

IPR2024-00963

Patent Owner's Preliminary Response

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

VUSIONGROUP SA,

Petitioner

v.

HANSHOW TECHNOLOGY CO., LTD.,

Patent Owner

Case No.: IPR2024-00963

Patent No. 10,701,321

PATENT OWNER'S PRELIMINARY RESPONSE

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Claim List¹

Claim 1	
Limitation	Text
[1.pre]	A video surveillance system, comprising:
[1.1]	one or more surveillance cameras that capture image data;
[1.2]	an object detection system that detects objects of interest within the image data and extracts portions of frames that include the detected objects of interest and sends the extracted portions of the frames; and
[1.3.1]	a video analytics system that receives only the extracted portions of the frames of the image data, transmitted over a network, from the object detection system,
[1.3.2]	the image data received by the video analytics system corresponding to objects of interest detected by the object detection system, the video analytics system analyzing the objects of interest;
[1.4.1]	wherein the video analytics system receives the image data from multiple object detection systems after being transmitted over the network and
[1.4.2]	the video analytics system is operated by a different business entity than the one or more surveillance cameras; and

¹ For convenience purposes only, Patent Owner adopt for this Preliminary Response the numbering of claim limitations advanced by Petitioner in the Petition (Paper 1). Patent Owner does not concede the appropriateness of such grouping and numbering of claim limitations.

[1.5.1]	wherein the image data corresponding to objects of interest detected by the object detection system are ranked by the object detection system according to factors including close proximity of the objects of interest to the one or more surveillance cameras, picture quality of the objects of interest, and/or contrast of the objects of interest to create a ranking and
[1.5.2]	the ranking is saved in metadata with the image data and
[1.5.3]	an object analysis system of the video analytics system reads the rankings within the metadata and decides whether or not to analyze the image data.
Claim 2	
Limitation	Text
[2]	The system of claim 1, wherein the object detection system creates cropped images from the image data that include the detected objects of interest and sends the cropped images to the video analytics system.
Claim 3	
Limitation	Text
[3]	The system of claim 1, wherein the image data include video data and the object detection system provides frames from the video data that include the detected objects of interest and sends the frames to the video analytics system as the image data.
Claim 4	
Limitation	Text
[4]	The system of claim 1, wherein the video analytics system includes an object analysis system that analyzes the image data corresponding to objects of interest detected by the object detection system by comparing the image data to reference images to identify

	the objects of interest, by recognizing patterns in the image data, and/or by applying image processing functions, neural network functions, deep learning functions, and/or object classification functions to the image data.
Claim 5	
Limitation	Text
[5]	The system of claim 1, wherein the object detection system is integrated within the one or more surveillance cameras.
Claim 6	
Limitation	Text
[6]	The system of claim 1, wherein the image data corresponding to objects of interest detected by the object detection system are compared by the video analytics system to reference images to identify the objects of interest.
Claim 7	
Limitation	Text
[7]	The system of claim 6, further comprising a database that receives metadata associated with the identified objects of interest from the video analytics system.
Claim 8	
Limitation	Text
[8]	The system of claim 1, further comprising a gateway system that provides access to the video analytics system over a public network.
Claim 9	
Limitation	Text

[9]	The system of claim 8, wherein the object detection system is integrated within the gateway system.
Claim 10	
Limitation	Text
[10]	The system of claim 1, wherein the one or more surveillance cameras each include a gateway system that provides access to the video analytics system over a public network.
Claim 11	
Limitation	Text
[11]	The system of claim 1, wherein the video analytics system receives the image data from the object detection system after being transmitted over an enterprise network.
Claim 12	
Limitation	Text
[12]	The system of claim 1, wherein the video analytics system receives the image data from the object detection system after being transmitted over a cloud network.
Claim 13	
Limitation	Text
[13.pre]	A method for analyzing video in a video surveillance system, the method comprising:
[13.1]	capturing image data from one or more surveillance cameras;
[13.2.1]	detecting objects of interest within the image data via an object detection system; the object detection system extracting portions of frames that include the detected objects of interest and transmitting

	the extracted portions of the frames of the image data over a network,
[13.2.2]	the image data transmitted by the object detection system corresponding to objects of interest detected by the object detection system; and
[13.3]	a video analytics system, which is operated by a different business entity than the one or more surveillance cameras, only receiving the extracted portions of the frames of the image data from the object detection system and analyzing the objects of interest;
[13.4]	the video analytics system further receiving image data from other object detection systems;
[13.5.1]	the object detection system ranking the image data corresponding to objects of interest detected by the object detection system according to factors including close proximity of the objects of interest to the one or more surveillance cameras, picture quality of the objects of interest, and/or contrast of the objects of interest to create a ranking and
[13.5.2]	the ranking is saved in metadata with the image data; and
[13.5.3]	an object analysis system of the video analytics system reading the rankings within the metadata and deciding whether or not to analyze the image data.
Claim 14	
Limitation	Text
[14]	The method of claim 13, further comprising the object detection system creating cropped images from the image data that include the detected objects of interest and sending the cropped images to the video analytics system.
Claim 15	

Limitation	Text
[15]	The method of claim 13, further comprising the image data including video data and the object detection system providing frames from the video data that include the detected objects of interest and sending the frames to the video analytics system as the image data.
Claim 16	
Limitation	Text
[16]	The method of claim 13, wherein the video analytics system analyzing the image data corresponding to objects of interest detected by the object detection system comprises comparing the image data to reference images to identify the objects of interest, by recognizing patterns in the image data, and/or by applying image processing functions, neural network functions, deep learning functions, and/or object classification functions to the image data.
Claim 17	
Limitation	Text
[17]	The method of claim 16, further comprising receiving metadata associated with the identified objects of interest from the video analytics system.
Claim 18	
Limitation	Text
[18]	The method of claim 13, further comprising integrating the object detection system within the one or more surveillance cameras.
Claim 19	
Limitation	Text

[19]	The method of claim 13, further comprising providing access to the video analytics system over a public network via a gateway system.
Claim 20	
Limitation	Text
[20]	The method of claim 19, further comprising integrating the object detection system within the gateway system.
Claim 21	
Limitation	Text
[21]	The method of claim 13, further comprising the one or more surveillance cameras each including a gateway system that provides access to the video analytics system over a public network.

Exhibit List

Exhibit Number	Description
2001	Amended Docket Control Order (Dkt. 48), case 2:23-cv-00617-RWS-RSP in the United States District Court for the Eastern District of Texas, Marshall Division

I. INTRODUCTION

Petitioner VusionGroup SA (“Petitioner” or “Vusiongroup”) challenges the patentability of claims 1-21 (of which claims 1 and 13 are independent) of U.S. Patent No. 10,701,321 (Ex. 1001, “the ’321 Patent”). Petitioner argues that prior art Laganier363 (Ex. 1005), Laganier817 (Ex. 1006), Laganier461 (Ex. 1007), Bedros (Ex. 1008) and Chen (Ex. 1009) in various combinations render claims 1-21 obvious. In particular, Petitioner argues that Laganier363, in combination with Laganier817 and Laganier461, renders independent claims 1 and 13 obvious. Petitioner also argues that Bedros by itself renders independent claims 1 and 13 obvious. Petitioner did not use Chen for any of its arguments related to independent claims 1 and 13.

Petitioner fails to establish a reasonable likelihood that any claim of the ’321 Patent is unpatentable. In particular, Petitioner fails to show that either Laganier363, in combination with Laganier817 and Laganier461, or Bedros, discloses or renders obvious the recited “an object analysis system of the video analytics system reads the rankings within the metadata and decides whether or not to analyze the image data” required by all challenged claims (e.g. [1.5.3], [13.5.3]). Because of this failure by Petitioner to meet the statutory threshold, the Board should deny institution. 35 U.S.C. § 314(a).

