


FEDERAL BUREAU OF INVESTIGATION
WASHINGTON, D. C. 20535

To: SAC, St. Louis
Squad 3

Date: August 16, 2005

Case ID No.: 305A-SL-190851

Lab No.: 050729251 HD

Reference: Communication dated July 28, 2005

Your No.:

Title: VISHAL SEHJPAL;
FORENSIC AUDIO/VIDEO AND
IMAGE ANALYSIS REQUEST

Date specimens received: July 29, 2005

- Q1 One (1) U.S. Customs Service CD-R marked, in part, "Vishal SEHJPAL"
(enclosed in sealed evidence bag #032002, barcode #E02131514)
- NE1 Letter (1 page)

The results of the Forensic Audio, Video and Image Analysis Unit examinations are included in this report.

The Q1 and NE1 specimens, as well as one compact disc and 15 prints produced during these examinations, are being returned under separate cover via FedEx. One (1) compact disc produced during these examinations is being retained with the laboratory notes.

Page 1 of 1

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FEDERAL BUREAU OF INVESTIGATION
WASHINGTON, D. C. 20535

Report of Examination

Examiner Name: Richard W. Vorder Bruegge Date: August 16, 2005
Unit: Forensic Audio, Video & Image Analysis Phone No.: [REDACTED]
Case ID No.: 305A-SL-190851 Lab No.: 050729251 HD

Results of Examinations:

Five (5) digital video files and four (4) digital image files contained on the Q1 compact disc were examined to determine if the individuals and events depicted therein are real or whether they represent computer-generated ("virtual") people and events, or otherwise altered individuals and events.

The five (5) Q1 digital video files examined are identified as follows: "14.mpg", "Girl sucks on small dick.mpg", "lesbians teens (1).mpeg", "my 12 yr old girl vicky COPY.mpg", and "skinny teen-tiny ass.mpeg". The individuals depicted in all five (5) Q1 video files exhibit smooth, continuous motion at a rate of 24 frames per second or more. Each of these video sequences runs for 28 seconds or longer. The total number of separate images contained within each of these video sequences is over 600.

The individuals depicted in these five (5) videos exhibit realistic skin tones and textures over the entirety of their bodies, and the movement of their skin reflects the underlying muscle and skeletal structure in a realistic fashion, including during instances of skin-to-skin contact. Shadows cast by the individuals depicted in these videos interact with their surroundings and each other in a realistic fashion. Finally, objects and materials depicted in these videos, including hair and genitalia, react to gravity and/or to contact with other objects and body parts in a realistic manner.

It is not possible to produce the degree of realism exhibited in the five (5) Q1 videos identified above with the current state-of-the-art in computer-generated animation. Therefore, it was concluded that the five (5) Q1 videos represent recordings of real people engaged in the acts depicted therein.

The four (4) Q1 digital image files were reviewed and compared with the contents of the Child Exploitation and Obscenity Reference File (CEORF) to determine the origin of these images. Through this comparison, two (2) of the images contained on the Q1 compact disc were identified.

The Q1 image "11 yr old kiddy porn (1).jpg" is a cropped copy of an image found on page 22 of a magazine titled "Nymph Lover No. 4." Page 2 of "Nymph Lover No. 4" contains the text "Printed June 1978 by CCC-Print Copyright (c) 1978 Color Climax Corporation." Likewise, the Q1 image "young fuck 2.jpg" is a copy of an image found on page 11 of a magazine titled "Nymph Lover No. 2." Page 2 of "Nymph Lover No. 2" contains the text "Printed December 1976 by CCC-Print Copyright (c) 1976 Color Climax Corporation." The individuals and/or scene depicted in these two Q1 images also appear in multiple other images within these magazines. Finally, the Q1 images "11 yr old kiddy porn

(1).jpg" or "young fuck 2.jpg" do not contain any artifacts or inconsistencies that would indicate that either is the result of image manipulations designed to alter its content.

Based on these observations, as well as the fact that the state-of-the-art in digital image processing at the time was insufficient to permit the production of realistic "virtual people," it was concluded that both of the Q1 images "11 yr old kiddy porn (1).jpg" and "young fuck 2.jpg" depict real people and events. It should be further noted that the current state-of-the-art in digital image processing does not permit the automated production of "virtual people" with the degree of realism depicted in the images contained in these magazines.

