ 82. In order to determine that an acquired image contains, specifically, the second eldest brother, the image retrieving device must be able to identify, with specificity, the presence of that specific person. EX2001, ¶ 82

On the other hand, if the objects in the database are merely high level, generic descriptions of certain objects in an image, the image retrieving device would be unable to make such a specific determination. *Id.*, ¶ 83. Stated differently, information that simply describes objects at a high level or generically are not “objects” within the meaning of the claim. *Id.* This is because high-level or generic information cannot be used to determine whether an object in an acquired image is “sufficiently similar to identify the specific object of the image previously contained in the database.” *Id.* High-level, generic descriptions of objects merely indicate a general category of an object, such as “a person,” “a car,” “grass,” or “sky.” *Id.* While these high-level descriptions may be useful for **broadly** categorizing images, they would not be by themselves sufficient to identify **specific** objects (in other words, far more information and analysis are needed to identify a specific object). *Id.* This is because there is substantial variation of objects within these broad categories. *Id.* For example, there are billions of unique

people, thousands of unique car models, thousands of types of grass, and a variety of atmospheric phenomena that can all be broadly categorized as “sky.” *Id.*

Given the clear and consistent description of objects in the specification of the ’807 patent, “an object of the image” must be usable to determine whether an object in an acquired image is “similar to the object of the image previously contained in the database,” as a POSITA would understand that phrase, namely, “sufficiently similar to identify the specific object of the image previously contained in the database.” *Id.*, ¶ 84.

2. Stubler Discloses “Region Metadata,” which Merely Consists of High-Level Descriptions of Particular Regions.

Petitioner relies exclusively on Stubler’s disclosure of “region metadata”⁵ as disclosing “an object of the image being previously contained in the database.” Pet. at 20.

According to Stubler, region metadata includes regional features such as face, skin, sky, grass, open space, and background vs. foreground in a particular

⁵ Stubler generally discusses two other types of metadata—capture metadata and global metadata. The Petition does not point to either of these types of metadata as allegedly disclosing the claimed “object previously contained in the database” that is stored along with the image to be classified and the keyword.

image region. EX1005 at ¶[0030]; EX2001, ¶ 86. Stubler, however, makes clear it is using the term “image region” specifically to refer to “significant characteristic low-level feature[s], such as ‘sky’ or ‘grass’.” *Id.* at ¶[0022]; EX2001, ¶ 86. Moreover, Stubler explains that regional processing yields “high-level feature ***description***” and not the high-level features themselves (or a representation thereof). *Id.* (emphasis added); EX2001, ¶ 86. In other words, Stubler’s region metadata is simply a ***textual description*** of a feature in a particular area of the acquired image. The region metadata is ***not*** the object of the image itself or a representation thereof. EX2001, ¶ 86

This understanding (that region metadata consists merely of high-level textual descriptions) is consistent with the examples that Stubler provides for determining region metadata detection. Stubler states that its high-level region metadata is “derived from lower level data (e.g., flesh color, sky color and distribution, open space).” EX1005 at ¶[0028]; EX2001, ¶ 87. Stubler provides several examples for determining this region metadata, which are discussed below.

First, Stubler identifies Sung 1998 (EX1007) as providing an example of “face detection.” Sung explains that “face *detection* determines the location and size of each human face (if any) in an input image.” EX1007 at 1 (emphasis in original); EX2001, ¶ 88. Thus, face detection as described in Sung simply generates the location and size of an object (in this case, a face), but it is not the

object itself. Sung contrasts face “detection” with a different, albeit “closely related” problem of facial recognition. *Id.*; EX2001, ¶ 88. Sung is not concerned with facial recognition; it deals exclusively with facial detection. *Id.* (“We present an example-based learning approach for **locating** vertical frontal views of human faces in complex scenes.” (emphasis added)); EX2001, ¶ 88. In practical terms, if the method of Sung is employed to detect the presence of a face, the output of that determination is simply a binary “yes” or “no” as to whether a face is present at a particular location in an image. *Id.* at 2 (“the most critical part of our system is the algorithm for classifying window patters as ‘faces’ or ‘nonfaces.’”); EX2001, ¶ 88. At most, Sung is similar to sections 112/113 of Fig. 2 in the ’807 patent, in which the ’807 patent discusses detecting a face image or a face color area. EX2001, ¶ 88. Sung does not disclose an output of a specific face or representation of a face that could then be used to determine similarity with a specific face. *Id.*