II. BACKGROUND

A. Overview of the '321 Patent

The '321 Patent is directed to a system and method for distributed analysis of image data in a video surveillance system. Ex. 1001 at [Abstract]. The Patent discloses a video surveillance system that separates the image data analysis into separate object detection and object analysis functions or systems. *Id.* at 2:9-10. The object detection system detects objects of interest and classes of objects of interest within the image data. *Id.* at 2:11-12. The object analysis system then analyzes the image data including the detected objects of interest, in one example, to recognize (e.g. identify) the detected objects of interest. *Id.* at 2:12-15. As a result, only image data that includes the detected objects of interest needs to be sent over the data network for object analysis by the local or remote video analytics systems. *Id.* at 2:41-44. The object detection system can further limit the image data sent over the data network, for example create cropped images from the image data that include only the detected objects of interest, and send only the cropped images over the data network for processing by the video analytics system. *Id.* at 2:48-54. The image data received by the video analytics system correspond to objects of interest detected by the object detection system, and the video analytics system then analyzes the objects of interest. *Id.* at 2:61-64. The objects of interest detected by the object detection system may also be ranked by the object detection system according to factors

including close proximity of the objects of interest to the one or more surveillance cameras, picture quality of the objects of interest, and/or contrast of the objects of interest. *Id.* at 3:8-13. The rankings are typically saved in the metadata within or with the image data. *Id.* at 6:37-38. The video analytics system may include an object analysis system that compares the image data corresponding to objects of interest detected by the object detection system to reference images to identify the objects of interest. *Id.* at 3:14-17. The object analysis system can read the rankings within the metadata to decide whether or not to analyze the image data. *Id.* at 6:38-40.

Prior art surveillance systems typically include common components such as (i) surveillance cameras that capture image data that are typically then sent over one or more data networks, network video recorders (NVRs) that store the image data, (ii) video analytics systems that analyze the image data, and (iii) control systems that control the surveillance systems and coordinate the operation of the components. *Id.* at 1:16-24. These prior art video surveillance systems can increase the volume of data traffic sent over the networks. *Id.* at 1:46-48. This increased data traffic volume can limit the available bandwidth of the networks, which can cause performance problems for components of the video surveillance systems and other nodes that communicate over the networks. *Id.* at 1:48-53.

One reason for the increased data traffic created by these prior art video surveillance systems is that the surveillance cameras typically send their image data

over the networks for further processing. *Id.* at 1:54-57. For example, the image data are typically sent by surveillance cameras over the network to video analytics systems located within the network. *Id.* at 1:57-59. Another reason for increased data traffic over networks is that advances in video technology have resulted in an increase the resolution of the image data that the surveillance cameras capture and transmit. *Id.* at 1:59-63. Further, because the video analysis methods employed by video analytics systems for analyzing the image data are typically memory processor intensive tasks, the video analytics systems need to be high-performance or specialized computer systems. *Id.* at 1:65-2:2. This typically increases the cost of the video analytics systems, which correspondingly increases the cost of the overall video surveillance systems. *Id.* at 2:2-5. Further, analysis methods are constantly being improved and so the systems must be periodically updated, adding to the cost of the system. *Id.* at 2:5-7.

To resolve the problems of bandwidth and cost, the '321 Patent discloses an innovative video surveillance system as described above. Prior art video surveillance systems typically send all image data including empty scenes and image data not including objects of interest over the data network. *Id.* at 2:44-47. In the innovative video surveillance system of the '321 Patent, the object detection is separated from object analysis, thus only a portion of the image data generated by the surveillance cameras needs to be sent over the network, mitigating the network bandwidth

problem. *Id.* at 2:65-67. Further, the object detection system can create cropped images from the image data that include only the detected objects of interest, and send only the cropped images over the data network for processing by the video analytics system. This further limits the image data sent over the data network to achieve even greater bandwidth savings. *Id.* at 2:48-54. Moreover, because the object detection system and the video analytics system are separate, and because the object detection system can rank the objects of interest detected and save the rankings in the metadata of the image data, and an object analysis system of the video analytics system can read the rankings within the metadata and decide whether or not to analyze the image data, the memory and processor requirements for both the object detection system and the video analytics system can be reduced, thus reducing costs .

An embodiment of the video surveillance system of the '321 Patent is shown in FIG. 5 of the '321 Patent, included below:

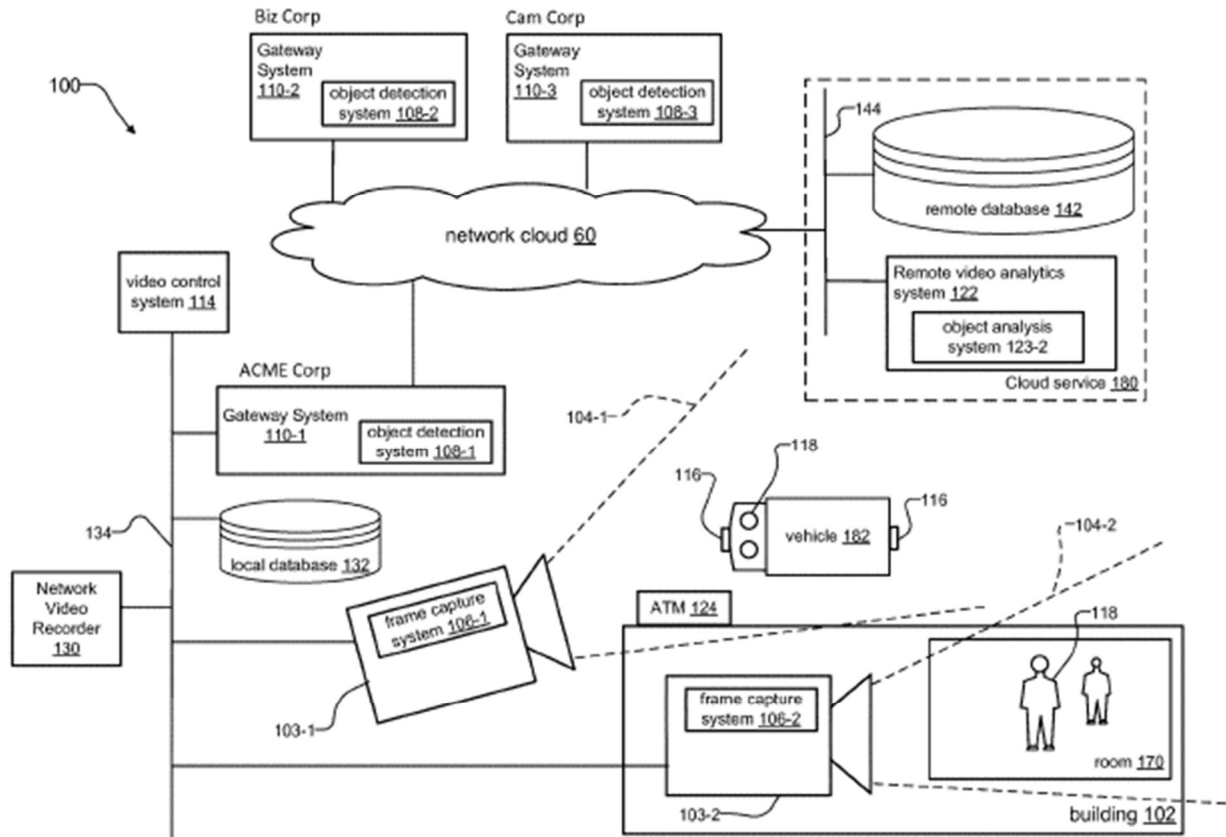


FIG. 5

Ex. 1001, FIG. 5.

Unlike the prior art, the '321 Patent discloses a distributed video surveillance system that separates the object detection system and video analytics system to achieve bandwidth savings, and allows the video analytics system to selectively process image data based on rankings generated by the object detection system and saved in the metadata of the image data.

III. LEVEL OF ORDINARY SKILL

For the purposes of this Preliminary Response only, Patent Owner agrees with Petitioner that a person of ordinary skill in the art (“POSITA”) as of the priority date of the ’321 Patent (September 2016) would have had a bachelor’s degree in electrical engineering, computer engineering, computer science, or a related field, and two or more years of work experience or research related to computer vision, image analytics or automated object recognition methods and systems, and additional education in a relevant field or relevant industry experience may compensate for a deficit in one of the other aspects of the requirements stated above. *See* Paper 1, at 6. Patent Owner reserves all rights to raise a different level of ordinary skill in subsequent filings (if any) in this proceeding, as well as in other forums.