The Q1 image "kids-sex-criacas (1).jpg" was determined to be from a known series identified by the National Center for Missing and Exploited Children as the "SABBAN" series. A search of known images from this series resulted in the identification of at least seven (7) other images in which the female depicted in the Q1 image "kids-sex-criacas (1).jpg" is also depicted. The individuals depicted in all of these images exhibit realistic skin tones and textures over the entirety of their bodies, and their skin reflects the underlying muscle and skeletal structure in a realistic fashion. Additionally, the resolution of these images is frequently sufficient to resolve realistic, fine details such as hair on the head and legs, and individual skin blemishes, as well as skin creases and vein/artery/muscle patterns on the subjects depicted. Finally, the Q1 image "kids-sex-criacas (1).jpg" does not contain any artifacts or inconsistencies that would indicate that it is the result of image manipulations designed to alter its content.

The current state-of-the-art in digital image processing does not permit the automated production of "virtual people" with the degree of realism depicted in these SABBAN images. Therefore, it was concluded that the Q1 image "kids-sex-criacas (1).jpg" represents a recording of real people engaged in the act depicted therein.

The Q1 image "young girl fucked in ass.bmp" could not be located in the CEORF, nor could it be associated with any series of images. The quality of the Q1 image "young girl fucked in ass.bmp" is only sufficient to observe gross characteristics of the individuals depicted, such as general skin tone and texture, and skeletal and muscle structure. Both of the individuals depicted in the Q1 image "young girl fucked in ass.bmp" exhibit realistic skin tones and textures, as well as realistic skeletal and muscle structures, at a large scale. Likewise, neither of the individuals depicted in the Q1 image "young girl fucked in ass.bmp" exhibit any characteristics that would indicate that they are computer-generated.

However, the Q1 image "young girl fucked in ass.bmp" lacks the resolution sufficient to permit the observation of fine scale features of the skin and body such as individual hairs, skin creases, and freckles, moles and other such blemishes. Such detail is also necessary to allow one to identify artifacts created in the process of image alteration, such as those created during image compositing ("cut-and-paste"). Due to this fact, it cannot be determined if the Q1 image "young girl fucked in ass.bmp" is an authentic representation, or whether it may represent an image altered to change its meaning or content. It should be noted, however, that the level of skill necessary to produce altered images of the quality depicted in the Q1 image "young girl fucked in ass.bmp" is beyond that of the casual user and would require extensive experience in both art and in the use of image processing tools.



Richard W. Vorder Bruegge, Ph.D.

Federal Bureau of Investigation
Forensic Audio, Video, and Image Analysis Unit (FAVIAU)
Engineering Research Facility, Building 27958A
Quantico, VA. 22135

E-mail: [REDACTED]

PROFESSIONAL EXPERIENCE

Jan 1995 - present

Forensic Scientist/Examiner of Questioned Photographic Evidence

Federal Bureau of Investigation, Operational Technology Division, Quantico, VA.

Conducts examinations on questioned and known photographic evidence, which includes film, video, and digital images. Supervises technical staff in forensic examinations. Manages the National Automotive Image File and the Child Exploitation and Obscenity Reference File. Performs research in the forensic analysis of imagery. Provides technical assistance to law enforcement organizations in U.S. and abroad. Serves on multiple external and FBI internal working groups related to imaging policies and standards.

Oct 1990 - Dec 1994

Staff Scientist

Science Applications International Corporation (SAIC), Washington, D.C.

Provided scientific and technical support to the National Aeronautics and Space Administration (NASA) Solar System Exploration Division in the development of missions of exploration to solar system objects including planets, comets, and asteroids. Provided scientific and technical support in the development and operations of the Department of Defense's Clementine mission to the Moon. Served as Principal Investigator under the NASA Venus Data Analysis Program.

EDUCATION

Sep 1985 - May 1991

Brown University

Providence, RI

Master of Science (Sc.M.) and Ph.D.

Major: Geological Sciences

Sep 1981 - May 1985

Brown University

Providence, RI

Bachelor of Science (Sc.B)

Major: Engineering

FORENSIC EXAMINATION / TESTIMONY EXPERIENCE

Have worked full time in FBI laboratories dedicated to imaging science for over ten years. Conducted video/image analysis examinations in over 500 criminal, civil and administrative matters, which includes submissions from local, state and federal law enforcement organizations. Have testified as an expert witness in Municipal, State, and Federal Courts in over 40 instances.

