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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GLOBAL TEL*LINK CORPORATION,
Petitioner,

v.

SECURUS TECHNOLOGIES, INC.,
Patent Owner.

Case IPR2016-01220
U.S. Patent No. 9,007,420 B1

DECLARATION OF PROFESSOR IOANNIS KAKADIARIS, PH.D. IN SUPPORT OF PATENT OWNER'S MOTION TO EXCLUDE

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I, Ioannis A. Kakadiaris, do hereby declare and state, under penalty of perjury under the laws of the United States of America, that all statements made herein of my own knowledge are true and correct 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 Section 1001 of Title 18 of the United States Code.

Executed on July 15, 2017, at Houston, TX.

_____
Ioannis A. Kakadiaris

1. My name is Ioannis A. Kakadiaris. I have been asked to submit this declaration on behalf of Securus Technologies, Inc. ("Securus" or "Patent Owner") in connection with Patent Owner's Motion to Exclude Evidence Under 37 C.F.R. §§ 42.64(b)(1) and 42.64(c) in IPR2016-01220. My background and qualifications to testify as an expert in this proceeding are detailed in my prior declaration supporting Securus' Patent Owner Response, dated March 17, 2017. Securus Exhibit 2004.

2. In preparing this declaration, I reviewed Petitioner's Reply (Paper 19), my deposition transcript (GTL Exhibit 1022), and GTL Exhibit 1021, which I will refer to as "GTL Exhibit 1021." I also reviewed my prior declaration (Securus Exhibit 2004), as well as various portions of the record cited therein, such as U.S. Patent No. 9,007,420 (GTL Exhibit 1001), which I will refer to as the "'420 patent."

3. Petitioner states in its Reply that "Dr. Beigi's understanding of 'actual' is consistent with how Dr. Kakadiaris has used the word in his own writings related to face detection and recognition. In one of his publications, Dr. Kakadiaris describes an '***actual*** geometry of the face.'" Petitioner's Reply at 7 (emphasis in original). Petitioner cites GTL Exhibit 1021 at 260 in an attempt to support this assertion. Petitioner's Reply at 7. I disagree with Petitioner's interpretation of this statement from GTL Exhibit 1021 and Petitioner's assertion that it supports Dr. Beigi's interpretation of "actual." Petitioner takes the phrase "actual geometry of the face"

from GTL Exhibit 1021 out of context. When taken in context, it is clear that GTL Exhibit 1021's use of the term "actual" is much different than the use of "actual" in the '420 patent.

4. The statement quoted by Petitioner purports to come from a paper in GTL Exhibit 1021 titled "Bidirectional Relighting for 3D-Aided 2D Face Recognition," which I co-authored. I have no opinion on the authenticity of GTL Exhibit 1021. The paper in GTL Exhibit 1021 uses the term "actual" to refer to an "actual geometry" and never refers to detecting an "actual face" of a person in an image like the '420 patent. To be clear, GTL Exhibit 1021 does not describe any method of distinguishing an "actual face" from a "face" depicted in a photograph or facsimile like the '420 patent. Instead, the portion of the paper highlighted by Petitioner's Reply describes an "2D+3D Enrollment" method for enrolling the biometric data from both a 2D image and a 3D facial mesh to a gallery of biometric data. GTL Exhibit 1021 at 260.

5. Unlike the '420 patent, the "enrollment" method disclosed in the paper presupposes 3D facial input. *See* GTL Exhibit 1021 at 258 ("In this respect we have developed a face recognition method ***that makes use of 3D face data for enrollment*** while requiring only 2D data for authentication.") (emphasis mine). Three-dimensional input refers to a 3D facial mesh that stores both the geometry (3D coordinates x, y, and z) and appearance information captured by the 3D sensor. In

fact, the first step of the enrollment algorithm defines the "Input" as "3D facial mesh, 2D facial image, subject ID." GTL Exhibit 1021 at 260. Figure 11.1 shows that the "enrollment procedure" requires facial input:

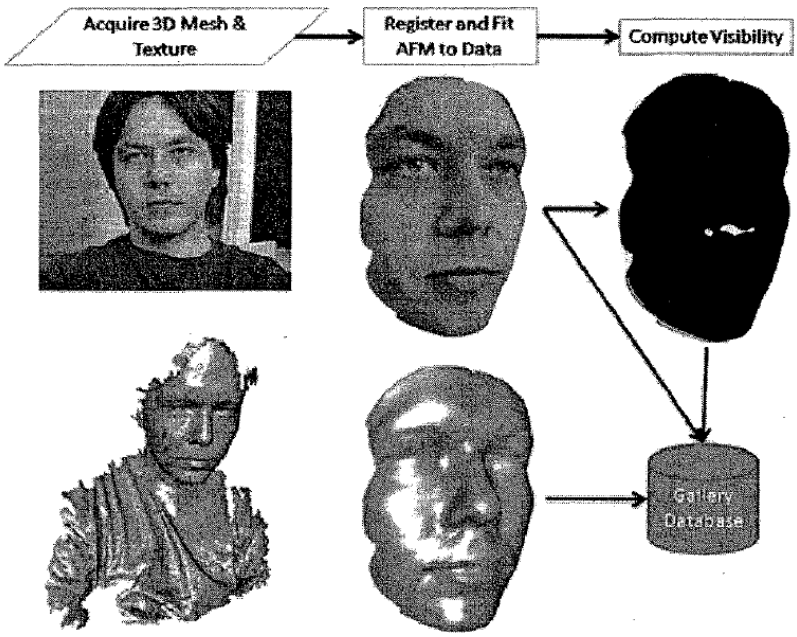

Figure 11.1. Depiction of the enrollment procedure for our 3D-aided 2D face recognition system. The first column depicts the input data, and the second column depicts the fitted AFM with texture on the top and without texture on the bottom.

GTL Exhibit 1021 at 261. The Annotated Face Model (AFM) is fitted to the 3D data acquired by the 3D device (bottom row, middle column). Once this process is completed then the 2D facial texture is lifted from the 2D image to the 3D AFM (middle column, top image). Thus, the system does not perform face detection from the 2D image like the '420 patent.

6. Instead, the paper in GTL Exhibit 1021 uses an AFM to create 2D matrices (called "geometry images") from the raw 2D+3D data (i.e., 2D texture plus

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