IV. CLAIM CONSTRUCTION

For the purposes of this Preliminary Response only, Patent Owner believes that no claim constructions are necessary and the claims should be given their plain and ordinary meanings. Patent Owner reserves all rights to raise claim construction arguments in subsequent filings (if any) in this proceeding, as well as in other forums.

Petitioner argues that the terms “object detection system,” “video analytics system,” and “object analysis system” should be construed as means-plus-function terms. Paper 1, at 6-8. However, as Petitioner itself admits, “[n]o claim terms in the Challenged Claims use the term ‘means,’ and as such, there is a rebuttable

presumption that §112(f) does not apply.” Paper 1, at 7. Thus, Petitioner bears the burden of going forward with evidence to rebut this presumption. *Apex Inc. v. Raritan Comput., Inc.*, 325 F.3d 1364, 1372 (Fed. Cir. 2003). This burden must be met by a preponderance of the evidence. *Id.* Yet, despite its admission, Petitioner advances no argument to rebut this presumption. Instead, Petitioner simply presents its contentions with the qualifier “[i]f the Board finds the presumption is overcome for any of the ‘system’ limitations.” Paper 1, at 7.

But, “[i]f the party who must bring forth evidence fails to proffer sufficient evidence to meet its burden, the presumption, either for or against the application of § 112, P6, prevails.” *Apex*, 325 F.3d at 1372. Here, Petitioner fails to offer *any* evidence to meet its burden. Thus, the presumption prevails and Petitioner’s argument for means-plus-function constructions of these three terms fails.

Accordingly, all the claims of the ’321 Patent should be given their plain and ordinary meanings.

V. INSTITUTION SHOULD BE DENIED ON ALL GROUNDS BECAUSE NO GROUND RENDERS CLAIM 1 OBVIOUS

The Board should deny institution under 35 U.S.C. § 314(a) because the Petition does not demonstrate a reasonable likelihood that any challenged claim is unpatentable. In particular, no ground renders independent claim 1 obvious. Because the Petition does not advance separate obviousness arguments against independent claim 13, and instead relies on the obviousness arguments against claim 1 (*see* Paper

1, at 30-31, 71-72), no ground renders independent claim 13 obvious either. Because no ground renders any of the independent claims obvious, *a fortiori* no ground renders any of the dependent claims obvious. *See In re Fine*, 837 F.2d 1071, 1076 (Fed. Cir. 1988) (“Dependent claims are nonobvious under section 103 if the independent claims from which they depend are nonobvious.”).

A. The Identified Components of Laganiere363, Laganiere817 and Laganiere461 Fail To Meet Specific Claim Requirements.

Ground 1 does not render Claim 1 obvious because Petitioner fails to show that Laganiere363, in combination with Laganiere817 and Laganiere461, discloses or renders obvious at least the claimed “an object analysis system of the video analytics system reads the rankings within the metadata and decides whether or not to analyze the image data” (*e.g.* limitation [1.5.3]).

Petitioner argues that “a first processor disposed at the source end” that performs “first video analytics for detecting the event of interest in a portion of the video data” of Laganiere 363 ([0040]) discloses “an object detection system at the source end,” that is, the “object detection system” limitation of ’321 Patent (*e.g.* limitation [1.2]). Paper 1, at 14. Petitioner further argues that Laganiere 363’s central server 108 that receives the region of video data containing the identified license plate from the source end (Ex. 1005, [0025], [0040-41]), together with each of Laganiere 363’s video analytics systems 120-124, that “performs a different video

analytics function” (Ex. 1005, [0029-30]), discloses the “video analytics system” limitation of ’321 Patent (e.g. limitation [1.3.1]). Paper 1, at 17, 20.

Petitioner then argues, for the limitation “an object analysis system of the video analytics system reads the rankings within the metadata and decides whether or not to analyze the image data” ([1.5.3]):

Following transmission of the image data (i.e., face log) Laganriere363’s central server reads the data and performs operations on it based on the metadata. Laganriere363, ¶37. Laganriere817 discloses higher quality images are better for performing facial recognition. Laganriere817, 1:24-26; *see Laganriere363*, ¶41 (discussing selection of “suitable” license plate images for downstream reading). POSITAs would have found it obvious to combine these references’ teachings for the central server to start with the highest quality images when performing facial recognition. *Houh*, ¶114. In so doing, the central server would read the rankings within the metadata to decide whether or not to analyze the image data with the same structure. *Id.*

Paper 1, at 28.

Noticeably, Petitioner failed to cite any content from Laganriere363 *or* Laganriere817 to support its assertion that “[i]n so doing, the central server would read the rankings within the metadata to decide whether or not to analyze the image data with the same structure.” Instead, Petitioner cites only its expert’s, Dr. Houh’s, declaration. The relevant paragraph reads:

Following transmission of the image data (i.e., face log) Laganriere ’363 explains that the central server reads the data and performs operations on it based on the metadata. Laganriere ’363, ¶37. Laganriere ’817 discloses that higher

quality images are better for performing facial recognition. Laganier '817, 1:24-26; *see also* Laganier '363, ¶41 (discussing selection of “suitable” license plate images for downstream reading). It would have been obvious to a POSITA combining the teachings of these references for the central server to start with the highest quality images when performing facial recognition. In so doing, the central server would read the rankings within the metadata to decide whether or not to analyze the image data using facial recognition. Moreover, because the central server performs the functions, Laganier '363 discloses or suggests the same or equivalent structure to that described by the '321 patent for performing the claimed functions, as I explained above in paragraph 88.

Ex. 1003, at ¶114.

But Dr. Houh simply reiterates Petitioner's argument and does not offer any support for his assertion that “[i]n so doing, the central server would read the rankings within the metadata to decide whether or not to analyze the image data using facial recognition.”

Thus, Petitioner's only evidence cited in support of its assertion is a portion of the declaration of Dr. Houh, which merely parrots the same statement without evidence. The Board should afford such unsubstantiated testimony little weight in its analysis. *See Vyripharm Enterprises, Inc. v. Metrc LLC*, IPR2021-01015, Paper 7, at 23 (P.T.A.B. Nov. 23, 2021).

Petitioner offers no evidence other than Dr. Houh's unsubstantiated, *ipse dixit* assertion for its mapping of limitation [1.5.3] because it can not. Laganier363 does not disclose the central server “read[ing] the rankings within the metadata to decide

whether or not to analyze the image data.” In fact, Laganier363’s central server does not “decide whether or not to analyze the image data.” Instead, it “provides the video data to the plurality of video analytics engines 120-124” over some communication network. Ex. 1005, [0029]. In Laganier363, the metadata is used to “describ[e] the event of interest that was detected using video analytics,” or to “specif[y] a particular video analytics engine to be used to perform additional video analytics processing of the preprocessed data.” Ex. 1005, [0037]. In the latter scenario, “[t]he central server 108 interprets the metadata, and based thereon a video analytics engine is selected for performing the additional video analytics processing of the pre-processed data.” Ex. 1005, [0037]. Thus, Laganier363 is clear that the central server *always* provides the image data to the plurality of video analytics engines for analysis, and it at most uses the metadata to decide *which* video analytics engine to use, but never to decide whether or not to analyze the data.

Laganier363’s central server does not need to decide whether or not to analyze the data, because, as Laganier363 has disclosed: “Optionally, the first video analytics selects a frame with a suitable license plate image. Thus bandwidth is reduced since only one or a few frames having a suitable quality relative to the other frames is transmitted.” Ex. 1005, [0041]. Thus, in Laganier363, it is the “first video analytics”, performed “using a first processor disposed at the source end” for

“detecting the event of interest in a portion of the video data” (Ex. 1005, FIG.5 and [0040]), that decides whether or not a particular frame should be further processed.

In Laganier363's method, every image frame received by the central server (which Petitioner maps to a part of “video analytics system”) would have already passed a pre-filtering step carried out by the first processor disposed at the source end (which Petitioner maps to “object detection system”), and have already been determined by such first processor as “suitable” (Ex. 1005, [0041]) for further processing. Accordingly, in Laganier363's method, the central server no longer needs to filter the image data it receives, but can simply proceed to processing. This is the opposite of the '321 Patent, wherein the object detection system bundles ranking information with the image data in order that an object analysis system of the video analytics system can read the ranking information and decide whether or not to analyze the image data. In other words, in Laganier363, the filtering happens before the image leaves the first processor (which Petitioner maps to “object detection system”), while in the '321 Patent, the filtering happens after the image arrives at the video analytics system. Such fundamental difference renders Petitioner's unsupported mapping impossible.

