



FACIAL DEBARKATION



Sea Innovation, Mobility,
Biometric Advancement

February 2020



U.S. Customs and
Border Protection

~~For Official Use Only~~

FOIA CBP 000194

CBP Transforming Security

Biometric processing reduces the administrative burden from CBP officers allowing them to focus on national security



Prioritize core law enforcement operations and threat detection



(b)(7)(E)



Eliminate administrative functions such as Visual Identification of Documents

(b)(7)(E)

TRANSFORMING SECURITY THROUGH THE USE OF FACIAL RECOGNITION



We Need You



CBP Primary Officers are the frontline defenders of our Nation's safety



Facial debarkation technology (b)(7)(E)



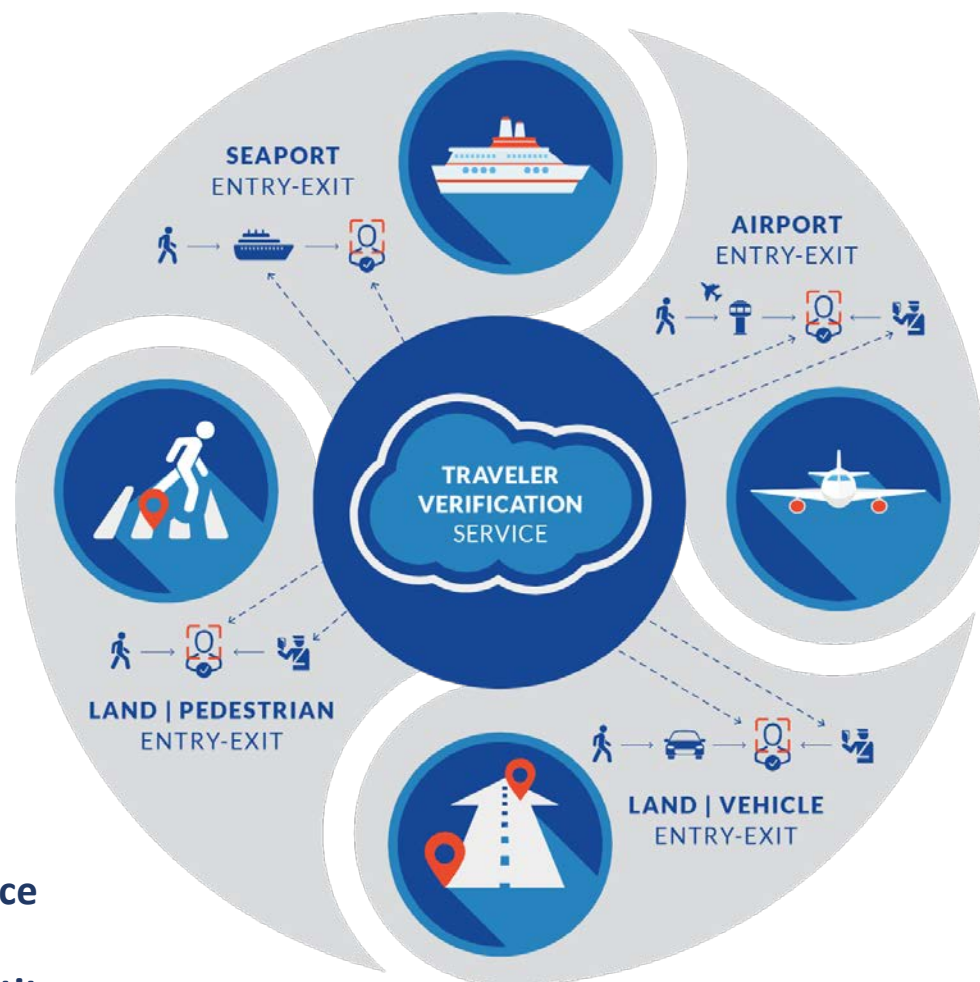
This new technology is meant to provide an additional security tool to (b)(7)(E) enhance focus on detecting prospective vulnerabilities to national security



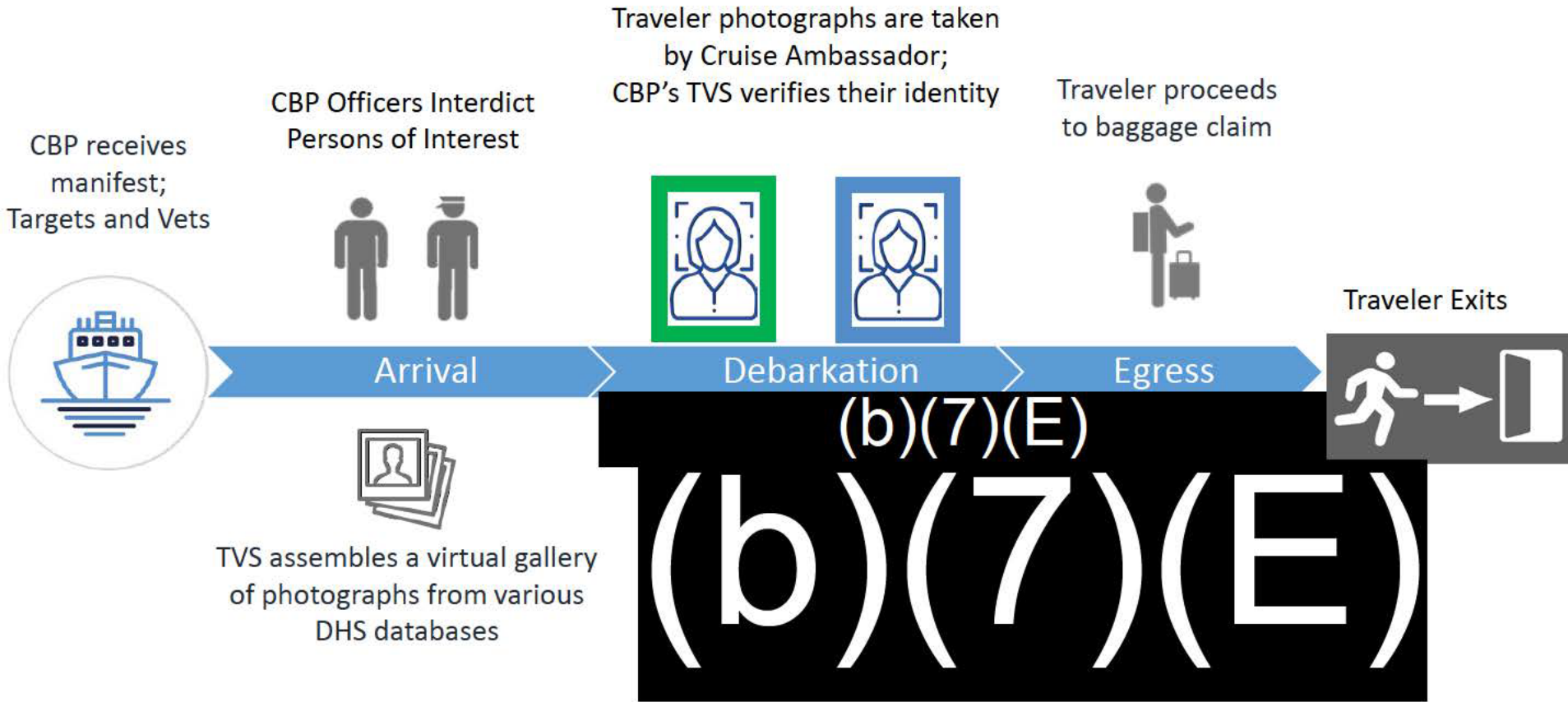
CBP's INVESTMENT | A Facial Matching Service

- + The Traveler Verification Service (TVS) is a government provided biometric matching service
- + TVS retrieves all associated traveler images from DHS holdings
- + Matches one to few utilizing cloud infrastructure
- + Trusted source for identity verification

The biometric matching service is a device agnostic, secure, cloud based technical infrastructure to support advanced identity verification.



HOW FACIAL DEBARKATION WORKS



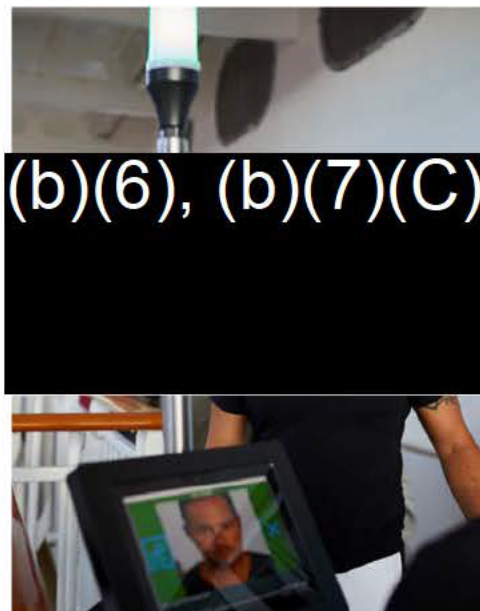
USING FACIAL RECOGNITION TO VERIFY A TRAVELER'S IDENTITY
CREATING A STREAMLINED TRAVEL EXPERIENCE

FACIAL DEBARKATION | Hardware

- + Cruise Line owned camera
- + All maintenance of the equipment is provided by the cruise line
- + TVS enabled equipment must apply a set of consistent traveler-facing indicators visible to passengers, personnel operating/facilitating the use of the equipment, and CBPOs



Idemia Camera used by RCCL



FaceX Camera used by NCL



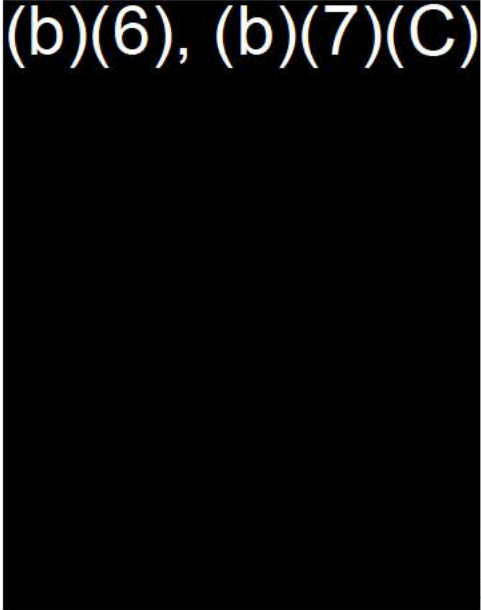
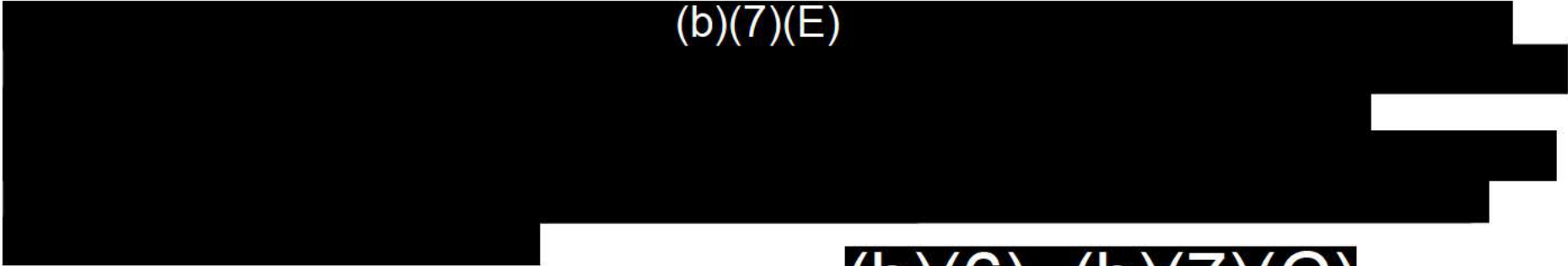
[REDACTED]

10

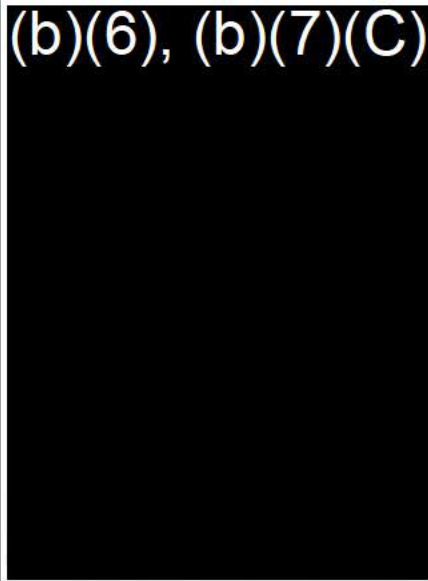


Simplified Arrival | Intercepted Imposters

Imposter at San Diego Airport (SAN)



Live Photo



Travel Document Photo



Simplified Arrival | Intercepted Imposters

Imposter at Washington Dulles International Airport (IAD)

(b)(7)(E)

(b)(6), (b)(7)(C)

(b)(6), (b)(7)(C)

Live Photo

Travel Document



Simplified Arrival |

(b)(7)(E)

SIMPLIFIED ARRIVAL TRAINING

CBP | 2019

(b)(7)(E)



(b)(7)(E)

Captured Photo

Travel Document Photo

Captured Photo

Travel Document Photo

(b)(6), (b)(7)(C)



Law Enforcement Sensitive

Simplified Arrival is a tool that enables Officers to focus on enforcement and threat detection

16



FACIAL DEBARKATION | Light Indicators

TVS enabled equipment uses uniform traveler-facing indicators providing a consistent experience. The following primary indicators are:

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

FACIAL DEBARKATION | Light Indicators

(b)(7)(E) :

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)



FACIAL DEBARKATION | CBP Operation

1. (b)(7)(E)
(b)(7)(E)
(b)(7)(E)
2. (b)(7)(E)
(b)(7)(E)
(b)(7)(E)
3. (b)(7)(E)
(b)(7)(E)
4. (b)(7)(E)

CBP will



FACIAL DEBARKATION | Cruise Operation

Cruise line ambassadors will:

1. **Manage traveler queues**

Passport holder travelers to TVS facial debarkation

Non-passport holder travelers and Canadian Nationals to triage

2. **Operate the camera** during facial debarkation

Will ask the traveler to step in front of camera

Camera will capture a photo and provide a response

(b)(7)(E)
(b)(7)(E)
(b)(7)(E)
(b)(7)(E)
(b)(7)(E)



3. **Maintain equipment**

4. **Assess system outages** and makes corrections, as needed

5. **Report problems** with equipment and/or travelers to CBP

Mitigation System Outages

(b)(7)(E)

Cruise lines are responsible for notifying CBP in the unlikely event of a system outage

- + Direct travelers to triage

During a system outage, CBP will:

- + Notify the cruise line that facial debarkation operations are discontinued
- + Reassign CBP Officers from camera triage to primary inspection
- + Conduct manual inspections
- + Report the facial debarkation system outage to CBP Office of Information and Technology
(b)(7)(E) (TVS Outage Duty Phone)



CRUISE REENGINEERING | Transforming Cruise Processing



The Cruise Reengineering Project leverages facial recognition to modernize the cruise inspection process

Cruise Reengineering consists of three synchronized initiatives:

- + Enhance data sharing between CBP and the cruise industry;
- + Biometrically confirm the identities of cruise passengers and crew departing and entering the United States; and,
- + Implement modernized and **automated administrative processes** by enabling electronic submission of forms and electronic issuance of documentation.

CBP is engaged with cruise lines to incorporate facial recognition technology into debarkation processes as well as to improve data sharing between CBP and the cruise lines.



FACIAL DEBARKATION |

(b)(5)

Biometric processing allows CBP officers to (b)(7)(E)

+ (b)(5)

+ (b)(5)

(b)(5) (b)(5)

(b)(5)

(b)(5)



FACIAL DEBARKATION | Commitment to Privacy

Transparency builds public trust while enhancing security and facilitate travel

Transparency

- + Briefing Sessions with Privacy Advocates and Stakeholders
- + DHS Data Privacy and Integrity Advisory Committee Meetings

Public Notice

- + Privacy Impact Assessments
- + Online Content at CBP.GOV
- + Signage at Demonstration Sites
- + Alternative verification process for US Citizens

Intergovernmental Cooperation

- + Collaboration on Regulatory Implications White Paper, *Biometric Boarding using Identity as a Service: The potential impact on liability in the aviation industry*

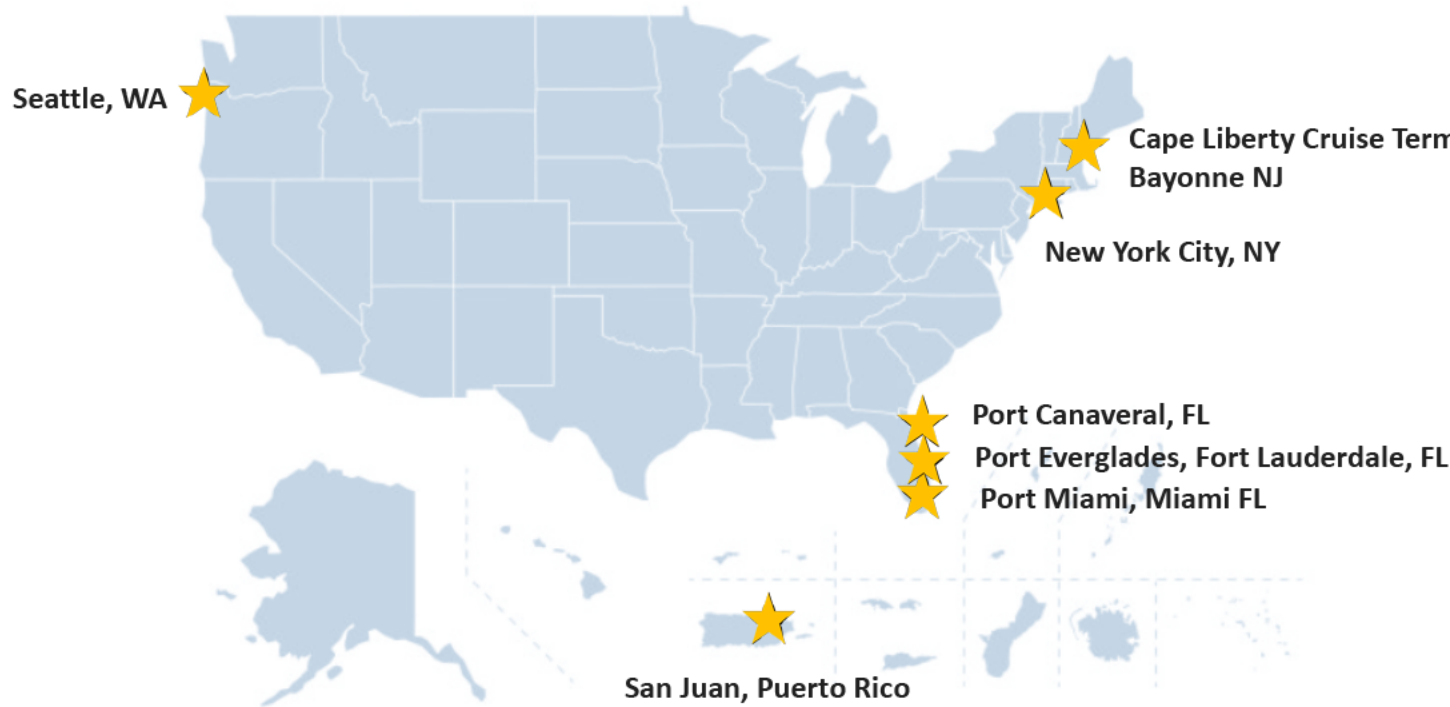
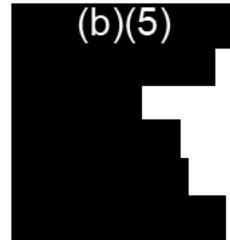


FACIAL DEBARKATION | Current & Future Status

Current Cruise Line Partners

- Royal Caribbean Cruise Lines/Celebrity (RCCL)
- Norwegian Cruise Lines (NCL)
- MSC Cruises (MSC)
- Carnival Cruise Line (CCL)
- Holland America Group/Princess Cruises (HAG)
- Viking Cruises (VC)
- Virgin Voyages (VV)

Future Partners & Locations



Thank you!



(b)(6), (b)(7)(C)

Deputy Director

Office of Field Operations

Planning, Program Analysis and Evaluation

Sea Innovation, Mobility, Biometric Advancement

U.S. Customs and Border Protection

(b)(6), (b)(7)(C)

NEC NeoFace Express 2

User Manual



U.S. Customs and
Border Protection

January 2020

Version 2.4

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Purpose

The purpose of this user manual is to provide systematic instructions to properly set-up, operate, and troubleshoot the NEC NeoFace Express 2 camera and application.

This document guides officers in the field to set a camera up, process a flight, and shut the camera down.

Navigating the NEC Express Application – An Overview

1. The Express application will start automatically when the device is powering up. If the Express application has closed and you see the device desktop, manually start the Express application (b)(7)(E) [REDACTED].
 2. Application start up screen [REDACTED] (b)(7)(E) [REDACTED]
 3. PIN screen
 - a. [REDACTED] (b)(7)(E) [REDACTED]
 - b. [REDACTED] (b)(7)(E) [REDACTED]
 4. Manual Configuration
 - a. [REDACTED] (b)(7)(E) [REDACTED]
 - b. [REDACTED] (b)(7)(E) [REDACTED]
 - c. [REDACTED] (b)(7)(E) [REDACTED]
 - d. [REDACTED] (b)(7)(E) [REDACTED]
 - e. [REDACTED] (b)(7)(E) [REDACTED]
 5. Airport Information
 - a. [REDACTED] (b)(7)(E) [REDACTED]
 - b. [REDACTED] (b)(7)(E) [REDACTED]
 - c. [REDACTED] (b)(7)(E) [REDACTED]
 - d. [REDACTED] (b)(7)(E) [REDACTED]
 - e. [REDACTED] (b)(7)(E) [REDACTED]
 6. Boarding –
 - a. [REDACTED] (b)(7)(E) [REDACTED]
 - b. [REDACTED] (b)(7)(E) [REDACTED]
 - c. [REDACTED] (b)(7)(E) [REDACTED]
[REDACTED]
 - d. [REDACTED] (b)(7)(E) [REDACTED]
[REDACTED]
- [REDACTED] (b)(7)(E) [REDACTED]



NEC Camera Diagram

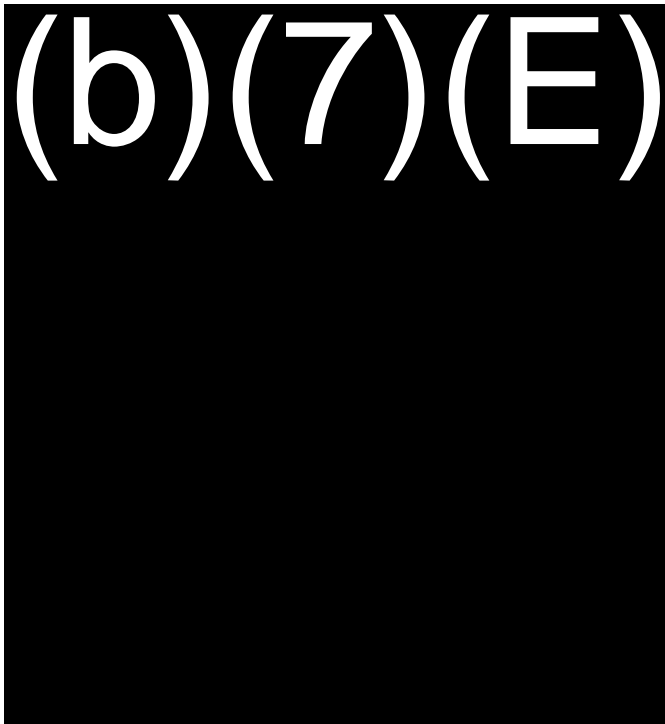
(b) (7) (E)



NEC NeoFace Express 2 Camera Setup

Step 1: Setup

1. Maneuver the NEC NeoFace Express device to the gate area. Grip by the stand (not the camera), tilt the stand back, and roll the stand to its destination.
2. Locate a power source, plug in the surge protector, and plug the device in to the surge protector.
 - a. [REDACTED] (b)(7)(E) [REDACTED]
[REDACTED]
 - b. A recommended cable protector to prevent tripping.
3. Place a mat in front of the camera approximately 12 to 18 inches from the device. This will help both passengers and officers to keep distances consistent during boarding.
4. Clean the touch screen with lens cleaner and microfiber cloth.
5. Press and quickly release the power button [REDACTED] (b)(7)(E) [REDACTED] to turn on the device.