PROFESSIONAL TRAINING

A program of forensic photography established by the FBI Laboratory that includes hundreds of hours of formal course work in photographic studies, extensive readings in numerous texts and technical journals on the subject, laboratory and factory tours, and conducting examinations on casework submitted to the FBI under the guidance of qualified senior examiners. Partial list of training follows:

A. FBI Academy

1. Laboratory Forensic Examiner Training
2. Basic Photography
3. Crime Laboratory Forensic Photography (3 hrs. credit from U- Va)
4. SOG/SSG Photo Surveillance In-Service
5. Digital Image Processing

B. FBI Laboratory

1. Softcopy Photogrammetry
2. Introduction to Forensic Applications of the Avid Media Composer

C. Director of Imagery Exploitation, National Defence Headquarters (Canada)

1. & 2. Single Photo Perspective Course (Basic& Advanced)

D. Rochester Institute of Technology

1. Electronic Imaging
2. Digital Image Processing
3. Photoshop for Engineers

E. Society of Photo-Optical Instrumentation Engineers

1. Basic Optical Design

F. Polaroid School of Law Enforcement Imaging

1. Analysis of Polaroid Products

G. Nikon Inc.

1. Crime Scene Reconstruction Using AIMS (Automated Invest'n Meas. Sys.)

H. Defense Mapping School (DMS)

1. Stereoscopic Interpretation of Aerial Photographs (SIAP)

I. The SONY Video Institute

1. ABC's of Video

J. Orange Technologies

1. Basic Photoshop 5.0

K. International Association for Identification

1. Earprint Identification Workshop

L. Ocean Systems

1. Forensic Video analysis on the dTective System from Ocean Systems
2. dTective Training on Avid Xpress for Windows 2000

M. 3DMetrics

1. Operation of 3DFlash!Cam

N. Henninger Education Center

- 1./2. AVID 101/110 Intro to Media Composer Editing & Effects

O. WPAFB/NAIC

1. Close Range Photogrammetry Methodologies

P. Peter Ratner/James Madison University

1. Fundamentals of Creating Virtual People

Q. Stefan Fleischmann/X-Ways Software Technology AG

1. X-Ways Forensics
2. File Systems Revealed

CURRENT PROFESSIONAL AFFILIATIONS/COMMITTEES/HONOR SOCIETIES

Scientific Working Group on Imaging Technologies (SWGIT) (Chairman, 2000-present)
Scientific Working Group on Digital Evidence (SWGDE)
American Academy of Forensic Sciences (AAFS) (Fellow - Promoted from member February 2005)
Mid-Atlantic Association of Forensic Scientists (MAAFS)
American Society for Photogrammetry and Remote Sensing (ASPRS)
The International Society for Optical Engineering (SPIE)
International Association for Identification (IAI)
American Geophysical Union (AGU)
Sigma Xi
Tau Beta Pi

FORMAL PRESENTATIONS AND PUBLICATIONS

- *Determining a Bank Robber's Height from Video using Reverse Projection Photogrammetry*, MAAFS, 1995
- *Some Cautions Regarding the Application of Biometric Analysis and Computer-Aided Facial Recognition in Law Enforcement*, ADPA, 1996 (co-author with T. Musheno)
- *Reverse Projection Photogrammetry* (Photographic Resources Update/1996) (co-author w/ W. J. Stokes)
- *Photogrammetry as a Means to Detect Photographic Deception* (AAFS/1997)
- *Detecting Fraud and Alteration in Digital Imagery* (FBI DISLE/1997)
- *Photographic Identification of Blue Jeans from Bank Surveillance Film* (AAFS/1998)
- *Digital Imaging and the Examination of Photographic Evidence* (IAI/1998)
- *Noise Reduction of Video Imagery Through Simple Averaging* (SPIE/1998)
- *Photographic Identification of Denim Trousers from Bank Surveillance Film* (J Forensic Sci 1999; 44(3):613-622)
- *Image Processing of Surveillance Video Tape & the Identification of a Mini-Van* (AAFS/1999)
- *Knuckle Crease Patterns & Stray Marks as a Means of Photographic Identification*(IAI/1999)
- *Digital Evidence Laboratories* (IAFS/1999 Workshop)
- *Digital Image Processing in Forensic Photographic Examinations* (IAFS/1999)
- *Developing a Digital Evidence Program for your Laboratory* (AAFS/2000 Workshop)
- *Analytical Photogrammetric Analysis of Bank Robbery Surveillance Film* (AAFS/2000) (co-author w/ D.A. Bonner)
- *Identification of Individuals through Photographic Facial Comparisons* (IACI/2000) (co-author w/ T. Musheno)
- *The Scientific Working Group on Imaging Technologies: Developing Practical Guidelines for Law Enforcement Applications* (IAI/2000 Lecture)
- *Image Analysis: Getting the most out of your surveillance images* (NATIA/2000)
- *Techniques in Forensic Image Comparisons* (Toronto Police Forensic Identification Seminar/2001)
- *Techniques in Forensic Photogrammetry* (Toronto Police FIS/2001)
- *The Scientific Working Group on Imaging Technologies (SWGIT) and the Future of Imaging in Law Enforcement* (Toronto Police FIS/2001)
- *Forensic Photogrammetry* (Forensic Video and the Law/May 2001 and October 2001)
- *Scientific Working Group on Imaging Technologies (SWGIT) Update* (IAI/2001 Panel)

