

**UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD**

REGIONS BANK,

Petitioner,

v.

UNITED SERVICES AUTOMOBILE ASSOCIATION,

Patent Owner

Case No. IPR2025-01326

U.S. Patent No. 12,159,310

**PATENT OWNER PRELIMINARY RESPONSE MERITS BRIEF
REQUESTING DENIAL OF INSTITUTION**

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EXHIBIT LIST	
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2002	Docket Control Order in <i>United Services Auto Ass'n v. Regions Bank</i> , No. 2:25-cv-00082-JRG (E.D. Tex.) dtd May 30, 2025 (Dkt. 32)
2003	Second Amended Complaint in <i>United Services Auto Ass'n v. Regions Bank</i> , No. 2:25-cv-00082-JRG (E.D. Tex.) dtd June 23, 2025 (Dkt. 41)
2004	Defendant's Invalidity and Patent-Eligibility Contentions in <i>United Services Auto Ass'n v. Regions Bank</i> , No. 2:25-cv-00082-JRG (E.D. Tex.) served July 9, 2005.
2005	Docket Report for <i>United Services Auto Ass'n v. Regions Bank</i> , No. 2:25-cv-00082-JRG (9/23/2025)
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2008	LegalMetric Report EDTX
2009	Ranjan – Using a Camera with Windows Mobile 5
2010	U.S. Pat. No. 8,977,571
2011	U.S. Pat. No. 10,769,598
2012	WO 2016/073800A1 (Bowles)
2013	EP Pat. Pub. 2081061A1 (Zhu)
2014	U.S. Pat. No. 11,914,985 (Liu)

CLAIM LISTING¹

1[pre] 1. A method enabling mobile check deposit auto-capture functionality via video frame processing, the method comprising:

1[a] providing an app for download to a mobile device of a user, the user's mobile device including a camera and a memory storing a software abstraction layer for controlling the camera, the app associated with a bank to control check deposit by controlling the camera through the software abstraction layer, wherein the app, when downloaded to the user's mobile device and executed by the user's mobile device, is configured to cause the user's mobile device to perform operations comprising:

1[b] providing instructions to the user for capturing an image of a check;

1[c] generating a live video of the check in a field of view of the camera, the downloaded app causing the live video to be generated by controlling the camera through the software abstraction layer;

1[d] overlaying an alignment guide on the live video of the check in the field of view of the camera;

¹ The numbering of the limitations is consistent with that presented in the Petition.

1[e] monitoring the live video of the check in the field of view of the camera with respect to at least one monitoring criterion;

1[f] determining that a video frame of the live video of the check satisfies the at least one monitoring criterion and then automatically capturing the video frame;

1[g] when the video frame of the live video of the check in the field of view of the camera is determined to satisfy the at least one monitoring criterion, providing feedback advising the user that the check has been captured;

1[h] using a wireless network, transmitting a digital image of the check from the user's mobile device and submitting the check for mobile check deposit in the bank after automatically capturing the video frame, wherein the digital image is the captured video frame or is based on the captured video frame; and

1[i] before the submitting, confirming that the mobile check deposit can go forward after optical character recognition is performed on the check in the digital image, a magnetic ink character recognition (MICR) line on the check in the digital image is recognized, and an amount payable on the check in the digital image is validated;

1[j] receiving the digital image of the check transmitted by the user's mobile device;

1[k] processing the digital image of the check including performing optical character recognition on the check in the digital image and verifying that the digital image of the check is acceptable for mobile check deposit, wherein the app, when downloaded and executed by the user's mobile device, is configured to cause the user's mobile device to perform additional operations including receiving an indication of a result of the processing before confirming that the mobile check deposit can go forward; and

1[l] updating, by a computer, a balance of an account at a financial institution of the user to reflect an amount of funds associated with the check submitted for mobile check deposit by the user's mobile device, after the submitting the check for mobile check deposit in the bank, the confirming that the mobile check deposit can go forward, and the verifying that the digital image of the check is acceptable for mobile check deposit,

1[m] wherein the app, when downloaded and executed by the user's mobile device, is configured to cause the user's mobile device to perform additional operations comprising:

1[n] before determining that the video frame of the live video of the check satisfies the at least one monitoring criterion, determining that a different video frame of the live video of the check does not satisfy the at least one monitoring criterion; and

1[o] after determining that the different video frame of the live video of the check does not satisfy the at least one monitoring criterion, providing feedback to the user.

2[pre] 2. A method enabling mobile check deposit auto-capture functionality via video frame processing, the method comprising:

2[a] providing an app for download to a mobile device of a user, the user's mobile device including a camera and a memory storing a software abstraction layer for

controlling the camera, the app associated with a bank to control check deposit by controlling the camera through the software abstraction layer, wherein the app, when downloaded to the user's mobile device and executed by the user's mobile device, is configured to cause the user's mobile device to perform operations comprising:

2[b] providing instructions to the user for capturing an image of a check;

2[c] generating a live video of the check in a field of view of the camera, the downloaded app causing the live video to be generated by controlling the camera through the software abstraction layer;

2[d] overlaying an alignment guide on the live video of the check in the field of view of the camera;

2[e] monitoring the live video of the check in the field of view of the camera with respect to at least one monitoring criterion;

2[f] determining that a video frame of the live video of the check satisfies the at least one monitoring criterion and then automatically capturing the video frame;

2[g] when the video frame of the live video of the check in the field of view of the camera is determined to satisfy the at least one monitoring criterion, providing feedback advising the user that the check has been captured;

2[h] using a wireless network, transmitting a digital image of the check from the user's mobile device and submitting the check for mobile check deposit in the bank after automatically capturing the video frame, wherein the digital image is the captured video frame or is based on the captured video frame; and

2[i] before the submitting, confirming that the mobile check deposit can go forward after optical character recognition is performed on the check in the digital image, a magnetic ink character recognition (MICR) line on the check in the digital image is recognized, and an amount payable on the check in the digital image is validated;

2[j] receiving the digital image of the check transmitted by the user's mobile device;

2[k] processing the digital image of the check including performing optical character recognition on the check in the digital image and verifying that the digital image of the check is acceptable for mobile check deposit, wherein the app, when downloaded and executed by the user's mobile device, is configured to cause the user's mobile device to perform additional operations including receiving an indication of a result of the processing before confirming that the mobile check deposit can go forward; and

2[l] updating, by a computer, a balance of an account at a financial institution of the user to reflect an amount of funds associated with the check submitted for mobile check deposit by the user's mobile device, after the submitting the check for mobile check deposit in the bank, the confirming that the mobile check deposit can go forward, and the verifying that the digital image of the check is acceptable for mobile check deposit,

2[m] wherein the at least one monitoring criterion is a plurality of monitoring criteria based on two or more selected from a group consisting of light contrast, light brightness, check positioning, check dimensions, character spacing, skewing, warping, corner detection, edge detection, and magnetic ink character recognition (MICR) line detection.

3. The method of claim 2, wherein the plurality of monitoring criteria includes a criterion based on magnetic character recognition (MICR) line detection.

4. The method of claim 2, wherein the plurality of monitoring criteria includes criteria based on light brightness, skewing, and warping.

5[pre] 5. A method enabling mobile check deposit auto-capture functionality via video frame processing, the method comprising:

5[a] monitoring a live video of a check in a field of view of a camera with respect to at least one monitoring criterion, wherein the live video is generated by a mobile device of a user, the user's mobile device including the camera and a downloaded app, the downloaded app associated with a bank to control check deposit by controlling the camera, the downloaded app, when executed by the user's mobile device, being configured to cause the user's mobile device to perform operations comprising:

5[b] providing instructions to the user for capturing an image of the check;

5[c] generating the live video of the check in the field of view of the camera, the downloaded app causing the live video to be generated by controlling the camera;

5[d] overlaying an alignment guide on the live video of the check in the field of view of the camera; and

5[e] using a wireless network, submitting the check for mobile check deposit in the bank after a frame of the live video of the check in the field of view of the camera is automatically captured;

5[f] determining that a video frame of the live video of the check satisfies the at least one monitoring criterion and then automatically capturing the video frame;

5[g] when the video frame of the live video of the check in the field of view of the camera is determined to satisfy the at least one monitoring criterion, providing feedback advising the user that the check has been captured;

5[h] processing a digital image of the check including performing optical character recognition and verifying that the digital image of the check is acceptable for mobile check deposit, the digital image of the check being the captured video frame or being based on the captured video frame;

5[i] confirming that the mobile check deposit can go forward after optical character recognition is performed on the check in the digital image, a magnetic ink character recognition (MICR) line on the check in the digital image is recognized, and an amount payable on the check in the digital image is validated;

5[j] updating, by a bank computer, a balance of an account at a financial institution of the user to reflect an amount of funds associated with the check submitted for mobile check deposit by the user's mobile device, after the check is

submitted for mobile check deposit in the bank, confirming that the mobile check deposit can go forward, and verifying that the digital image of the check is acceptable for mobile check deposit;

5[k] before determining that the video frame of the live video of the check satisfies the at least one monitoring criterion, determining that a different video frame of the live video of the check does not satisfy the at least one monitoring criterion; and

5[l] after determining that the different video frame of the live video of the check does not satisfy the at least one monitoring criterion, providing feedback to the user.