6. The NEC NeoFace Express will begin booting up. The application will launch automatically after approximately 5 seconds. Once the application has started, [REDACTED] (b)(7)(E) [REDACTED]



Setup Notes

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)



Step 1.5: Checking Modality

(b)(7)(E)

(b)(7)(E)

- (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E)

(b)(7)(E)



Step 2: PIN Screen

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E) :

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)



Step 3: Manual Configuration Screen

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

- (b)(7)(E)
- (b)(7)(E)

(b)(7)(E)

- (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E)

Enter User Credentials

1. (b)(7)(E)

(b)(7)(E)

(b)(7)(E)

2. (b)(7)(E)

3. (b)(7)(E)



(b)(7)(E)

(b)(7)(E)

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(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

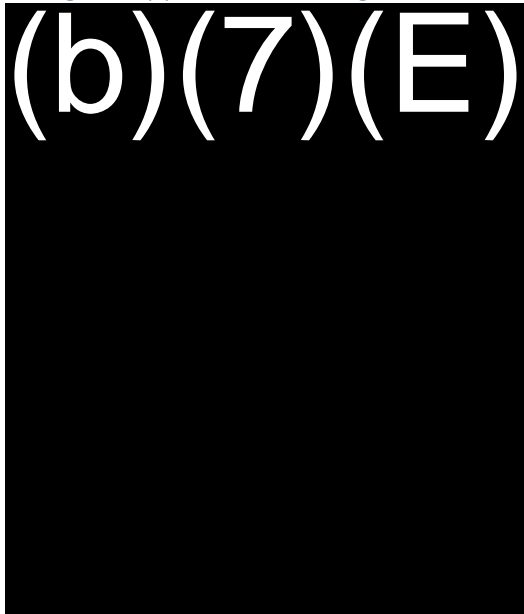
(b)(7)(E)

(b)(7)(E)



Configure Application Settings

(b)(7)(E)



- (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E)



Enter Airline Data

1. [REDACTED] (b)(7)(E)
2. [REDACTED] (b)(7)(E)
[REDACTED]
[REDACTED]

(b)(7)(E)

- [REDACTED] (b)(7)(E)
- [REDACTED]
- [REDACTED] (b)(7)(E)
- [REDACTED] (b)(7)(E)

- [REDACTED] (b)(7)(E)
- [REDACTED] (b)(7)(E)
- [REDACTED] (b)(7)(E)
- [REDACTED] (b)(7)(E)
- [REDACTED] (b)(7)(E)
- [REDACTED]



(b)(7)(E)

[Redacted]

3. (b)(7)(E)

4. (b)(7)(E)

5. (b)(7)(E)



Step 4: Flight Data Screen

(b)(7)(E)

1. (b)(7)(E)
2. (b)(7)(E)
3. (b)(7)(E)
4. (b)(7)(E)
5. (b)(7)(E)

(b)(7)(E)

(b)(7)(E)

- (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E)

(b)(7)(E)

- (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E)

(b)(7)(E)



Testing the Camera Screen

To test the cameras [REDACTED] (b)(7)(E)

[REDACTED] (b)(7)(E)

[REDACTED]

[REDACTED] (b)(7)(E)

(b)(7)(E)

[REDACTED] (b)(7)(E)

- [REDACTED] (b)(7)(E)

[REDACTED] (b)(7)(E)

- [REDACTED] (b)(7)(E)

[REDACTED] (b)(7)(E)

- [REDACTED] (b)(7)(E)

- [REDACTED] (b)(7)(E)

- [REDACTED] (b)(7)(E)

[REDACTED]

- [REDACTED] (b)(7)(E)

[REDACTED]

- [REDACTED] (b)(7)(E)

[REDACTED]



Step 5: Boarding Screen

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

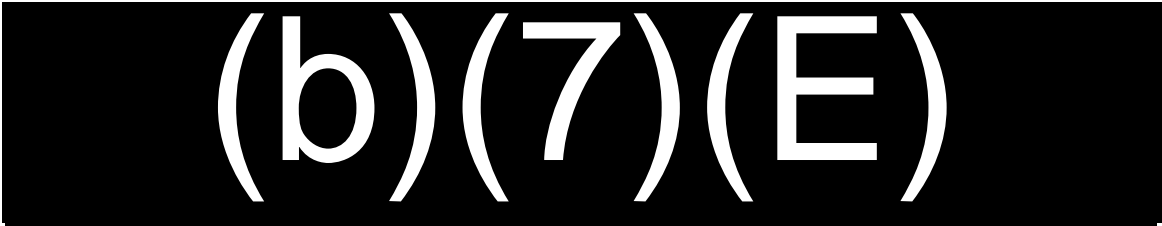
(b)(7)(E)

(b)(7)(E)



An animation demonstrates how to approach the camera for processing.

1. [REDACTED] (b)(7)(E)
[REDACTED]
2. Prepare for boarding by instructing passengers to approach the device and position themselves on the mat.



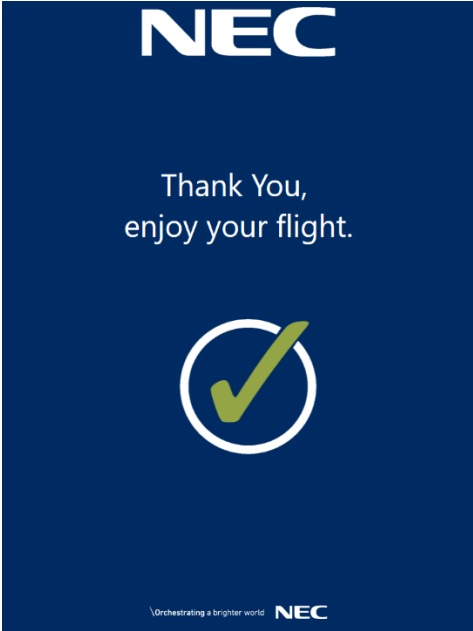
3. Once in position, instruct the passenger to look at the screen.



[REDACTED] (b)(7)(E)
[REDACTED]
[REDACTED]

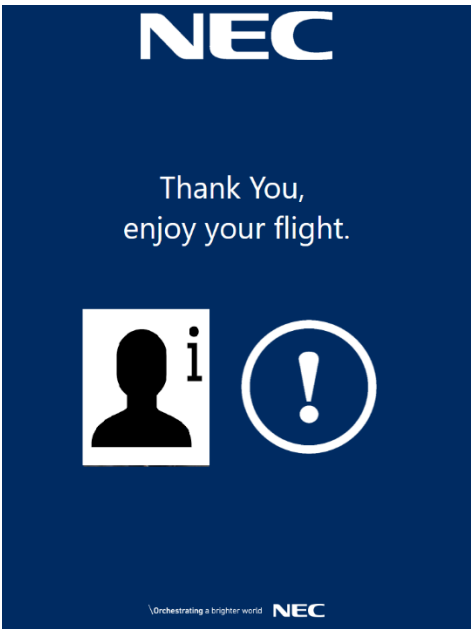
4. [REDACTED] (b)(7)(E)
[REDACTED]





(b)(7)(E)

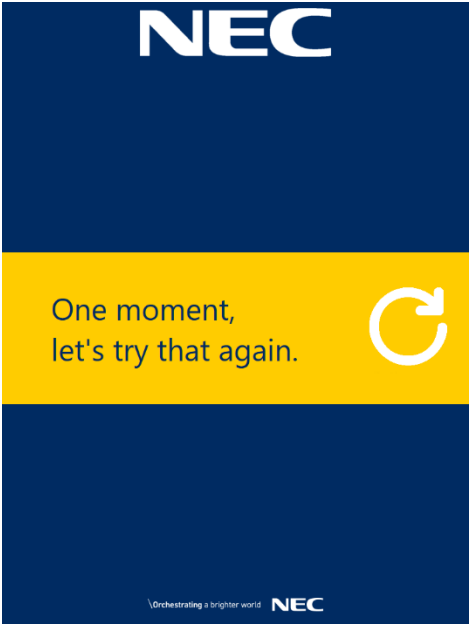
(b)(7)(E)



(b)(7)(E)

(b)(7)(E)





RETRY PHOTO

- (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E)
 - (b)(7)(E)
 - (b)(7)(E)
- (b)(7)(E)
 - (b)(7)(E)
 - (b)(7)(E)
 - (b)(7)(E)

5. (b)(7)(E)

Step 6: Post-Boarding Process

- (b)(7)(E)
1. (b)(7)(E)
 2. (b)(7)(E)
 3. (b)(7)(E)
 4. (b)(7)(E)

Additional Setup Instructions

Setting up the Network Configuration

1. (b)(7)(E)
2. (b)(7)(E)



3. [REDACTED] (b)(7)(E)
 4. [REDACTED] (b)(7)(E)
 5. [REDACTED] (b)(7)(E)
 6. [REDACTED] (b)(7)(E)
 7. [REDACTED] (b)(7)(E)
- a. [REDACTED] (b)(7)(E)
 - b. [REDACTED] (b)(7)(E)

[REDACTED] (b)(7)(E)

1. [REDACTED] (b)(7)(E)
2. [REDACTED] (b)(7)(E)

(b)(7)(E)

- [REDACTED] (b)(7)(E)

3. [REDACTED] (b)(7)(E)

(b)(7)(E)

- [REDACTED] (b)(7)(E)

4. [REDACTED] (b)(7)(E)

(b)(7)(E)

- [REDACTED] (b)(7)(E)



- [REDACTED] (b)(7)(E)
- [REDACTED] (b)(7)(E)
- [REDACTED] (b)(7)(E)
- [REDACTED] (b)(7)(E)

NEC Application Configurations

[REDACTED] (b)(7)(E)

1. [REDACTED] (b)(7)(E)
2. [REDACTED] (b)(7)(E)
3. [REDACTED] (b)(7)(E)
4. [REDACTED] (b)(7)(E)
5. [REDACTED] (b)(7)(E)
6. [REDACTED] (b)(7)(E)
7. [REDACTED] (b)(7)(E)
8. [REDACTED] (b)(7)(E)

Camera Configurations

[REDACTED] (b)(7)(E)

1. [REDACTED] (b)(7)(E)
2. [REDACTED] (b)(7)(E)
3. [REDACTED] (b)(7)(E)
4. [REDACTED] (b)(7)(E)
5. [REDACTED] (b)(7)(E)



- 6. [REDACTED] (b)(7)(E)
- 7. [REDACTED] (b)(7)(E)
- 8. [REDACTED] (b)(7)(E)
- 9. [REDACTED] (b)(7)(E)



Troubleshooting Section

Exiting the Program

1. [REDACTED] (b)(7)(E)

a. [REDACTED] (b)(7)(E)

(b)(7)(E)

b. [REDACTED] (b)(7)(E)

c. [REDACTED] (b)(7)(E)

(b)(7)(E)

2. [REDACTED] (b)(7)(E)

3. [REDACTED] (b)(7)(E)



- a. [Redacted] (b)(7)(E)
- b. [Redacted] (b)(7)(E)
- c. [Redacted] (b)(7)(E)

Checking the network connection

[Redacted] (b)(7)(E)

(b)(7)(E)

(b)(7)(E)



Error Message

(b)(7)(E)

(b)(7)(E)

a. (b)(7)(E)

b. (b)(7)(E)

c. (b)(7)(E)

d. (b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)



Support Information

In the event you encounter an issue, which you cannot resolve, please contact CBP OIT for support:

EOC Phone: (b)(7)(E)
TVS Support Email: (b)(7)(E)
TVS Duty Phone: (b)(7)(E)

Please be prepared to provide a detailed description of the issue, including repeating the steps you have taken and any logs, to assist CBP OIT in resolving the issue.

Email: (b)(7)(E)

Send an email (b)(7)(E)

Include as much detail as possible about your issue, including the steps you took before the issue appeared and the steps you took to attempt to remediate. Please attach any logs or photos of the issue associated with the issue to the email. A provided response within 24 hours.

Below is a template and an example of an email to TVS Support:

Template

Title: Port - Carrier - Flight Number - Departure Date – Summary

Type: Should be indicated as an New Feature, Enhancement, or Defect

Reported Issue: An objective summary of the issue. Should not include any analysis, opinions, or solutions.

Steps to Replicate the Issue: List the exact steps taken with the discovered issue. (b)(7)(E)
(b)(7)(E)

Attachments: Attach all pertinent supporting artifacts including (b)(7)(E).

Example

Title: (b)(7)(E)

Type: (b)(7)(E)

Reported Issue: (b)(7)(E)

Steps to Replicate the Issue: (b)(7)(E)

Attachments: ScreenShotOfError.jpg.



NEC NeoFace Express 2

User Manual



U.S. Customs and
Border Protection

June 23, 2017

Version 1.0.8.1

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Purpose

The purpose of this user manual is to provide step-by-step instructions to properly set-up, operate, and troubleshoot the NEC NeoFace Express 2 camera and application.

Who is this for?

This guide is intended to guide officers in the field to set a camera up, process a flight, and shut the camera down.

Navigating the NEC Express Application – An Overview

1. The Express application will start automatically when the device is powering up. If the Express application has closed and you see the device desktop, manually start the Express application (b)(7)(E)
 2. Application start up screen (b)(7)(E)
 3. PIN screen
 - a. (b)(7)(E)
 - b. (b)(7)(E)
 - c. (b)(7)(E)
 4. Manual Configuration
 - a. (b)(7)(E)
 - b. (b)(7)(E)
 - c. (b)(7)(E)
 - d. (b)(7)(E)
 - e. (b)(7)(E)
 5. Flight Details
 - a. (b)(7)(E)
 - b. (b)(7)(E)
 - c. (b)(7)(E)
 - d. (b)(7)(E)
 - e. (b)(7)(E)
 6. Boarding –
 - a. (b)(7)(E)
 - b. (b)(7)(E)
 - c. (b)(7)(E)
 - d. (b)(7)(E)
- (b)(7)(E)



NEC Camera Diagram

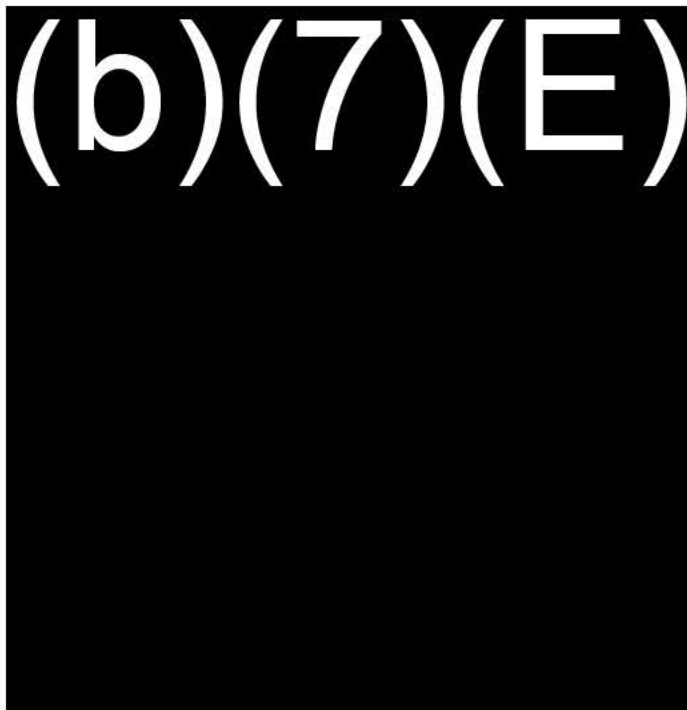
(b) (7) (E)



NEC NeoFace Express 2 Camera Setup

Step 1: Setup

1. Maneuver the NEC NeoFace Express device to the gate area. Grip by the stand (not the camera), tilt the stand back, and roll the stand to its destination.
2. Locate a power source, plug in the surge protector, and plug the device in to the surge protector.
 - a. If an available power source is not available, a battery may be used. (b)(7)(E)
(b)(7)(E)
 - b. (b)(7)(E)
 - c. A cable protector is recommended to prevent tripping.
3. Place a mat in front of the camera approximately 12 to 18 inches from the device. This will help both passengers and officers to keep distances consistent during boarding.
4. Clean the touch screen with lens cleaner and microfiber cloth.
5. Press and quickly release the power button (b)(7)(E), to turn on the device.



6. The NEC NeoFace Express will begin booting up. The application will launch automatically after approximately 5 seconds. Once the application has started, (b)(7)(E)



Setup Notes

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)



Step 2: PIN Screen

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)



Step 3: Manual Configuration Screen

(b)(7)(E)

(b)(7)(E)

- (b)(7)(E)
- (b)(7)(E)

(b)(7)(E)

- (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E)

Enter User Credentials

1. (b)(7)(E)

(b)(7)(E)

(b)(7)(E)

2. (b)(7)(E)

3. (b)(7)(E)



(b)(7)(E)

[Redacted]

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

[Redacted]

(b)(7)(E)

(b)(7)(E)



(b)(7)(E)

[Redacted]

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)



Enter Airline Data

1. [Redacted] (b)(7)(E)
2. [Redacted] (b)(7)(E)

(b)(7)(E)

- [Redacted] (b)(7)(E)
- [Redacted] (b)(7)(E)

- [Redacted] (b)(7)(E)
- [Redacted] (b)(7)(E)
- [Redacted] (b)(7)(E)

3. [Redacted] (b)(7)(E)
4. [Redacted] (b)(7)(E)
[Redacted] (b)(7)(E)
5. [Redacted] (b)(7)(E)
[Redacted] (b)(7)(E)
6. [Redacted] (b)(7)(E)



Step 4: Flight Data Screen

- (b)(7)(E)
1. (b)(7)(E)
 2. (b)(7)(E)
 3. (b)(7)(E)
 4. (b)(7)(E)
 5. (b)(7)(E)

The Camera Screen

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

- (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E)

(b)(7)(E)

- (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E)



(b)(7)(E)

(b)(7)(E)

- (b)(7)(E)
(b)(7)(E)
- (b)(7)(E)
(b)(7)(E)
- (b)(7)(E)

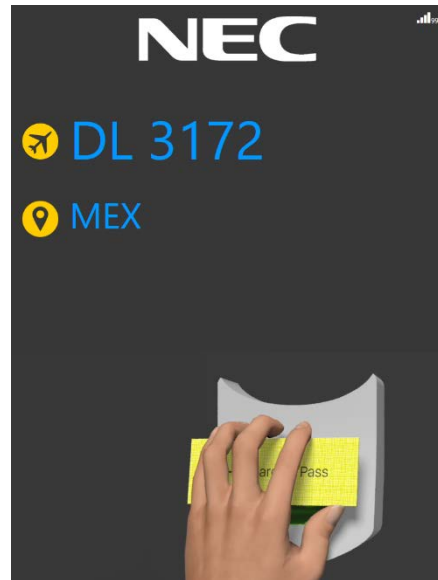
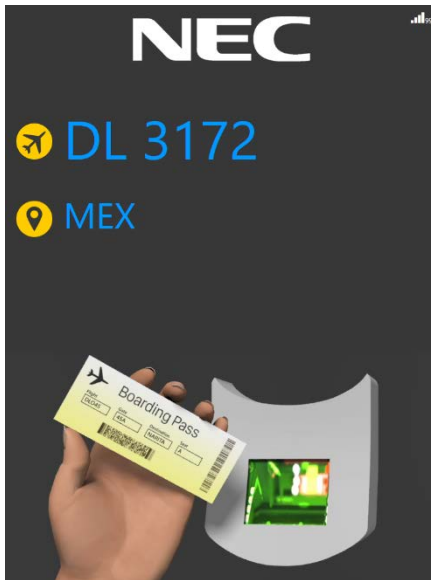


Step 5: Boarding Screen

(b)(7)(E)

The CBP officer is advised to take the boarding pass from the traveler to scan. The process moves faster when an officer experienced with the operation of the device scans the boarding pass.

(b)(7)(E)



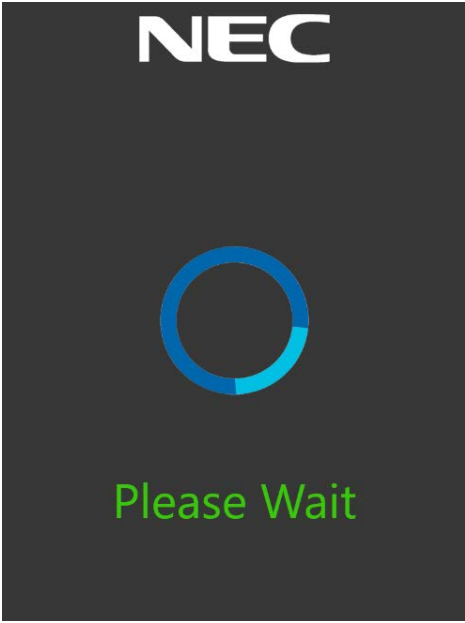
(b)(7)(E)

1. (b)(7)(E)
2. Prepare for boarding by instructing passengers to approach the device and position themselves on the mat.

(b)(7)(E)

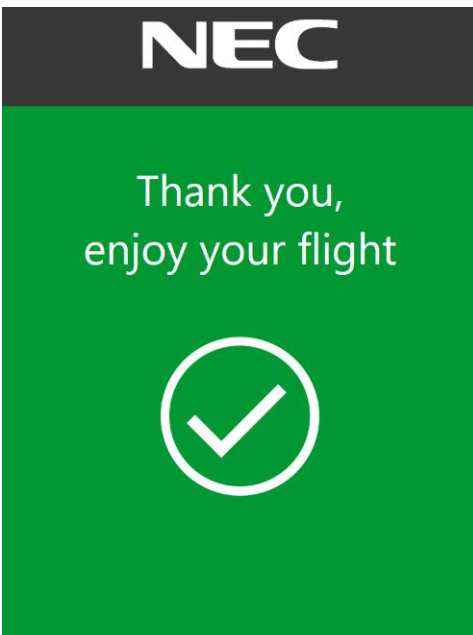
3. Once in position, instruct the passenger to look at the screen and scan their boarding pass.
4. (b)(7)(E)





(b)(7)(E)

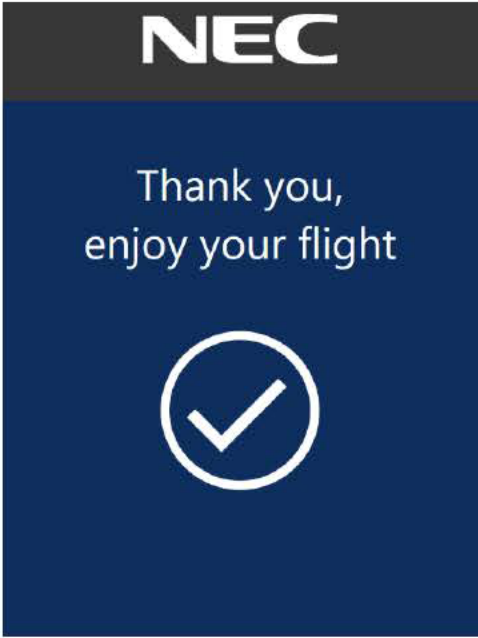
5. (b)(7)(E)



(b)(7)(E)

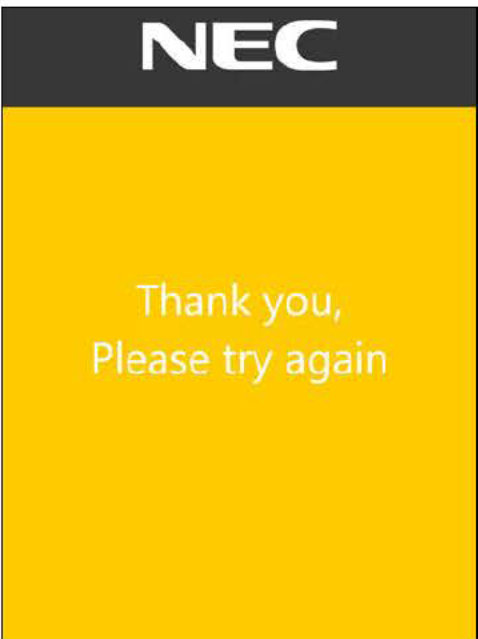
(b)(7)(E)





(b)(7)(E)

(b)(7)(E)



RETRY PHOTO

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

- (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E)
 - (b)(7)(E)
 - (b)(7)(E)

- (b)(7)(E)
 - (b)(7)(E)
 - (b)(7)(E)
 - (b)(7)(E)

6. (b)(7)(E)



Step 6: Post-Boarding Process

(b)(7)(E)

1. (b)(7)(E)
2. (b)(7)(E)
3. (b)(7)(E)
4. (b)(7)(E)
5. (b)(7)(E)
6. (b)(7)(E)
7. (b)(7)(E)



Additional Setup Instructions

Setting up the Network Configuration

1. [Redacted] (b)(7)(E)
2. [Redacted] (b)(7)(E)
3. [Redacted] (b)(7)(E)
4. [Redacted] (b)(7)(E)
5. [Redacted] (b)(7)(E)
6. [Redacted] (b)(7)(E)
7. [Redacted] (b)(7)(E)
 - a. [Redacted] (b)(7)(E)
 - b. [Redacted] (b)(7)(E)

Setting up the Mi-Fi Device (If Applicable)

1. [Redacted] (b)(7)(E)
2. [Redacted] (b)(7)(E)

NEC Application Configurations

- [Redacted] (b)(7)(E)
1. [Redacted] (b)(7)(E)
 2. [Redacted] (b)(7)(E)
 3. [Redacted] (b)(7)(E)
 4. [Redacted] (b)(7)(E)
 5. [Redacted] (b)(7)(E)



6. [REDACTED] (b)(7)(E)

7. [REDACTED] (b)(7)(E)

8. [REDACTED] (b)(7)(E)

Camera Configurations

[REDACTED] (b)(7)(E)

1. [REDACTED] (b)(7)(E)

2. [REDACTED] (b)(7)(E)

3. [REDACTED] (b)(7)(E)

4. [REDACTED] (b)(7)(E)

5. [REDACTED] (b)(7)(E)

6. [REDACTED] (b)(7)(E)

7. [REDACTED] (b)(7)(E)

8. [REDACTED] (b)(7)(E)

9. [REDACTED] (b)(7)(E)



Troubleshooting Section

Exiting the Program

1. [REDACTED] (b)(7)(E)
2. [REDACTED] (b)(7)(E)
 - a. [REDACTED] (b)(7)(E)
 - b. [REDACTED] (b)(7)(E)
 - c. [REDACTED] (b)(7)(E)

Checking the network connection

[REDACTED] (b)(7)(E)

(b)(7)(E)



Viewing Logs

- (b)(7)(E)
- 1. (b)(7)(E)
- 2. (b)(7)(E)
- 3. (b)(7)(E)
- 4. (b)(7)(E)
- 5. (b)(7)(E)
- 6. (b)(7)(E)
 - a. (b)(7)(E)
 - b. (b)(7)(E)
 - c. (b)(7)(E)
 - d. (b)(7)(E)
 - e. (b)(7)(E)

(b)(7)(E) (b)(7)(E)

(b)(7)(E)

(b)(7)(E)



Support Information

In the event you encounter an issue which you cannot resolve, please contact CBP OIT for support:

TVS Duty Phone (b)(7)(E)

For immediate assistance 24/7, call the TVS duty phone: (b)(7)(E).