FORMAL PRESENTATIONS AND PUBLICATIONS (continued)

- *Photographic Identification of Clothing from Wear and Tear and Manufactured Characteristics - The Band-Aid Bandit Case* (IAI/2001 Lecture)
- *Acquiring, Processing, and Protecting Imaging Evidence - Guidelines for Managers, Crime Scene Personnel, and Laboratory Experts* (AAFS/2002 Workshop)
- *Photographic Identification of a Native American Artifact Using Visible and Ultraviolet Light* (AAFS/2002)
- *Comparing the Resolution of Film to Digital Cameras: Cautions for the Forensic Community* (AAFS/ SPIE/ MAAFS 2002)
- *Imaging Sciences in Forensics and Criminology* (chapter in the Encyclopedia of Imaging Science and Technology, John Wiley & Sons, Inc., New York, 2002)
- *Forensic Photogrammetry* (IAI/2002 Lecture)
- *Scientific Working Group on Imaging Technologies (SWGIT) Update* (IAI/2002 Panel)
- *Photographic Identification of Two Native American Artifacts* (IAI/2002 Lecture)
- *Image Examinations in Child Pornography Cases* ("Advanced Child Exploitation Seminar" NAC, Columbia, SC, 2002)
- *When is Evidence Considered Manipulated?* (Texas Center for the Judiciary 2003 Reg. Conf., El Paso)
- *Detecting Image Manipulation in a Digital World* (IAI/2003 Lecture) (co-author w/ T. Musheno)
- *Reverse Projection Photogrammetry* (IAI/2003 Lecture)
- *Scientific Working Group on Imaging Technologies (SWGIT) Update* (IAI/2003 Panel)
- *Digital Imaging in the Laboratory* (ASCLD 2003 Conference)
- *SWGIT - The Scientific Working Group on Imaging Technologies* (ASCLD 2003 Conference)
- *Forensic Image and Video Processing* (AAFS/2004 and 2005 Workshop)
- *Discovering the Electronic Trail of Evil: It's All About Digital Evidence, Technology, and Crime!* (AAFS/2004 Seminar)
- *SWGIT Presents: Part 1 - Does Your Forensic Imaging Unit Need Accreditation as a "Digital Evidence Unit?"* (AAFS/2004)
- *SWGIT Presents: Part 2 - Forensic Image Processing, Repeatability, and the Myth of Bit-for-Bit Duplicates* (AAFS/2004)
- *Facial Comparison Analysis at the FBI* (ENFSI-DIWG/2004)
- *Is Digital Aerial Photography Admissible? - SWGIT and the Law Enforcement Perspective* (ASPRS Panel Member/2004)
- *Height Determination using the Perspective Grid Technique* (IAI/2004 Lecture)
- *Detecting Image Manipulation in a Digital World - 2004 Update* (IAI/2004 Lecture)
- *A Look at Statistics in Photographic Comparisons* (IAI/2004 Lecture)
- *Scientific Working Group on Imaging Technologies (SWGIT) Update* (IAI/2004 Panel)
- *Courtroom Testimony for Photographic Evidence & Digital Images in the Courtroom* (2004 FBI Field Photographers Conference)
- *SWGIT Presents: Guidelines for Acquiring, Processing, Analyzing, and Archiving Video and Image Data* (AAFS/2005 Workshop)
- *Analysis of an Image Anomaly in the Space Shuttle Columbia Accident, Part 1: Authenticating the Camera Source* and *Part 2: Determining the Source* (AAFS/2005)
- *SNIPER! How Digital and Multimedia Evidence Can Help Track and Convict the Bad Guy* (AAFS/2005 Seminar)
- *Adobe Photoshop: A Tool for Document Examination* (MAAFS/2005 Workshop)
- *Scientific Working Group on Imaging Technology (SWGIT) Update* (IAI/2005 Panel)
- *Reverse Projection Photogrammetry - Principles and Procedures* (IAI/2005 Lecture)
- *Detecting Manipulated Imagery - 2005 Update* (IAI/2005 Lecture)