Petitioner further argues that

Additionally, Laganier817 discloses purging lower quality images from the face log once a face (or license plate) has been recognized. *Laganier817*, 10:50-54. By purging lower quality images from the face log, the central

server would also decide not to analyze those images based (at least in part) on their quality rankings because they would not have been analyzed to perform the recognition. *Houh*, ¶115.

Paper 1, at 28.

However, Laganiere817 does not disclose any “central server.” In fact, Laganiere817’s method and system can be performed on “a non-transitory computer readable medium.” Ex. 1006, [claim 20]. That is, Laganiere817 does not envision a distributed system, with “central server” and other components, at all. The “central server” can only come from Laganiere363.

In fact, Yet Petitioner’s own argument precludes the possibility of Laganiere363’s central server performing Laganiere817’s purging. Petitioner argues that “POSITAs would have been motivated to use Laganiere817’s face log in Laganiere363 to reduce the amount of data sent to Laganiere363’s central server and to ensure only high-quality images are used for subsequent license plate or facial recognition.” Paper 1, at 26 (discussing limitation [1.5.1]). Regardless of whether this motivation to combine is sufficient, under Petitioner’s argument, the POSITA would look to implement Laganiere817’s purging *before* the data is sent to Laganiere363’s central server, “to reduce the amount of data sent to Laganiere363’s central server.” Thus, under Petitioner’s own argument, the purging happens *outside* its so-called Laganiere363-Laganiere817 combination’s central server. Petitioner

never explains how the central server in its so-called Laganiere363-Laganiere817 combination now would “purg[e] lower quality images from the face log.”

Apart from this inconsistent reasoning, Petitioner supports this argument with nothing more than its expert declaration, which simply parrots the petition's arguments without any additional evidentiary support. Thus, the declaration is entitled to little weight. *See Vyripharm*, Paper 7, at 23.

Furthermore, Laganiere817's method first performs face detection and tracking (712), then performs quality analysis (714), then stores face image to face history (716), purges face history after such storing (718, 722), and does not perform any further analysis after the purging. Ex. 1006, FIG. 7.

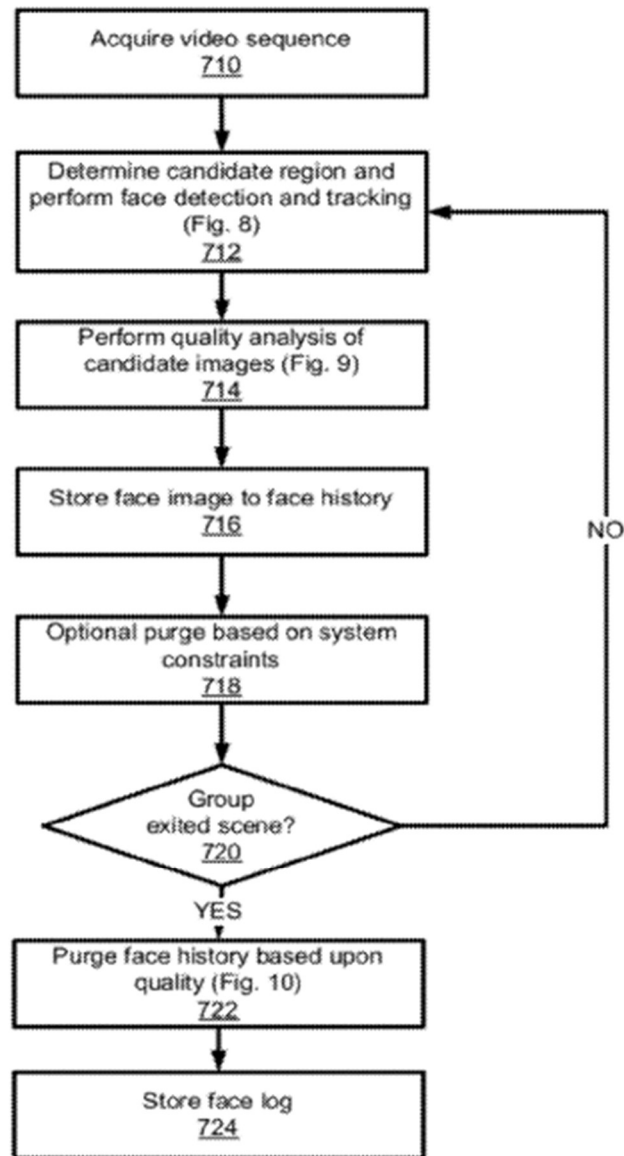


Fig. 7

Ex. 1006, FIG. 7.

Thus, contrary to Petitioner's arguments, Laganier817 does not disclose any decision not to analyze images. Instead, Laganier817 analyzes every image

regardless of its quality score. In fact, Laganieri817's step 714 performs "face detection", with details shown in FIG. 8 of Laganieri817.

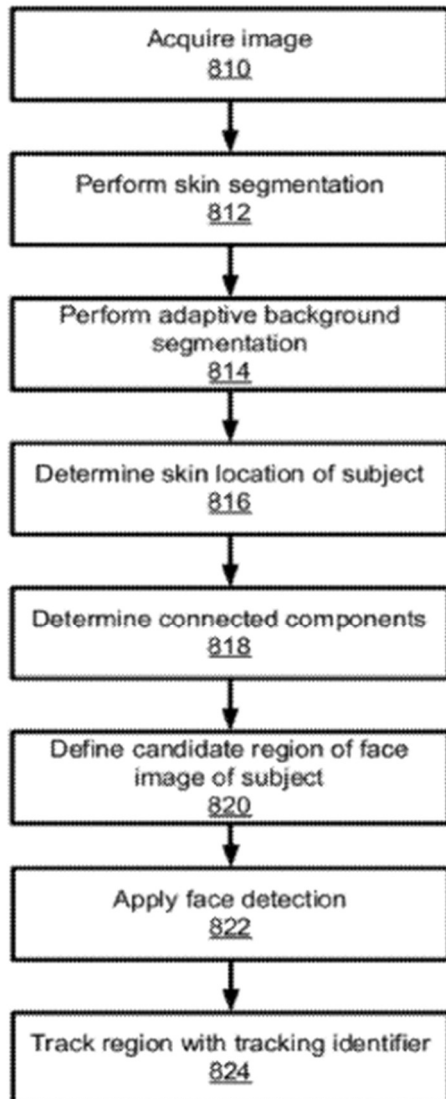


Fig. 8

Ex. 1006, FIG. 8.

A POSITA would recognize that such detailed face detection is equivalent to the facial recognition performed in Laganieri363's Video Analytics_3 124. *See* Ex. 1005, [0030], FIG. 2.