Please be prepared to provide a detailed description of the issue, including repeating the steps you have taken and any logs, to assist CBP OIT in resolving the issue.

Email: (b)(7)(E)

Send an email to (b)(7)(E)

Include as much detail as possible about your issue, including the steps you took before the issue appeared and the steps you took to attempt to remediate. Please attach any logs or photos of the issue associated with the issue to the email. A response will be provided within 24 hours.

Below is a template and an example of an email to TVS Support:

Template

Title: Port - Carrier - Flight Number - Departure Date – Summary

Type: Should be indicated as an New Feature, Enhancement, or Defect

Reported Issue: An objective summary of the issue. Should not include any analysis, opinions, or solutions.

Steps to Replicate the Issue: List the exact steps taken when the issue was discovered. (b)(7)(E)
(b)(7)(E)

Attachments: Attach all pertinent supporting artifacts including (b)(7)(E)

Example

Title: (b)(7)(E)

Type: (b)(7)(E)

Reported Issue: (b)(7)(E)
(b)(7)(E)

Steps to Replicate the Issue: (b)(7)(E)
(b)(7)(E)

Attachments: ScreenShotOfError.jpg.





Traveler Verification Services

Field Support Standard Operating Procedure (SOP)

Version 2.1

Jan 2020

(b)(6), (b)(7)(C)



Traveler Verification Services (TVS) Overview

What is TVS?

- CBP Traveler Verification Services (TVS) biometrically confirms traveler departure by using facial recognition.
- TVS is a cloud-based facial biometric matching service that enables External Partners and Other Government Agencies (OGA) to confirm passenger identity against a trusted source.
- At a high level, TVS is a three step process: 1) Build the gallery, 2) Receive a match request and perform an identify operation, and 3) Return the match response.

Step 1: Build the gallery

- CBP uses existing traveler data provided by airlines via the Advance Passenger Information System (APIS) to identify passengers on a flight manifest.
- For each flight, the biographic data from the APIS service is used to create a flight manifest and the corresponding gallery of photos for each traveler. The photos are sourced and compiled from CBP holdings, including: TECS, (b)(7)(E) US Passport, Other Passports, Visa, GES, (b)(7)(E) Encounters.
- For each flight, the gallery is built (b)(7)(E) prior to processing a flight. All staged galleries are updated (b)(7)(E) (b)(7)(E) to capture passenger check-in activity, updated passenger data, (b)(7)(E) (b)(7)(E).

Step 2: Receive and Process Match Request

- CBP accepts requests from CBP owned devices as well as airport/airline owned devices.
- TVS is vendor and technology agnostic and can support processing of images from any device.
- The device takes a photo and submits the captured photo to TVS for matching.
- Once the authenticated match request is received, the captured photo is compared against the appropriate gallery photos in less than 2 seconds.

Step 3: Return Match Response

- Once the captured image request is processed in TVS match services, a match response is returned.
- The response contains the match status and a UID. The UID is a unique passenger identifier assigned by the APIS system.
- The match responses are:
 - Match – Passengers match a traveler in the manifest
 - No Match – Passenger did not match any travelers in the manifest
 - Poor Image Quality – Recommend attempting a retry



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Field Support SOP: Purpose of This Document

- Objective:**
- The primary objective of the CBP Biometric Verification initiative is to biometrically confirm every traveler exiting and entering the United States.
 - To do so, TVS needs to assure all TVS services are optimized, operational, and available. Furthermore, additional health monitoring and diagnostic measures should be taken to proactively resolve potential issues.
- Intent:**
- CBP TVS supports operations at airports for both CBP owned devices as well as airport/airline owned devices.
 - TVS supports 3 primary services: gallery generation, match services, and return match response.
 - The intent of this SOP is to provide “just in time” guidance needed to verify the critical components of daily operations, services, and equipment to proactively minimize impediments and or prevent service interruptions.
- Scope:**
- CBP strongly recommends a series of steps that can be taken to proactively monitor and resolve any potential issues prior to processing a flight.
 - The scope of this SOP includes steps that can be taken to:
 - Monitor and report potential issues with the gallery generation process prior to processing a flight
 - Verify and report potential issues with CBP owned equipment prior to processing a flight
 - Verify and report potential issues with the match response service prior to processing a flight
- Task:**
- Prior to processing each flight that requires TVS services, use the check list provided in this SOP to verify each critical component to identify and report any issues or potential issues discovered during the verification process.
 - Work with TVS team to assure issues are resolved immediately prior to processing the flight if possible.
 - Report issues that impede operations as soon as possible to EOC Support: (b)(7)(E)
 - Report issues that do not impede but can improve operations to the TVS Support Email: (b)(7)(E)

EOC Phone: (b)(7)(E)
TVS Support Email: (b)(7)(E)
TVS Duty Phone: (b)(7)(E)



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Checklist: Camera Readiness

- Why:**
- Intent is to verify:
 - The camera is setup and configured appropriately
 - The camera is positioned with proper signage and foot mats as appropriate to maximize the photo quality

- Who:**
- The OFO Officer on site for CBP owned equipment.
 - Airline/Airport personnel for non-CBP owned equipment.

- When:**
- Approximately (b)(7)(E) prior to boarding.

- What:**
- Verify the camera is setup appropriately.
 - Verify the camera is configured with correct flight information (b)(7)(E)
 - Verify the camera (b)(7)(E)
 - For mobile cameras, verify the camera is (b)(7)(E)
 - (b)(7)(E)
 - Verify the camera is paired with proper foot mats and signage for additional awareness.

- How:**
- For CBP owned equipment:
ex. Refer to the NEC NeoFace Express 2 User Manual for detailed instructions on camera configuration.
 - For non-CBP owned equipment: Contact the appropriate Airline/Airport personnel.

ACTION:

Immediate Actions:

- For CBP owned equipment, call the TVS Duty Phone for any camera configuration issues.
- For CBP owned equipment, call the local Field Operations personnel for any power issues.

Follow Up Actions:

- For missing signage and foot mats, contact your OFO representative for additional guidance.

(b)(7)(E)

(b)(7)(E)



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Checklist: Camera Connectivity

Why:

- Intent is to verify:
 - The camera has a strong reliable connection.

Who:

- The OFO Officer on site for CBP owned equipment.
- Airline/Airport personnel for non-CBP owned equipment.

When:

- Initially, approximately (b)(7)(E) prior to boarding.
- Once more about (b)(7)(E) prior to boarding.

What:

(b)(7)(E)
(b)(7)(E)
(b)(7)(E)
(b)(7)(E)

- Process initial photo and take necessary action.

How:

- For CBP owned equipment: *Refer to the NEC NeoFace Express 2 User Manual for detailed instructions on how to setup the CradlePoint.*
- For non-CBP owned equipment: Contact the appropriate Airline/Airport personnel.

ACTION:

- For CBP owned equipment, call the TVS Duty Phone for any camera configuration issues.
- For CBP owned equipment, call the local Field Support personnel for any network connectivity issues.

(b)(7)(E)



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Checklist: Camera Response

Why:

- Intent is to verify:

(b)(7)(E)
(b)(7)(E)
(b)(7)(E)

Who:

- The OFO Officer on site for CBP owned equipment.
- Airline/Airport personnel for non-CBP owned equipment.

When:

- Initially, approximately (b)(7)(E) prior to boarding.
- Once more about (b)(7)(E) prior to boarding.

What:

- Verify the TVS match service is working and a match result is returned.
- (b)(7)(E) (if applicable)

How:

- For CBP owned equipment: *Refer to the NEC NeoFace Express 2 User Manual*
- (b)(7)(E), take 2-3 photos of non-travelers and monitor the results.
 - A match result should returned in about 2 seconds.
 - For CBP owned equipment: (b)(7)(E)
(b)(7)(E)

ACTION:

- Call the TVS Duty Phone if:
 - A few consecutive response times exceed 2 seconds.
 - An error or exception prompt is returned.
 - (b)(7)(E)
 - (b)(7)(E)
 - (b)(7)(E)
 - (b)(7)(E)

NEC



Please Wait.

NEC

Thank You!
Please see Gate Agent.



NEC

NEC

Thank You!
Enjoy your flight.



NEC

NEC

One moment,
let's try that again.



NEC



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Checklist: Match Service

- Why:**
- Intent is to verify:
 - Service is uninterrupted during processing

Who: • [REDACTED] (b)(7)(E)

When: • Match service performance is [REDACTED] (b)(7)(E)

- What:**
- [REDACTED] (b)(7)(E)
 - [REDACTED] (b)(7)(E)
 - [REDACTED] (b)(7)(E)
 - [REDACTED] (b)(7)(E)
 - [REDACTED] (b)(7)(E)

ACTION: • [REDACTED] (b)(7)(E)



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Camera Setup and Login

Device Setup

(b)(7)(E)

Device Login

(b)(7)(E)

(b)(7)(E)



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EOC Phone: (b)(7)(E)

TVS Support Email: (b)(7)(E)

TVS Duty Phone: (b)(7)(E)



Boarding and Shutdown

Process Boarding

Step 1

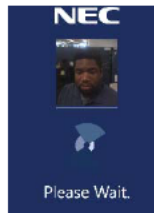
Position the passenger 12-18 inches from the camera device and have the passenger look at the screen.

(b)(7)(E)

Step 1

NOTE: When "Please Wait" is displayed, the scan is in progress. When "Thank you, enjoy your flight" is displayed, the scan is successfully complete.

(b)(7)(E)



Light?

Step 2A

(b)(7)(E)

(b)(7)(E)

Passenger Processed

Device Shut Down

(b)(7)(E)



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Checklist: Daily Operation Readiness Checklist

Gallery Generation

- (b)(7)(E)
- Verify the scheduler processed the gallery
- Galleries are templated (b)(7)(E)
- Verify the health of the gallery
- (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E)

(b)(7)(E) (b)(7)(E)

Camera Readiness

- Verify the camera is setup appropriately.
- Verify the camera is configured with correct flight information (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E) and signage for additional awareness.

(b)(7)(E)

Camera Connectivity Readiness

- (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E)
- Process initial photo and take necessary action.

(b)(7)(E)

Camera Response

- (b)(7)(E) take 2-3 photos of non-travelers and monitor the results.
- For CBP owned equipment: (b)(7)(E)
- (b)(7)(E)

(b)(7)(E)

NOTE: For CBP owned equipment: Refer to the NEC NeoFace Express 2 User Manual (June 2017) for detailed instructions.

Match Service

- (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E)



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EO Phone: (b)(7)(E)
Support Email: (b)(7)(E)
TVS Duty Phone: (b)(7)(E)



Checklist: Daily Operation Readiness Checklist

Camera Readiness

- Verify the camera is set up appropriately
- Verify the camera is configured with correct flight information including (b)(7)(E)
- Verify the camera has a reliable source of power to support the duration of the operation
- (b)(7)(E)
- (b)(7)(E)
- Verify the camera is paired with proper foot mats and signage for additional awareness.

- (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E)
- Process initial photo and take necessary action.

(b)(7)(E)

Camera Response

- Using QR code, take 2-3 photos of non-travelers and monitor the results.
- For CBP owned equipment: (b)(7)(E)
- (b)(7)(E)

NOTE: for CBP owned equipment: Refer to the NEC NeoFace Express User Manual for detailed information.

(b)(7)(E)

Help Desk Support Contact Information:

(b)(7)(E)



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Acknowledgement and Compliance Declaration

I, (b)(6) knowledge that I have received and read the Biometric Exit Business Requirements Document (BRD) and Technical Reference Guide (TRG) on behalf of Houston Airports, and agree to comply with the contents as of the date of signature.

Signature:

(b)(6)

Name:

Title:

(b)(6)

Date:

March 2, 2020

Acknowledgement and Compliance Declaration

I, **(b)(6)** acknowledge that I have received and read the Biometric Exit Business Requirements Document (BRD) and Technical Reference Guide (TRG) on behalf of McCarran International Airport and agree to comply with the contents as of the date of signature.

Signature:

Name:

Title:

Date:

(b)(6)
(b)(6)

March 24, 2020



**U.S. Customs and
Border Protection**

DEC 27 2019

MEMORANDUM FOR: Directors, Field Operations
FROM: Colleen M. Mann, (b)(6), (b)(7)(C)
Executive Director
Planning, Program Analysis and Evaluation
SUBJECT: U.S. Citizen Opt Outs of Facial Comparison

Facial comparison technology is currently in use in a number of air, land, and sea Ports of Entry. The Office of Field Operations leverages the Traveler Verification Service (TVS) during inbound and outbound processing to compare a traveler's live photo against their travel document, visa, or other photo in Department of Homeland Security holdings.

As a reminder, U.S. citizens may opt out of facial comparison processing. Ports must also ensure that biometric signage is properly displayed in the Federal Inspection Service areas and at the departure gates. Physical signage must be present anywhere facial comparison using TVS is conducted. Local management should conduct periodic signage checks, to ensure that signage is adequately placed.

Should you have any questions or concerns regarding this matter, please contact (b)(6), (b)(7)(C) (b)(6), (b)(7)(C) Director, Biometric Exit Strategic Transformation, at (b)(6), (b)(7)(C) or have a member of your staff contact Branch Chief (b)(6), (b)(7)(C) at (b)(6), (b)(7)(C).



U. S. Customs and Border Protection
Biometric Air Exit
Business Requirements

Version 2.0
January 2020

Approvals

(b)(6), (b)(7)(C)

2/4/2020
Date

Approved by:

(b)(6), (b)(7)(C)

Acting Executive Director
Planning, Program Analysis and Evaluation
Entry/Exit Transformation
Office of Field Operations
U.S. Customs and Border Protection

Revision Summary

Version	Date	Remarks
1.0	September 19, 2018	Initial draft developed
1.1	November 1, 2018	Updated
1.2	August 1, 2019	Updated
2.0	December 1, 2019	Updated to include additional security requirements.
2.0	January 6, 2020	Inclusion of Appendices
2.0	February 4, 2020	Final edits for approval

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1. Introduction

1.1 Background

U.S. Customs and Border Protection (CBP) is congressionally mandated to implement a biometric entry-exit system.¹ In 2017, CBP developed an integrated approach to a comprehensive biometric entry-exit system that stakeholders, including other U.S. government agencies and travel industry partners such as airlines, airports, and cruise lines, can incorporate into their respective operations. CBP offered relevant stakeholders, also known as business sponsors, an “identity as a service” solution that uses facial comparison technology to automate manual identity verification, and complies with the Congressional mandate for biometric exit. This harmonizes the data collection and privacy standards each stakeholder must follow.

CBP’s Traveler Verification Service (TVS) offers a process for compliance with the pre-departure clearance of passengers under the Intelligence Reform and Terrorism Prevention Act. TVS uses facial comparison technology in a cloud environment to match live traveler photos with photos maintained in U.S. Government holdings. Stakeholder participation in biometric exit is voluntary and is not mandated by CBP. Furthermore, the biometric exit program is designed to facilitate a public – private partnership wherein business sponsors procure and maintain biometric equipment that uses TVS to efficiently and effectively fulfill the biometric exit requirement for in-scope passengers.² Through partnerships with various business sponsors, CBP is enabling a large-scale transformation that will facilitate air travel, while making it more secure, in fulfillment of DHS mission responsibilities.

1.2 Purpose

The purpose of this document is to identify the business requirements for airlines and airport authorities to participate in biometric exit. Additionally, this document provides a list of operational recommendations that should be accounted for when onboarding new sites.

¹ The following statutes require DHS to take action to create an integrated entry-exit system: Section 2(a) of the Immigration and Naturalization Service Data Management Improvement Act of 2000 (DMIA), Public Law 106-215, 114 Stat. 337; Section 110 of the Illegal Immigration Reform and Immigrant Responsibility Act of 1996, Pub. L. No. 104-208, 110 Stat. 3009-546; Section 205 of the Visa Waiver Permanent Program Act of 2000, Pub. L. No. 106-396, 114 Stat. 1637, 1641; Section 414 of the Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism Act of 2001 (USA PATRIOT Act), Pub. L. No. 107-56, 115 Stat. 272, 353; Section 302 of the Enhanced Border Security and Visa Entry Reform Act of 2002 (Border Security Act), Pub. L. No. 107-173, 116 Stat. 543, 552; Section 7208 of the Intelligence Reform and Terrorism Prevention Act of 2004 (IRTPA), Pub. L. No. 108-458, 118 Stat. 3638, 3817; Section 711 of the Implementing Recommendations of the 9/11 Commission Act of 2007, Pub. L. No. 110-53, 121 Stat. 266, 338; and Section 802 of the Trade Facilitation and Trade Enforcement Act of 2015, Pub. L. No. 114-125, 130 Stat. 122, 199.

² An “in-scope” traveler is any person who is required by law to provide biometrics upon exit from the United States pursuant to 8 CFR 235.1(f)(ii). In-scope travelers include any aliens other than those specifically exempt as outlined in the CFR.

2. Definitions

Term	Definition
Biometric Confirmation Rate	The percentage of all travelers on a given flight who were biometrically confirmed.
Technical Match Rate	The percentage of in-scope travelers with a valid encounter photo and a gallery photo available for matching, who were successfully matched by TVS. For exit, this is a sample estimate of travelers who were positively matched out of all travelers who should have matched.
Capture Rate	The percentage of in-scope travelers whose encounter photo taken at crossing was of sufficient quality to be submitted and accepted by TVS for matching purposes. For exit this is an estimate based on a sample.
Photo Gallery	A compilation of government holding photos, specific to a flight manifest, used for facial comparison. Photo galleries are templated and stored in a cloud environment for matching.
Gallery Completion Rate	The percentage of travelers who had a gallery photo available for matching.
Exception Processing Required	Passenger needs manual processing. Please see Operational Considerations in Section 4 for additional instructions.

3. Business Requirements

This section describes the business requirements for Biometric Air Exit. The term ‘system’ in Section 3 refers to any physical equipment, software and/or any resource involved in the Biometric Air Exit process.

#	Requirement	Comments
1	The business sponsor and its systems integrator must adhere to the requirements outlined in this document and the technical on-boarding guide attached as Appendix A.	A business sponsor must be an airline and/or airport authority that facilitates the use of TVS to implement biometric exit. In addition to Appendix A, the CBP TVS New User Access Request (UAR) Form and TVS-In-A-Box New UAR Form are available upon request.