6[pre] 6. A method enabling mobile check deposit auto-capture functionality via video frame processing, the method comprising:

6[a] monitoring a live video of a check in a field of view of a camera with respect to at least one monitoring criterion, wherein the live video is generated by a mobile device of a user, the user's mobile device including the camera and a downloaded app, the downloaded app associated with a bank to control check deposit by controlling the camera, the downloaded app, when executed by the user's mobile device, being configured to cause the 5 user's mobile device to perform operations comprising:

6[b] providing instructions to the user for capturing an image of the check;

6[c] generating the live video of the check in the field of view of the camera, the downloaded app causing the live video to be generated by controlling the camera;

6[d] overlaying an alignment guide on the live video of the check in the field of view of the camera; and

6[e] using a wireless network. submitting the check for mobile check deposit in the bank after a frame of the live video of the check in the field of view of the camera is automatically captured;

6[f] determining that a video frame of the live video of the check satisfies the at least one monitoring criterion and then automatically capturing the video frame;

6[g] when the video frame of the live video of the check in the field of view of the camera is determined to satisfy the at least one monitoring criterion, providing feedback advising the user that the check has been captured;

6[h] processing a digital image of the check including performing optical character recognition and verifying that the digital image of the check is acceptable for mobile check deposit, the digital image of the check being the captured video frame or being based on the captured video frame;

6[i] confirming that the mobile check deposit can go forward after optical character recognition is performed on the check in the digital image, a magnetic

ink character recognition (MICR) line on the check in the digital image is recognized, and an amount payable on the check in the digital image is validated; and

6[j] updating, by a bank computer, a balance of an account at a financial institution of the user to reflect an amount of funds associated with the check submitted for mobile check deposit by the user's mobile device, after the check is submitted for mobile check deposit in the bank, confirming that the mobile check deposit can go forward, and verifying that the digital image of the check is acceptable for mobile check deposit,

6[k] wherein the at least one monitoring criterion is a plurality of monitoring criteria based on two or more selected from a group consisting of light contrast, light brightness, check positioning, check dimensions, character spacing, skewing, warping, corner detection, edge detection, and magnetic ink character recognition (MICR) line detection.

7. The method of claim 6. wherein the plurality of monitoring criteria includes criteria based on light brightness, skewing, and warping.

8[pre] 8. A method enabling mobile check deposit auto-capture functionality via video frame processing, the method comprising:

8[a] monitoring a live video of a check in a field of view of a camera with respect to at least one monitoring criterion, wherein the live video is generated by a

mobile device of a user. the user's mobile device including the camera and a downloaded app, the downloaded app associated with a bank to control check deposit by controlling the camera, the downloaded app, when executed by the user's mobile device, being configured to cause the user's mobile device to perform operations comprising:

8[b] providing instructions to the user for capturing an image of the check;

8[c] generating the live video of the check in the field of view of the camera, the downloaded app causing the live video to be generated by controlling the camera;

8[d] overlaying an alignment guide on the live video of the check in the field of view of the camera; and

8[e] using a wireless network, submitting the check for mobile check deposit to the bank after a frame of the live video of the check in the field of view of the camera is automatically captured;

8[f] determining that a video frame of the live video of the check satisfies the at least one monitoring criterion and then automatically capturing the video frame;

8[g] when the video frame of the live video of the check in the field of view of the camera is determined to satisfy the at least one monitoring criterion, providing feedback advising the user that the check has been captured;

8[h] processing a digital image of the check including performing optical character recognition and verifying that the digital image of the check is acceptable for mobile check deposit, the digital image of the check being the captured video frame or being based on the captured video frame;

8[i] confirming that the mobile check deposit can go forward after optical character recognition is performed on the check in the digital image, a magnetic ink character recognition (MICR) line on the check in the digital image is recognized, and an amount payable on the check in the digital image is validated; and

8[j] updating, by a bank computer, a balance of an account at a financial institution of the user to reflect an amount of funds associated with the check submitted for mobile check deposit by the user's mobile device, after the check is submitted for mobile check deposit in the bank, confirming that the mobile check deposit can go forward, and verifying that the digital image of the check is acceptable for mobile check deposit,

8[k] wherein the downloaded app, when executed by the user's mobile device, is configured to cause the user's mobile device to perform additional operations comprising the monitoring, the determining, the providing, and the confirming.

9[pre] 9. A method enabling mobile check deposit auto-capture functionality via video frame processing, the method comprising:

9[a] monitoring a live video of a check in a field of view of a camera with respect to at least one monitoring criterion, wherein the live video is generated by a mobile device of a user, the user's mobile device including the camera and a downloaded app, the downloaded app associated with a bank to control check deposit by controlling the camera, the downloaded app, when executed by the user's mobile device, being configured to cause the user's mobile device to perform operations comprising:

9[b] providing instructions to the user for capturing an image of the check;

9[c] generating the live video of the check in the field of view of the camera, the downloaded app causing the live video to be generated by controlling the camera;

9[d] overlaying an alignment guide on the live video of the check in the field of view of the camera; and

9[e] using a wireless network, submitting the check for mobile check deposit in the bank after a frame of the live video of the check in the field of view of the camera is automatically captured;

9[f] determining that a video frame of the live video of the check satisfies the at least one monitoring criterion and then automatically capturing the video frame;

9[g] when the video frame of the live video of the check in the field of view of the camera is determined to satisfy the at least one monitoring criterion, providing feedback advising the user that the check has been captured;

9[h] processing a digital image of the check including performing optical character recognition and verifying that the digital image of the check is acceptable for mobile check deposit, the digital image of the check being the captured video frame or being based on the captured video frame;

9[i] confirming that the mobile check deposit can go forward after optical character recognition is performed on the check in the digital image, a magnetic ink character recognition (MICR) line on the check in the digital image is recognized, and an amount payable on the check in the digital image is validated; and

9[j] updating, by a bank computer, a balance of an account at a financial institution of the user to reflect an amount of funds associated with the check submitted for mobile check deposit by the user's mobile device, after the check is submitted for mobile check deposit in the bank, confirming that the mobile check

deposit can go forward, and verifying that the digital image of the check is acceptable for mobile check deposit,

9[k] wherein the confirming step is performed before the submitting step and the user's mobile device receives an indication of a result of the processing the digital image of the check before the confirming step.

10[pre] 10. A method enabling mobile check deposit auto-capture functionality via video frame processing. the method comprising:

10[a] providing an app for download to a mobile device of a user, the user's mobile device including a camera and a memory storing a software abstraction layer, the app associated with a bank to control check deposit by controlling the camera through the software abstraction layer, wherein the app, when downloaded to the user's mobile device and executed by the user's mobile device, is configured to cause the user's mobile device to perform operations comprising:

10[b] providing instructions to the user for capturing an image of a check;

10[c] generating a live video of the check in a field of view of the camera, the downloaded app causing the live video to be generated by controlling the camera through the software abstraction layer;

10[d] monitoring the live video of the check in the field of view of the camera with respect to at least one monitoring criterion;

10[e] determining that a video frame of the live video of the check satisfies the at least one monitoring criterion and the automatically capturing the video frame;

10[f] when the video frame of the live video of the check in the field of view of the camera is determined to satisfy the at least one monitoring criterion, providing feedback advising the user that the check has been captured;

10[g] using a wireless network, transmitting a digital image of the check from the user's mobile device and submitting the check for mobile check deposit in the bank after automatically capturing the video frame, wherein the digital image is the captured video frame or is based on the captured video frame; and

10[h] before the submitting, confirming that the mobile check deposit can go forward after optical character recognition is performed on the check, a magnetic ink character recognition (MICR) line on the check is recognized, and an amount payable on the check is validated; and

10[i] updating, by a computer, a balance of an account at a financial institution of the user to reflect an amount of funds associated with the check submitted for mobile check deposit by the user's mobile device, after the submitting the check for mobile check deposit and the confirming that the mobile check deposit can go forward,

10[j] wherein the app, when downloaded and executed by the user's mobile device, is configured to cause the user's mobile device to perform additional operations comprising:

10[k] before determining that the video frame of the live video of the check satisfies the at least one monitoring criterion, determining that a different video frame of the live video of the check does not satisfy the at least one monitoring criterion; and

10[l] after determining that the different video frame of the live video of the check does not satisfy the at least one monitoring criterion, providing feedback to the user.

11[pre] 11. A method enabling mobile check deposit auto-capture functionality via video frame processing, the method comprising:

11[a] providing an app for download to a mobile device of a user, the user's mobile device including a camera and a memory storing a software abstraction layer, the app associated with a bank to control check deposit by controlling the camera through the software abstraction layer, wherein the app, when downloaded to the user's mobile device and executed by the user's mobile device, is configured to cause the user's mobile device to perform operations comprising:

11[b] providing instructions to the user for capturing an image of a check;

11[c] generating a live video of the check in a field of view of the camera, the downloaded app causing the live video to be generated by controlling the camera through the software abstraction layer;

11[d] monitoring the live video of the check in the field of view of the camera with respect to at least one monitoring criterion;

11[e] determining that a video frame of the live video of the check satisfies the at least one monitoring criterion and then automatically capturing the video frame;

11[f] when the video frame of the live video of the check in the field of view of the camera is determined to satisfy the at least one monitoring criterion, providing feedback advising the user that the check has been captured;

11[g] using a wireless network, transmitting a digital image of the check from the user's mobile device and submitting the check for mobile check deposit in the bank after automatically capturing the video frame, wherein the digital image is the captured video frame or is based on the captured video frame, and

11[h] before the submitting, confirming that the mobile check deposit can go forward after optical character recognition is performed on the check, a magnetic ink character recognition (MICR) line on the check is recognized, and an amount payable on the check is validated, and

11[i] updating, by a computer, a balance of an account at a financial institution of the user to reflect an amount of funds associated with the check submitted for mobile check deposit by the user's mobile device, after the submitting the check for mobile check deposit and the confirming that the mobile check deposit can go forward,

11[j] wherein the at least one monitoring criterion is a plurality of monitoring criteria based on two or more selected from a group consisting of light contrast, light brightness, check positioning, check dimensions, character spacing, skewing, warping, corner detection, edge detection, and magnetic ink character recognition (MICR) line detection.

12. The method of claim 11, wherein the plurality of monitoring criteria being based on magnetic ink character recognition (MICR) line detection and one or both of corner detection and edge detection.