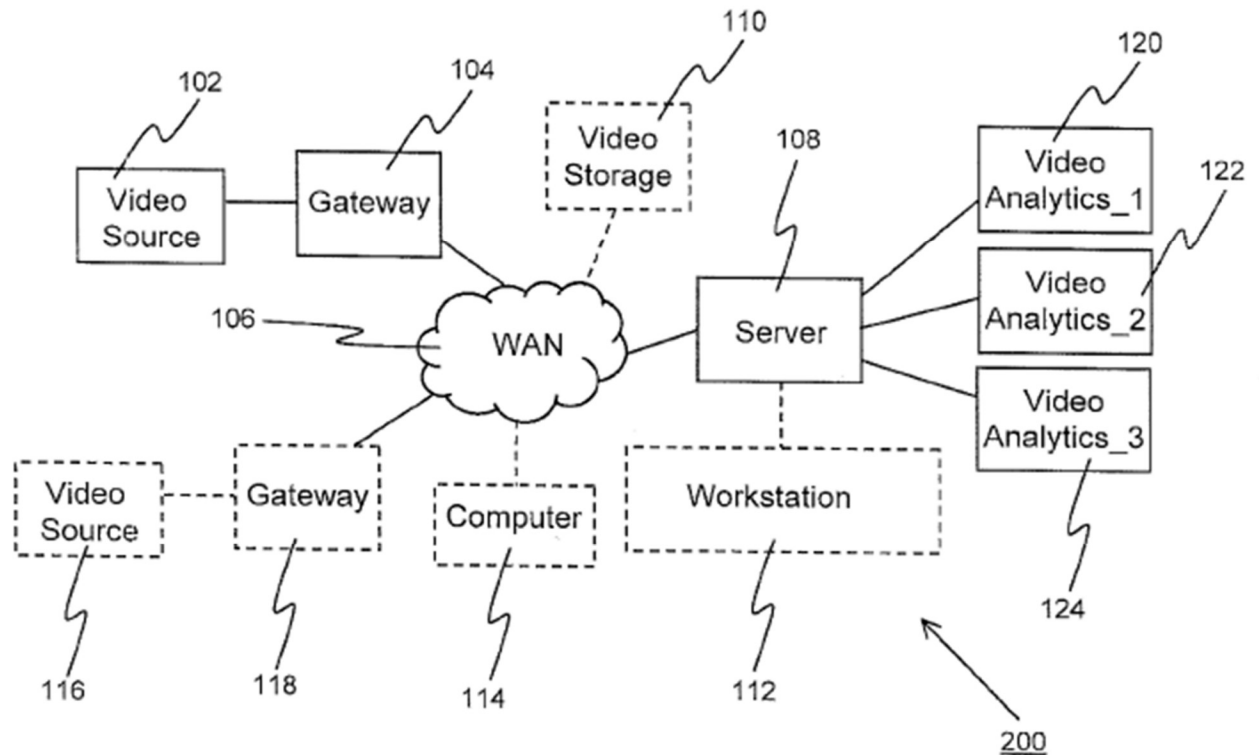


Fig. 2

Ex. 1005, FIG. 2.

Thus, Laganieri817 discloses that face detection, an equivalent process to Laganieri363's facial recognition (a kind of video analytics, *see* Ex. 1005, [0030]) is *always* performed. This means that Laganieri817 has to analyze every image. Petitioner's assertion "[the images] would not have been analyzed to perform the recognition" (Paper 1, at 28) is therefore contrary to Laganieri817's explicit

teachings. Since Laganiere817 does not teach any decision whether or not to analyze images, a POSITA would not find it obvious to create such a decision process out of nowhere and modify Laganiere363's central server to include it. Further, other from this misinterpretation of Laganiere817, Petitioner's expert provides no rationale or explanation to support why a POSITA would make this process-altering modification to Laganiere363.

In addition, Petitioner has not established sufficient motivation to combine Laganiere363 and Laganiere817 in its argument regarding limitation [1.5.3]. Petitioner argues that "Laganiere363 does not describe how frames having a suitable quality are selected, what is included in the metadata, or how the central server uses the metadata. POSITAs would have thus looked to other references, such as Laganiere817, that address these teachings." Paper 1, at 23. But, as discussed above, Laganiere363 discloses what is included in the metadata and how the central server uses the metadata. Ex. 1005, [0037]. Thus, a POSITA would not need to look anywhere else for those teachings. Further, Laganiere363 is clear that the selection of frames having a suitable quality happens in the first processor disposed at the source end, in order to reduce bandwidth. Ex. 1005, [0041]. Even if a POSITA would look to Laganiere817 to determine "how frames having a suitable quality are selected", the POSITA would look to implement Laganiere817's teachings in the first processor of Laganiere363, where the selection happens. Petitioner never

explains how a POSITA would look to implement Laganier817's teachings in the central server of Laganier363, which does not need to determine how frames having a suitable quality are selected. Moreover, as discussed above, Petitioner's so-called motivation to combine in its discussion of [1.5.1] is inconsistent with the limitation [1.5.3].

Petitioner further argues that Laganier461 cures the defect of its so-called Laganier363-Laganier817 combination. Paper 1, at 28-30. Petitioner cites Laganier461's disclosure that "under control of the central server 108, portions of the retrievably stored portion of the video data, which differ from the identified subset of the portion of the video data, are deleted from the memory storage device 118" (Ex. 1007, [0025]) and argues that "POSITAs would have been motivated to use Laganier461's processing at the central server to further reduce the amount of data the central server must process, thereby speeding up the recognition process." Paper 1, at 29-30.

However, Petitioner ignores Laganier461's disclosure, which Petitioner itself cites, that "the central server controls a process for selectively erasing portions of video data that are stored in the video storage device, *based on a result of video analytics processing of the video data.*" Ex. 1007, [0010]. Further, Laganier461 discloses that:

The first video data, either with or without preprocessing, is also provided via gateway 104 and WAN 106 to central

server 108. At 304 video analytics is performed on the first video data at other than the source end. For instance, video analytics processing is performed using a not illustrated processor of central server 108. Optionally, the central server 108 has access to a plurality of different video analytics engines, which may be selected individually for performing the video analytics processing of the first video data. Alternatively, the central server 108 comprises a plurality of separate processors, each processor being capable of performing different video analytics processing of the first video data. In particular, the video analytics processing is performed to identify a first portion of the first video data that is representative of the event of interest. At 306, under control of central server 108, portions of the first video data other than the first portion are deleted from the memory storage device 110.

Ex. 1007, [0024].

A flow chart of this disclosure is provided in FIG. 3 of Laganriere461.

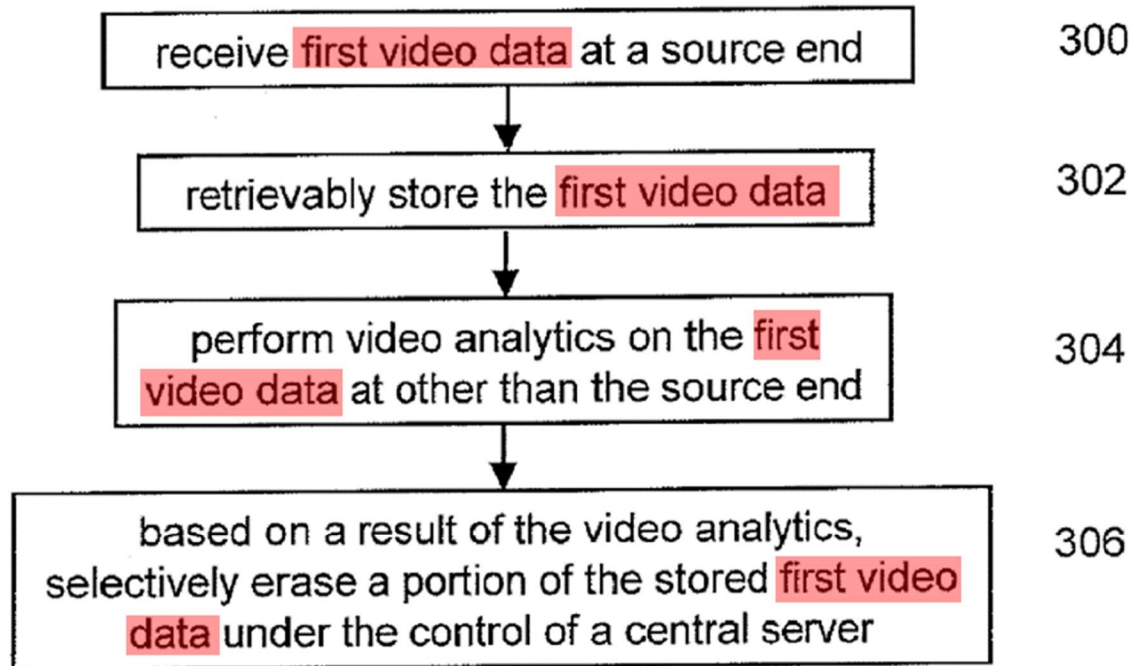


Fig. 3

Ex. 1007, FIG. 3 (annotated).

Laganiere461 is clear that its central server 108 will *first* perform video analytics on first video data that it received, *then*, based on a result of the video analytics on the first video data, selectively erase a portion of the stored first video data. Thus, in Laganiere461, the central server will *always* perform video analytics on video data. This is consistent with Laganiere363's method, where the central server 108 *always* analyzes the image data (as discussed above). Laganiere461 does not cure the defects of the so-called Laganiere363-Laganiere817 combination.

Instead, it *reinforces* Laganiere363's method to have the central server always perform analytics on incoming data, contrary to limitation [1.5.3] of the '321 Patent.