#	Requirement	Comments
2	The business sponsor must return a signed copy of this document’s acknowledgement and compliance page, which confirms receipt of the program’s business requirements and records the business sponsor’s agreement to comply with the requirements.	Any TVS-related contract between a business sponsor and another organization (e.g., a systems integrator, vendor, or other third party) must detail the specified actions and measures that will be taken to ensure compliance with all relevant business requirements contained herein and Technical Reference Guides (TRG).
3	The business sponsor and its systems integrator must submit and receive approval for a proposal, which incorporates the use of TVS. For approval, the business sponsor is required to submit information including: network topology, high-level solution architecture, test schedule, and deployment plan. In addition, the business sponsor must provide CBP with the camera’s manufacturer information, including name, model, serial number, and firmware version.	<p>The TVS TRG contains specific requirements. Any required infrastructure and equipment must be procured and maintained by the business sponsor and/or its vendor. Upon the release of an updated version of the TRG, the business sponsor must provide a plan and a reasonable timetable to bring the solution back into compliance with any Government-mandated changes. Any changes that are identified as “mandatory” must to be implemented as soon as technically possible, but no later than 60 days. CBP may provide an extension upon request.</p> <p>Upon review of the aforementioned documents (e.g., solution architecture), CBP may request additional IT and security documents from the business sponsor. Examples may include but are not limited to: the DHS Security Requirements Traceability Matrix (RTM); and/or FEDRAMP certification. All CBP requests for security documentation must be fulfilled and approved prior to “Go-Live” and connectivity with CBP’s Production environment. Existing partnerships will be required to comply within an agreed upon timeframe.</p>

#	Requirement	Comments
4	<p>The business sponsor and its systems integrator must adhere to the CBP prescribed naming convention for device unique identifiers (i.e., camera’s “Device_ID”). The scheme should comply with the following: (1) Port; (2) Terminal; (3) Gate; (4) Camera Model; and (5) Camera number. An example Device_ID is ATL-E-014-Vendor-01.</p>	<p>The TVS TRG mandates compliance with the Device_ID scheme on message elements. If the vendor recommends a different approach, CBP will consider all requests.</p>
5	<p>The business sponsor must provide the required power for use of TVS, as well as reliable and secure network access (e.g., high-speed internet and/or cellular).</p>	<p>The TVS TRG contains specific internet requirements. Cellular networks are also required to support CBP Officer mobile devices that will be used to perform exception processing of travelers.</p> <p>The business sponsor must provide CBP with the site’s network/internet bandwidth no later than the activation of the solution.</p>
6	<p>The business sponsor and all relevant third parties (e.g., airlines and port authorities) must comply with applicable DHS/CBP security and privacy policies and compliance documentation. Business sponsors and participating organizations should ensure their own privacy policies and notices are updated. CBP will conduct compliance reviews on a periodic basis.</p>	<p>The TVS Privacy Impact Assessment (PIA) contains a complete list of applicable privacy policies (e.g., posting DHS-branded signs in close proximity of and prior to the cameras, provide CBP-approved tear sheets, boarding gate announcements, and facilitation of exemption processing for travelers who elect to opt-out). If e-signage is used, the CBP-approved language must be visible for the entirety of the boarding process.</p> <p>The current TVS PIA, along with the applicable appendices and its predecessor PIAs, can be found at: www.dhs.gov/privacy</p>

#	Requirement	Comments												
7	<p>Any photos taken to facilitate TVS matching must not be stored and/or retained by the business sponsor or its systems integrator/vendor. All photos must be immediately purged from the business sponsor’s system upon the photo’s transmission to TVS. The business sponsor’s system (including its systems integrator) must provide a mutually agreeable method by which CBP is able to audit compliance with this requirement.</p>	<p>CBP will consider requests by the business sponsor to retain the Advance Passenger Information System (APIS) Unique Identification Number (UID) and matching result (assuming compliance with DHS/CBP privacy requirements).</p> <p>An approved partner may collect photos of travelers using its own equipment under its own separate business process for its own commercial purposes. In this scenario, the business sponsor must distinguish its process from CBP’s TVS enabled one through signage and other forms of public notice.</p>												
8	<p>Any public communications regarding TVS performance or CBP’s biometric exit program must be coordinated with CBP prior to release to the public or media. Any marketing campaigns and multimedia content related to CBP, TVS, or the biometric exit program must be approved in advance and in writing by CBP.</p>	<p>Public releases that do not reference CBP or any of its programs and systems (such as TVS) do not require CBP coordination or approval.</p> <p>Public releases that do reference CBP or any of its programs and systems should be coordinated as soon as possible. CBP recommends at least 7 days in advance to ensure prompt approval.</p>												
9	<p>To provide a consistent passenger experience, all TVS-enabled equipment throughout the traveler continuum must apply a set of consistent traveler-facing indicators. The following indicators must be used and visible to both travelers and airline/CBP staff:</p> <table border="1" data-bbox="256 1591 911 1780"> <thead> <tr> <th>Color</th> <th>Symbol</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>Blue</td> <td>X</td> <td>No Match</td> </tr> <tr> <td>Yellow</td> <td>Refresh</td> <td>Recapture or Error/Issue</td> </tr> <tr> <td>Green</td> <td>Checkmark</td> <td>Match/Board</td> </tr> </tbody> </table>	Color	Symbol	Meaning	Blue	X	No Match	Yellow	Refresh	Recapture or Error/Issue	Green	Checkmark	Match/Board	<p>CBP will consider requests by the business sponsor to alter the defined list of indicators.</p> <p>The messaging for the blue light indicator can vary by vendor and/or stakeholder. An example of messaging: “Please see gate agent.”</p>
Color	Symbol	Meaning												
Blue	X	No Match												
Yellow	Refresh	Recapture or Error/Issue												
Green	Checkmark	Match/Board												

#	Requirement	Comments
10	Any system log files and data stored, associated with a TVS-enabled biometric exit solution transaction data, must be approved by CBP to ensure compliance with DHS and CBP privacy and security policy.	The log files and data may be subject to select privacy and security policies depending on their content, retention period, and purpose. All data must be encrypted at rest and in transit.
11	For TVS performance standards, the TVS TRG contains requirements for system scalability, availability, and maintainability.	The TVS TRG states “Reliable, high-speed internet access is required. A hard-wired connection is preferred, but high speed wireless will be adequate if the connection can be made reliable.”
12	CBP must be allowed to review and/or audit any code, encryptions, network connections and any other TVS related technical specifications.	
13	<p>The business sponsor must ensure that CBP-approved signage is posted at each gate location, while the biometric boarding processing is ongoing. This is described below. The signage must be clearly visible and placed at a sufficient distance in front of the camera in order to provide the traveler with a reasonable opportunity to read the content and opt-out before reaching the photo capture area.</p> <p>Where signage is at least 22 inches wide and 28 inches tall, only one sign needs to be present. If signage is smaller than 22 inches wide and 28 inches tall, a minimum of two signs need to be present unless accompanied by e-signage (described below). Posted signage should never be smaller than 7 inches wide and 11 inches tall.</p> <p>Business sponsors can elect to display e-signage in either a static or slide show format. Should e-signage be displayed as part of a slide show, it must be visible for at least 45 seconds once every 5 minutes and be accompanied by at least one posted sign of a size no smaller than 7 inches wide by 11 inches tall. If the signage is displayed in a static format, it must be maintained as such throughout the entirety of the boarding process.</p>	<p>Any updates to CBP mandated privacy signage must be posted as soon as possible (e.g., sufficient time for fabrication and posting). Business sponsors can find the most current version of communication materials on the CBP website.</p> <p>www.cbp.gov/biometrics</p>

#	Requirement	Comments
14	CBP will distribute TVS performance data to the business sponsor (and relevant biometric exit program stakeholders) on an agreed-upon frequency that is operationally sustainable.	
15	CBP may request ad hoc performance reporting on select systems integrated with TVS. Examples include, but are not limited to: (a) estimated number of opt-outs; (b) camera capture rates; (c) number of travelers processed; (d) average photo quality scores; and (e) percentage of photos taken that were below the prescribed quality threshold.	
16	Upon the identification of a system performance issue, the business sponsor and its systems integrator must provide a detailed remediation plan and schedule. The business sponsor will provide progress reports to the CBP Biometric Exit Program Office on a mutually agreed-upon interval.	All remediation schedules must be completed as quickly as possible.
17	CBP must be notified of any cybersecurity-related incidents or breaches that occur on networks and hardware maintained by airport authorities and airlines which are integrated with CBP's TVS. All known or suspected incidents or breaches shall be promptly reported to the CBP Biometric Exit Program Office, CBP Privacy Office, and CBP Security Operations Center within 24 hours after discovery of a suspected incident or within 1 hour after a suspected incident has been confirmed, whichever is earlier.	<p>This requirement begins immediately once TVS integration is operational.</p> <p>Points of Contact:</p> <ul style="list-style-type: none"> • Biometric Exit Program Office: <div style="background-color: black; color: white; padding: 2px;">(b)(7)(E)</div> • CBP Privacy Office: <div style="background-color: black; color: white; padding: 2px;">(b)(7)(E)</div> • CBP Security Operations Center: <div style="background-color: black; color: white; padding: 2px;">(b)(7)(E)</div> <p>Source: DHS Privacy Incident Handling Guidance (https://www.dhs.gov/publication/privacy-incident-handling-guidance-0)</p>

#	Requirement	Comments
18	The sponsor and/or vendor must ensure that all access to the hardware is secured and restricted to authorized personnel only. CBP does not permit any unsecured methods of externally accessing the camera (e.g., interfaces or ports such as USB). Furthermore, access to the system and its endpoints must require no less than a username/log-in and password.	
19	The business sponsor’s system must be designed to include a time-out mechanism for each camera when not in use for boarding operations.	The “time-out” feature should minimize any unintentional photographs taken of travelers that are not attempting to board the plane.
20	Business sponsors are responsible for ensuring their participation in any TVS-related program is done in compliance with applicable federal and state laws and their relevant contracts. This includes any decision to integrate an e-gate into the biometric exit solution. The business sponsor must confirm such equipment is compliant with applicable codes that govern relevant operations within your jurisdiction (e.g., fire code, the Americans with Disabilities Act, etc.).	
21	All maintenance of the equipment and software development provided by the business sponsor or relevant stakeholder in support of the TVS-related program is the responsibility of that business sponsor and/or the relevant participating stakeholders. Any personnel with access to equipment that is located airside must meet airport security requirements for access to secured areas. Airport security screening requirements may include criminal history, background, and fingerprint check and CBP vetting.	

#	Requirement	Comments
22	The business sponsor and its systems integrator may not use any equipment to collect and send data to TVS, which has been manufactured by, or has parts that have been manufactured by, any company that is banned by statute or regulation from being purchased by a Federal Government agency, or is suspended or debarred for federal contracts. This includes Section 889 of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 and the System for Award Management (SAM).	This covers video surveillance and telecommunications equipment produced by ZTE, Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities), whom the Federal Government is banned from using for national security reasons.
23	All relevant business sponsor and system integrator personnel are required to review CBP's Privacy and Security Principles.	Please see Appendix B for a list of CBP's Privacy and Security Principles.

4. Operational Considerations and Recommendations

This section describes the operational considerations for carriers conducting biometric exit.

#	Operational/Onboarding Considerations	Comments
1	The business sponsor and its systems integrator must submit and receive approval for its deployment schedule.	
2	In the event that a traveler does not match through TVS, the airline personnel (or its designee) at the boarding gate should verify the traveler's identity against his/her travel document before permitting the traveler to board the aircraft. If there is any concern about the authenticity of the travel document, or any concerns that the traveler is not the true bearer of the document, CBP can be contacted to adjudicate the matter. CBP will respond as soon as operationally possible. Operating under its own authorities and business processes, the airline can choose not to board the traveler if the traveler's identity is not adjudicated by CBP in time to allow for a timely departure.	The business sponsor and all relevant airlines must ensure that all boarding gate personnel operating international departure boarding gates are trained on alternative manual processing for persons who do not match through TVS.
3.	It is highly recommended that all carriers provide boarding announcements prior to boarding and periodically throughout the boarding process. The boarding gate announcements should clearly convey the use of TVS for purposes of boarding	Please see www.cbp.gov/biometrics for the most current version of the Biometric Boarding Gate Announcement script and/or recording that gate agents should use.

	and disclose the ability of travelers to opt-out of the process.	
4	If the business sponsor is an airline then the airline must ensure all flight schedules, diversions, delays and departure times are updated within the relevant systems as soon as possible.	TVS is designed to ensure galleries are staged and removed "just in time." Therefore, if a flight is significantly delayed without a corresponding update with a new departure time, biometric exit processing/boarding may not be available.
5	If the business sponsor is an airline, then the airline must ensure that all identified APIS errors are corrected prior to departure to facilitate comprehensive gallery creation.	Gallery creation is dependent on accurate API data. If API is incomplete, it must be updated during check-in or prior to boarding. TVS updates the photo galleries every 5 minutes, beginning 2 hours prior to departure.

Acknowledgement and Compliance Declaration

I, **(b)(6)**, acknowledge that I have received and read the Biometric Exit Business Requirements Document (BRD) and Technical Reference Guide (TRG) on behalf of Metropolitan Airports Com, and agree to comply with the contents as of the date of signature.

Signature:

(b)(6)

Name:

(b)(6)

Title:

Date:

3/3/20

Appendix A: TVS Onboarding Guide

Upon commitment to implementing a biometric verification process, CBP will provide the business sponsor the TVS Technical Reference Guide(s).

New business sponsors/new vendor's solutions shall complete the following steps (in order) prior to using TVS in the production environment:

1. Review the TVS Technical Reference Guide(s);
2. Request access to the TVS in a Box (TIAB) environment using the TVS in a Box User Access Request Form;
3. Develop and test in the TIAB environment;
4. Request access to the TVS System Acceptance Test (SAT) and production environment using the External Vendor New CBP User Access Request Form;
5. Schedule and perform an integration test with the CBP TVS Team in the SAT environment;
6. Review and correct issues from the integration testing performed in the SAT environment; A joint "Go" or "No Go" decision shall be held with a planned outcome including revisions to the schedule as necessary; and
7. Upon completion of all testing activities, CBP will provide the TVS production environment user credentials. The business sponsor shall communicate to CBP of the planned production deployment date.

Steps 5-7 shall be completed if any of the following conditions are met:

- An existing business sponsor/vendor's solution is expanding to a new airport.
 - Example: Airline ABC, the business sponsor, has an existing vendor's solution with vendor "X" at one airport. ABC intends to expand biometric exit to a new airport with the existing vendor "X." This will require additional SAT testing with TVS.
- An existing business sponsor is using a new vendor solution.
 - Example: Airline ABC, the business sponsor, intends to add/use a new vendor. This will require additional SAT testing with TVS.
- An existing Business Sponsor/Vendor's Solution is expanding to a new airline.
 - Example: airport authority XYZ, the business sponsor, has an existing solution with Airline "Gray." XYZ intends to expand and support airline "Blue" as well. This will require additional SAT testing with TVS.

The business sponsor/vendor's solution will also be required to provide a point of contact for password expiration notifications. This contact will receive notification when the business sponsor/vendor's solution password is about to expire. The TVS Team recommends providing a group mailing list in the event of any staffing changes.

Please send all completed forms to the CBP TVS Team using the email **(b)(7)(E)**

Appendix B: CBP Privacy and Security Principles

FAIR INFORMATION PRACTICE PRINCIPLES (DHS FIPPs)

- **Transparency:** DHS should be transparent and provide notice to the individual regarding its collection, use, dissemination, and maintenance of personally identifiable information (PII).
- **Individual Participation:** DHS should involve the individual in the process of using PII and, to the extent practicable, seek individual consent for the collection, use, dissemination, and maintenance of PII. DHS should also provide mechanisms for appropriate access, correction, and redress regarding DHS's use of PII.
- **Purpose Specification:** DHS should specifically articulate the authority that permits the collection of PII and specifically articulate the purpose or purposes for which the PII is intended to be used.
- **Data Minimization:** DHS should only collect PII that is directly relevant and necessary to accomplish the specified purpose(s) and only retain PII for as long as is necessary to fulfill the specified purpose(s).
- **Use Limitation:** DHS should use PII solely for the purpose(s) specified in the notice. Sharing PII outside the Department should be for a purpose compatible with the purpose for which the PII was collected.
- **Data Quality and Integrity:** DHS should, to the extent practicable, ensure that PII is accurate, relevant, timely, and complete.
- **Security:** DHS should protect PII (in all media) through appropriate security safeguards against risks such as loss, unauthorized access or use, destruction, modification, or unintended or inappropriate disclosure.
- **Accountability and Auditing:** DHS should be accountable for complying with these principles, providing training to all employees and contractors who use PII, and auditing the actual use of PII to demonstrate compliance with these principles and all applicable privacy protection requirements.³

³ *Privacy Policy Guidance Memorandum*, Hugo Teufel III, Chief Privacy Officer, U.S. Department of Homeland Security (Dec. 29, 2008), www.dhs.gov/xlibrary/assets/privacy/privacy_policyguide_2008-01.pdf.

(b)(6)

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FIELD ANNOUNCEMENT – SIMPLIFIED ARRIVAL

What: Simplified Arrival - the next generation of Primary Passenger Processing, replacing TPAC

Where: Miami International Airport, Central Terminal

When: May 7th, 2018

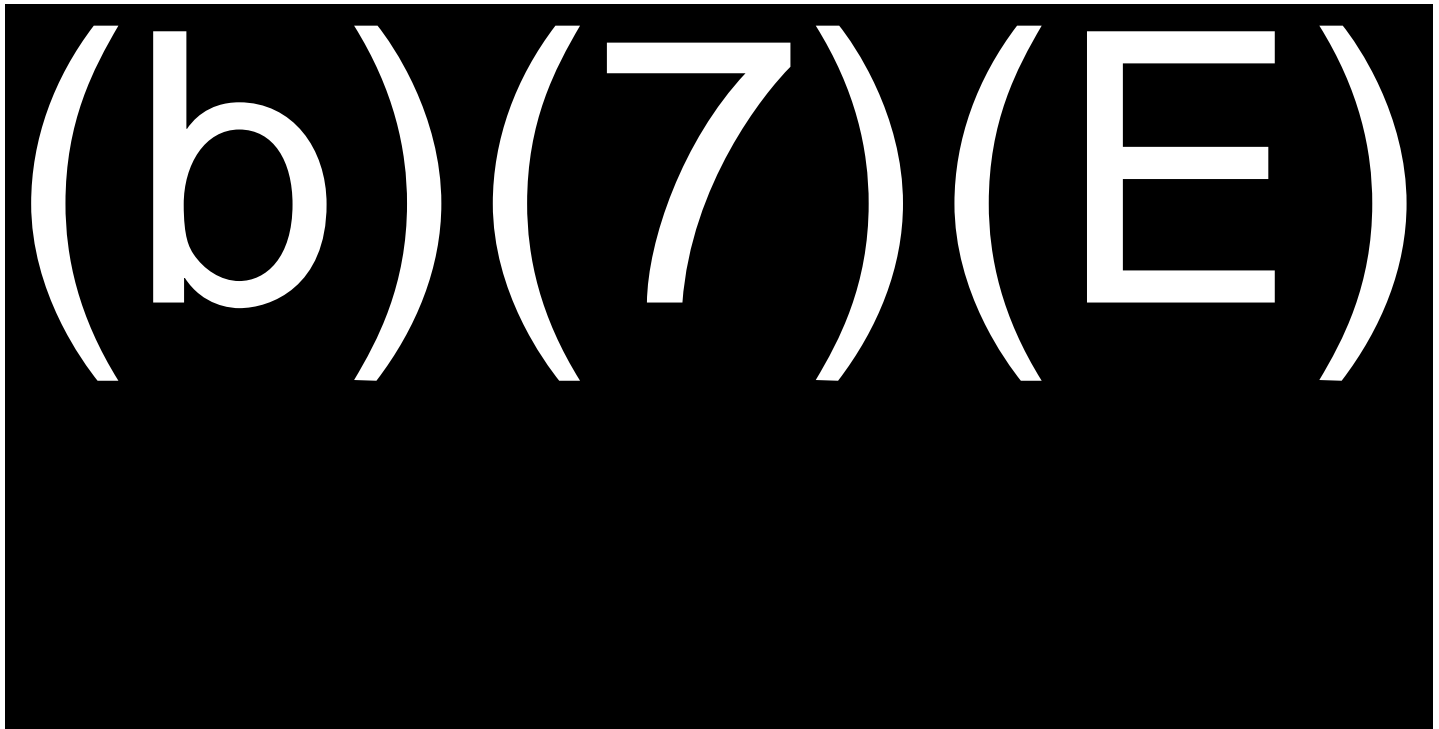
How will Simplified Arrival impact the process?

- Provides faster processing
- Allows more time to conduct inspections
- Replaces document scan with facial recognition as a first step in the process
- Bypasses fingerprint capture when appropriate
- [REDACTED] (b)(7)(E)
- [REDACTED] (b)(7)(E)

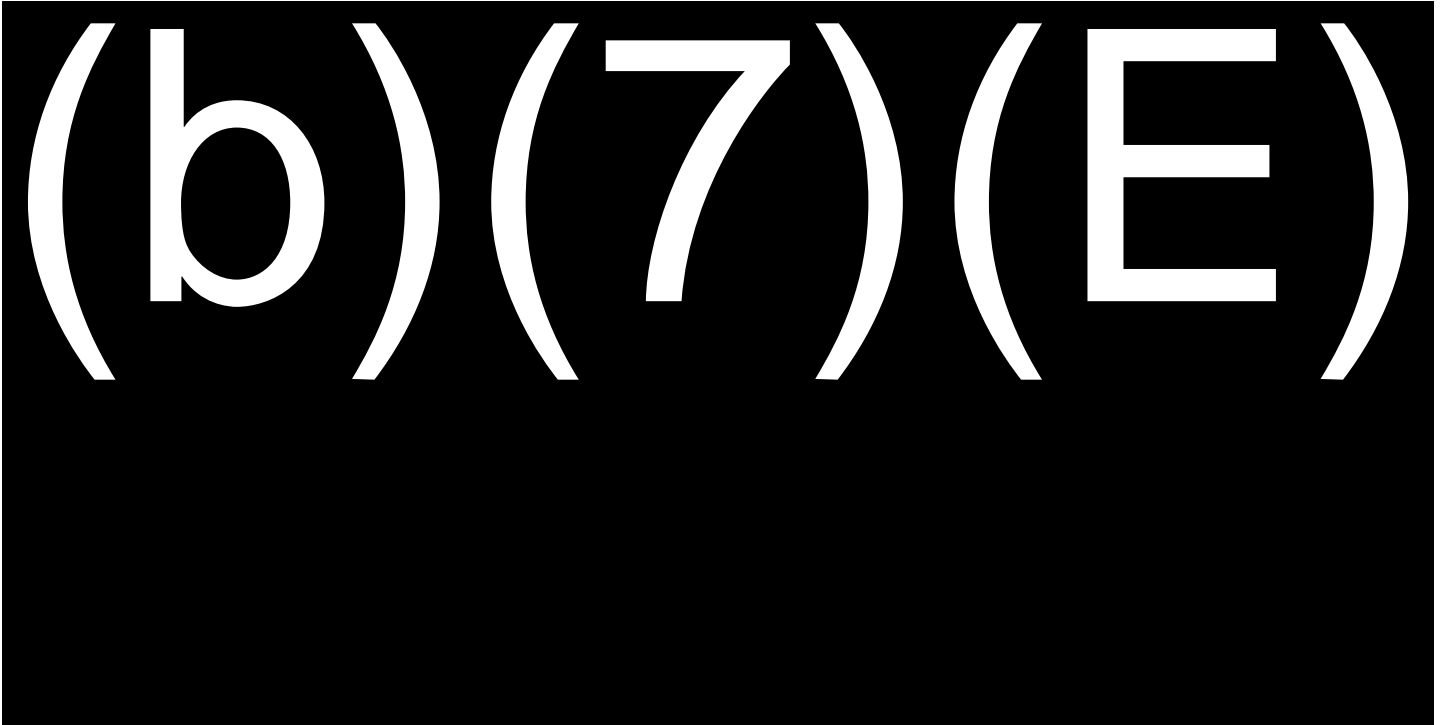
Give me the 30,000 foot view

- Photo is compared to existing photo(s)/gallery
- [REDACTED] (b)(7)(E)
- [REDACTED] (b)(7)(E)
- Usual inspection process(es) are carried out
- Traveler is admitted or referred

Can I see a picture?



Login Screen



Home screen

What's the same, even though the screen(s) have changed?

- Need to complete thorough passenger inspections
- Verification of additional documents (Visas, SEVIS, etc.)
- Functionality
 - (b)(7)(E)
 - (b)(7)(E)
 - (b)(7)(E)
 - (b)(7)(E)
 - (b)(7)(E)



U.S. Customs and
Border Protection

SIMPLIFIED ARRIVAL (SA) OVERVIEW

TRAEN Code: (b)(7)(E)



- **(b)(7)(E)**
- Provides a new and innovative approach to expedite the entry process.
- Incorporates advanced facial recognition technologies.
- Releases:
 - ✓ Initial launch for capability evaluation, performance feedback, and application updates
 - ✓ Added capability

LOGIN SCREEN



U.S. Customs and
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(b)(7)(E)

HOME SCREEN



U.S. Customs and
Border Protection

(b)(7)(E)

JUNE 2018

~~For Official Use Only - Law Enforcement Sensitive~~

4

FOIA CBP 000299

HOME SCREEN



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(b)(7)(E)

PROCESS TRAVELER

(b)(7)(E)



U.S. Customs and Border Protection

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

1. Take Photo once traveler is aligned in front of camera.

2. Process Traveler after capturing photo.

(b)(7)(E)

(b)(7)(E)



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(b)(7)(E)

(b)(7)(E) SCREEN



U.S. Customs and
Border Protection

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(b)(7)(E) SCREEN



U.S. Customs and
Border Protection

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(b)(7)(E) SCREEN



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SCREEN



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FINGERPRINTS



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(b)(7)(E) SCREEN



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SCREEN



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SCREEN



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EXCEPTIONS

JUNE 2018

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14

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U.S. Customs and Border Protection

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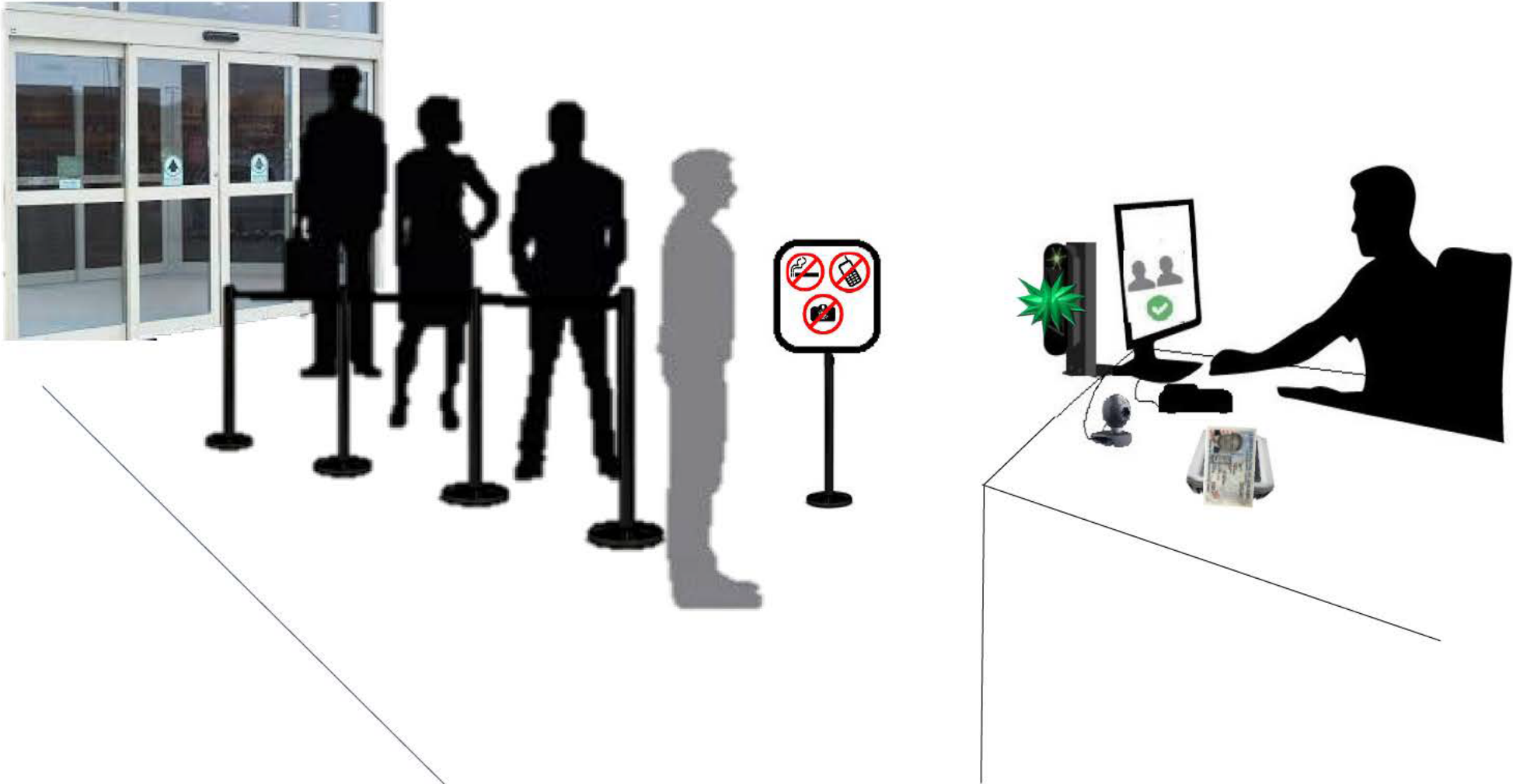
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U.S. Customs and
Border Protection

Pedestrian Overview

ENTRY PROCESS



Facial comparison technology intercepts imposters at US-Mexico Border

Tuesday, October 16, 2018 by [Chris Galford](#)

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When two separate individuals attempted to enter the United States at the Port of San Luis in Arizona earlier this month, it was new facial comparison technology that identified inconsistencies between the passports and the people who stood before Customs and Border Protection (CBP) officers.