13. The method of claim 11, wherein the plurality of monitoring criteria includes criteria based on light brightness, skewing, and warping.

14[pre] 14. A method enabling mobile check deposit auto-capture functionality via video frame processing, the method comprising:

14[a] receiving an image of a check, wherein the image of the check is provided for mobile check deposit in a bank by a mobile device of a user, the user's mobile device including a camera and a memory storing a software

abstraction layer and a downloaded app, the downloaded app associated with the bank to control check deposit by controlling the camera through the software abstraction layer, and the downloaded app, when executed by the user's mobile device, being configured to cause the user's mobile device to perform operations comprising:

14[b] providing instructions to the user for capturing the check;

14[c] generating a live video of the check in a field of view of the camera, the downloaded app causing the live video to be generated by controlling the camera through the software abstraction layer;

14[d] monitoring the live video of the check in the field of view of the camera with respect to at least one monitoring criterion;

14[e] determining that a video frame of the live video of the check satisfies the at least one monitoring criterion and then automatically capturing the video frame;

14[f] when the video frame of the live video of the check in the field of view of the camera is determined to satisfy the at least one monitoring criterion, providing feedback advising the user that the check has been captured;

14[g] using a wireless network, transmitting a digital image of the check from the user's mobile device and submitting the check for mobile check deposit in

the bank after automatically capturing the video frame, wherein the digital image is the captured video frame or is based on the captured video frame; and

14[h] before the submitting, confirming that the mobile check deposit can go forward after optical character recognition is performed on the check, a magnetic ink character recognition (MICR) line on the check is recognized, and an amount payable on the check is validated;

14[i] performing image processing operations on the image of the check, the image processing operations including performing optical character recognition and verifying that the image of the check is acceptable for mobile check deposit, wherein the image of the check is the digital image transmitted by the user's mobile device or is based on the digital image transmitted by the user's mobile device; and

14[j] updating, by a computer, a balance of an account at a financial institution of the user to reflect an amount of funds associated with the check submitted for mobile check deposit by the user's mobile device. after the submitting the check for mobile check deposit in the bank, the confirming that the mobile check deposit can go forward, and the verifying that the image of the check is acceptable for mobile check deposit,

14[k] wherein the downloaded app, when executed by the user's mobile device, is configured to cause the user's mobile device to perform additional operations comprising:

14[l] before determining that the video frame of the live video of the check satisfies the at least one monitoring criterion, determining that a different video frame of the live video of the check does not satisfy the at least one monitoring criterion; and

14[m] after determining that the different video frame of the live video of the check does not satisfy the at least one monitoring criterion, providing feedback to the user.

15[pre] 15. A method enabling mobile check deposit auto-capture functionality via video frame processing, the method comprising:

15[a] receiving an image of a check, wherein the image of the check is provided for mobile check deposit in a bank by a mobile device of a user, the user's mobile device including a camera and a memory storing a software abstraction layer and a downloaded app, the downloaded app associated with the bank control check deposit by controlling the camera through the software abstraction layer, and the downloaded app, when executed by the user's mobile device, being configured to cause the user's mobile device to perform operations comprising:

15[b] providing instructions to the user for capturing the check;

15[c] generating a live video of the check in a field of view of the camera, the downloaded app causing the live video to be generated by controlling the camera through the software abstraction layer;

15[d] monitoring the live video of the check in the field of view of the camera with respect to at least one monitoring criterion;

15[e] determining that a video frame of the live video of the check satisfies the at least one monitoring criterion and then automatically capturing the video frame;

15[f] when the video frame of the live video of the check in the field of view of the camera is determined to satisfy the at least one monitoring criterion, providing feedback advising the user that the check has been captured;

15[g] using a wireless network, transmitting a digital image of the check from the user's mobile device and submitting the check for mobile check deposit in the bank after automatically capturing the video frame, wherein the digital image is the captured video frame or is based on the captured video frame; and

15[h] before the submitting, confirming that the mobile check deposit can go forward after optical character recognition is performed on the check, a magnetic ink character recognition (MICR) line on the check is recognized, and an amount payable on the check is validated;

15[i] performing image processing operations on the image of the check, the image processing operations including performing optical character recognition and verifying that the image of the check is acceptable for mobile check deposit, wherein the image of the check is the digital image transmitted by the user's mobile device or is based on the digital image transmitted by the user's mobile device; and

15[j] updating, by a computer, a balance of an account at a financial institution of the user to reflect an amount of funds associated with the check submitted for mobile check deposit by the user's mobile device, after the submitting the check for mobile check deposit in the bank, the confirming that the mobile check deposit can go forward, and the verifying that the image of the check is acceptable for mobile check deposit,

15[k] wherein the at least one monitoring criterion is a plurality of monitoring criteria based on two or more selected from a group consisting of light contrast, light brightness, check positioning, check dimensions, character spacing, skewing, warping, corner detection, edge detection, and magnetic ink character recognition (MICR) line detection.

16. The method of claim 15, wherein the plurality of monitoring criteria includes a criterion based on magnetic ink character recognition (MICR) line detection.

I. INTRODUCTION

U.S. Pat. No. 12,159,310 (“the ’310 Patent”) is assigned to United Services Automobile Association (“USAA” or “Patent Owner”). The ’310 Patent is directed to remote mobile check deposit with auto-capture functionality for banking systems.

Petitioner Regions Bank (“Regions” or “Petitioner”) filed a Petition asserting four grounds of unpatentability against Claims 1-16 (“Challenged Claims”). Pet., Paper 1, 7. The independent claims are Claims 1-2, 5-6, 8-11, and 14-15.

Each of Petitioner’s Grounds 1-4 fails to meet multiple limitations of the Challenged Claims. Patent Owner demonstrates herein that the combination of references in each ground fails to teach or suggest the limitations of the claims, and/or that there was no reason for a POSITA to combine or modify the references as proposed.

Further, the Petition is based on the extensive 225-page declaration of Petitioner’s expert, Dr. Daniel Lopresti (Ex. 1002), which is repeatedly used to supply missing limitations that are not found in the references identified for the grounds.

For these reasons, the Petition should be denied because Petitioner has failed to demonstrate a reasonable likelihood that the claims of the ’310 Patent are unpatentable.

II. BACKGROUND

A. Procedural History

USAA asserted the '310 Patent against the Petitioner in *United Services Automobile Association v. Regions Bank*, No. 2:25-cv-00082-JRG (E.D. Tex.), which was filed on January 28, 2025. That matter is set for trial on October 5, 2026. See Ex. 2002 (Docket Control Order).

The Petition was filed on July 30, 2025, more than six months after the Complaint was filed. Ex. 2005 (Docket Report).

B. The '310 Patent

1. The Specification of the '310 Patent

System Overview

A holder of a check (payee) can submit a digital image of the check to a banking institution to be processed for the deposit of funds into the payee's bank account. '310 Patent, 1:27-34. However, capturing an image of the check with a quality sufficient to enable the banking system to extract the necessary information to process the check for remote deposit was a major challenge. '310 Patent, 1:34-39. Additionally, the passage of the Check Clearing for the 21st Century Act ("Check 21 Act") in 2003 created new technical challenges because imaged checks had to meet very particular standards and requirements to avoid being rejected. '310 Patent, 12:39-47 (e.g., Check

21 requirements for substitute checks, X9.37 file format), 14:57-61; Ex. 2003 (Second Amended Complaint), ¶¶ 19-20.

The '310 Patent highlights the problem with remotely depositing checks from a client device:

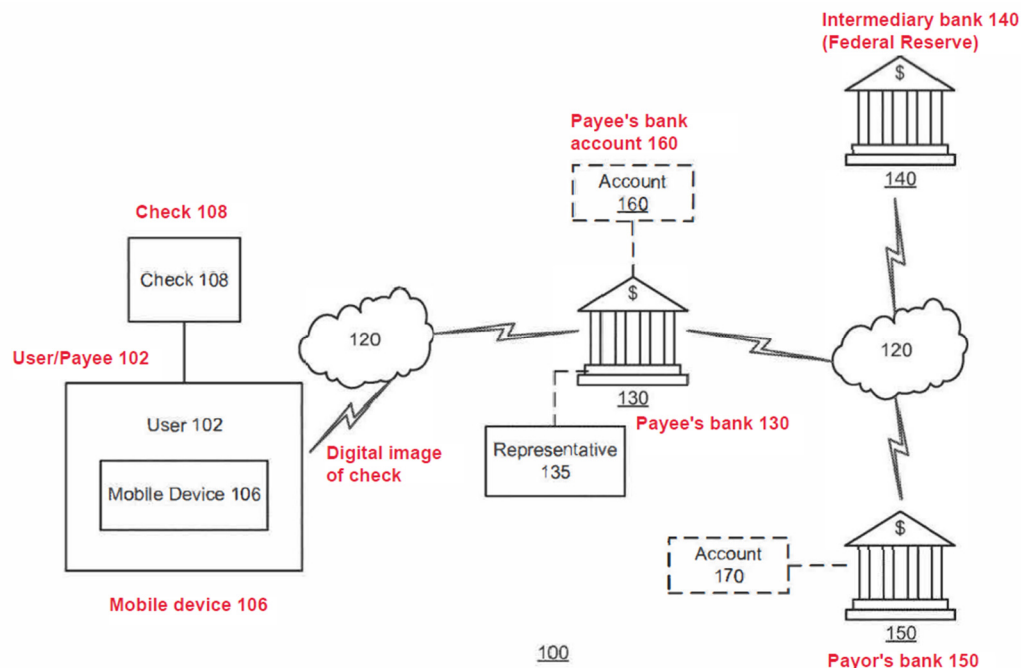
However, such a technique requires the efficient and accurate detection and extraction of the information pertaining to a check in the digital image. Capturing a digital image at a mobile device that allows for subsequent detection and extraction of the information from the digital image is difficult.