Further, Petitioner's argument for motivation to combine is flawed. Petitioner argues that "POSITAs would have been motivated to use Laganiere461's processing at the central server to further reduce the amount of data the central server must process." Paper 1, at 29. But this is wrong. Laganiere461's processing does not reduce the amount of data the central server must process, as Laganiere461's central server processes all incoming data before selectively erasing a portion. Further, Laganiere363 has disclosed its own method to reduce the amount of data the central server must process – by pre-filtering the data in the first processor at the source end, before the data even reaches the central server (*see* Ex. 1005, [0041], discussed above. There is no motivation for a POSITA to use Laganiere461's *processing* at the central server to reduce the amount of data Laganiere363's central server must *process*, in particular where Laganiere363 already discloses its own, incompatible, method for achieving this objective.

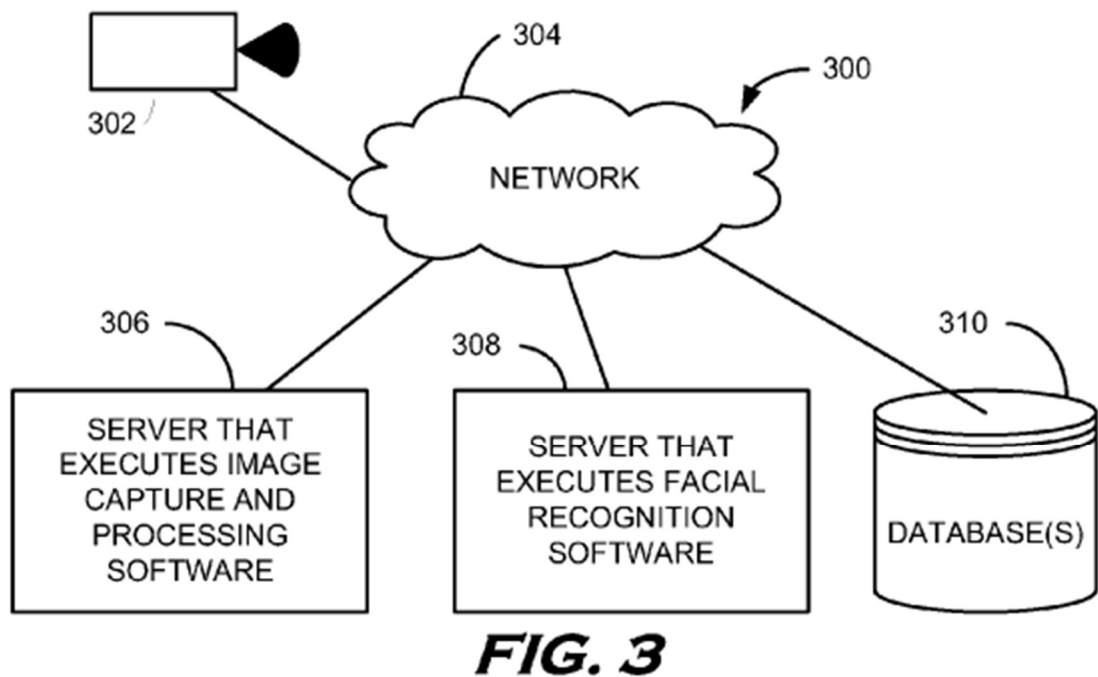
Therefore, Petitioner's mapping for "an object analysis system of the video analytics system reads the rankings within the metadata and decides whether or not to analyze the image data" fails, and Petitioner cannot demonstrate a reasonable likelihood that Ground 1 renders claim 1 obvious. For reasons discussed at the

beginning of this Section V, this means Petitioner cannot demonstrate a reasonable likelihood that Ground 1 renders any claim obvious.

B. The Identified Components of Bedros Fail To Meet Specific Claim Requirements.

Ground 2 does not render Claim 1 obvious because Petitioner fails to show that Bedros discloses or renders obvious the claimed “an object analysis system of the video analytics system reads the rankings within the metadata and decides whether or not to analyze the image data” (*e.g.* limitation [1.5.3]).

Petitioner argues that the server 306 of Bedros discloses the “object detection system” limitation of the '321 Patent (*e.g.* limitation [1.2]). Paper 1, at 53. Petitioner further argues that the server 308 of Bedros discloses the “video analytics system” limitation of the '321 Patent (*e.g.* limitation [1.3.1]). Paper 1, at 57. These two servers are depicted in FIG. 3 of Bedros.



Ex. 1008, FIG. 3.

Petitioner then argues, for the limitation “an object analysis system of the video analytics system reads the rankings within the metadata and decides whether or not to analyze the image data” ([1.5.3]):

Multiple servers 306 submit images to server 308 that “executes the facial recognition software.” §VII.C.2.f; *Bedros*, 8:46-49. Specifically, after processing in optional processing layer 220 is complete, facial images 116 are submitted to the facial image queue (*id.*, 7:19-21), where queue processing “includes submitting 242 images from the queue to the facial recognition program and receiving 244 facial recognition data in response” (*id.*, 7:26-30). *Bedros* discloses “submitting 230 the facial image 116 to the queue may include **removing** and reordering facial images 116 within the queue awaiting submission to the facial recognition program.” *Bedros*, 7:21-25. Thus, certain facial images 116 may be removed from the queue of images awaiting processing by the facial recognition

software as subsequent images arrive from any of servers 306. POSITAs would have understood this sort of queue processing—reordering the queue as new images arrive from different places—would have taken place at server 308 (“*video analytics system*”), where all quality scored images would be stored together for processing with the same structure. *Houh*, ¶225. POSITAs would have thus understood the facial image queue resides and is managed on server 308, where facial recognition takes place, because ranked images are received from multiple servers 306. *Id.*

Paper 1, at 68-69.

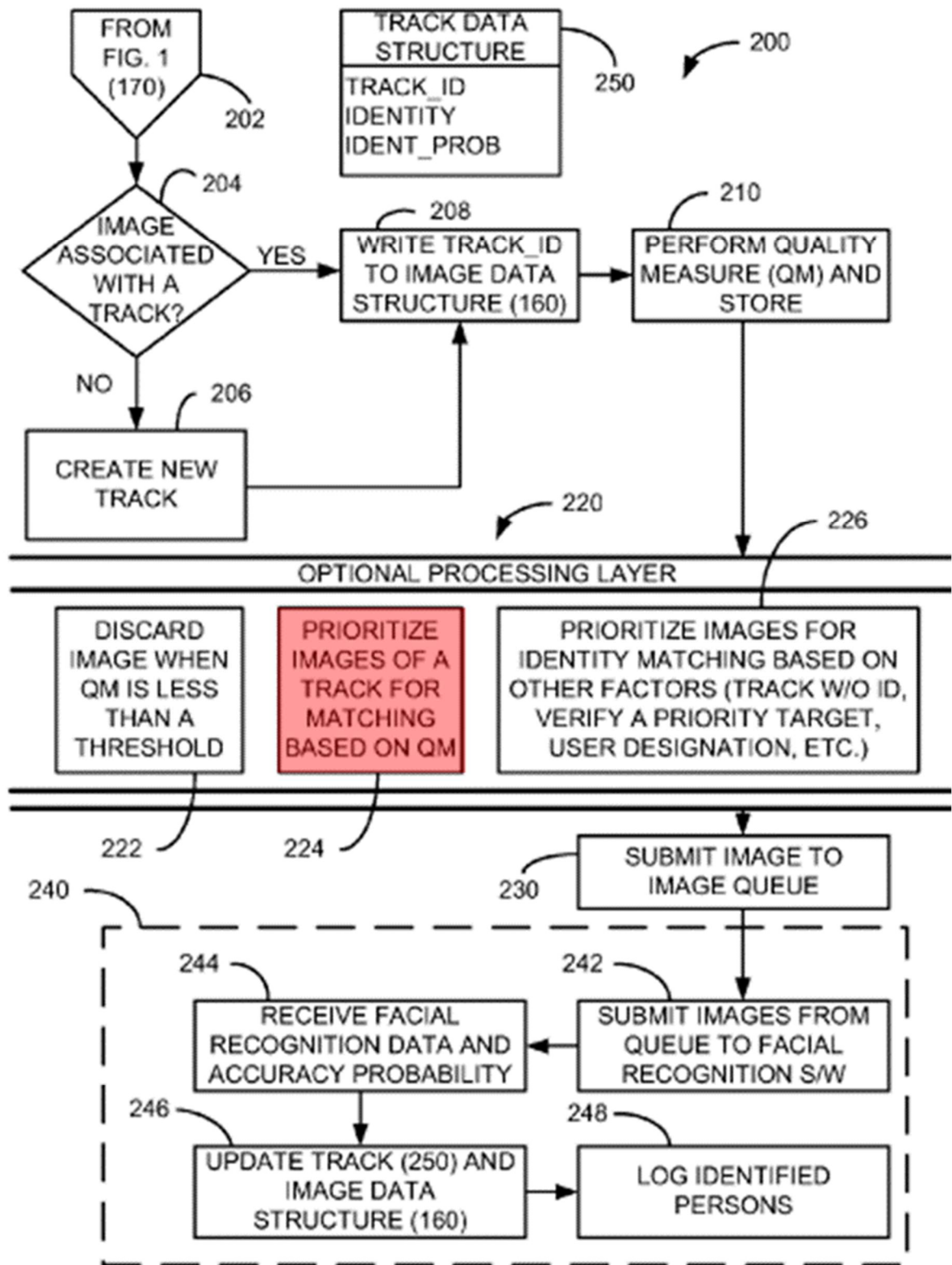
As with Ground 1, in Ground 2, Petitioner again relies exclusively upon the declaration of Dr. Houh, which merely parrots the same statement without evidence, for its assertion that “POSITAs would have understood this sort of queue processing—reordering the queue as new images arrive from different places—would have taken place at server 308.” The Board should afford such unsubstantiated testimony little weight in its analysis. *See Vyripharm*, Paper 7, at 23.