Second, Stubler points to Yang 1996 (EX1009) as an example of representing skin color in a chromatic space. Again, the resulting data generated in Yang is not the object itself, but a “chromatic color space” comprising normalized color information (*e.g.*, traditional R, G, and B values) in the absence of brightness data. EX1009 at 2; EX2001, ¶ 89. This data can then be used to detect or locate, generally, the presence of a face in the original image by comparing the chromatic color space information for each pixel to a skin color model. *Id.* at 4; EX2001,

¶ 89. Further, Yang discusses a transformation model over multiple images in a video to track the motion of a face. *Id.* at 5; EX2001, ¶ 89. At no point is the detected face or a representation thereof in Yang ever stored as its own object. EX2001, ¶ 89. Instead, the metadata is the *location* of the face in a series of images. *Id.*; EX2001, ¶ 89. To the extent Yang discusses identifying the “same face” across images, it does so using “a motion model [that] is used to estimate image motion and to predict search window.” *Id.* at 1; EX2001, ¶ 89. Yang does not compare objects in multiple images to determine whether they are similar. EX2001, ¶ 89. Yang, like Sung is more similar to sections 112/113 of Fig. 2 in the ’807 patent, in which the ’807 patent discusses detecting a face image or a face color area. *Id.* Accordingly, Yang simply generates color information that can be used to detect the presence or location of a face and track motion of that face across images, but Yang does not disclose saving the specific object (*e.g.*, the face or a representation thereof) itself. *Id.*

Third, Stubler points to U.S. Pat. App. No. 09/450,190 (“Luo”) (EX1008) as an example of detecting “semantic regions” such as the sky. Luo, like Sung and Yang, is concerned only with determining the *location* of objects. EX1008 at 3:58-60 (“It is an object of this invention to provide a method for detecting *the location* of main subjects within a digitally captured image” (emphasis added)); EX2001, ¶ 90. Luo is silent as to saving the object (or “main subject” in the

terminology of Luo) as recited in claim 1 of the '807 patent. EX2001, ¶ 90. Thus, Luo also only discloses determining the location of a subject, and not saving the subject itself. *Id.* Petitioner does not contend otherwise.

Accordingly, Stubler's "region metadata" is merely high-level, textual descriptions of generic features within a region of an image. Such high-level textual descriptions are based on certain low-level features that are concerned with determining the location of certain objects. EX2001, ¶ 91.

3. Stubler's "Region metadata" Is not Usable to Determine Whether the Image to be Classified Includes an Object that is "Similar to the Object of the Image Previously Contained in the Database," as a POSITA would Understand that Phrase.

Stubler's region metadata is not an "object of the image" because region metadata is merely a high-level, textual description of the basic contents of a region of an image and is not usable to determine similarity between an image to be classified and an object previously contained in the database. *Id.*, ¶ 92.

Specifically, Stubler's region metadata lacks sufficient information to determine whether a newly acquired image is "sufficiently similar to identify the specific object of the image previously contained in the database." *Id.* Each of the categories of "region metadata" discussed in Stubler and cited by Petitioner lacks sufficient information to identify a *specific* object in a newly acquired image. *Id.*

As discussed above, Stubler identifies region metadata as containing "high-

level feature description (clear sky, cloudy sky, mixed sky) and low-level features (color representation, area coverage, location).” EX1005 at ¶[0011]; EX2001, ¶ 93. Any “[s]imilarities between such regions would be calculated on the basis of a combination of high-level and low-level features.” *Id.*; EX2001, ¶ 93. Neither high-level textual descriptions nor low-level features are sufficient to identify a specific object across images, as explained below. EX2001, ¶ 93.