Both individuals were Mexican nationals from San Luis Rio Colorado, Mexico. One presented a border crossing card, while the other presented a lawful permanent resident document — neither, as it turned out, belonged to them. When they were referred to secondary inspection, the truth was confirmed, and CBP arrested both men.

“Facial comparison technology is an important step forward for CBP in protecting the United States from a variety of threats,” Petra Horne, CBP’s acting director of the Tucson Field Office, said. “Criminal elements continually look for creative techniques to enter the U.S. to include using stolen or rented genuine documents. This new facial recognition technology virtually eliminates the ability for anyone to use someone else’s genuine document.”

The identification marks the first time criminals have been caught through biometric technology in a pedestrian land environment. CBP now uses the technology for both entry and exit identification of travelers.

Individuals who are otherwise unable to gain legal entry to the United States will sometimes use U.S. passports that have been stolen, purchased, or “borrowed” to attempt to enter the country illegally. However, using another person’s identity documents to enter the United States represents a violation of U.S. immigration law and could result in criminal prosecution.

Homelandprepnews.com
October 16, 2018

OCTOBER 2018



Biometric ID spots imposters at land crossing

By [Mark Rockwell](#) Oct 15, 2018

Customs and Border Protection’s tech trial of biometric entry/exit identification nabbed two imposters attempting to cross from Mexico into the U.S. near Yuma, Ariz., using someone else’s border-crossing cards.

The apprehensions are the first by the entry/exit biometric facial recognition technology at a land border crossing, CBP officials said on Oct. 12.

The two men were arrested within hours of one another at the same pedestrian crossing. According to the agency, the photos on their border-crossing cards didn’t match the images taken at the pedestrian crossing. Both face criminal prosecution.

The biometric entry/exit system is more widely deployed in U.S. airports, but CBP is beginning to use it at pedestrian entry points at the border. The deployment at the San Luis Rio Colorado port of entry, which sits near the confluence of the borders of Arizona, California and Mexico, is a “technology demonstration,” pending a wider deployment at other land ports of entry, according to CBP.

CBP’s biometric entry/exit system at Dulles International Airport nabbed its first imposter in August. Dulles is one of 14 “early adopter” airports currently using the system, CBP said.

Gcn.com October 15, 2018

PEDESTRIAN ENTRY EXIT PROJECT



In this Phase of the project, CBP will capture photos of arriving pedestrians and compare those photos to the photos associated with the documents the travelers present, (b)(7)(E) (b)(7)(E). This project will reduce the threat of imposters along the southwest border and validate the concept of face as a token.

- CBP will deploy a network camera at the primary processing booth.
- As the traveler approaches, the camera will automatically capture a photo of the traveler.
- CBP Officer will collect and query the travel document.
- Simplified Arrival will send both photos (the live captured image and the document photo) to the CBP matching service called the Traveler Verification Service (TVS).
- TVS will compare the two photos (b)(7)(E) (b)(7)(E) (b)(7)(E)

(b)(7)(E), it is ultimately the responsibility of the CBP Officer to verify the identity of, and the admissibility of the traveler.

(b)(7)(E)

HARDWARE EQUIPMENT



Network camera
(automatic; multi-capture, face-finding technology;
sends best photo to application)



Workstation camera
(auxiliary; for manual capture, if needed)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)



(b)(7)(E)



(b)(7)(E)



(b)(7)(E)

To logoff, (b)(7)(E)

(b)(7)(E)

Select Logoff.



(b)(7)(E)

PROCESS TRAVELER (Photo is taken)



U.S. Customs and
Border Protection

Live photo taken and displayed

(b)(7)(E)



(b)(7)(E)



(b)(7)(E)



(b)(7)(E)

(b)(7)(E)



(b)(7)(E)



(b)(7)(E)

(b)(7)(E)



(b)(7)(E)

PROCESS TRAVELER – Multiple Travelers



U.S. Customs and
Border Protection

When multiple travelers display (e.g. a family crossing together)

(b)(7)(E)



(b)(7)(E)



(b)(7)(E)



Live photo taken as traveler approaches the booth and document has been queried.

(b)(7)(E)



(b)(7)(E)



(b)(7)(E)



(b)(7)(E)



(b)(7)(E)



(b)(7)(E)



(b)(7)(E)



(b)(7)(E)



(b)(7)(E)



(b)(7)(E)



(b)(7)(E)



(b)(7)(E)



(b)(7)(E)



(b)(7)(E)



(b)(7)(E)



(b)(7)(E)

(b)(7)(E)



U.S. Customs and
Border Protection

(b)(7)(E)



(b)(7)(E)



(b)(7)(E)



(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

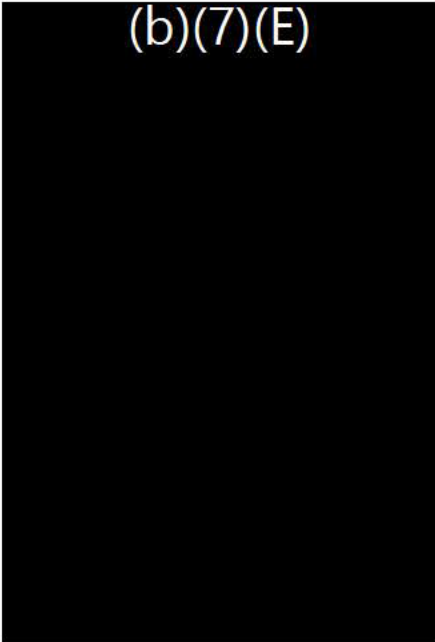
(b)(7)(E)

SIMPLIFIED ARRIVAL (SA) QUICK REFERENCE CARD

V1.0

PROCESSING TRAVELERS

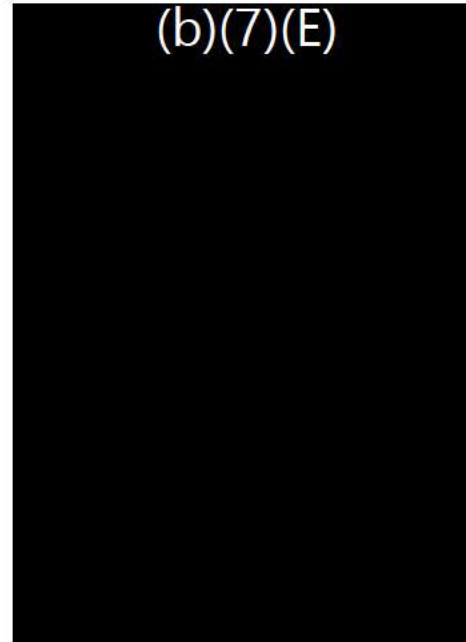
Follow the steps below to begin processing the traveler.



1) Select **Take Photo**.



2) Select **Process Traveler**.



3) [Redacted]

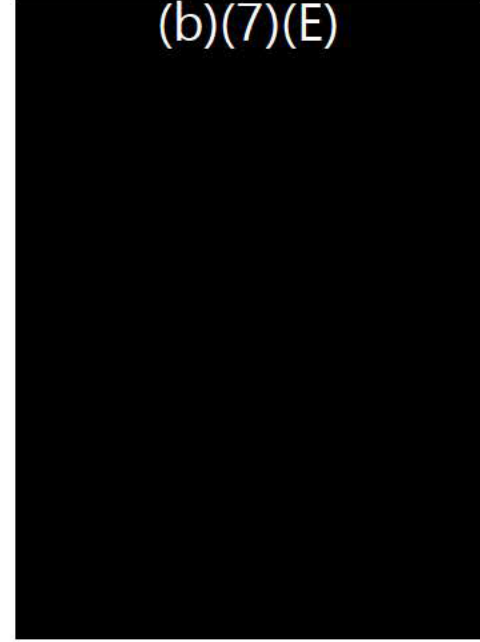
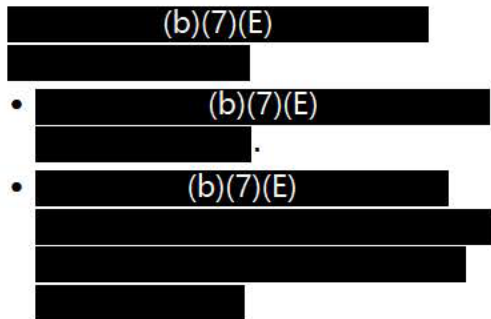
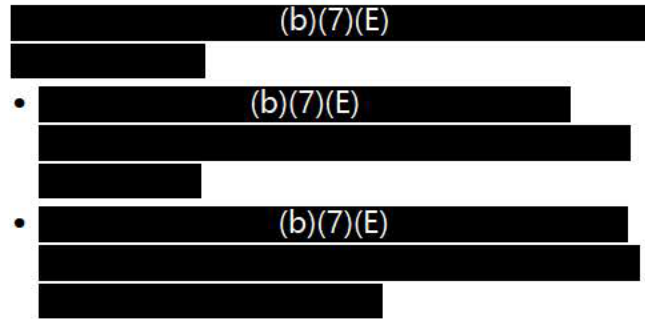


PHOTO MATCH



NO PHOTO MATCH



SIMPLIFIED ARRIVAL (SA) QUICK REFERENCE CARD

V1.0

WORKSPACE OVERVIEW

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

Acknowledgement and Compliance Declaration

(b)(6) acknowledge that I have received and read the Biometric Exit Business Requirements Document (BRD) and Technical Reference Guide (TRG) on behalf of Tampa Int'l Airport and agree to comply with the contents as of the date of signature.

Signature: **(b)(6)**
Name: **(b)(6)**
Title: **(b)(6)**
Date: 2/27/20

Traveler Verification Service

(b)(7)(E)

Technical Reference Guide



U.S. Customs and
Border Protection

June 1 2018

Version 1.0

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FOIA CBP 000361

Change Control Log

Revised By	Revised Version Number	Date	Description of Revisions
CBP OIT	V1.0	06/01/2018	Initial document creation.

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1. Introduction

1.1 Purpose

The purpose of this document is to provide a guide to testing the TVS Matcher Service in an alternate SAT environment called (b)(7)(E)

(b)(7)(E)

(b)(7)(E)

1.2 Background

A functional simulacrum of TVS is needed by internal and external partners who require a stable instance of TVS to be available for testing and education without the concerns of connections to live data or the instability of a software development environment. (b)(7)(E)

(b)(7)(E)

(b)(7)(E)

2. (b)(7)(E)

(b)(7)(E)

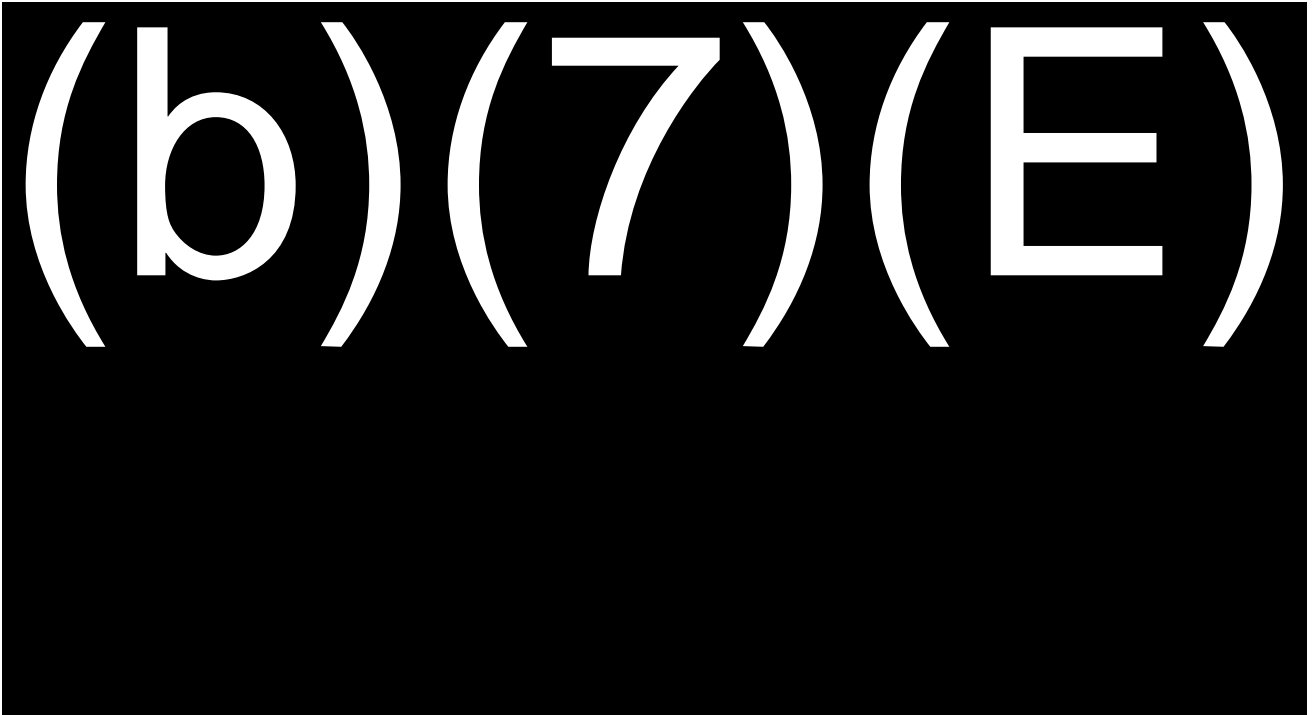
2.1 Logging in (b)(7)(E)

(b)(7)(E)

Example credentials:

(b)(7)(E)

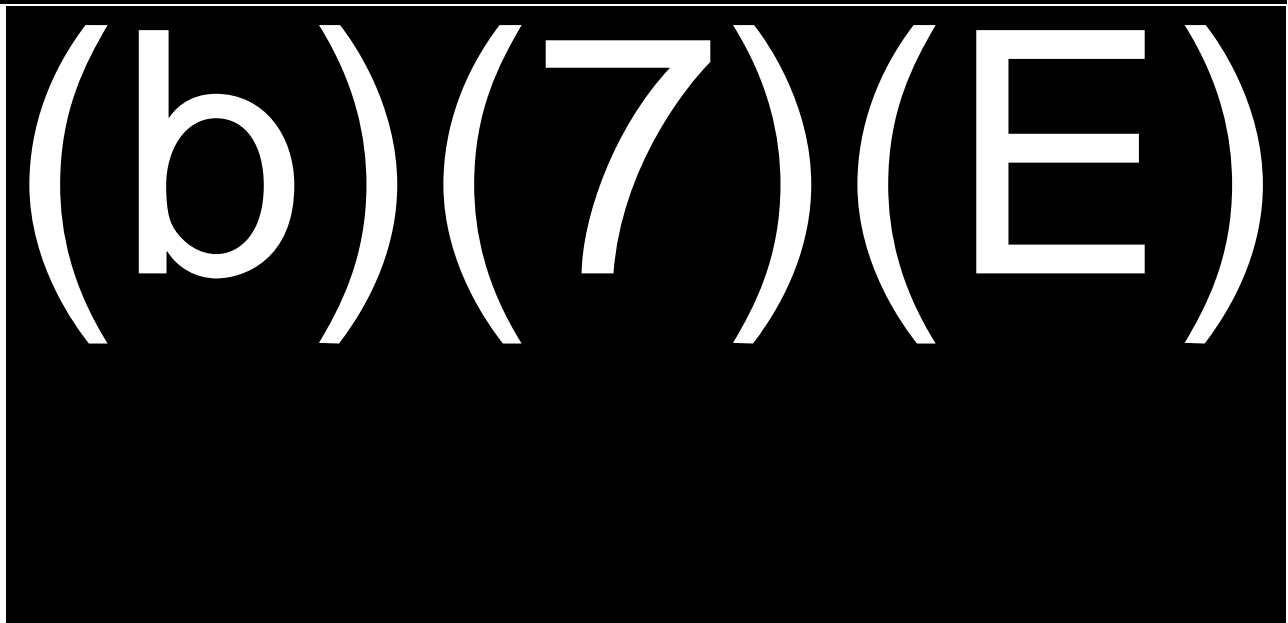
(b)(7)(E)



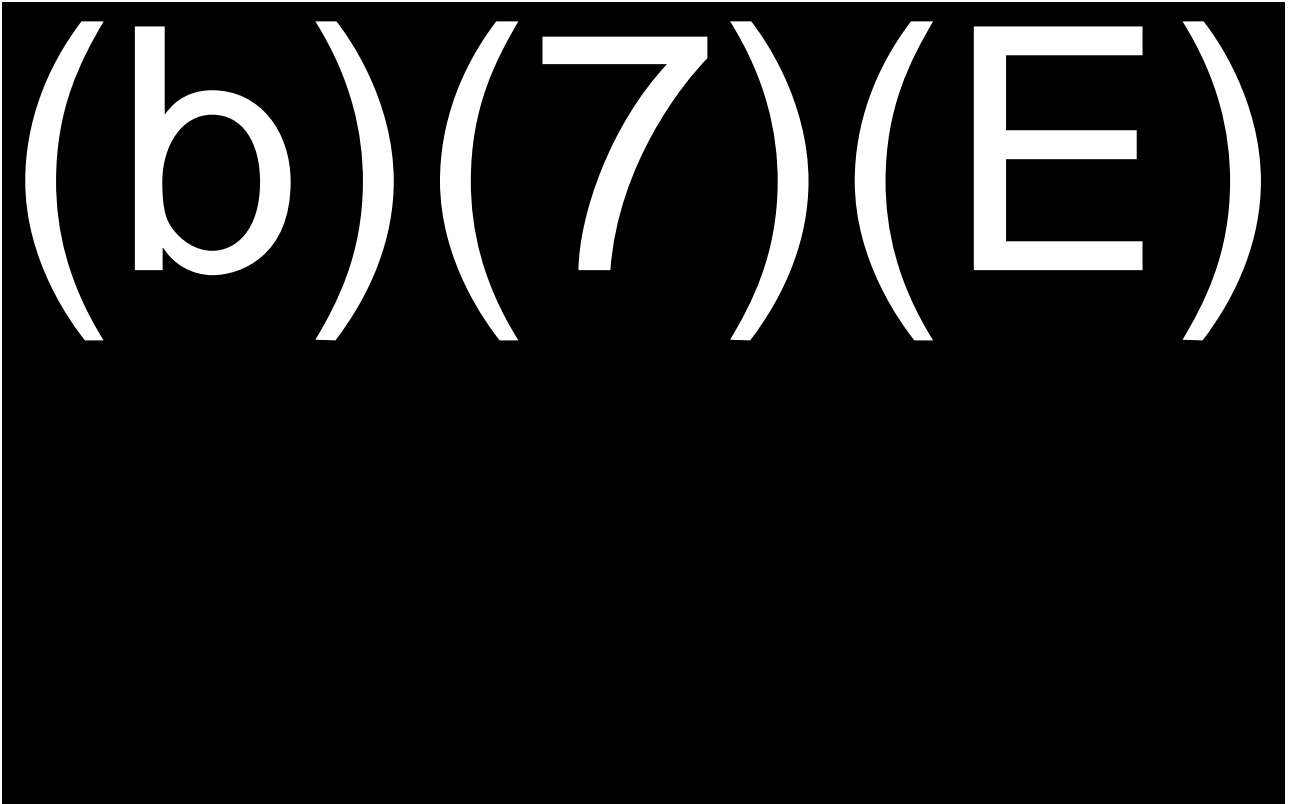
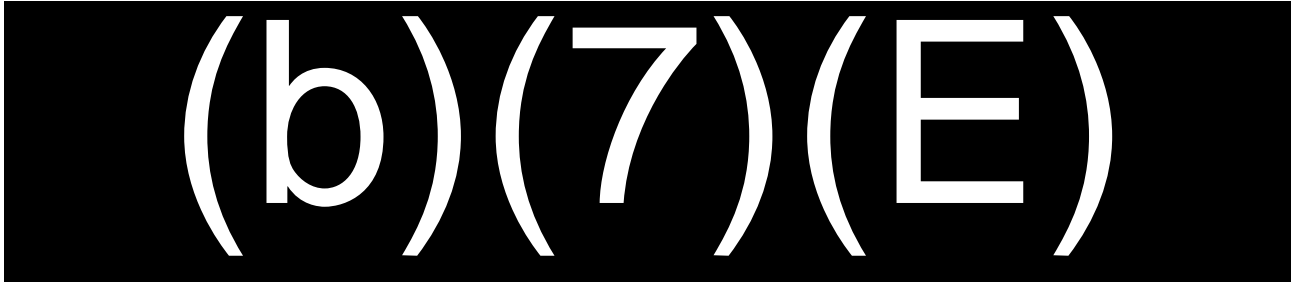
2.2

(b)(7)(E)

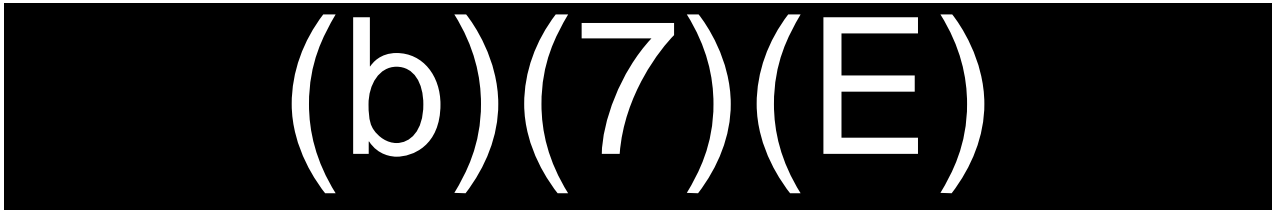
(b)(7)(E)



2.3 Identify (b)(7)(E)



2.4 Verify (b)(7)(E)



2.5 (b)(7)(E)



(b)(7)(E)