Petitioner resorts to this unsubstantiated testimony because the statement is incompatible with Bedros’s disclosures. Petitioner argues that the submitting 230 of Bedros may involve removing and reordering facial images 116 within the queue, and that such “prioritizing facial images within the queue of images” discloses the claim limitation “decides whether or not to analyze the image data.” Petitioner, however, does not explain how “prioritizing” is equivalent to “decid[ing] whether or not to analyze”. Paper 1, at 69, 71.

Bedros discloses that “the method 200 includes submitting 230 the facial image 116 to the facial image queue.” Ex. 1008, [7:20-21]. Bedros further discloses that “[o]ne particular server 306 executes image capturing and processing software, such as software that implements one or both of the methods 150 and 200.” Ex. 1008, [8:20-22]. In contrast, the server 308 only executes facial recognition software. Ex. 1008, [8:23-24]. Therefore, Bedros’s server 306, not server 308, executes the submitting 230, which is a part of the method 200. Further, Bedros discloses that the facial image queue is a “queue awaiting submission to the facial recognition program.” Ex. 1008, [7:23-24]. In Bedros’s method and system, server 308, not server 306, executes facial recognition software. Ex. 1008, [8:24-26]. Indeed, Bedros teaches that “the server 306 software may cause the facial images 116 to be submitting each facial image 116 to the server 308 that executes the facial recognition software.” Ex. 1008, [8:46-49]. Therefore, the destination of the submitting 230 is server 308 such that the images in the queue are awaiting submission to server 308. That is, prioritizing operations on images in the queue happen before the images reach server 308.

In addition, FIG. 2 of Bedros shows the steps of Bedros’s method 200, including a queue processing 240 after submitting 230. Bedros explicitly discloses that “[t]he queue processing 240 includes submitting 242 images from the queue to the facial recognition program.” Ex. 1008, [7:27-30]. Thus, it is clear that the

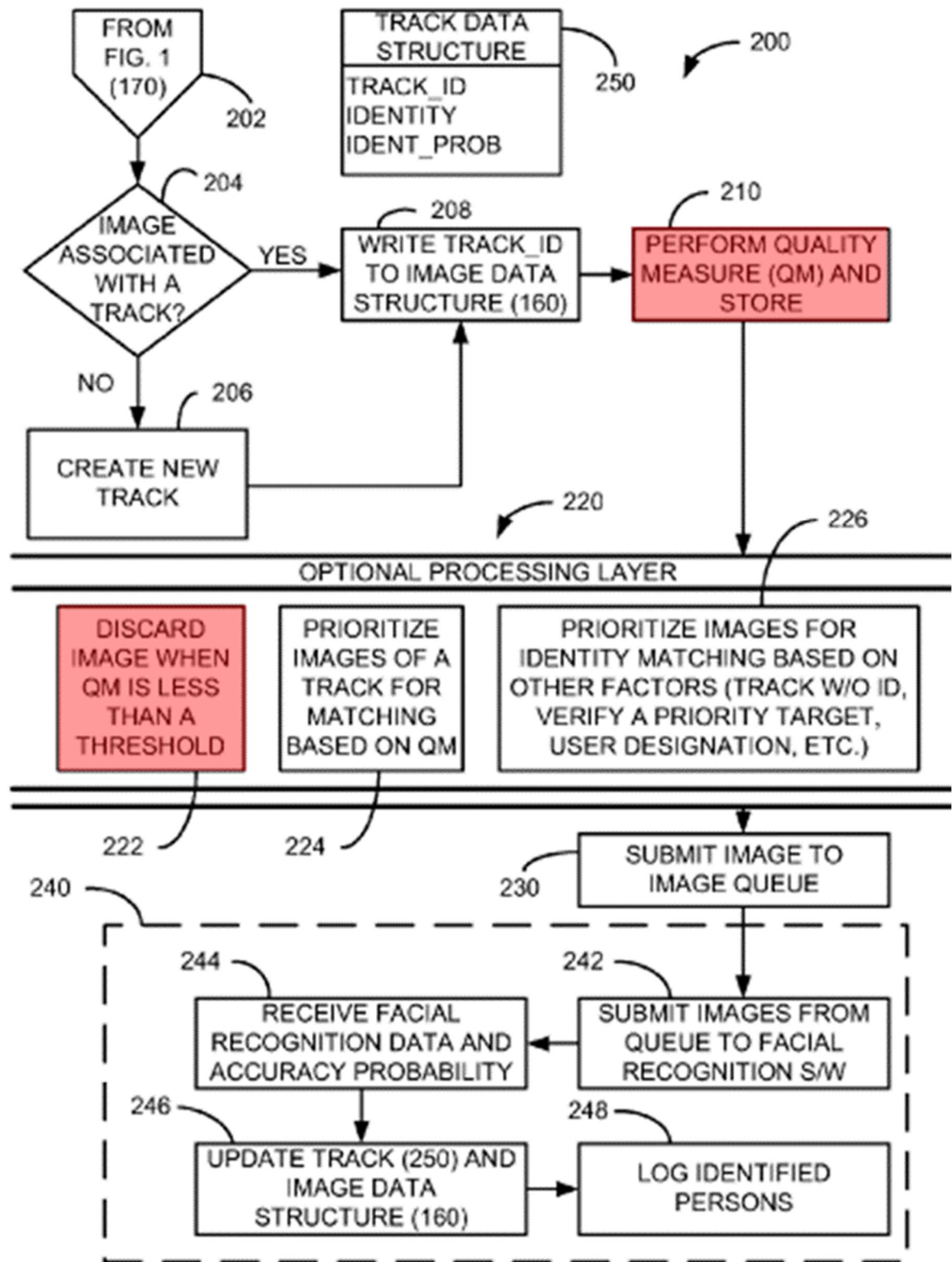
“prioritizing” that Petitioner argues in submitting 230 happens before the images reach the facial recognition program (that is, server 308).



Ex. 1008, FIG. 2 (annotated).

Therefore, Petitioner's argument that "POSITAs would have understood this sort of queue processing—reordering the queue as new images arrive from different places—would have taken place at server 308" is baseless. To the contrary, POSITAs would readily understand, from the explicit disclosures of Bedros that the queue processing happens in server 306 (mapped by Petitioner to the claimed "object detection system"), not in server 308 (mapped by Petitioner to the claimed "video analytics system.").

