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

FIFTH THIRD BANK, NATIONAL ASSOCIATION
Petitioner,

v.

UNITED STATES AUTOMOBILE ASSOCIATION
Patent Owner

INTER PARTES REVIEW OF U.S. PATENT NO. 12,159,310
Case No. IPR2026-00279

DECLARATION OF JOHN C. HART, PHD IN SUPPORT OF PETITION FOR *INTER PARTES REVIEW*

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I, John C. Hart, PhD, declare as follows.

I. INTRODUCTION

1. I have been retained by counsel for Petitioner Fifth Third Bank, National Association ("Fifth Third" or "Petitioner") to provide my opinion about the validity of claims 1-16 of U.S. Patent No. 12,159,310 (the "Challenged Claims" of the "'310 Patent," EX1001), which is owned by United Services Automobile Association ("USAA," "Patent Owner," or "PO"). I understand that Fifth Third is seeking to join a prior proceeding brought by Regions Bank ("Regions"). I understand that Fifth Third, like Regions, is requesting that the United States Patent and Trademark Office hold claims 1-16 unpatentable. I submit this declaration in support of Petitioner's petition for *inter partes* review.

2. I am associated with Gerson Lehrman Group, which I understand is being compensated for my time at a rate of $1,300/hour. I understand that I will be reimbursed for any reasonable expenses I incur while performing this work. I have no financial or other personal interest in the '310 patent, and my compensation is not contingent on the outcome of this matter or the specifics of my testimony.

II. BACKGROUND AND QUALIFICATIONS

3. I am a tenured full Professor in the Siebel School of Computing and Data Science at the University of Illinois at Urbana-Champaign, a computer science program consistently ranked in the top five according to US News and World Report.

I also served as the area chair for its Graphics, Visualization and Human-Computer Interaction area from 2004-2011. I received a Ph.D. in Electrical Engineering and Computer Science from the University of Illinois at Chicago in 1991. I have also received an M.S. in Electrical Engineering and Computer Science from the University of Illinois at Chicago in 1989, and a B.S. in Computer Science from Aurora University in 1987.

4. My area of research is visual computing, including computer graphics, data visualization, virtual reality and imaging systems. Over the past nearly four decades I have contributed over a hundred papers, videos and patents to this area. My research in visual computing has been funded by Adobe, Intel, Microsoft, Nokia and Nvidia as well as the National Science Foundation (NSF) and the Defense Advanced Research Projects Agency (DARPA).

5. In 2011, I was funded by the National Science Foundation's Advanced Digitization of Biodiversity Collections to design and deliver an imaging infrastructure to scan the nation's entomological collections of insect drawers. This project required the fusion of 51,791 photographic images of small portions of insect drawers, vials and slides to make the collections available via the Internet as high-resolution zoomable composite images. This effort included the design and deployment of a custom robotic photographic imaging system, designed specifically to capture and integrate numerous photographs of each specimen drawer, as

described in: C. Dietrich, J. Hart, D. Raila, U. Ravaioli, N. Sobh, O. Sobh, C. Taylor. InvertNet: a new paradigm for digital access to invertebrate collections. ZooKeys 209, July 2012, pp. 165-181.

6. I am an internationally recognized leader in the field of visual computing. The Association for Computing Machinery (ACM) is the main worldwide organization for computing professionals. From 1994 to 1999, I served on the executive committee of the ACM Special Interest Group on Computer Graphics and Interactive Techniques (SIGGRAPH). From 2002 to 2008, I was the Editor-in-Chief of the ACM Transactions on Computer Graphics, the top journal in that field. From 2014 to 2022, I was a founding member of the editorial board of ACM Books, served as its area editor for visual computing, and oversaw the publication of such books including "The VR Book: Human-Centered Design for Virtual Reality."

7. I have also served as an educator in interactive computing for nearly four decades. I have taught courses to thousands of students on a variety of topics in visual computing, including computer graphics, data visualization, virtual reality, and imaging systems.

8. I have worked on a variety of methods and systems for the processing of images and video. For example, in 2008 I was granted patent #7,365,744 "Method and Systems for Image Modification" on techniques for learning a surface

appearance from one photograph and realistically applying it to a different surface in another photograph.

9. My curriculum vitae ("CV") is being submitted along with this declaration and includes a more detailed list of my qualifications and experience, as well as the cases in which I have testified as an expert at trial or by deposition.

III. LEGAL STANDARDS

10. I am not an attorney, but counsel has explained to me the following legal principles, which I applied in conducting the analyses expressed in this declaration.

11. I understand that patent claims may be invalid as "anticipated" in view of a single prior art reference, or "obvious" in view of one or more prior art references.

12. Counsel has explained that a prior art reference anticipates a patent claim when it discloses, either expressly or inherently, every limitation of the claim as arranged in the claim. A reference does not need to explicitly disclose what was already well-known to a person of ordinary skill in the art. Furthermore, I have been informed that a prior art reference should be considered for everything it teaches, and not limited merely to a particular embodiment or the specific invention claimed therein.

13. I understand that a patent claim is unpatentable if the claimed invention would have been obvious to a person of ordinary skill in the art at the time the alleged invention was made. An obviousness determination requires consideration of several factors: (1) the scope and content of the prior art; (2) any differences between the prior art and the claims at issue; (3) the level of ordinary skill in the pertinent art; and (4) objective indicia of non-obviousness, also known as secondary considerations.

14. I have been informed that for a finding of obviousness, there must have been some reason or motivation that would have led a person of ordinary skill in the art to combine or modify the relevant teachings in the prior art to arrive at the claimed invention, along with a reasonable expectation of success in doing so. However, obviousness does not require that a particular combination or modification be the best or preferred approach; it need only have been desirable in view of the prior art.

15. I have been informed that exemplary rationales supporting obviousness include: (a) combining prior art elements according to known methods to yield predictable results; (b) simple substitution of one known element for another to obtain predictable results; (c) using a known technique to improve similar devices, methods, or products in the same way; (d) applying a known technique to a known device, method, or product ready for improvement to yield predictable results; (e)

choosing from a finite number of identified, predictable solutions with a reasonable expectation of success; (f) adapting work from one field of endeavor for use in the same or a different field based on design incentives or market forces where the variations are predictable; and (g) some teaching, suggestion, or motivation in the prior art that would lead one of ordinary skill to modify the prior art reference or combine references to arrive at the claimed invention.

IV. MATERIALS CONSIDERED

16. In forming my opinions, I relied on my experience, education, and training, as well as my detailed review of the Declaration of Dr. Daniel Lopresti in support of Regions Bank's Petition for *Inter Partes* Review of U.S. Patent No. 12,159,310 ("Lopresti Declaration," EX1002), as well as all materials referenced therein.

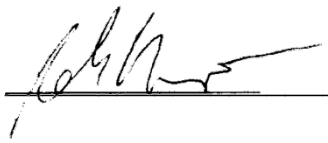
V. OPINIONS REGARDING THE '310 PATENT

17. I have reviewed the Lopresti Declaration, submitted in connection with Regions Bank's petition for *inter partes review* of the '310 patent (IPR2025-01326), including the materials and exhibits cited therein. I fully agree with, and hereby adopt as if set forth herein, the opinions set forth in the Lopresti Declaration.

VI. CONCLUSION

18. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001.

Dated: February 26, 2026



John C. Hart, PhD