2.5.1

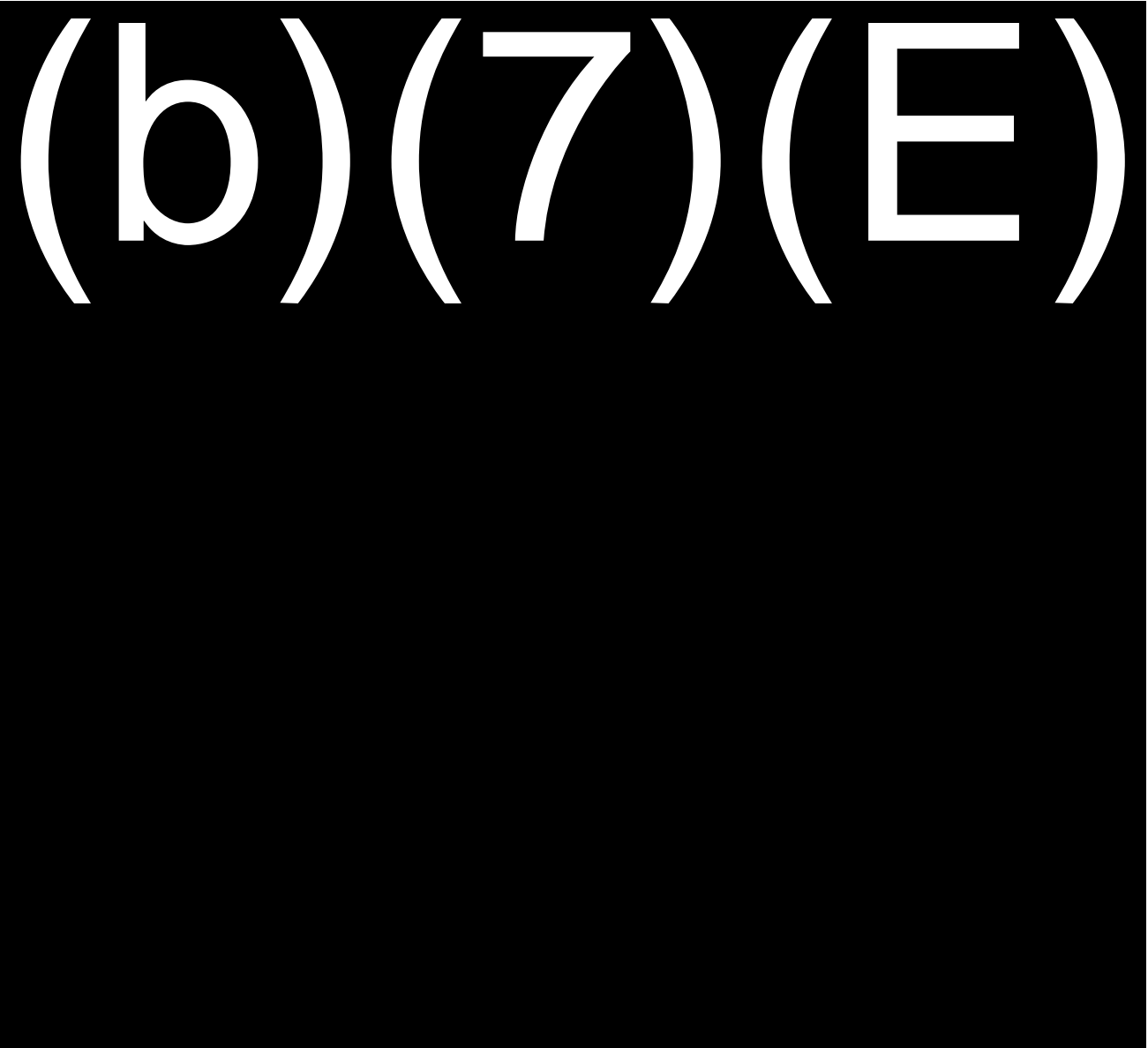
(b)(7)(E)

(b)(7)(E)

2.5.2

(b)(7)(E)

(b)(7)(E)



2.6 Gallery Creation

(b)(7)(E)

3. Diagnostic Tool



3.1 Logging In (b)(7)(E)

If upon reaching the login screen you are unable to log in, (b)(7)(E)
(b)(7)(E)

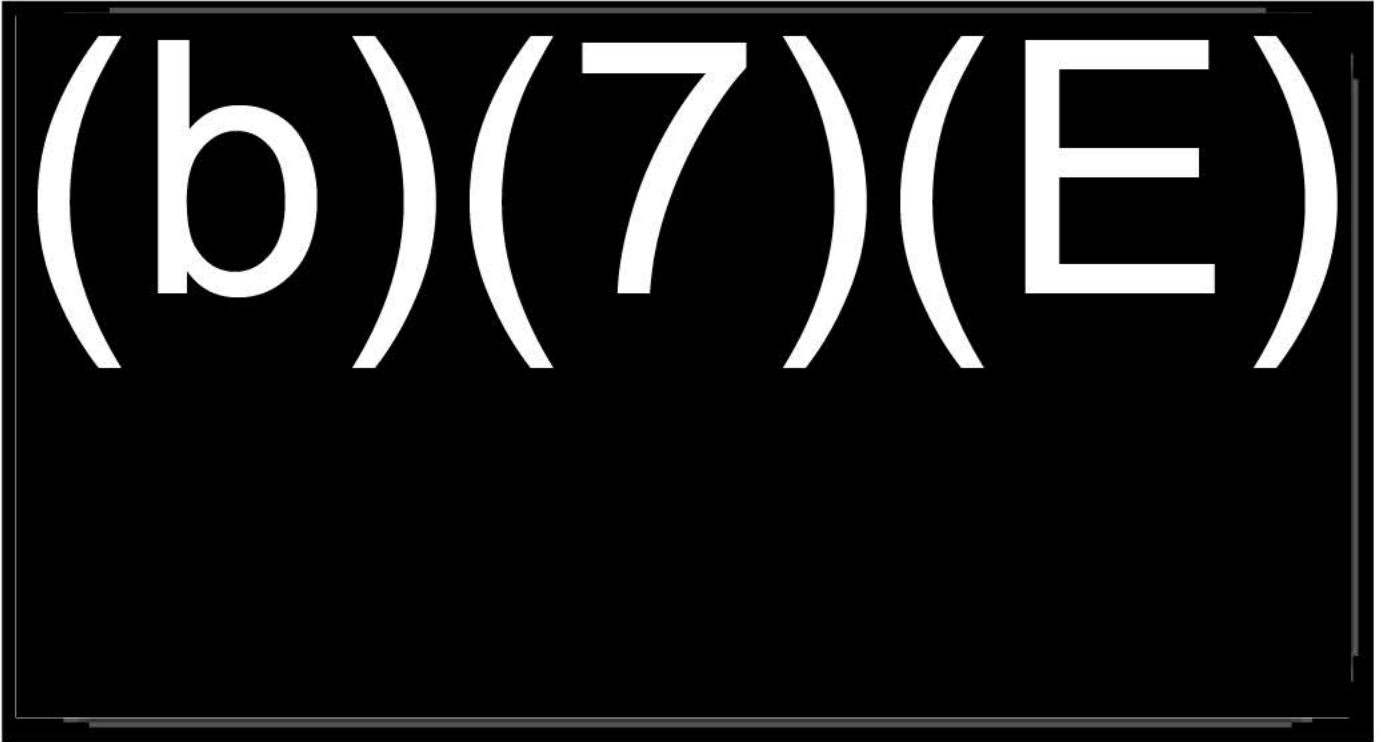


Figure 1: Login Screen

3.2 Galleries

(b)(7)(E)

3.2.1 Galleries (b)(7)(E)

(b)(7)(E)

3.2.1.1 (b)(7)(E)

(b)(7)(E)

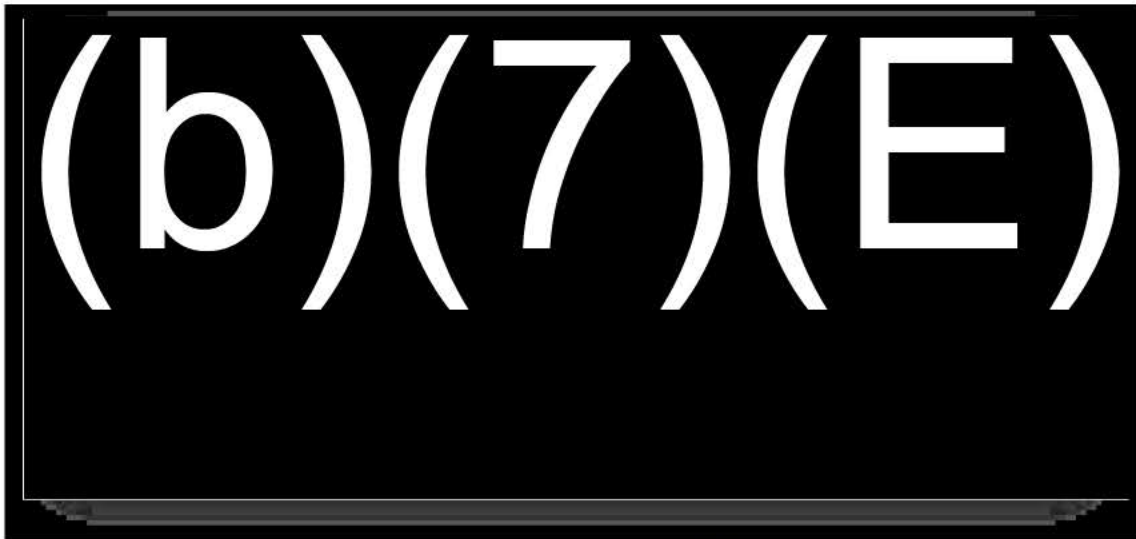


Figure 2: A sample of the galleries (b)(7)(E)

3.2.1.2 (b)(7)(E) Menu

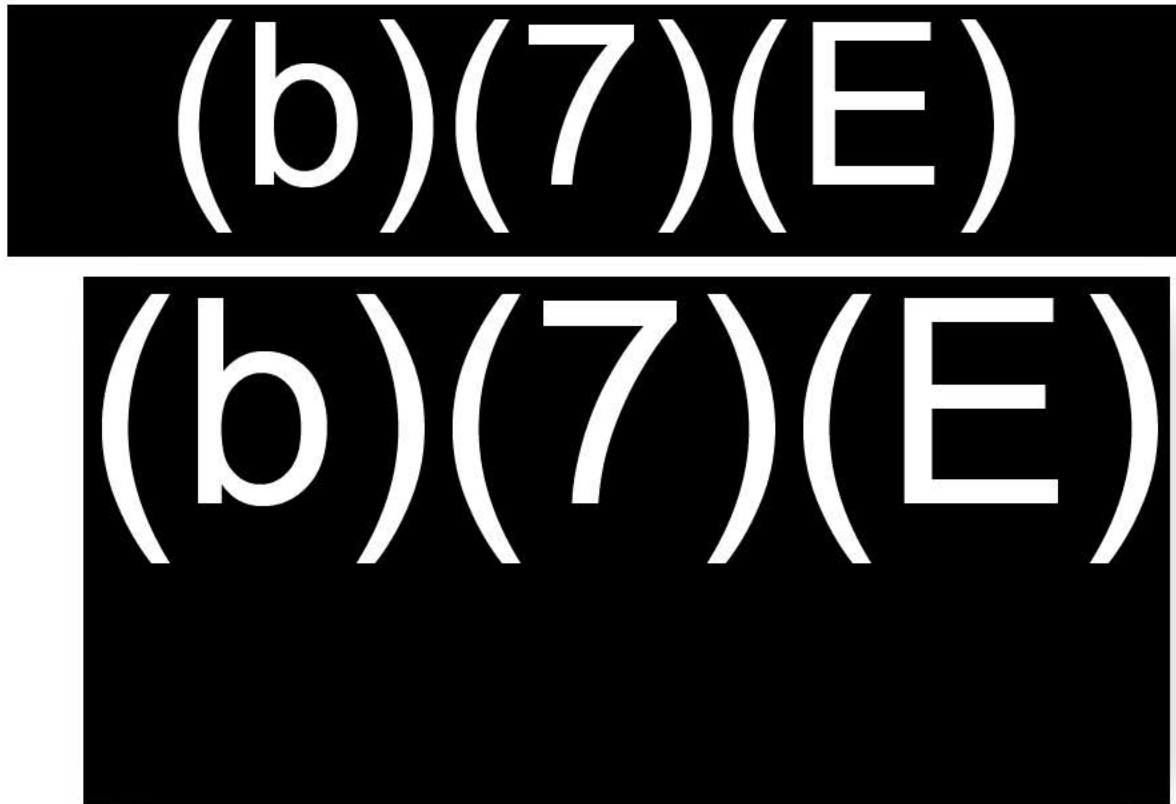


Figure 3: Actions available on each gallery (b)(7)(E)



Figure 4: (b)(7)(E)

Clicking the [Download](#) button will download (b)(7)(E) as follows:



Figure 5: Sample downloaded gallery



3.2.2 Manage Galleries

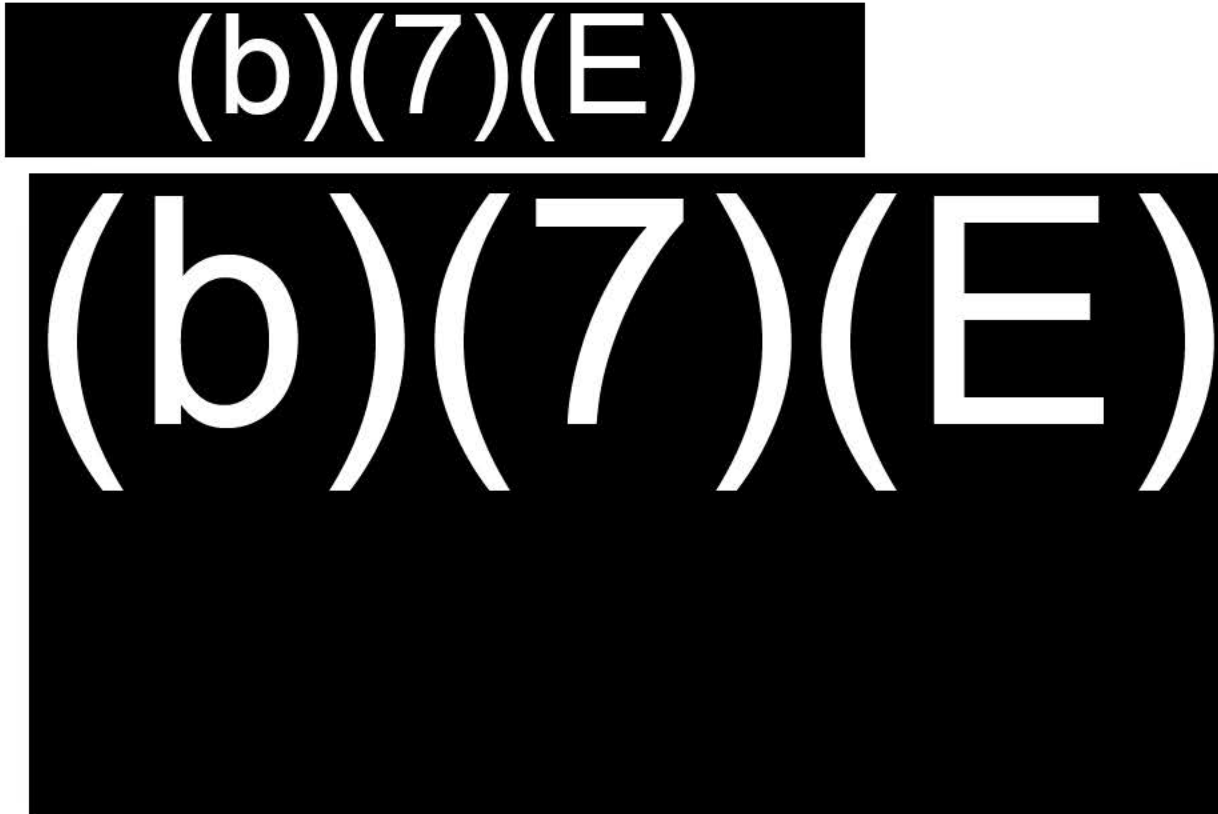


Figure 6: (b)(7)(E)



3.2.2.1 Create Gallery



Click on the **Submit** button to create the gallery.

3.2.2.2 Add Passengers to Gallery





Figure 7: Sample (b)(7)(E) file (b)(7)(E)

To add passengers to an existing gallery:

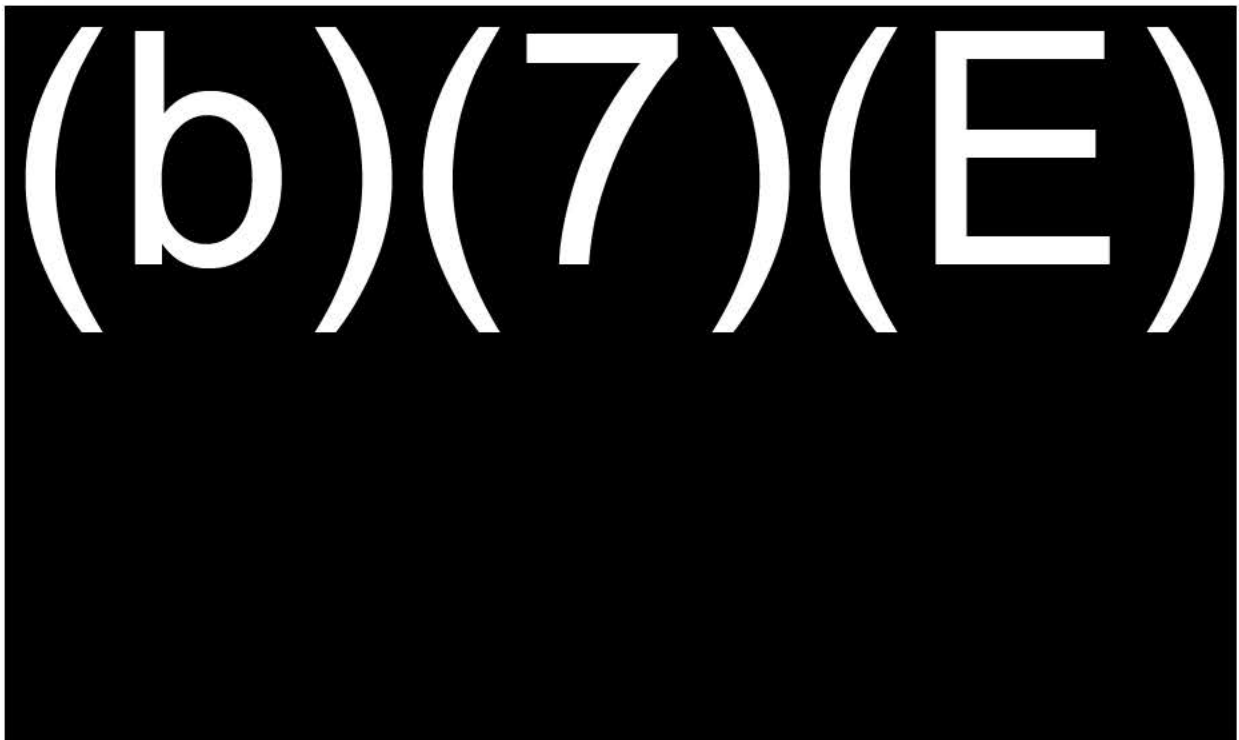


Figure 8: Add Passengers to Gallery





Figure 9: Gallery Details (b)(7)(E)



3.2.2.3 Delete Gallery



3.3 Extract

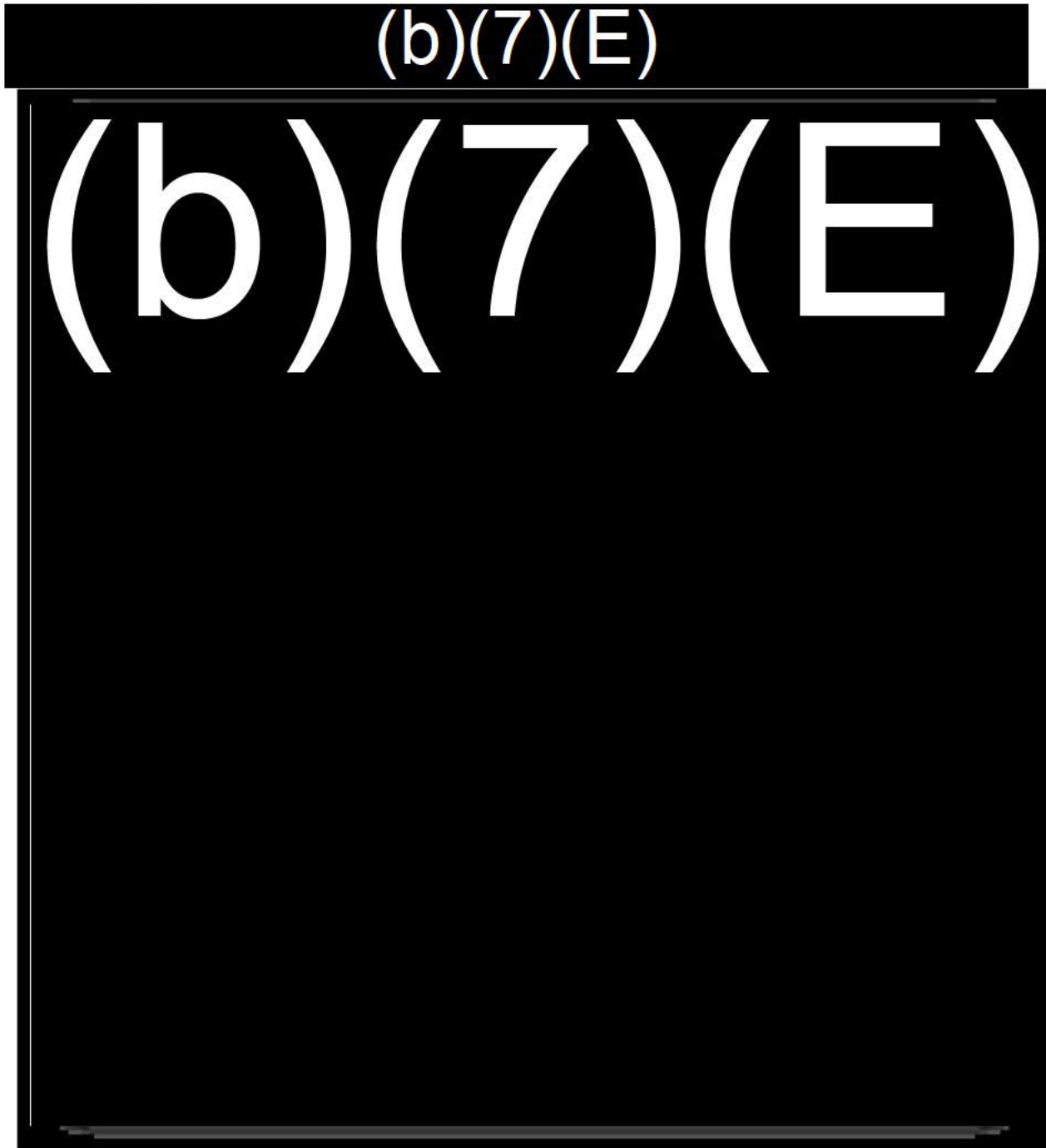


Figure 10: (b)(7)(E)