'310 Patent, 1:34-39.

The '310 Patent is generally directed to remote mobile check deposit with auto-capture functionality for banking systems using “video frame processing.” In general, the invention provides for an application downloaded onto a mobile device that controls a camera through an abstraction layer stored onto the memory of the mobile device. The downloaded app generates “live video” of a check in a field of view of the camera that is processed to detect a “video frame” from the live video that meets at least one monitoring criteria. Upon determining that a video frame meets the monitoring criteria, the video frame is “automatically captur[ed]” and a digital image of the captured video frame or based thereon is transmitted from the user’s mobile device to an institution (e.g., banking system). Before the mobile device submits the check for mobile deposit at the bank, certain additional parameters are checked to

“confirm[] that the mobile check deposit can go forward after [1] optical character recognition is performed on the check in the digital image, [2] a magnetic ink character recognition (MICR) line on the check in the digital image is recognized, and [3] an amount payable on the check in the digital image is validated.” Among other operations, Claim 1 provides that the “digital image of the check” is then processed by the banking system and a balance in the user’s account is updated. See, e.g., ’310 Patent, Cl. 1 (brackets added).

Figure 1 of the ’310 Patent depicts a system for remote mobile check deposit with auto-capture functionality:



’310 Patent, Fig. 1 (annotated), 2:52-3:64.

Video Frame Processing of Video Frames of Live Video

The '310 Patent describes that the camera on a mobile phone (or connected thereto) can provide video frames in a stream of live video that are monitored by the mobile phone and/or the banking institution:

A **frame of the video** may be obtained and **monitored with respect to monitoring criteria**, as described further herein. The mobile device 106 and/or the institution may **obtain the frame and monitor the frame**, depending on an implementation. ... [I]t is contemplated that any device that is capable of generating a **live video** may be used to make a video of the check 108 which may be **monitored in real-time** with respect to monitoring criteria.

'310 Patent, 5:58-6:7 (emph. added).

The '310 Patent discloses that the mobile device may provide, through a communication pathway, a video stream generated by the camera that is to be monitored against the monitoring criteria:

At 940, an image in the field of view of the camera may be obtained and provided, via the communication pathway, to the institution. A still image may be provided or a **video** may be provided, such as a **video stream** generated by the camera.

'310 Patent, 17:63-67 (emph. added). A POSITA reading the specification would understand that a video stream provided by a camera on a mobile device constitutes a series of video frames.

The '310 Patent describes that a video frame in a video stream (e.g., live video) can be evaluated against monitoring criteria, and if they are satisfied, the video frame can be captured for use as the check image:

At 950, the institution may receive the image or **video stream** and may analyze the image or a **frame of the video stream** with respect to one or more monitoring criteria, such as those described above.
'310 Patent, 18:1-4 (emph. added).

Application of Monitoring Criteria to Capture a Video Frame

The '310 Patent describes that video frames can be evaluated against one or more monitoring criteria (discussed further below) to ensure the image is of sufficient quality to be processed for mobile deposit by the banking institution. See '310 Patent, 3:65-4:23. Once the video frame meets the monitoring criteria, it can be captured for further mobile deposit processing:

When the image 230 passes the monitoring criteria (e.g., is positioned properly with respect to an alignment guide, is not warped, is not skewed, has adequate light brightness and/or light contrast, etc.), the image 230 may be captured either automatically (e.g., by the camera or the mobile device under direction of an application running on the camera 207 or the mobile device 106 or the financial institution) or manually ... The digital image thus captured may be provided from the mobile device 106 to a financial institution. The check 108 may be deposited in a user's bank account based on the digital image.

'310 Patent, 10:42-56; 13:56-60 (“The check processing module 454 may be configured, in one example, to cause the image monitoring and capture module 456 to monitor an image of at least one side of a check provided in a field of view of the camera 207 and then capture the image after it passes monitoring criteria.”).

The '310 Patent discloses that before it is captured, a video frame is processed to monitor it for “compliance with one or more monitoring criteria” so that the captured image has sufficient quality that it can be processed as a mobile check deposit:

To increase the likelihood of capturing a digital image of the check 108 that may be readable and processed such that the check 108 can be cleared, the image is monitored for compliance with one or more monitoring criteria, prior to the image of the check 108 being captured. The monitoring criteria may be directed to **proper lighting and/or framing** of the check 108 in an image of the check 108 that will be captured and processed for clearing of the check 108. An application may monitor whether the check 108 is **sufficiently within the frame** of the camera and has a **high enough quality for subsequent processing**. The monitoring is performed with respect to the image as it appears in the field of view of the camera of the mobile device 106. ... The monitoring criteria may be based on one or more of [1] light contrast on the image, [2] light brightness of the image, [3] positioning of the image, [4] dimensions, [5] tolerances, [6] character spacing, [7] skewing, [8] warping, [9] corner detection, and [10] MICR (magnetic ink character recognition) line detection, as described further herein. In

an implementation, one or more [11] histograms may be determined using the image being monitored. The histograms may be used in conjunction with monitoring criteria, as described further herein.

'310 Patent, 3:65-4:23 (emph. and brackets added).

Compliance with the monitoring criteria is intended to ensure that the image of the check is suitable for one or more processing tasks. For instance, if the check is rotated 45 degrees clockwise when captured, the check processing module 454 or a software object operated on the server 322 described above may be unable to optically detect information on the check.

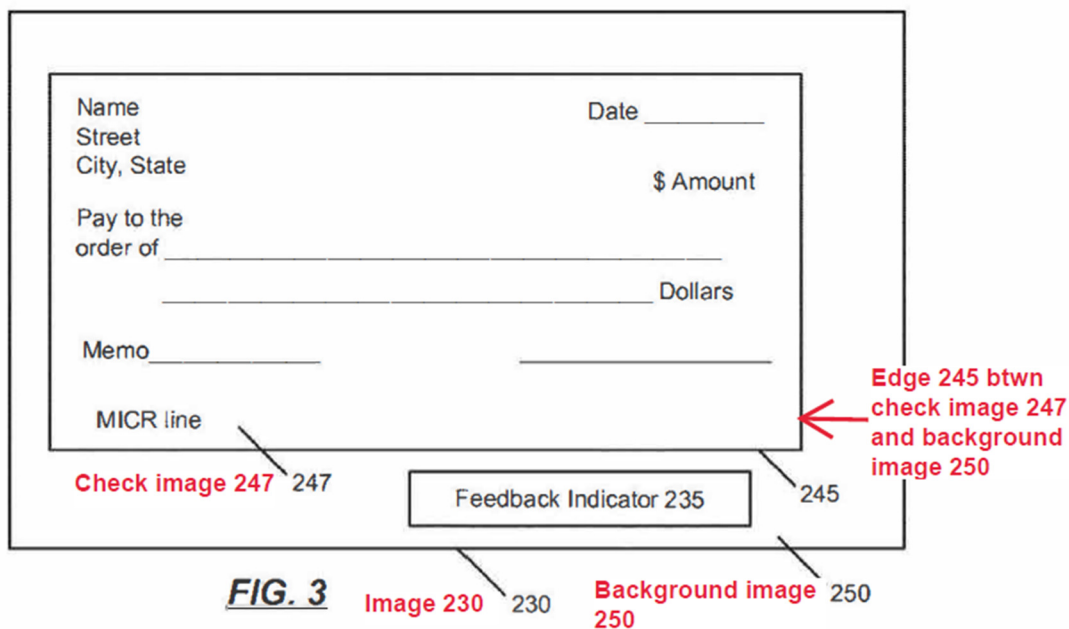
'310 Patent, 13:60-67.

Once the monitoring criteria are met, the digital image of the check can be captured automatically. '310 Patent, 4:39-47, 10:42-51.

The '310 Patent also describes how monitoring criteria can be applied to address distortions of the check image in the camera, such as skewing and warping. Generally, skewing refers to a distortion of the image where the plane of the check is substantially parallel to the plane of the camera lens (i.e., the document is flat relative to the camera lens), but the check image is not properly oriented because it is rotated or otherwise misaligned (e.g., it is not horizontal). '310 Patent, 8:24-36. Warping generally refers to a distortion of the image where the plane of the check is not parallel to the plane of the camera lens such that one portion of the check appears closer or farther (e.g., larger or smaller) than another portion of the check. '310 Patent, 8:37-51. The '310 Patent

describes how skewing and warping can be identified and used as monitoring criteria. See '310 Patent, 8:20-51. Similarly, the '310 Patent explains that “the perimeter of the check 108 may be determined” and “used for monitoring the image 230 for distortions.” '310 Patent, 8:52-57.

Figure 3 illustrates an exemplary field of view of a camera providing an image 230 (e.g., video frame) that includes a check image 247 on background image 250. There is an edge 245 defined by the transition from the edge of the check to the background image. There is a feedback indicator 235 that provides feedback to the user on image 230 meeting the monitoring criteria or not meeting the monitoring criteria. '310 Patent, 7:11-52.