First, high-level textual descriptions cannot be used to identify a specific object in an acquired image. *Id.*, ¶ 94. As the examples in Stubler make clear, high level semantic descriptions are merely textual descriptions of generic categories of objections. Stubler at ¶[0028]; EX2001, ¶ 94. For example, Stubler identifies “face” as one possible high-level semantic description of a region. EX2001, ¶ 94. In other words, the region metadata indicates that an object in the region is *a* face. *Id.* But Stubler is completely silent as to how a semantic indication that a given region includes *a* face would include sufficient information to compare that semantic description to an acquired image to determine whether the acquired image contains *the specific* face. *Id.* At best, the only similarity that the high-level semantic description “face” could identify is that both the image with the region metadata “face” and an acquired image contain *a* face. *Id.* This is insufficient because, as discussed above, the claimed “object” must include information to determine whether the image to be classified is “sufficiently similar to identify the

specific object of the image previously contained in the database.” *Id.*

The same is true of the other high-level semantic descriptions identified in Stubler. *Id.*, ¶ 95. Specifically, general textual descriptions that state that a given region contains a “sky” or “grass” lack sufficient information to determine whether a new image to be classified contains a *specific* sky or *specific* grass. *Id.*

Second, Stubler fails to explain how “low-level” features, such as those discussed above with respect to Sung, Yang, and Luo, can be used to determine whether a newly acquired image is “sufficiently similar to identify the specific object of the image previously contained in the database.” *Id.*, ¶ 96. As discussed above, similar to the first step of the two-step process discussed in the ’807 patent each of these low-level features analyzes a region of an image to make a binary determination of whether the region contains a particular high-level feature. *Id.* While these references take into account information, such as skin color, which may be implicated in a process of identifying a specific face, neither Stubler nor the incorporated references disclose doing so to identify a particular instance of an object in a class. *Id.* While Stubler includes a generic statement that calculation of similarities is “based on” (EX1005 at ¶[0028]) a combination of high-level and low-level features, Stubler provides no additional description explaining that these similarities are used to identify a *specific* object. *Id.* Nor could it, the low and high-level features are determined in such vague detail that similarity could only be

determined in broad categories and not to the granularity of specific instances of an object class. *Id.*

Stubler’s disclosure with respect to Figures 3 and 5 demonstrates the shortcomings of Stubler. *Id.*, ¶ 97. With respect to Figure 3, step 204, Stubler states “After the image representation is built, a search of the database is performed, and similar images are retrieved (204) from the database, and a set of caption or semantic label options are prepared. The retrieval and preparation stage 204 will be further explained in relation to FIG. 5.” EX1005 at ¶[0037]; EX2001, ¶ 97. With respect to Figure 5, Stubler discloses:

If captioning or semantic labeling of the acquired images based on region metadata is desired (256), the database is searched (258) for any images with region metadata (e.g., face, sky, grass, skin, open space, etc.) similar to that of the acquired images, and repeated as needed (260) for similar regions until all images are analyzed.

Id. at ¶[0040]. That is the extent of Stubler’s explanation of how similar images are determined based on region metadata. EX2001, ¶ 97. There is no explanation as to **how** similar images are located, **how** similarity is calculated or determined, or **what** even constitutes “similarity.” EX2001, ¶ 97.

Thus, Stubler fails to disclose that “region metadata” is usable to determine whether the image to be classified includes an object that is “similar to the object of the image previously contained in the database,” as a POSITA would understand that phrase. EX2001, ¶ 98. Namely, Stubler fails to disclose that “region metadata”

can be used to determine whether an acquired image is “sufficiently similar to identify the specific object of the image previously contained in the database.” *Id.*

For these reasons, Stubler’s “region metadata” is not the same as the claimed “object previously stored in the database.”

Because Stubler fails to disclose the claimed “object previously stored in the database,” Stubler neither anticipates nor renders obvious claim 1 of the ’807 patent. Therefore, Petitioner fails to meet its burden of proof in showing that claim 1 is unpatentable in view of Stubler under Ground 1.

B. Stubler fails to disclose “an object information inputting section for confirming by the user, adding, and correcting the keyword which is proposed by the keyword proposing section when the inputted object acknowledged by the object acknowledging section is similar to the object of the image previously contained in the database.”