3.4 Verify

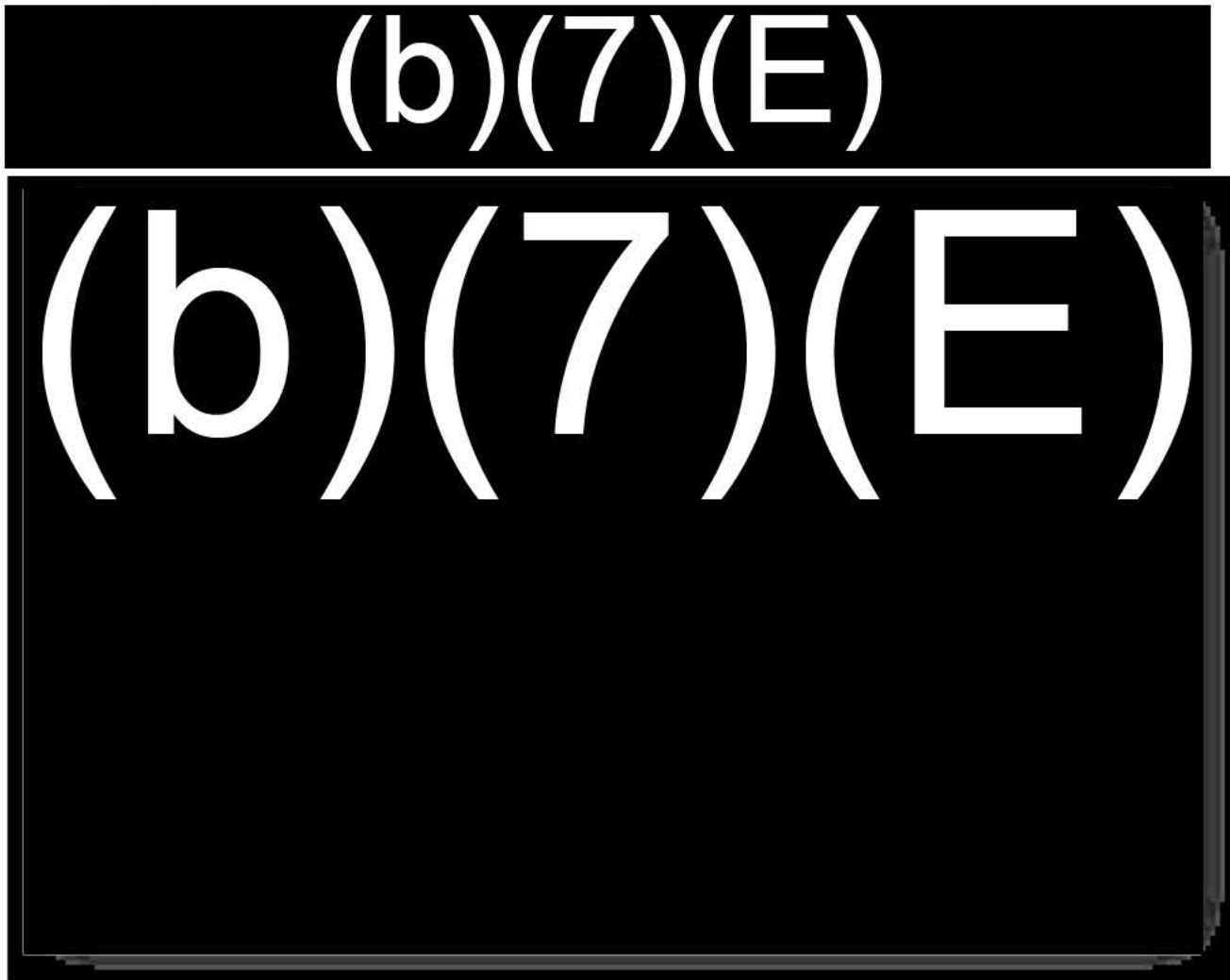


Figure 11: Sample (b)(7)(E)

3.5 Identify

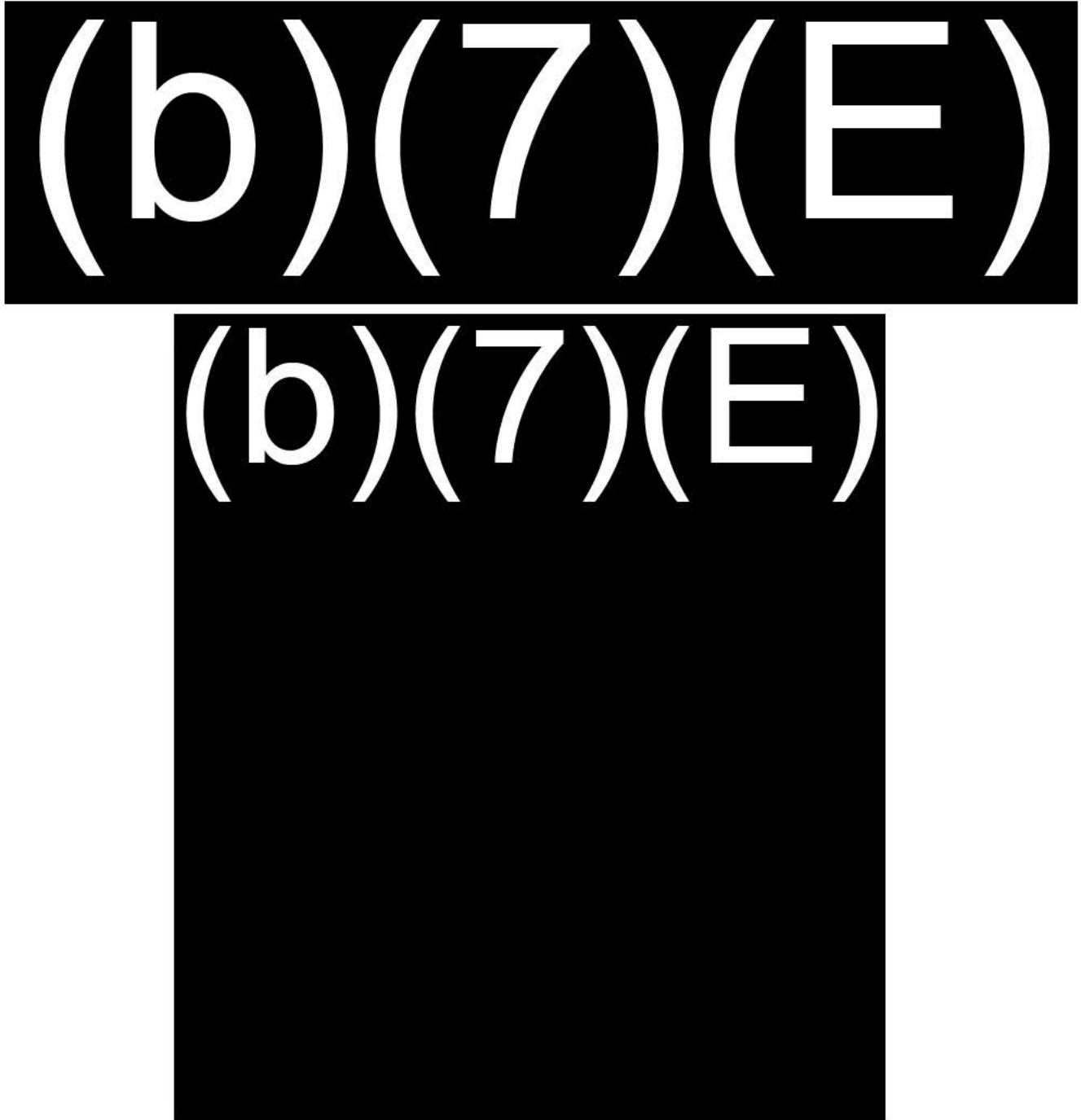


Figure 12: (b)(7)(E)

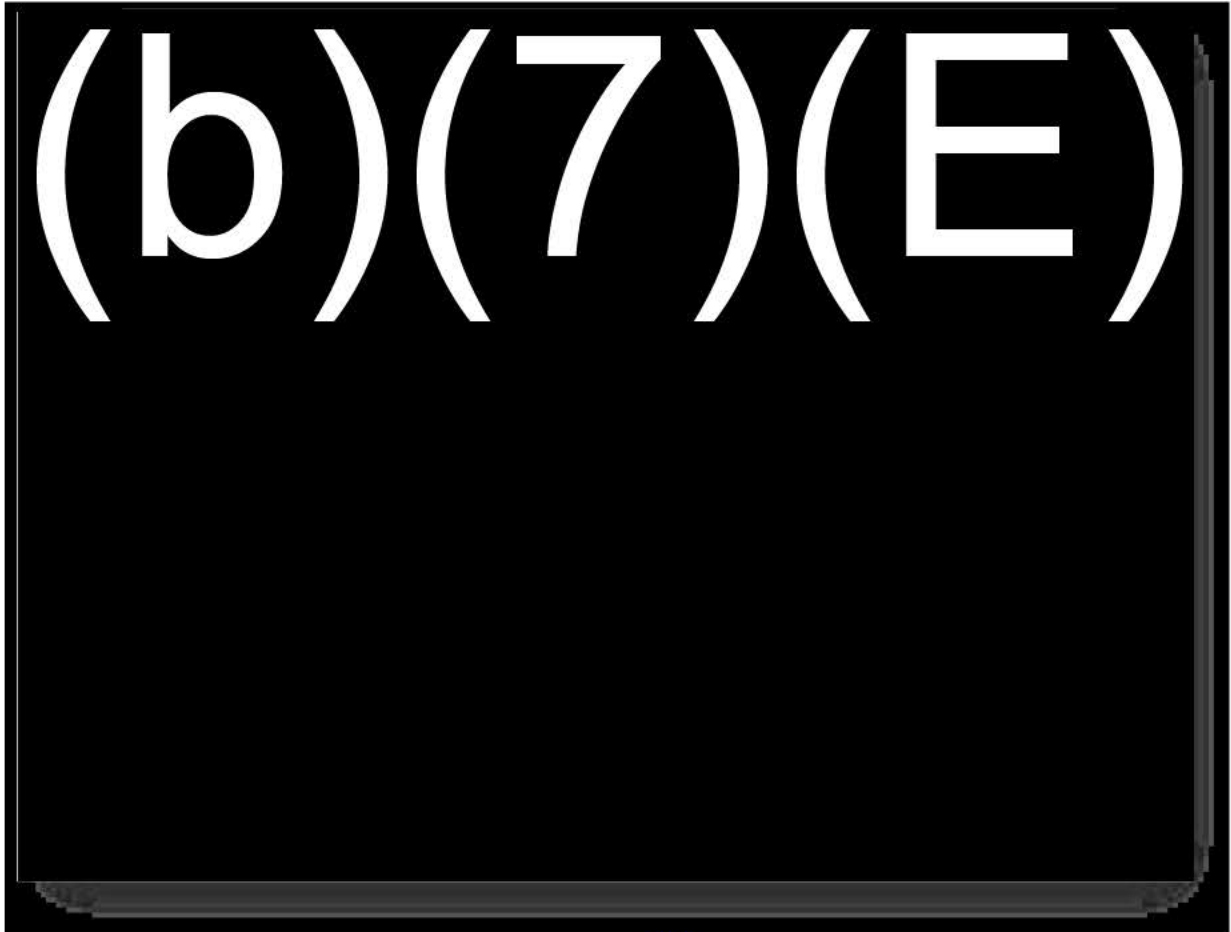
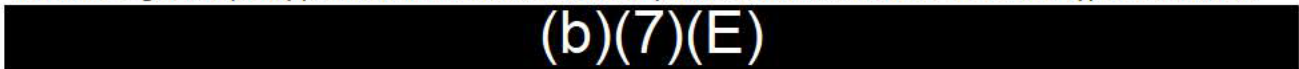


Figure 13: (b)(7)(E)

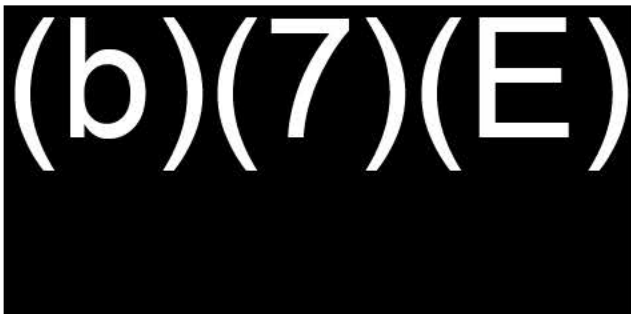
4. Photo Specifications

The photo specification for (b)(7)(E) are as follows:

A facial recognition quality photo shall have reasonable compliance with the ANSI/NIST ITL 1-2011 Type 10 standards



The photo shall include the following characteristics:



(b)(7)(E)

6. Log-in Information

To login, use the credentials which have been provided (b)(7)(E) Example:

6.1 Username: (b)(7)(E)

6.2 Password: (b)(7)(E)

If you do not have credentials, contact (b)(7)(E) to obtain credentials.

7. Contact Information

Send questions and comments related to this reference guide to (b)(7)(E)@cbp.dhs.gov.

Traveler Verification Service (Cloud-Based Matching Pilot) Technical Reference Guide



U.S. Customs and
Border Protection

July 20, 2018

Version 1.6

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Change Control Log

Revised By	Revised Version Number	Date	Description of Revisions
CBP OIT	V1.0	02/15/2017	Initial Document
CBP OIT	V1.1	03/21/2017	<ol style="list-style-type: none"> 1. (b)(7)(E) 2. (b)(7)(E) 3. (b)(7)(E) 4. (b)(7)(E)
CBP OIT	V1.2	05/04/2017	<ol style="list-style-type: none"> 1. (b)(7)(E) 2. (b)(7)(E)
CBP OIT	V1.3	05/10/2017	<ol style="list-style-type: none"> 1. (b)(7)(E) 2. (b)(7)(E) 3. (b)(7)(E)
CBP OIT	V1.4	05/17/2017	<ol style="list-style-type: none"> 1. (b)(7)(E) 2. (b)(7)(E)
CBP OIT	V1.5	05/23/2018	1. Addition of Details for Cruise Vessels
CBP OIT	V1.6	07/20/2018	1. (b)(7)(E)

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1. Introduction

1.1 Purpose

The purpose of this document is to provide the interface specifications between the U.S. Customs and Border Protection (CBP) Traveler Verification Service (TVS) and Commercial Airline/Cruise line Operators supporting the Biometric Air Exit and Sea Entry pilot. CBP Office of Information and Technology (OIT) will work closely with each airline/cruise line in developing, testing, and implementing software during the pilot phase.

1.2 Background

TVS is the next transitional step towards deployment of reliable and repeatable biometric verification capabilities in the air exit/entry and sea exit/entry environment. TVS is intended to operationalize its recent predecessor, Atlanta Pilot. The Departure Information Systems Test began on June 15, 2016 at the Atlanta Hartsfield-Jackson International Airport, in cooperation with Delta Airlines, a major U.S. carrier. A CBP manned camera and tablet computer were placed between Delta’s boarding pass scanner and the aircraft. As travelers checked in for their flight, (b)(7)(E)

(b)(7)(E) As travelers passed through the boarding area, they stopped at the camera while a photograph was captured. The live photographs were compared to the downloaded gallery of expected travelers to determine if CBP systems could accurately match live photographs to those of the same traveler that were previously acquired by CBP.

The objective of TVS is to further the pilot to experiment and establish a Reference Implementation model where the airline or cruise line provides the traveler biometric and biographic data to CBP for biometric verification of the traveler.

2. Internet Connectivity

2.1 Networking

2.1.1 Network connection requirements

(b)(7)(E)

2.1.2 (b)(7)(E)

(b)(7)(E)

2.1.3 (b)(7)(E)

(b)(7)(E)

2.1.4 (b)(7)(E)

(b)(7)(E)

2.2 Testing Region

2.2.1 (b)(7)(E)

TVS has a test region for technical certification. Technical specifications for this connection are outlined in this document.

2.2.2 URL

Use the following URL for the test region:

(b)(7)(E)

2.2.3 Project Test Plan

Airlines and Cruise lines should coordinate with CBP at the following points:

1. Prior to development

(b)(7)(E)

2. During development
 - a. Resolve technical issues
 - b. Address technical questions
 - i. Networking test (b)(7)(E) :

3. Prior to integration testing
- (b)(7)(E)

2.2.4 (b)(7)(E)

(b)(7)(E) Technical specifications for this connection are (b)(7)(E).

3. Interface Overview

CBP provides a TVS Web Service for the airlines/cruise lines to use for submission of photos of the travelers (b)(7)(E)

(b)(7)(E)

3.1 (b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

3.1.2 Login Request Message Elements

A query message shall include the following data elements for **Login**:

(b)(7)(E)

3.1.3 Login Response Message Elements

(b)(7)(E)

(b)(7)(E)

3.1.4 Authorization Header

After a successful login, the response will contain an (b)(7)(E)
(b)(7)(E) Please note the following:

(b)(7)(E)

3.1.5 (b)(7)(E)

(b)(7)(E)

3.1.6 (b)(7)(E) Message Elements

A query message shall include the following data elements for (b)(7)(E) :

(b)(7)(E)

3.1.7 (b)(7)(E) Message Elements

A response message shall include the following data elements for (b)(7)(E)

(b)(7)(E)

3.1.8 Change Password (b)(7)(E)

The changePassword (b)(7)(E) allows an authenticated user to update their existing password to a new password.

(b)(7)(E)

3.1.9 Change Password Request Message Elements

A query message shall include the following data elements for **Change Password**:

(b)(7)(E)

3.1.10 Change Password Response Message Elements

A response message shall include the following data elements for **Change Password**:

(b)(7)(E)

3.2 Identify Service

The Identify Service performs biometric verification of a passenger's identity. (b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

3.2.2 Encounter Types

(b)(7)(E)
(b)(7)(E)

(b)(7)(E)

3.2.3 Identify Request Message Elements

A query message shall include the following data elements for **Identify**:

(b)(7)(E)

3.2.4 Identify Response Message Elements

A response message shall include the photo match result and the correlation ID for **Identify**.

(b)(7)(E)

(b)(7)(E)

3.3 User Authentication

For the pilot phase, CBP will register and grant access to users to the (b)(7)(E). Contact the POC listed in Section 6 below. Upon registration, the (b)(7)(E) URL for the services will be provided.

4. Photo Specifications

(b)(7)(E)

5. Assumptions

(b)(7)(E)

6. Request Log-in ID

To request a log-in ID, please submit a request to: (b)(7)(E)

Include in the email:

- Airline/Cruise Line Name
- Port Name
- Device Description
- POC with email

7. URL

Use the following URL:

(b)(7)(E)

8. Contact Information

Send questions and comments related to this reference guide to (b)(7)(E)

9. Acronyms

ANSI	American National Standards Institute
API	Application Program Interface

APIS	Advance Passenger Information System
CBP	Customs and Border Protection
FOUO	For Official Use Only
IATA	International Air Transport Association
NIST	National Institute of Standards and Technology
OIT	Office of Information and Technology
PX	Pixel
TVS	Traveler Verification System
UTC	Coordinated Universal Time
WS	Web Service

10. Appendix

10.1 Network Testing Examples

10.1.1 (b)(7)(E) Sample Response Screenshot

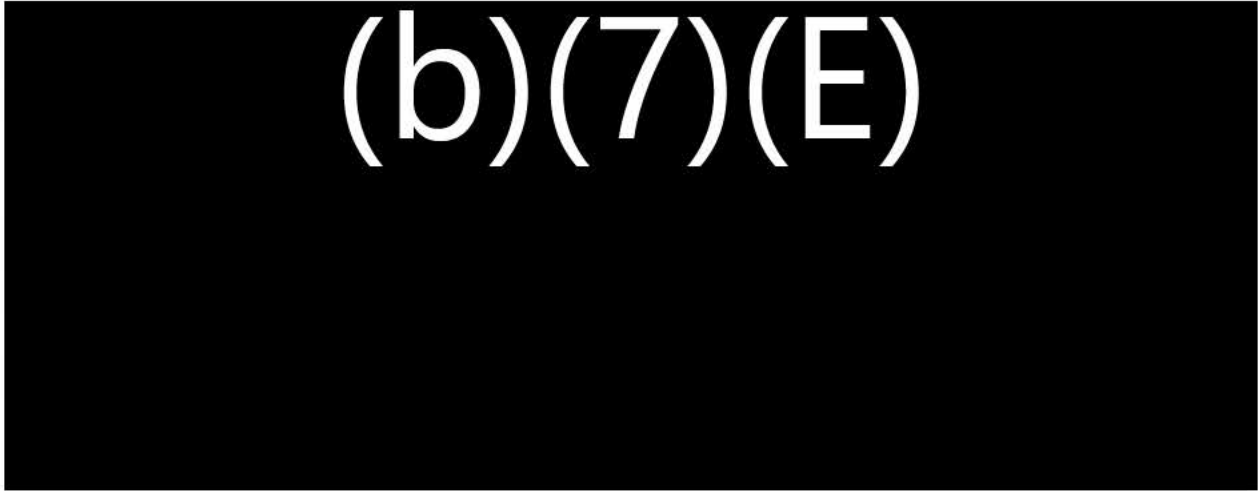
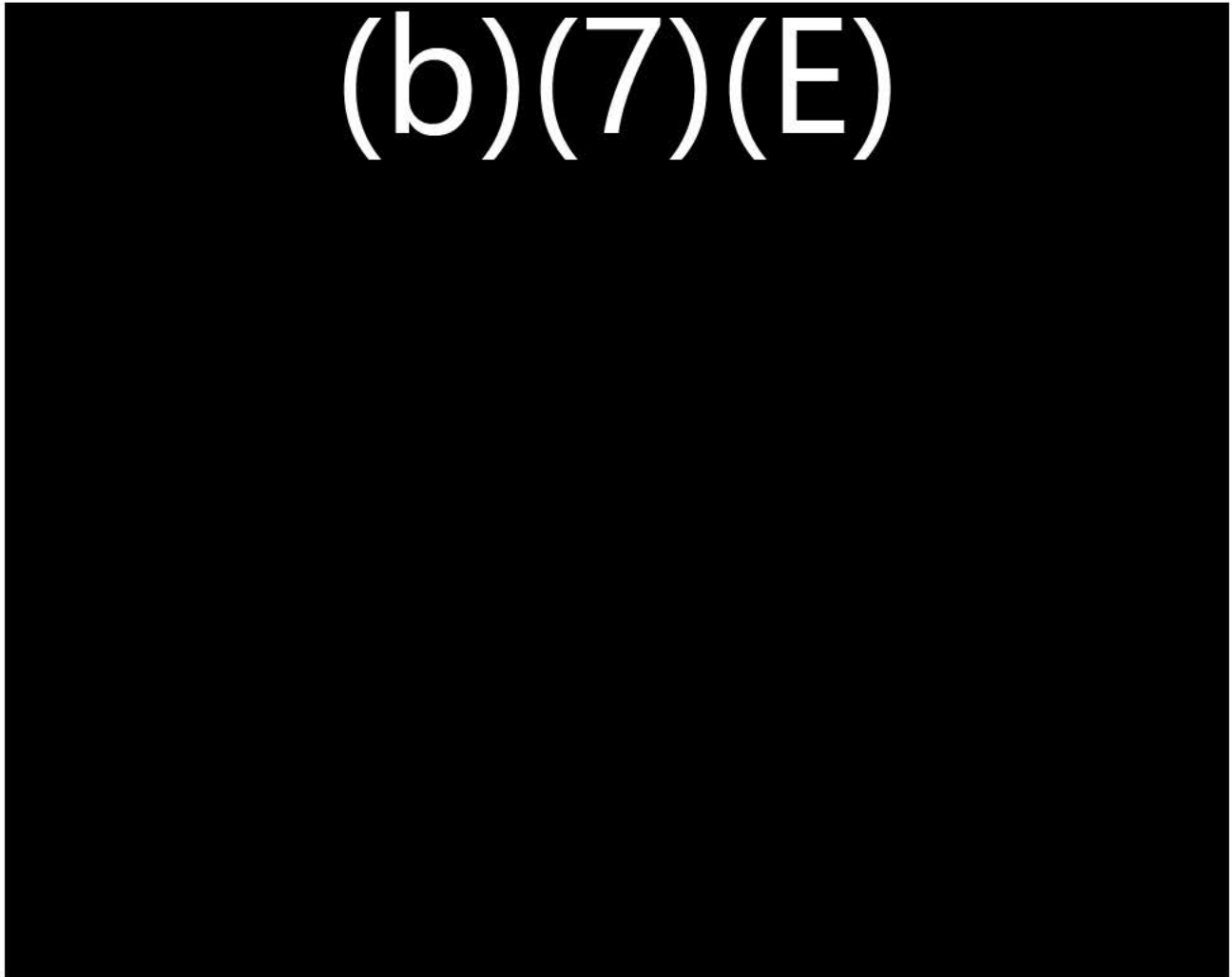


Figure 3: Sample (b)(7)(E) Test Response

10.1.2 (b)(7)(E) Sample Complete Response



(b)(7)(E)

TRAVELER VERIFICATION SERVICE

STANDARD OPERATING PROCEDURE



U.S. Customs and Border Protection

June 2017

Version 1.0

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1 Purpose

The Traveler Verification Service (TVS) Standard Operating Procedure (SOP) provides operational and enforcement guidance to U.S. Customs and Border Protection (CBP) Officers working outbound passenger enforcement and inspection operations. The policies and procedures outlined in this document relate specifically to operations during an outbound flight in which the TVS is deployed.

2 Background

This document supersedes the Departure Verification System (DVS) SOP. DVS was the operationalization of the Departure Information Systems Test (DIST), which tested the ability of CBP systems to compare images of travelers departing the U.S. against images within government holdings. Government holdings, such as U.S. passports and visa photos, are pulled to create a manifest gallery of photos, which are then used to match against passengers traveling outbound to biometrically confirm departure. DVS had two significant enhancements over DIST; the confirmation of travelers' outbound crossings and real time matching responses by the camera.