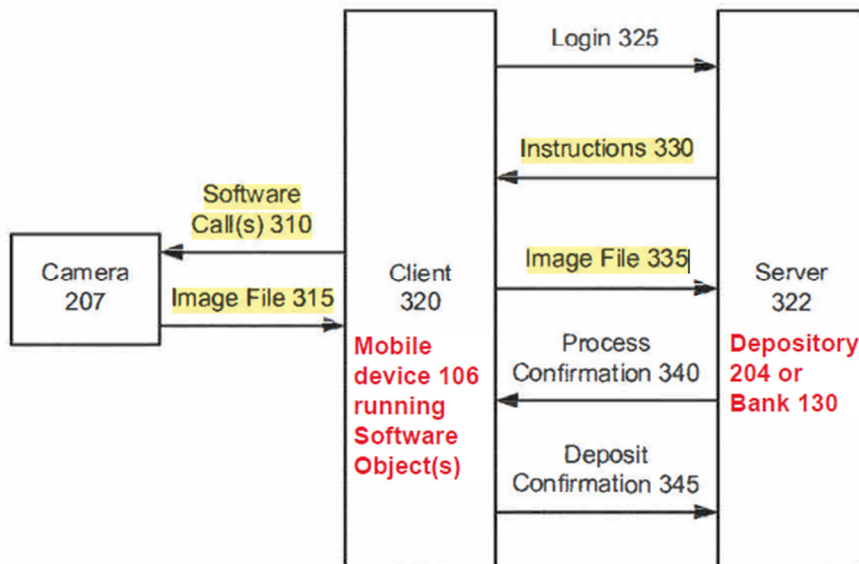


'310 Patent, Fig. 3 (annotated).

The '310 Patent describes exemplary monitoring and feedback operations occurring for a check image on a background image. For example, monitoring criteria can include edge detection, light contrast, and positioning of the check including comparison to predetermined dimensions. Feedback on proper positioning of the check and/or the camera may be provided by audio or visual (e.g., text or arrows) indicia. See '310 Patent, 7:11-52, Fig. 3.

Architecture

The '310 Patent describes various exemplary software and hardware architectures and configurations for carrying out the invention. For example, Figure 6 depicts a data flow diagram 300 illustrating that client 320 (e.g., a software object running on mobile device 106) can log-in to a server in a banking system (e.g., depository 204, bank 130, etc.) and receive instructions that cause camera 207 to be invoked, that cause monitoring criteria to be applied, and that cause an image file 315 to be transferred from camera 207 to client 320, and from there as image file 335 to server 322:



'310 Patent, Fig. 6 (annotated), 10:57-11:60.

2. Prosecution History of the '310 Patent

The application leading to the '310 Patent was filed on March 1, 2024, with Claims 1-30. Ex. 1033, 1-44 ('521 Patent, Cover, 22). The independent claims were Claims 1, 9, 18, and 26. *Id.*

The application for the '310 Patent received two office actions addressing the claims on the merits. In the second office action dated August 30, 2024, the Examiner indicated that Claims 2-5, 10, 12-15, 19-22 and 27-29 would be allowable if rewritten into independent form. Ex. 1033, 177, 185. Applicant rewrote Claims 2-3, 10, 12, 14-15, 19-20, and 27-28 into independent claims. *Id.*, 211.

The Examiner issued a Notice of Allowance on September 19, 2024, which stated the reasons for allowance:

The prior art does not disclose, either alone or in combination, the elements of the independent claims. Prasad nor Buentello disclose the limitations of the claims indicated as allowable subject matter previously. Other references disclosing the subject matter are either not found in the prior art by the examiner or cannot be reasonably combined with the existing prior art without the benefit of hindsight on the part of the examiner.

Ex. 1033, 679-686.

The '310 Patent duly issued on December 3, 2024. '310 Patent (cover page).

III. LEVEL OF ORDINARY SKILL IN THE ART AND PRIORITY DATE

Petitioner submits that a person of ordinary skill in the art (“POSITA”) “would have had a bachelor’s degree in electrical engineering, computer science, computer engineering, or equivalent field, and at least two years of prior experience with (1) image capture/scanning technology, involving transferring and processing of image data to and at a server and (2) software application development.” Pet., 16-17.

The definition of the level of skill of the ordinary artisan should consider factors such as the field of endeavor, the type of problems encountered in the art, prior art solutions, and sophistication of the technology. *In re GPAC, Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995). The factors are non-exclusive and may include the educational level of the inventor; type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology;

and educational level of active workers in the field. *Environmental Designs, Ltd. v. Union Oil Co. of Cal.*, 713 F.2d 693, 696 (Fed. Cir. 1983) (citing *Orthopedic Equip. Co. v. All Orthopedic Appliances, Inc.*, 707 F.2d 1376, 1381–82 (Fed. Cir. 1983)). “Not all such factors may be present in every case, and one or more of these or other factors may predominate in a particular case.” *Id.* at 696–97. Plainly, the factors considered in defining the level of skill are tied to the technology of the claims of the patent.

In this case, the patented invention addresses problems arising when attempting to use a mobile device to capture a check for deposit. ’310 Patent, 1:27-39. The problem addressed includes the challenge of the mobile device capturing an image of adequate quality because the “accurate detection and extraction of the information pertaining to a check in the digital image [at the financial institution] ... is difficult.” ’310 Patent, 1:34-49. The claims (e.g., Claim 1) recite that the (1) the mobile device processes **video** and (2) the mobile device is programmed with a **downloaded software application**.

Further, at the time of the priority date in 2009, programming applications for mobile devices—as opposed to programming for personal computers or programming for mainframe computers—involved a distinct skillset and experience base, as reflected in Petitioner’s own references. See Ex. 1005 (Meier) (development manual

for programming Android applications for mobile devices), Ex. 1008 (Goyal) (development manual for programming MIDlet applications on Java-enabled mobile devices).

Patent Owner submits that Petitioner's definition of the level of skill as one "having experience with (1) image capture/scanning technology, involving transferring and processing of image data to and at a server and (2) software application development" (Pet., 16-17) is too broad and generic. Instead, the level of skill should be characterized as one having experience with (1) the capture and processing of video in mobile devices, including the transfer of video to a server for further processing, and (2) software application development for mobile devices. The remainder of Petitioner's definition of the level of skill is acceptable.

Accordingly, a POSITA would have had a bachelor's degree in electrical engineering, computer science, computer engineering, or equivalent field, and at least two years of prior experience with (1) the capture and processing of video in mobile devices, including the transfer of video to a server for further processing, and (2) software application development for mobile devices.

Patent Owner reserves the right to revise the definition of the level of skill of a POSITA in any future papers in this IPR. Patent Owner submits that institution should

be denied regardless of whether Petitioner's definition or Patent Owner's definition is applied.

For purposes of this Preliminary Response, Patent Owner agrees that the priority date of the '310 Patent is at least August 21, 2009, and that the date of invention is at least as early as July 2008. See Ex. 1002 (Declaration of Dr. Daniel Lopresti), ¶ 87 n.6.

IV. CLAIM CONSTRUCTION

Petitioner submits that the claim terms can be accorded their plain and ordinary meaning. Pet., 16.

For purposes of this Preliminary Response, Patent Owner submits that the claim terms can be interpreted according to their plain and ordinary meaning in view of the surrounding claim language and other intrinsic evidence. Patent Owner does not believe any special constructions are needed for this IPR but reserves the right to propose constructions in any future papers, such as in a Patent Owner Response or in papers submitted in the district court litigation.

V. RELEVANT LEGAL STANDARDS

The objective standard for determining obviousness under 35 U.S.C. § 103, as set forth in *Graham v. John Deere Co.*, 383 U.S. 1 (1966), requires a factual determination to ascertain: (1) the scope and content of the prior art; (2) the level of ordinary skill in the art; and (3) the differences between the claimed subject matter and the prior art. Based on these factual inquiries, it must then be determined, as a

matter of law (4) whether or not the claimed subject matter as a whole would have been obvious to one of ordinary skill in the art at the time the alleged invention was made. *Id.* at 17. If appropriate, secondary considerations of nonobviousness, sometimes called “objective indicia,” should be considered, such as commercial success, long-felt but unsolved need, failure of others, unexpected results, copying, and so forth. *Id.* at 17.

A finding of obviousness requires a showing that as of the date of the invention (a) the prior art teaches or suggests each of the limitations of the claim; (b) there exists an apparent reason to combine and/or modify the prior art as proposed; and (c) a person of ordinary skill would have a reasonable expectation of success that the proposed combination and/or modification of the prior art would operate for its intended purpose. See *KSR Int’l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1741 (2007); *Pfizer, Inc. v. Apotex, Inc.*, 480 F.3d 1348, 1361 (Fed. Cir. 2007); *Regents of Univ. of California v. Broad Institute, Inc.*, 903 F.3d 1286, 1291 (Fed. Cir. 2018).

VI. THE PETITION RELIES ON DETERMINATIONS IN PRIOR IPRs THAT ARE NOT RELEVANT TO THIS IPR

The Petition makes repeated reference to decisions in prior IPRs and Federal Circuit decisions as “evidence” supporting the grounds presented in this IPR. These decisions are demonstrably irrelevant to this IPR, and Petitioner’s effort to muddy the waters should be disregarded.

For example, Petitioner refers to the decision in IPR2022-00076 (Ex. 1010, hereinafter the “-00076 IPR”) regarding U.S. Pat. No. 10,769,598. Pet., 35-36, 53, 78. However, the challenged ’598 Patent is from a different family than the ’310 Patent. The -00076 IPR also involved materially different claims and different grounds. Ex. 1010, 4 (grounds). The claims of the ’598 Patent are directed to a process for “*determining whether [a] check was previously deposited.*” Ex. 2011 (’598 Patent), Cl. 1. This is materially different from the claims of the ’310 Patent. See, e.g., ’310 Patent, Cl. 1. Additionally, the independent claims of the ’598 Patent do not recite “*monitoring the live video*” of a check, “*capturing [a] video frame*” of the “*live video*,” “*controlling the camera through the software abstraction layer*” stored in memory, “*overlaying an alignment guide on the live video*,” among other limitations set forth in the claims of the ’310 Patent. See ’598 Patent, Cl. 1; ’310 Patent, Cl. 1.

Petitioner also neglects to bring to the Board’s attention that the FWD in the -00076 IPR determined that Claims 2-7 were patentable. Ex. 1010, 57, 69. Notably, Claim 3 of the ’598 Patent refers to comparing the results of OCR recognition with validation data for the check. ’598 Patent, Cl. 2.