As with the “image storing section” discussed above, Petitioner fails to meet its burden of proving that Stubler anticipates or renders obvious the claimed “object information inputting section” because Stubler does not disclose a way to determine that “the inputted object acknowledged by the object acknowledging section is similar to the object of the image previously contained in the database,” as a POSITA would understand that phrase. Specifically, Stubler describes only storing region metadata, which is a high-level description or location of an object,

but not the object itself or a representation thereof. EX2001, ¶ 100. Claim 1 recites that the object inputting section is for confirming, adding, or correcting a keyword “when the inputted object acknowledged by the object acknowledging section is similar to the object of the image previously contained in the database.” EX1001, Cl. 1. Thus, claim 1 determines whether the inputted object and the previously stored object are the same by comparing them. EX2001, ¶ 100. Under Stubler’s “region metadata,” this is not possible because there is no previously stored object with which to compare an inputted object. EX2001, ¶ 100. Accordingly, Petitioner fails to demonstrate that Stubler anticipates or renders obvious the claimed “object information inputting section for confirming by the user, adding, and correcting the keyword which is proposed by the keyword proposing section when the inputted object acknowledged by the object acknowledging section is similar to the object of the image previously contained in the database.” EX2001, ¶ 100.

C. Petitioner Fails to Demonstrate that Independent Claims 7 and 8 Are Unpatentable.

Petitioner also fails to demonstrate that independent claims 7 and 8 are unpatentable for the same reasons as claim 1. Claims 7 and 8 contain similar limitations to those discussed above with respect to claim 1. Specifically, claim 7 recites “storing the image which is supposed to be classified and retrieved together with the keyword in a database and *an object of the image being previously*

contained in the database” and “confirming by the user, adding, and correcting the keyword which is proposed by the keyword proposing section *when the inputted object acknowledged by the object acknowledging section is similar to the object of the image previously contained in the database.*” EX1001, Cl. 7 (emphasis added). Similarly, claim 8 recites “storing the image which is supposed to be classified and retrieved together with a keyword in a database and *an object of the image being previously contained in the database*” and “confirming by the user, adding, and correcting the keyword which is proposed by the keyword proposing section *when the inputted object acknowledged by the object acknowledging section is similar to the object in the image previously contained in the database.*” *Id.*, Cl. 8 (emphasis added). Because claims 7 and 8 contain similar limitations as claim 1, Petitioner fails to demonstrate that claims 7 and 8 are unpatentable for the same reasons that Petitioner fails with respect to claim 1.

D. Petitioner fails to demonstrate that dependent claims 2-6 and 9-14 are unpatentable.

Dependent claims 2-6 each depend from claim 1 and dependent claims 9-14 each depend from claim 8. Therefore, claims 2-6 include all of the limitations of claim 1 and claims 9-14 include all of the limitations of claim 8. Accordingly, Petitioner fails to demonstrate a reasonable likelihood that claims 2-6 and 9-14 are unpatentable for the same reasons as claims 1 and 8.

VII. Petitioner Fails To Demonstrate that Any Claim is Unpatentable Under Ground 2.

In Ground 2, Petitioner asserts that Stubler in view of Wang renders dependent claims 2-6 and 9-14 obvious. As discussed above, dependent claims 2-6 each depend from claim 1 and dependent claims 9-14 each depend from claim 8. Therefore, claims 2-6 include all of the limitations of claim 1 and claims 9-14 include all of the limitations of claim 8. Because Petitioner does not challenge independent claims 1 and 8 under Ground 2, Petitioner fails to demonstrate that claims 2-6 and 9-14 are unpatentable for the same reasons as claims 1 and 8.

VIII. Conclusion

Based on the deficiencies identified above, Petitioner has not and cannot meet its burden of proving that any of the Challenged Claims are unpatentable as anticipated or obvious. On the contrary, the evidence confirms the patentability of the Challenged Claims. Thus, Patent Owner respectfully submits that the Board should confirm the patentability of claims 1-14 of the '807 patent.

Dated: April 21, 2025

Respectfully submitted,

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**CERTIFICATE OF COMPLIANCE WITH TYPE-VOLUME
LIMITATION**

I hereby certify that the above Patent Owner's Response consists of 9885 words in 14 point Times New Roman font as calculated by the word count feature Microsoft Office 2016, in compliance with 37 C.F.R. § 42.24(a)(i) and (b)(1). This word count is inclusive of all text and footnotes but not including a table of contents, a table of authorities, mandatory notices under § 42.8, a certificate of service or word count, or appendix of exhibits or claim listing.

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e)(4), the undersigned certifies that on April 21, 2025, a copy of PATENT OWNER'S RESPONSE was served in its entirety by electronic mail on Petitioner's counsel at the following addresses indicated in Petitioner's Mandatory Notices:

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