In fact, Petitioner argues that the submitting 230 of Bedros discloses [1.5.3] for a reason – Bedros *already* discloses a location where the decision whether or not to analyze the facial image is made. But, that location does not suit Petitioner, so Petitioner ignores that disclosure and improperly relies on the submitting 230. It is readily seen from FIG. 2 of Bedros, however, that there is a step 210 of "PERFORM QUALITY MEASURE (QM) AND STORE" and a step 222 of "DISCARD IMAGE WHEN QM IS LESS THAN A THRESHOLD."



Ex. 1008, FIG. 2 (annotated).

Bedros discloses that “[t]he processing elements of the optional processing layer 220, according to the illustrated embodiment, include a processing element that discards 222 images when the quality measure of a facial image 116 is less than a threshold value.” Ex. 1008, [6:37-40]. Bedros further discloses that this optional processing layer 220 is included in the method 200. Ex. 1008, [6:23-24]. As discussed above, the server 306, not the server 308, executes the method 200. Ex. 1008, [8:20-24]. Therefore, this discarding 222 happens in server 306 (mapped by Petitioner to the claimed “object detection system”), not in server 308 (mapped by Petitioner to the claimed “video analytics system”). Indeed, Bedros discloses that “[a]t this point, the server 306 software *may* cause the facial images 116 to be submitting each facial image 116 to the server 308 that executes the facial recognition software.” Ex. 1008, [8:46-49] (emphasis added). Thus, again, it is server 306, not server 308, decides whether or not to analyze facial images 116.

This discarding 222 happens before the submitting 230, as readily seen from FIG. 2 of Bedros. *See also* Ex. 1008, [7:19-21] (“*Following* processing of the optional processing layer 220, the method 200 includes submitting 230 the facial image 116 to the facial image queue.”) (emphasis added). Therefore, the “removing and reordering” of facial images 116 within the queue awaiting submission to the facial recognition program (Ex. 1008, [7:21-24]) are not related to determining

whether or not to have the facial recognition program analyze the image, since such determination was already made during the discarding 222 (Ex. 1008, [6:37-40]), and there is no reason to make another determination here. Petitioner's argument that the submitting 230 represents a decision whether or not to analyze the image is thus unsupported. In addition, as discussed *supra*, whatever the submitting 230 represents, it happens in server 306 (mapped by Petitioner to the claimed "object detection system"), not in server 308 (mapped by Petitioner to the claimed "video analytics system"), so it cannot disclose limitation [1.5.3] or make it obvious.

Petitioner then argues:

If PO argues, or the Board finds, Bedros does not teach processing the facial image queue at server 308, POSITAs would have been motivated to do so at least because (1) all facial images are ultimately processed at server 308 and (2) servers 306 would not know what ranking other servers 306 assign to the images they send. *Houh*, ¶226. Processing the queue at server 308 would have been more efficient and reduced bandwidth by relieving servers 306 from reading the queue to reorder or remove facial images from it. *Id.* Performing queue processing on image data at the server receiving information was well-known in the art. *Houh*, ¶227-229 (citing Laganier⁴⁶¹, ¶¶24, 25; *Gali*, ¶¶53-54, 94-95, Fig. 1; *Deever* '965, 14:45-15:35). POSITAs would have been further motivated to separate and delineate tasks performed at servers 306 and servers 308 to streamline operation and to reduce transmission bandwidth. *Houh*, ¶¶230-232 (citing *Yang*, ¶¶14, 20).

Paper 1, at 69-70.

But Bedros *already* teaches processing the facial image queue (in the form of submitting 230 and queue processing 240, Ex. 1008, [7:19-39]) at server 306, as part of method 200. There would be no need for a POSITA to disregard Bedros's explicit teaching and move the processing of the queue to server 308. Further, also as discussed above, the so-called "processing [of] the facial image queue" has nothing to do with deciding whether or not to analyze the image data, so even if this processing is moved to server 308, Petitioner's mapping of [1.5.3] still fails.

In addition, Petitioner's argument that "[p]rocessing the queue at server 308 would have been more efficient and reduced bandwidth by relieving servers 306 from reading the queue to reorder or remove facial images from it" is nonsensical. If server 308, instead of server 306, removes facial images from the queue, that would *increase* bandwidth, not reduce it, because all images (not just images that servers 306 did not remove from the queue) would have gone through the network to reach server 308. While Dr. Houh apparently cites a reference "Yang" to support this argument, his summary of Yang does not show any disclosure of queue processing or image discarding at the central node. Ex. 1003, ¶¶230-232.

Further, Petitioner's argument that "servers 306 would not know what ranking other servers 306 assign to the images they send" (Paper 1, at 69) is also unconvincing. Petitioner has not explained what advantage might be gained from the knowledge of rankings of different servers 306, and there is none. Bedros prioritizes,

based on quality measures, facial images within and between multiple tracks in a particular scene, and such prioritization is naturally carried out in a server 306 that handles such particular scene. Ex. 1008, [4:30-54], [7:4-18]. Indeed, Bedros puts such prioritization inside method 200, to be carried out by server 306. Ex. 1008, [6:30-54], [8:20-22]. A POSITA would not have a motivation to perform such prioritization in server 308, which is specialized for facial recognition. Ex. 1008, [8:24-26].

Therefore, Petitioner's mapping for "an object analysis system of the video analytics system reads the rankings within the metadata and decides whether or not to analyze the image data" fails, and Petitioner cannot demonstrate a reasonable likelihood that Ground 2 renders claim 1 obvious. For reasons discussed at the beginning of this Section V, this means Petitioner cannot demonstrate a reasonable likelihood that Ground 2 renders any claim obvious.

VI. THE BOARD SHOULD EXERCISE ITS DISCRETION AND DENY INSTITUTION

Further, regardless of the merits of the petition, the Board should exercise its discretion and deny institution under an analysis of the *Fintiv* factors.

The first *Fintiv* factor is at most neutral because the District Court has not considered a motion to stay. The second factor favors denial of institution because the jury selection in the District Court case is currently scheduled on February 17, 2026 (*see* Exhibit 2001), barely two months after the expected final written decision

date. The third factor favors denial of institution because both parties have invested substantially in the discovery process, exchanging a high volume of documents and conducting extensive source code reviews. The fourth factor favors denial because there is a high overlap of claims (Petitioner challenge claims 1-21 in the current proceeding, which includes the only two independent claims 1 and 13, while the Patent Owner has raised claims 1-6, 8, and 11-19 in the District Court Proceeding) and Petitioner did not offer a *Sotera* stipulation. The fifth factor favors denial because the parties are the same. The sixth factor also favors denial because, as shown above, Petitioner's arguments are meritless.

Therefore, five out of the six *Fintiv* factors favor denial, with the remaining one at most neutral. The Board should exercise its discretion and deny institution.

VII. THERE IS NO GOOD CAUSE FOR A PRE-INSTITUTION REPLY

In view of the deficiencies in the Petition discussed above, Petitioner might seek to file a pre-institution reply. But there would be no good cause for a pre-institution reply. Petitioner fully discussed the grounds already, but did not demonstrate a reasonable likelihood that any challenged claim is unpatentable. Therefore, Petitioner has no good cause to seek a second chance of discussing them (and bypassing the character count limits imposed upon the Petition) through a pre-institution reply. *See e.g., Ontel Prods. Corp. v. Guy A. Shaked Invs. Ltd.*, IPR2020-

01703, Paper 10 at 2 (Feb. 4, 2021) (denying reply for “subjects that Petitioner should have developed in its Petition”).

VIII. CONCLUSION

For at least the above reasons, Patent Owner respectfully requests the Board deny institution.

Date: September 14, 2024

Respectfully submitted,

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CERTIFICATE OF WORD COUNT

I hereby certify that the foregoing PATENT OWNER'S PRELIMINARY RESPONSE includes 6,543 words (as calculated by Microsoft Word), excluding those in the table of contents, table of authorities, list of exhibits, list of claims, mandatory notices, signatures, certificate of word count, and certificate of service. Accordingly, this Preliminary Response is under the word count limit of 14,000 words.

Date: September 14, 2024

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e), I hereby certify that, on September 1, 2024, a set of true and correct copies of PATENT OWNER'S PRELIMINARY RESPONSE and supporting materials has been served via e-mail and UPS to the Petitioner by serving the below-listed attorneys of record for Petitioner in the concurrent proceeding:

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