Petitioner refers to the decision in IPR2021-01073 (Ex. 1009, hereinafter, the “-01073 IPR”) regarding U.S. Pat. No. 8,977,571. Pet, 35, 78. Petitioner also refers

to the Federal Circuit’s decision on this IPR. Pet., 35 (citing Ex. 1060 [“PNC2”]).

However, the -01073 IPR presented different grounds with a different lead reference (Acharya) from the lead reference (Garcia) in this IPR. See Ex. 1009 (-01073 IPR FWD), 9. Additionally, the claims of the ’310 Patent at issue in this IPR are materially different from the claims of the ’571 Patent challenged in the -01073 IPR. For example, the independent claims of the ’571 Patent do not recite “*monitoring the live video*” of a check, “*capturing [a] video frame*” of the “*live video*,” “*controlling the camera through the software abstraction layer*” stored in memory, “*overlaying an alignment guide on the live video*,” among other limitations. See ’310 Patent Cl. 1; ’571 Patent, Cl. 1.

Petitioner also refers to the decision in IPR2021-01077 (Ex. 1041, hereinafter, the “-01077 IPR”) regarding U.S. Pat. No. 10,621,559. Pet., 53, 57. The ’559 Patent is from a different family than the ’310 Patent. The -01077 IPR involved materially different claims and different grounds. Ex. 1041, 6 (grounds). The claims of the ’559 Patent pertain to a process including “*convert[ing] the digital image [of a check received in a first image format] to a second image format*.” Ex. 1041, 9-10. This is materially different from the claims of the ’310 Patent. See, e.g., ’310 Patent, Cl. 1. Additionally, the independent claims of the ’559 Patent do not recite “*monitoring the live video*” of a check, “*capturing [a] video frame*” of the “*live video*,” “*controlling*

the camera through the software abstraction layer” stored in memory, “overlaying an alignment guide on the live video,” among other limitations set forth in the claims of the ’310 Patent. See Ex. 1041, 9-10 (Cl. 1 of ’559 Patent); ’310 Patent Cl. 1.

In sum, the prior IPR decisions cited by Petitioner have no bearing on this IPR and only serve to highlight the weakness of the grounds presented in this IPR, as discussed further below.

VII. THE CHALLENGED CLAIMS ARE NOT UNPATENTABLE BASED ON GARCIA, LUO, MEIER, AND COHEN (GROUND 1)

The Petition fails to show that the claims are obvious based on Ground 1 because the references fail to meet one or more limitations of the Challenged Claims.

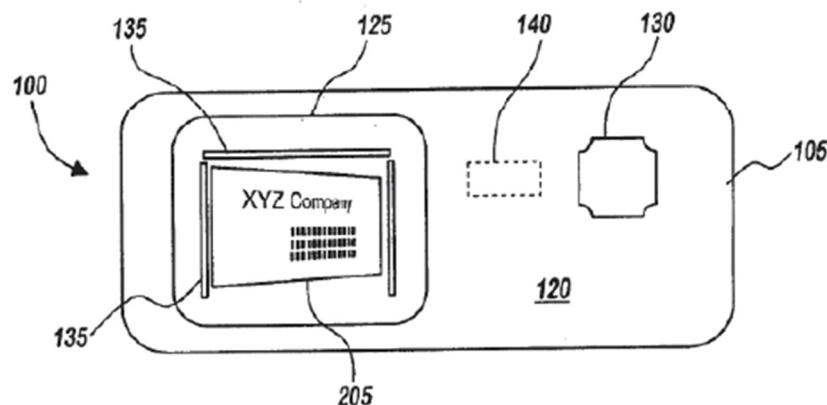
Ground 1 asserts obviousness of Claims 1-3, 5-6, 8-12, and 14-16 based on Garcia (Ex. 1003), Luo (Ex. 1004), Meier (Ex. 1005), and Cohen (Ex. 1006). Pet., 7, 26, *et seq.*

A. The Combination Fails to Teach A Method For “*Mobile Check Deposit Auto-Capture Functionality Via Video frame Processing*” [1-Pre]

Petitioner treats the preamble reciting “[a] *method enabling mobile check deposit auto-capture functionality via video frame processing*” as limiting. Patent Owner agrees. However, the references relied upon for the preamble, Luo and Meier, do not teach or suggest auto-capture using “*video frame processing*” as claimed. See Pet., 39-42.

First, the Petition relies on Luo as teaching “*video frame processing*.” Pet., 39. Luo generally discloses using a mobile device to capture the image of a document such as a business card by using “reference lines” to ensure the image is properly aligned before the image is captured. Luo, Abstract, 3-7, Figs. 3-5. The goal is to prevent “projective deformation” where the object plane for the image of the document is misaligned with the image plane of the camera lens. Luo, 4-5, Figs. 3-5.

Figure 2 of Luo depicts the use of reference lines 135 in the preview window 125 to align the image of the document 205 within the preview window:



Luo, Fig. 2.

Luo discloses that the device operates in three modes: (1) “standard still image mode,” (2) “video mode,” and (3) the “document capture mode.” Luo, 3. The Petition relies on Luo’s “document capture mode” as allegedly teaching parts of the challenged claims. But in the document capture mode described and claimed in Luo, the mobile device is not performing “*video frame processing*” as claimed. The

disclosure that the document capture mode is distinct from the “video mode” in Luo confirms this distinction.

Luo also describes its invention as a “system for capturing images.” Luo, 2. Throughout the disclosure, Luo describes that a “preview image” is displayed in the viewfinder and distinguishes that from its image capture process. Luo, 4 (“preview image displayed in the window 125”), 6 (“capture the selected image”).

Luo states that the “preview window 125 can function as a viewfinder ... and display in real time any moving image of the scene in front of the image sensor 115.” Luo, 3. A POSITA would understand this to mean that the device will provide a preview of images that can change as the scene changes. Thus, a POSITA would understand Luo as performing the preview and capture of still images, not performing “*video frame processing*” of video frames per limitation 1[pre].

Petitioner’s back-up argument relies on Meier for the claimed “*video frame processing*.” Pet., 41-42.

Specifically, the Petition alleges that Meier (Ex. 1005) teaches using a mobile device to “display and process [] video frames from a camera.” Pet., 41. However, Meier does not teach the processing of video frames, as alleged. Meier at most teaches a POSITA to “use the camera to capture images and preview and capture live video.” Meier, 315. The preview and capture of “live video” means at most that live

video is previewed and that a segment of live video can be captured (e.g., a 30 second clip of your child playing with her new puppy). That capture of a clip of video does not meet the “*video frame processing*” of video frames required by the claim.

Similarly, Petitioner refers to the disclosure in Meier (at 315) of providing “[a]ccess to the device camera for taking pictures and previewing video.” Pet., 41. At most, that passage teaches taking still images and previewing video, not “*video frame processing*” of video frames. Likewise, the Petitioner refers to Meier’s reference (at 320) that “[a]ccess to the camera’s streaming video means that you can incorporate live video into your application . . . The camera preview can be displayed in real time onto a Surface.” Pet., 41-42. That, at most, teaches previewing live video and including live video in an application, not “*video frame processing*” of video frames.

The Petition refers to Meier’s statement (at 320) that “early Android applications have used this functionality [previewing live video] as the basis for augmenting reality.” Pet., 42. At most, this refers to previewing live video and potentially incorporating live video into augmented reality applications, not “*video frame processing*” of video frames.

Other passages of Meier confirm Patent Owner’s position. For example, in the Summary section of Chapter 10 “Accessing Android Hardware,” Meier summarizes

what was taught: “You were introduced to the Camera APIs that can used to change camera settings, **initiate live camera previews, and take photos.**” Meier, 351 (emph. added). This confirms that Meier only teaches APIs for taking pictures (still images) and previewing live video, not performing “*video frame processing*” of video frames as claimed.

Meier, entitled “Professional Android Application Development,” is a manual exceeding four hundred pages used by software developers to code software applications for mobile devices. If there were APIs in Meier providing for processing individual video frames (“*video frame processing*”), they would have surely been called out in the manual.

B. The Combination Fails to Teach “*Generating a Live Video of the Check in a Field of View of the Camera*” of Limitation 1[c]

Petitioner refers to Meier and Luo as allegedly meeting limitation 1[c]’s requirement for “*generating a live video of the check in a field of view of the camera.*” Pet., 46-47.

However, as discussed above for 1[pre], Meier at most teaches the capture of “live video” and “previewing video,” but not generating live video “*in a field of view of the camera.*” Meier, 315. A POSITA would appreciate that “previewing video” does not necessarily teach that the video is presented in a field of view. Indeed, Meier does not disclose an API for generating live video “*in a field of view of the*

camera.” See Meier, 315 (“previewing video”), 319 (“manipulate streaming camera previews”), 320 (“camera preview ... displayed ... onto a Surface”).²

As for Luo, it does not teach “*generating a live video of the check.*” For example, Luo discloses generating a “**preview image** displayed in window 125.” Luo, 3 (emph. added). Luo also discloses that the device operates in one of three modes: (1) “standard image mode,” (2) “video mode,” and (3) the “document capture mode.” Luo, 3. The document capture mode is used for capturing documents such as business cards (Luo, 1, 4), and the Petition relies on the document capture mode functionality to read on the challenged claims—not the separate video mode. As discussed above for 1[pre], Luo teaches at most the display of still images, not “*generating [] live video of the check.*”

Accordingly, the combination fails to teach “*generating a live video of the check in a field of view of the camera*” of limitation 1[c].

² Surface is a buffer queue such as SurfaceView used to display a preview in real time. Meier, 320.

C. The Combination Fails to Teach “*Determining That a Video Frame of the Live Video of the Check Satisfies the At Least One Monitoring Criterion and Then Automatically Capturing the Video Frame*” of Limitation 1[f].