TVS will include two additional enhancements over DVS. The first enhancement is the creation of an (b)(7)(E) of travelers (b)(7)(E). The second enhancement is the capability of the camera (b)(7)(E) (b)(7)(E).

TVS technology includes the biometric exit application on the (b)(7)(E) platform. The deployed biometric capture device (the camera) and the Biometric Exit Mobile Application (BEMA) together are capable of the following:

- Provides (b)(7)(E)
- Provides (b)(7)(E)
- Provides the capability to capture a traveler's fingerprints for identity verification;
- Provides the capability to biographically or biometrically query a traveler's record; and
- Provides the capability to biographically or biometrically confirm the departure of a traveler from the United States.

3 Policy

Prior to boarding, the Passenger Analytical Unit (PAU) or other designated team will review the port of entry (b)(7)(E). Any traveler whose record is promoted to the (b)(7)(E) (b)(7)(E), either systematically or by the National Targeting Center (NTC), will be reviewed by the PAU to determine what action, if any, is appropriate. This document will identify which enforcement scenarios will require an exit enforcement action and under which circumstances.

If during TVS operations the identity of a traveler cannot be determined, the CBP Officer will use alternative methods to verify that traveler's identity. Once the identity of the traveler is verified and there are no enforcement concerns, the CBP Officer may allow the traveler to board the flight.

(b)(7)(E)

4 Authorities and References

The 1996 Illegal Immigration Reform and Immigrant Responsibility Act (IIRIRA, Public Law No. 104-208) called for the creation of an automated system to record arrivals and departures of non-citizens at all air, sea, and land ports of entry. The 2002 Enhanced Border Security and Visa Entry Reform Act (EBSVERA, Public Law No. 107-173), the Intelligence Reform and Terrorism Prevention Act of 2004 (IRTPA, Public Law No. 108-458), and the Implementing Recommendations of the 9/11 Commission Act of 2007 (Public Law No. 110-53) all called for the creation of a nationwide, biometric entry/exit system.

5 Responsibilities

5.1 Port Director

The Port Director or designee is responsible for the following:

- Assign appropriate staff to facilitate and ensure enforcement per this SOP of TVS operations;
- Ensure anyone assigned to TVS operations receive appropriate training; and
- Ensure that technical devices and communication materials related to the operation are properly secured.

The Port Director or designee will have the discretion (b)(7)(E)

5.2 Passenger Analytical Unit

The PAU (unless another unite is designated) will review the (b)(7)(E) of each TVS flight. If research confirms (b)(7)(E). If research confirms that the record was promoted to the (b)(7)(E) in error, the (b)(7)(E) event should be closed out. Other (b)(7)(E) should be researched as per port policy.

6 Procedures

6.1 Prior to Boarding - Passenger Analytical Unit

Prior to boarding, the PAU or other designated team should analyze the flight manifest to identify (b)(7)(E) on travelers for (b)(7)(E) (b)(7)(E) are currently placed on the (b)(7)(E) and may require an enforcement examination. (b)(7)(E) PAU will research the traveler's crossing history to make a determination (b)(7)(E) (b)(7)(E) (b)(7)(E) when the traveler's photo is captured.

- (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E)
- (b)(7)(E)

6.5 Post Boarding

After each flight, the equipment and the communication materials will be stored.

7 Exception Processing

7.1 Alternate process for identity verification

Alternate processing may require the use of the BEMA device, as discussed below. Use of the BEMA device requires training, either from the BE-Mobile Project Team or from a local user of the BEMA device who is skilled in the use and operation of the technology as well as provisioning for the BEMA application. For additional guidance on use and special encounters, such as travelers who overstayed the duration of their visa or who entered the country without an inspection, see the *Biometric Exit-Mobile Standard Operating Procedure*.

7.1.1 United States Citizens or Travelers Exempt¹ from Biometric Collection

If the TVS is unable to verify the identity of a traveler for any reason, an attempt should be made to verify the traveler's identity using alternate methods, such as reviewing the travel documents. If the CBP Officer is satisfied that the U.S. citizen traveler is the true bearer of the presented documents, he/she will allow the traveler to board; no BEMA confirmation is required.

7.1.2 Non-U.S. Citizens

If the TVS is unable to verify the identity of a non-U.S. citizen traveler, the CBP Officer will use the BEMA device to determine the reason for the (b)(7)(E) and, if allowed to board, both biographically and biometrically confirm the traveler's departure from the United States. The CBP Officer will begin the alternate processing by (b)(7)(E) (b)(7)(E)

(b)(7)(E) The CBP Officer will then follow the normal BEMA process flow to collect and query the traveler's fingerprints. Once results are returned, the CBP Officer can review those results while interviewing the passenger to determine their immigration status in the United States. If

¹ In-scope status is defined under 8 CFR 235.1(f)(1)(ii) to (iv) for entry and 8 CFR 215.8(a)(2)(i) to (iv) for exit.

the traveler has any (b)(7)(E) (b)(7)(E) The CBP Officer should also run the (b)(7)(E) to determine if there are any additional (b)(7)(E) associated with the traveler’s biographic or biometric information.

If the CBP Officer is satisfied that there is no reason to withhold boarding from the traveler, he or she will conclude the examination, select the (b)(7)(E) option, and allow the traveler to board the plane. (b)(7)(E)

(b)(7)(E)

- (b)(7)(E) (b)(7)(E)
- (b)(7)(E)

7.2 Travelers with Disabilities

Some travelers with disabilities are escorted and assisted by airline personnel, wheelchair service providers, and/or family members. Others may be traveling without escort or assistance.

- For travelers using a wheelchair, the traveler should be instructed to present themselves to the TVS technology for photo capture; the traveler is not required to stand.
- Some travelers with vision, hearing, or other disabilities may need instructions from a CBP Officer. (b)(7)(E)

(b)(7)(E) In this case refer to section 7.1 of this document for procedures.

7.3 Travelers with Limited English Proficiency

Some travelers may not be proficient enough in English to understand directions and questions. In these cases, the CBP Officer should attempt to assist the traveler. If the CBP Officer is not able to direct the traveler to the TVS technology, the CBP Officer may use the BEMA device (b)(7)(E)

(b)(7)(E) In this case refer to section 7.1 of this document for procedures.

7.4 Travelers with Religious Head Wear

For travelers with religious headwear with their face visible, no action on the part of the CBP Officer is required as the TVS technology will adjust. For travelers with religious headwear that

covers their face, officer discretion may be used consistent with CBP Policy. (b)(7)(E)
 (b)(7)(E)
 (b)(7)(E) In this case refer to section 7.1 of this document for procedures.

7.5 Age Restrictions

If a traveler appears to be too young or old to have biometrics captured (younger than 14 or older than 79), the CBP Officer may ask the traveler’s age. If the officer is satisfied that the traveler does not meet the listed criteria, they may allow the traveler to proceed at their discretion without providing biometrics. In this case refer to section 7.1 of this document for procedures.

7.6 U.S. Uniformed Military Personnel

If a member of the U.S. military requests to be excluded, the CBP Officer may excuse the traveler from participation, provided they are traveling on orders and produce valid military ID. In this case refer to section 7.1 of this document for procedures.

7.7 Surgical/Medical Masks

For travelers wearing surgical/medical masks, no action on the part of the CBP Officer is required. (b)(7)(E)
 (b)(7)(E)
 (b)(7)(E) In this case refer to section 7.1 of this document for procedures.

7.8 Travelers Who Refuse To Participate

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

7.9 Equipment Failure

If equipment does not work, the CBP Officer should notify his or her supervisor immediately and suspend operations until the problem is resolved. The Supervisory CBP Officer should contact the port Field Technology Officer (FTO) immediately.



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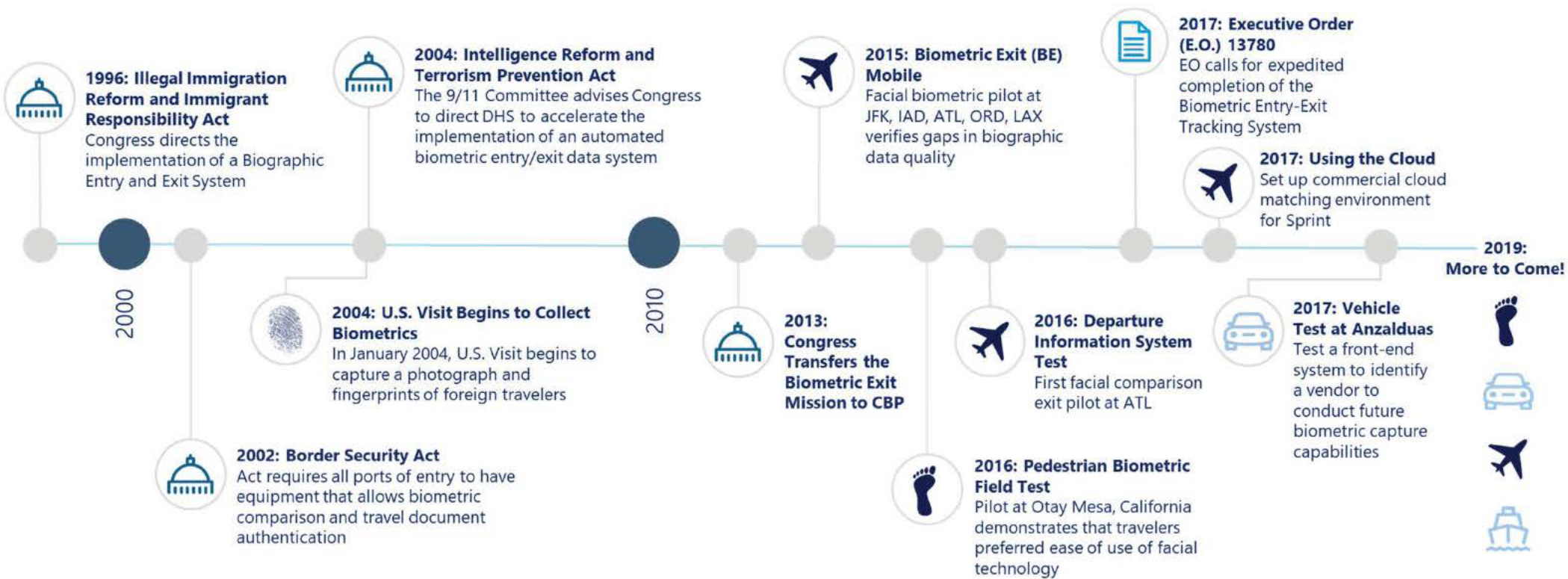
SPRINT



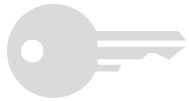
Traveler Verification Service &
Biometric Exit Mobile Air

| July 2019

TIMELINE: HOW CBP HAS CHANGED THE FACE OF TRAVEL



Key Parameters and Considerations



For a solution to be both feasible and realistic:

1 *Do not add another process*

Avoid adding any new processes

2 *Existing Infrastructure*

Utilize existing airport and airline infrastructure

3 *Existing Business Models*

Leverage existing stakeholder systems, processes, and business models

4 *Current Passenger Behavior*

Leverage passenger behaviors and expectations that do not require new or unexpected steps for travelers

5 *Existing Data & IT Infrastructure*

Use existing traveler data and existing government IT infrastructure

WHY FACIAL COMPARISON?

- 1 CBP is taking advantage of **already existing traveler biometric (facial) and biographic information**. Everyone we encounter has a photo—except first time visa waiver program travelers—including visa photos, primary encounters, and certain enforcement data, US Passport, LPR card photos, etc.
- 2 Facial comparison **eliminates the need to verify fingerprints** each time a foreign national returns to the U.S., but we will always collect foreign nationals' first encounter prints, (b)(7)(E) (b)(7)(E) (b)(7)(E) (b)(7)(E)
- 3 Facial comparison on Entry allows Officers (b)(7)(E) (b)(7)(E) (b)(7)(E)
- 4 Facial comparison technology is **accurate**. CBP's match rate using facial comparison technology is approximately **99%**.
- 5 The use of facial comparison technology has led to **positive tangible results**. In the first 4 months, 5 imposters were caught during entry processing at IAD and over 110 imposters at the land border.



(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

B8

TVS & BEMA: How do they fit together?

- Fulfill the mission requirement of Biometric Exit using two tools: **TVS and BEMA.**



- **TVS** automates facial recognition of travelers on exit.
 - Uses APIS manifest data and existing photos to match live photos of travelers boarding.
- **BEMA** for exception processing.
 - BEMA is a (b)(7)(E) program that receives (b)(7)(E). Officers can use BEMA to take fingerprints, scan documents (b)(7)(E).
- Used together, TVS and BEMA provide the foundation for robust biometric exit capabilities.

TVS Overview

What is TVS?

TVS biometrically confirms traveler departure by using facial recognition.

(b)(6);(b)(7)(C)

Last Name, First Name

00/00/1900

P 123456 (MEX)

Boarded

(b)(6);(b)(7)(C)

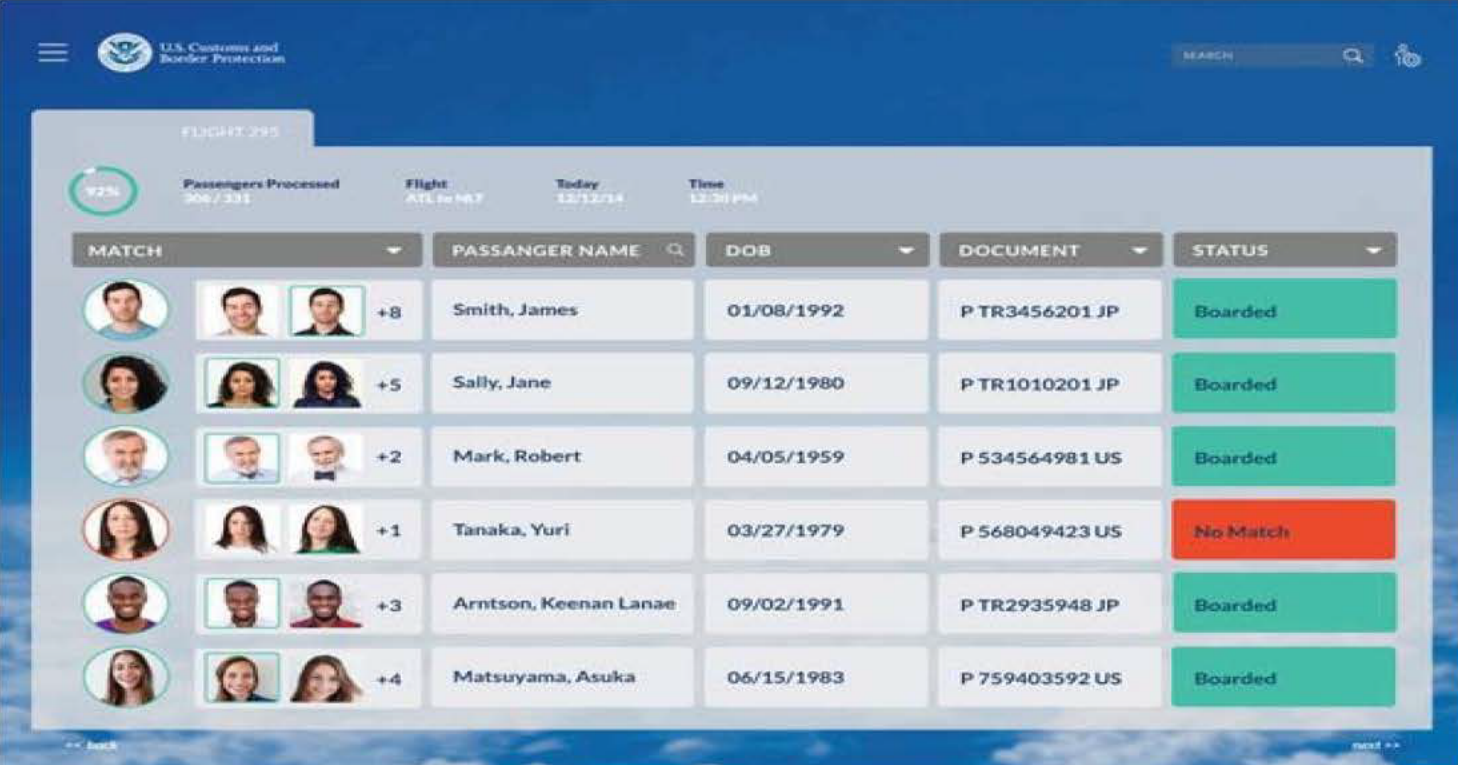
TVS uses traveler photos already available to CBP. APIS data is used to create a gallery of photos on travelers on a particular flight. The photos come from government holdings, such as U.S. passport and visa photos, photos in (b)(7)(E) etc. The live photo captured by TVS during the boarding process is then matched against the gallery to biometrically confirm identity/departure on exit.



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TVS Overview

- (b)(7)(E) before scheduled departure
(b)(7)(E) pulls the APIS information and Creates Gallery of photos from DHS holdings
- The Gallery will (b)(7)(E) when updates are made to APIS.



MATCH	PASSANGER NAME	DOB	DOCUMENT	STATUS
+8	Smith, James	01/08/1992	P TR3456201 JP	Boarded
+5	Sally, Jane	09/12/1980	P TR1010201 JP	Boarded
+2	Mark, Robert	04/05/1959	P 534564981 US	Boarded
+1	Tanaka, Yuri	03/27/1979	P 568049423 US	No Match
+3	Arntson, Keenan Lanae	09/02/1991	P TR2935948 JP	Boarded
+4	Matsuyama, Asuka	06/15/1983	P 759403592 US	Boarded

TVS Step 1: Setup Camera

(b)(7)(E)



TVS Step 2: Process Flight



- Instruct the traveler to stand 22-26 inches away from the screen.
- If the traveler does not initiate facial capture, advise the traveler to move closer to the camera.



TVS Responses



• (b)(7)(E)

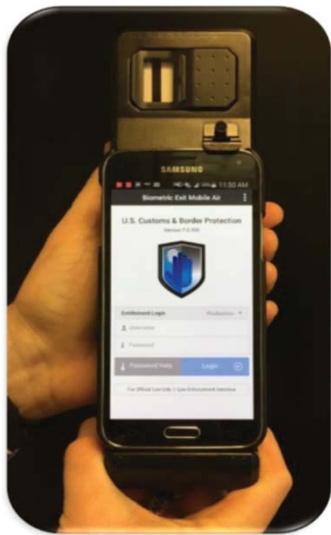


• (b)(7)(E)



• (b)(7)(E)

BEMA Overview



- BEMA is an enhanced handheld mobile device that allows CBPOs to collect and query biographic and biometric traveler data.

- [REDACTED] (b)(7)(E)

- [REDACTED] (b)(7)(E)

- [REDACTED] (b)(7)(E)

- [REDACTED] (b)(7)(E)



BEMA Referral (b)(7)(E)

(b)(7)(E)



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BEMA Selecting Referral

(b)(7)(E)

- Once you select a mismatch, (b)(7)(E) (b)(7)(E) the BEMA user will begin the adjudication process for that specific referral.

(b)(7)(E)

BEMA – Swipe Travel Document

(b)(7)(E) (b)(7)(E)

- After selecting the (b)(7)(E) (b)(7)(E) the BEMA user can begin processing the mismatch using normal BEMA techniques.
- At this point, you should only process the referred/mismatched traveler.

(b)(7)(E)

| BEMA – Primary Screen

(b)(7)(E)

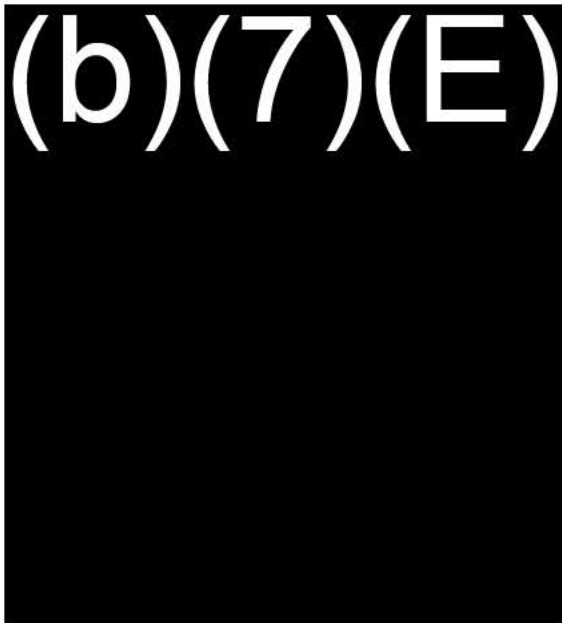
(b)(7)(E)



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BEMA – Biometric Collection

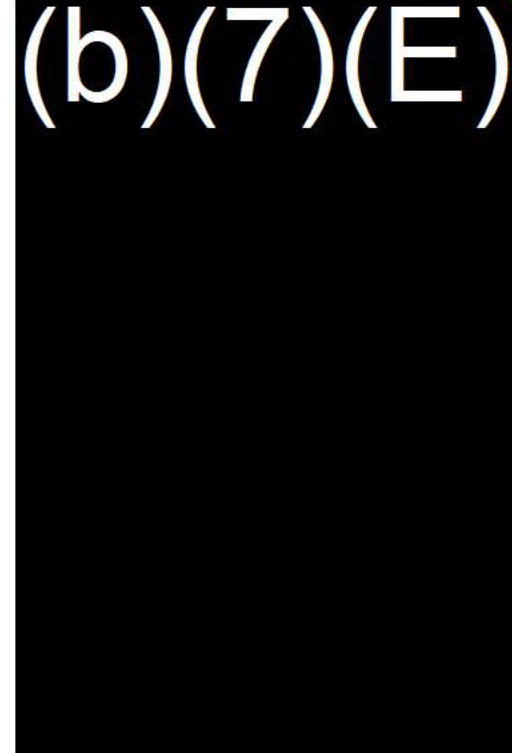
Biometrics Capture Screen
(b)(7)(E)



Fingerprint Capture
(b)(7)(E)



Homepage
(b)(7)(E)



BEMA — (b)(7)(E)

(b)(7)(E)

(b)(7)(E)

BEMA — (b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E):

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

(b)(7)(E):

(b)(7)(E)

(b)(7)(E)

(b)(7)(E)

BEMA — (b)(7)(E)

(b)(7)(E)

(b)(7)(E)

- (b)(7)(E)
- (b)(7)(E)

Policy

TVS allows the CBPO operating the device to determine the appropriate response to those travelers that do not match.

- All In-Scope passengers identities, including those of USCs, must be verified.
 - In-Scope is the same as the In-Scope age range for (b)(7)(E) Age 14 – 79
 - If A traveler Refuses or is unable to participate
 - Confirm using the (b)(7)(E)
 - Confirm using BEMA (NON- USC)
 - Out of Scope Travelers may be excused from TVS
- If the identity of a traveler cannot be verified by TVS, the CBP Officer will use appropriate alternative methods, such as BEMA or a manual review of documents, to verify that traveler's identity
- Once the traveler's identity is verified and there are no enforcement concerns, the CBP Officer may allow the traveler to board the flight

Exception Processing

For U.S. Citizen Travelers

- Absent any **Law Enforcement** concerns (b)(7)(E), a (b)(7)(E) review of the U.S. passport can suffice for verification.
- If a U.S. citizen refuses to participate, allow the traveler to bypass the TVS camera and verify their identity manually.
- Allow the traveler to board.

Diplomats

- If a traveler identifies themselves as a diplomat, review their travel documents to confirm identity and validity, then allow the traveler to board.



Exception Processing (Continued)

For Non- U.S. Citizen Travelers

- Review the traveler's passport for entry stamps
- Review the travelers US documents (VISA, I-551 Refugee Travel Document, etc.)
- Swipe passport using the BEMA device
- (b)(7)(E)
 - Ensure biographic information (Name, DOB, etc.) (b)(7)(E)
 - (b)(7)(E)
 - (b)(7)(E)
- Process the traveler through the BEMA device

If the traveler Entered Without Inspection (EWI)

- (b)(7)(E)
- (b)(7)(E)



| TVS Closeout

Closing out a TVS (b)(7)(E)

(b)(7)(E)

Points of Contact

(A) Director

(b)(6);(b)(7)(C)

(b)(6);(b)(7)(C)

(A) Branch Chief

(b)(6);(b)(7)(C)

(b)(6);(b)(7)(C)

BE-Mobile Mailbox

(b)(7)(E)

TVS Support Email

(b)(7)(E)

Enterprise Operations Center (EOC):

(b)(7)(E)



Questions?