Limitation 1[f] provides for “*determining that a video frame of the live video of the check satisfies the at least one monitoring criterion and then automatically capturing the video frame.*”

Petitioner relies on Luo for limitation 1[f]. See Pet., 49-50. As discussed above, Luo does not disclose generating a live video or analyzing video frames of live video, and similarly does not disclose anything about automatically capturing video frames from a live video feed. See Luo, 4, 6, Cl. 1, Cl. 10.

D. The Combination Fails to Teach Limitation 1[a] for “*A Memory Storing a Software Abstraction Layer ... to Control Check Deposit by Controlling the Camera through the Software Abstraction Layer*”

Limitation 1[a] recites “*a memory storing a software abstraction layer for controlling the camera ... to control check deposit by controlling the camera through the software abstraction layer.*”

Petitioner relies on Garcia and Meier for limitation 1[a]. Pet., 42-44. For the specific limitation of the downloaded software application “*controlling the camera through the software abstraction layer*” stored in memory, Petitioner relies on Meier. Pet., 43-44.

Petitioner points to Meier’s reference to APIs used to access camera hardware. But Petitioner does not establish that Meier discloses a software application controlling the camera “*through the software abstraction layer.*” Petitioner cites Meier at 315 and 319, but those sections do not address a software abstraction layer.

Petitioner might be suggesting—though it is far from clear—that a software abstraction layer is inherent through the use of an API: “Meier further teaches that such an application can use an API (software abstraction layer) of the mobile device to ‘access camera hardware’” Pet., 42. But the Petitioner makes no showing that the existence of an API means there must be a software abstraction layer. Pet., 42-44. Petitioner has not established that it is inherent that an application on the mobile device is “*controlling the camera through [a] software abstraction layer*” per limitation 1[a]. *Par Pharm. v. TWI Pharm., Inc.*, 773 F.3d 1186, 1194-1996 (Fed. Cir. 2014) (inherency cannot supply a missing limitation in an obviousness analysis if the limitation at issue is not necessarily present in the prior art). *See Rosco, Inc. v. Mirror Lite Co.*, 304 F.3d 1373, 1380 (Fed. Cir. 2002) (the doctrine of inherency requires that “the missing element ‘is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill.’”); *Continental Can Co. v. Monsanto Co.*, 948 F.2d 1264, 1268-1269 (Fed. Cir. 1991) (when a claim limitation is not explicitly set forth in a reference, evidence “must

make clear that the missing descriptive matter is necessarily present in the thing described in the reference . . .”).

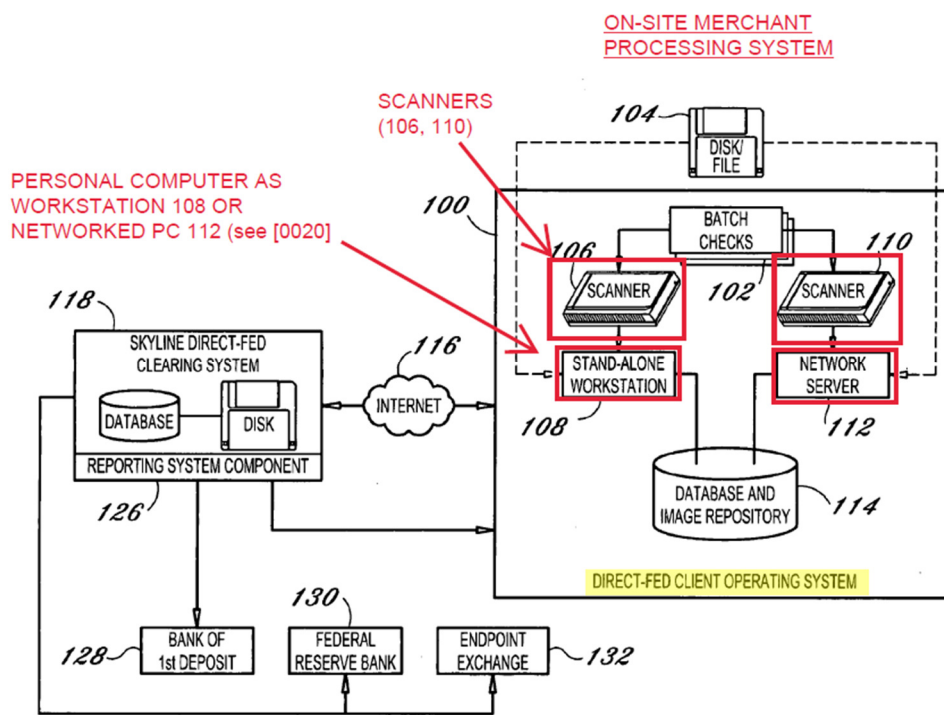
The Petition should be denied because it fails to establish limitation 1[a] of Claim 1.

E. The Combination Fails to Teach Limitation 1[k] for “*Processing the Digital Image of the Check ... Including Receiving an Indication of a Result of the Processing Before Confirming that the Mobile Check Deposit Can Go Forward*”

Limitation 1[k] provides for “*processing the digital image of the check including [1] performing optical character recognition on the check in the digital image and [2] verifying that the digital image of the check is acceptable for mobile check deposit, wherein the app, when downloaded and executed by the user’s mobile device, is configured to cause the user’s mobile device to perform additional operations including [3] receiving an indication of a result of the processing before confirming that the mobile check deposit can go forward.*” ’310 Patent, Cl. 1 (brackets added).

Petitioner relies on Cohen’s remote merchant system for check processing as allegedly teaching limitation 1[k][3] for the mobile device “*receiving an indication of a result of the processing before confirming that the mobile check deposit can go forward.*” Pet., 57-58. Cohen discloses a remote merchant system for performing “local on-site” check processing in batch mode using scanner devices and a personal

computer to perform OCR and parsing of MICR line data. Cohen, [0017], [0018]-[0022], Figs. 1-2. The purpose of Cohen is to provide a merchant-side check processing system that circumvents the Bank of First Deposit (BoFD) and allows submission of the check directly to a branch of the Federal Reserve. Cohen, Abstract, [0018].



Cohen, Fig. 1 (annotated). Cohen's merchant system relies on "DirectFed" client software running on the PC. Cohen, [0020].

Regarding limitation 1[k][3] for "*receiving an indication of a result of the processing before confirming,*" Petitioner tacitly admits that Cohen does not teach that limitation, arguing instead that "[t]he user's device **would need to receive an**

indication of the result of the processing.” Pet., 58 (emph. added; original italics). No citation to Cohen is provided for this limitation.

Instead, the Petitioner engages in improper gap-filling using its expert’s declaration to supply the missing limitation. Pet., 58 (citing to Ex. 1002, Lopresti declaration, ¶¶ 250-51). The expert does not dispute that Cohen teaches a PC-based system at a merchant location performing batch check processing. Cohen, [0020]-[0022], Fig. 1. There is no mobile device, let alone a “*user’s mobile device*,” as claimed. Further, Petitioner’s expert provides no citation that the “*user’s mobile device*” would “*receive a result of the processing before confirming*,” as claimed. The expert provides no citation to Cohen (or any other reference) supporting the assertion (¶ 251) that “Cohen teaches ‘receiving an indication of a result of the processing before confirming that the mobile check deposit can go forward.’” The Petitioner’s expert’s testimony used to supply missing limitation 1[k][3] is pure *ipse dixit* untethered to supporting evidence that should be disregarded. *TQ Delta, LLC v. CISCO Systems, Inc.*, 942 F.3d 1352, 1360, 1362 (Fed. Cir. 2019) (expert’s “*ipse dixit* declaration [] is untethered to any supporting evidence”).

Because Cohen fails to teach or suggest the limitation, Petitioner is forced to rely on another IPR decision as “evidence” that limitation 1[k] is met. Pet., 57 (citing to Ex. 1041, IPR2021-01077, hereinafter the “-01077 IPR.”). But the -01077 IPR

involves a different patent (U.S. Pat. No. 10,621,559) from a different family than the '310 Patent. Further, the cited passage from the decision in the -01077 IPR involves completely different claim language, which is “*accepting the digital image for check deposit in place of the check depicted in the digital image*” (see Ex. 1041, 45) than the language at issue in limitation 1[k]. Further, the cited passage from the decision (Ex. 1041, 48-51) appears to make its finding based on the Randle reference, not the Garcia reference as implied by Petitioner. Randle is not one of the references in Ground 1 of the instant IPR. In sum, Petitioner’s citation to the decision in the -01077 IPR is completely irrelevant.

Petitioner has failed to establish that the proposed combination of references meets limitation 1[k] for the reasons stated above.

F. Independent Claims 2, 5-6, 8-11, and 14-15 Are Patentable Over the Garcia/Luo/Meier/Cohen Combination of Ground 1

Petitioner relies on the same arguments from Claim 1 for independent Claims 2, 5-6, 8-11, and 14-15. See, e.g., Pet., 39 (same argument presented for 1[pre]/2[pre]/5[pre]/6[pre]/8[pre]/9[pre]/10[pre]/11[pre]/14[pre]/15[pre]), 45 (same argument presented for 1[c]/2[c]/5[c]/6[c]/8[c]/9[c]/10[c]/11[c]/14[c]/15[c]).

Patent Owner notes that Claims 5-6, 8-11, and 14-15 do not recite “*receiving an indication of a result of the processing before confirming that the mobile check deposit can go forward*” found in limitation 1[k]). Thus, the argument in Section

VII.E above does not apply to those claims. Patent Owner's arguments in Sections VII.A-D still apply.

Accordingly, independent Claims 2, 5-6, 8-11, and 14-15 are patentable for at least the reasons set forth in Sections VII.A-E, subject to the aforementioned.

G. Dependent Claims 3-4, 7, 12-13 and 16 Are Patentable Over the Garcia/Luo/Meier/Cohen Combination of Ground 1 and the Combination of Ground 2

Dependent Claims 3-4, 7, 12-13 and 16 are patentable for at least the reasons set forth for their respective independent claims. This conclusion applies to Ground 1 as well as Ground 2, which adds the fifth-level Yoon reference.

VIII. THE CHALLENGED CLAIMS ARE NOT UNPATENTABLE BASED ON GARCIA, LUO, GOYAL, AND COHEN (GROUND 3)

The Petition fails to show that the claims are obvious based on Ground 3 because the references fail to meet one or more limitations of the Challenged Claims.

Ground 3 asserts obviousness of Claims 1-3, 5-6, 8-12, and 14-16 based on the same combination as Ground 1, except the Meier reference is replaced by Goyal (Ex. 1008). Goyal is deficient because it at best teaches mobile apps that can “capture snapshots or full videos” (Goyal, 127), not apps that perform “*video frame processing*” and “*capturing [a] video frame*” from “*live video*” as set forth in the claims of the '310 Patent.

A. The Combination Fails to Teach A Method For “*Mobile Check Deposit Auto-Capture Functionality Via Video frame Processing*” [1-Pre]

The Petition does not even assert that Goyal teaches a mobile device performing “*video frame processing*” of video frames, as claimed. See Pet., 78-80. Indeed, the Petition admits that Goyal at best teaches a “downloadable application ... that can implement the capturing of **an image of a check**” (Pet., 79), i.e., a snapshot or still image, not “*video frame processing*” as claimed.

Goyal is an early guide (2006) for developing mobile applications for specific Java-enabled devices like the Alcatel and Nokia phones. Goyal, 3. A developer can use “MMAPI [Multimedia APIs] [that] allow you to create applications” known as MIDlets that can be used “to capture snapshots or full videos.” Goyal, 1, 127.

Accordingly, for the same reasons discussed above in Section VII.A for Meier, Goyal at most teaches use of snapshots or full video clips, not “*video frame processing*” of “*video frame[s]*” as claimed.

B. The Combination Fails to Teach “*Determining ... And then Automatically Capturing the Video Frame*” From the “*Live Video*” of Limitation 1[f]

The Petition groups most of the remaining limitations (e.g., limitations 1[c]-[h]) together in a very abbreviated section. See Pet., 81-82.

However, Goyal fails to teach or suggest “*determining ... and then automatically capturing the video frame*” from the “*live video*” of limitation 1[f].

At most, Goyal teaches “captur[ing] snapshots or full videos” and “display[ing] the video through a viewfinder.” Goyal, 127, 174. Goyal does not teach “*capturing [a] video frame*” from “*live video*.” As previously discussed, the capture of full video (e.g., a segment of 30 seconds of video of a child playing) does not teach capturing individual video frames from live video, nor does the ability to capture snapshots at a moment in time (Goyal, 174) teach capturing individual “*video frame[s]*” from “*live video*” per limitation 1[f].

In sum, the Petitioner has failed to establish that Goyal (alone or in combination with other references) teaches or suggests “*determining ... and then automatically capturing the video frame*” from the “*live video*” of limitation 1[f].

Regarding the other limitations of Claim 1, Petitioner’s abbreviated Section X.C.2.c presents no analysis but instead concludes: “Goyal therefore teaches or renders obvious the additional limitations in the Challenged claims that require the use of live video frames for similar reasons that Meier teaches or renders obvious such limitations.” Pet., 82. See Pet., 82-83 (“A POSITA would have found the remaining limitations ... obvious in view of Garcia/Luo/Goyal/Cohen for the same reasons [as for Ground 1 based on Garcia/Luo/Meier/Cohen].”

Accordingly, Patent Owner submits that Goyal is deficient for at least the reasons set forth above in Section VII for Meier.

C. The Combination Fails to Teach Limitation 1[a] for “A Memory Storing a Software Abstraction Layer ... to Control Check Deposit by Controlling the Camera through the Software Abstraction Layer ...”

Limitation 1[a] recites “*a memory storing a software abstraction layer for controlling the camera ... to control check deposit by controlling the camera through the software abstraction layer.*”

As with Meier discussed in Section VII.D, Goyal does not teach or suggest a mobile device having “*a memory storing a software abstraction layer for controlling the camera ... to control check deposit by controlling the camera through the software abstraction layer*” per limitation 1[a].

The Petition makes no showing that Goyal teaches or suggests the claimed software abstraction layer. See Pet., 80-81. Petitioner makes a conclusory assertion that Goyal teaches that a developer can “use an API (software abstraction layer) of the mobile device ‘to hook into a device camera.’” Pet., 80 (citing Goyal, 127, 174). In those passages, Goyal merely discusses using an API “to capture snapshots or full videos” by “hook[ing] into the camera.” Goyal, 127, 174. They do not even reference a software abstraction layer.

Petitioner does not argue, let alone establish, that the use of APIs means that a software abstraction layer is inherently present. See Pet., 80-81. Cited pages 174-178 of Goyal do not reference a software abstraction layer. See Pet., 82.

Accordingly, Petitioner does not establish that Goyal, alone or in combination with other references in the ground, teaches or suggests “*a memory storing a software abstraction layer for controlling the camera ... through the software abstraction layer*” per limitation 1[a].

D. The Combination Fails to Teach Limitation 1[k] for “*Processing the Digital Image of the Check ... Including Receiving an Indication of a Result of the Processing Before Confirming that the Mobile Check Deposit Can Go Forward*”

Limitation 1[k] provides for “*processing the digital image of the check [and] wherein the app, when downloaded and executed by the user’s mobile device, is configured to cause the user’s mobile device to perform additional operations including receiving an indication of a result of the processing before confirming that the mobile check deposit can go forward.*” ’310 Patent, Cl. 1.

For Ground 3, Petitioner does not even address this limitation. See Pet., 78-80. Section X.C.2.a purports to address multiple limitations including limitation 1[k]. See Pet., 78. However, it does not present any argument on limitation 1[k]. Pet., 78-80. For that reason alone, Petitioner has failed to establish limitation 1[k] for Ground 3.

Patent Owner notes that Cohen fails to teach the mobile device “*receiving an indication of a result of the processing before confirming that the mobile check*

deposit can go forward” for the reasons set forth above in Section VII.E for Ground

1.

E. Independent Claims 2, 5-6, 8-11, and 14-15 Are Patentable Over the Garcia/Luo/Meier/Cohen Combination of Ground 3

Petitioner relies on the same arguments for Claim 1 as for independent Claims 2, 5-6, 8-11, and 14-15. These claims are patentable over the combination of Ground 3 for the same reasons as Claim 1, except the argument in Section VIII.D does not apply to the claims not reciting the mobile device “*receiving an indication of a result of the processing.*”

F. Dependent Claims 3-4, 7, 12-13 and 16 Are Patentable Over the Garcia/Luo/Goyal/Cohen Combination of Ground 3 and the Combination of Ground 4

Dependent Claims 3-4, 7, 12-13 and 16 are patentable for at least the reasons set forth for their respective independent claims. This conclusion applies to Ground 3 and Ground 4, which adds the fifth-level Yoon reference.

IX. CONCLUSION

For the reasons set forth above, the Petition fails to demonstrate a reasonable likelihood that any of challenged Claims 1-16 of the '310 Patent are unpatentable.

Dated: November 12, 2025

Respectfully submitted,

/Stephen. T. Schreiner/

Stephen T. Schreiner (Reg. No. 43,097)

CARMICHAEL IP, PLLC

8607 Westwood Center Drive

Suite 270

Tysons, VA 22182

Tel: (703) 646-9254

schreiner@carmichaelip.com

Counsel for Patent Owner

CERTIFICATE OF COMPLIANCE WITH TYPE-VOLUME LIMITS

This Patent Owner Preliminary Response consists of 7,599 words, excluding table of contents, table of authorities, certificate of service, this certificate, or table of exhibits. The Response complies with the type-volume limitation of 14,000 words as set forth in 37 C.F.R. § 42.24. In preparing this certificate, counsel has relied on the word count of the word-processing system used to prepare the paper (Microsoft Word).

Dated: November 12, 2025

/Stephen T. Schreiner/
Stephen T. Schreiner (Reg. No. 43,097)
CARMICHAEL IP, PLLC
8607 Westwood Center Drive
Suite 270
Tysons, VA 22182
Tel: (703) 646-9254
schreiner@carmichaelip.com

Counsel for Patent Owner

CERTIFICATE OF SERVICE

I hereby certify that on November 12, 2025, I caused a true and correct copy of the foregoing Patent Owner Preliminary Response Merits Brief Requesting Denial of Institution and Exhibits 2010-2014 to be served on the following counsel for Petitioner by electronic mail to the following email addresses:

Regions Bank counsel:

David Cavanaugh
Gregory Lantier (notice of intent to designate as a
provisionally recognized PTAB attorney to be filed)
Andrew Danford (notice of intent to designate as a
provisionally recognized PTAB attorney to be filed)
Alexander J. Nemtzow, Amy L. Mahan, Chisom I. Nwakama
Wilmer Cutler Pickering Hale and Dorr LLP
60 State Street
Boston, MA 02109
David.Cavanaugh@wilmerhale.com
Alex.Nemtzw@wilmerhale.com
Gregory.Lantier@wilmerhale.com
Andrew.Danford@wilmerhale.com
Amy.Mahan@wilmerhale.com
Chisom.Nwakama@wilmerhale.com

By: /Stephen T. Schreiner/
Stephen T. Schreiner (Reg. No. 43,097)
CARMICHAEL IP, PLLC
8607 Westwood Center Drive, Suite 270
Tysons, VA 22182
Tel: (703) 646-9254
schreiner@carmichaelip.com
Counsel for Patent Owner