

Topaz Systems, Inc.
SigID Demo.OCX How-To

Topaz Systems, Inc.
650 Cochran Street, Unit 6
Simi Valley, CA, 93065
©1995-2005, all rights reserved, US patent 6,307,955, and pending

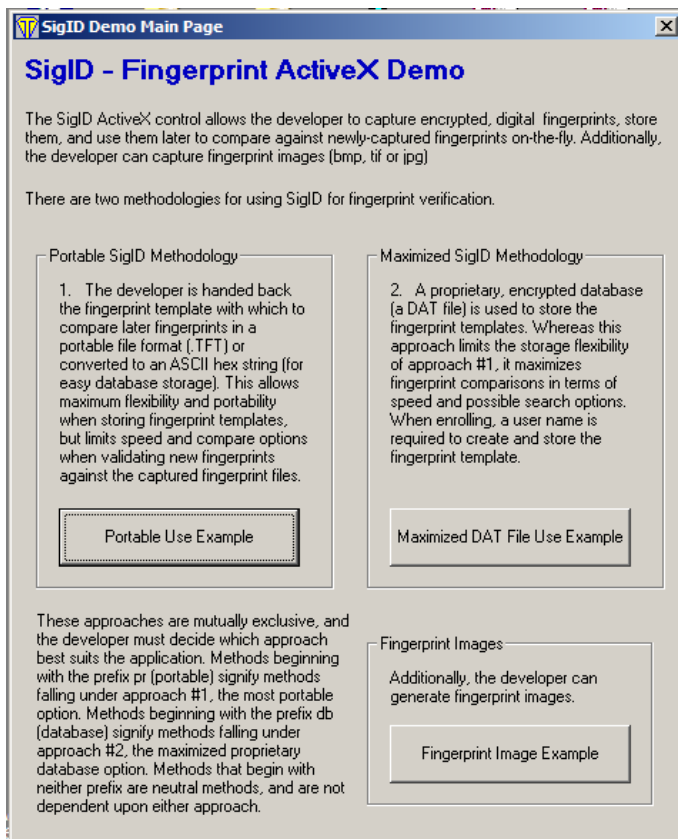
www.topazsystems.com
tech support: 805 520-8286
support@topazsystems.com

SigID.ocx is an Active-X control that allows the developer to capture encrypted fingerprint templates, store them, and use them later to compare against newly-captured fingerprints on-the-fly. Each fingerprint template is automatically encrypted prior to its delivery to the developer.

NOTE: It's important to understand there are two possible ways to use the SigID ActiveX control:

1-Portable: The developer is handed back the fingerprint template with which to compare later fingerprints in a portable file format (.TFT) or ASCII hex string (for easy database storage). This allows maximum flexibility in terms of storing fingerprint templates, but certain fingerprint comparisons are not possible using this approach (namely one-to-many searches).

2-Maximized: A proprietary, encrypted database (a DAT file) is used to store the fingerprint templates. Whereas this approach limits the storage flexibility of approach 1, it maximizes fingerprint comparisons in terms of speed and possible search options (namely one-to-many searches).



These approaches are mutually exclusive, and the developer must decide which approach best suits the application. Methods beginning with the prefix pr (portable) signify methods falling under approach #1, the most portable option. Methods beginning with the prefix db (database) signify methods falling under approach #2, the maximized proprietary database option. Methods that begin with neither prefix are neutral methods, and are not dependent upon one approach or another.

Topaz Systems, Inc.
SigID Demo.OCX How-To

Topaz Systems, Inc.
650 Cochran Street, Unit 6
Simi Valley, CA, 93065
©1995-2005, all rights reserved, US patent 6,307,955, and pending

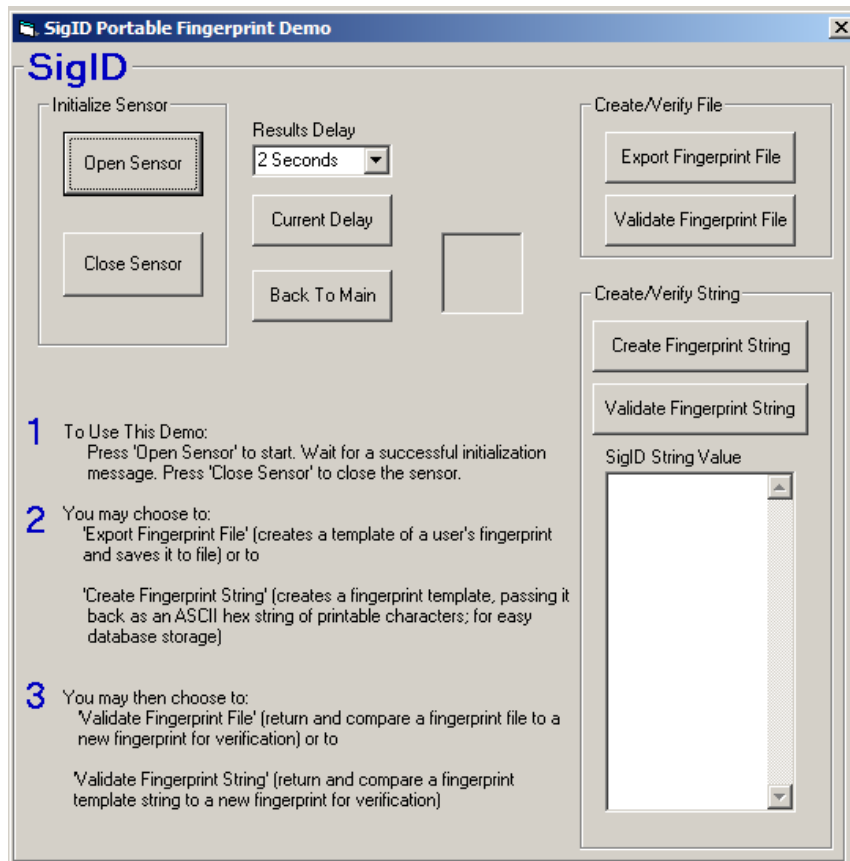
www.topazsystems.com
tech support: 805 520-8286
support@topazsystems.com

Using the SigID Demo

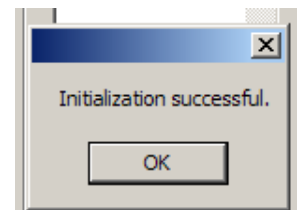
Note: This is a How To for the demo of SigID, this demo is for demonstration purposes only and is not meant to be the full implementation of the SigID.ocx.

After opening the SigID Demo the ‘SigID Demo Main Page’ will be opened. Here the user can choose whether to work within the Portable methodology or the Maximized methodology or to make a simple fingerprint image.

Portable Methodology



This is the Portable Fingerprint demo. To start click on the ‘Open Sensor’ button, this will activate the Topaz fingerprint capture device and return a message when successful.



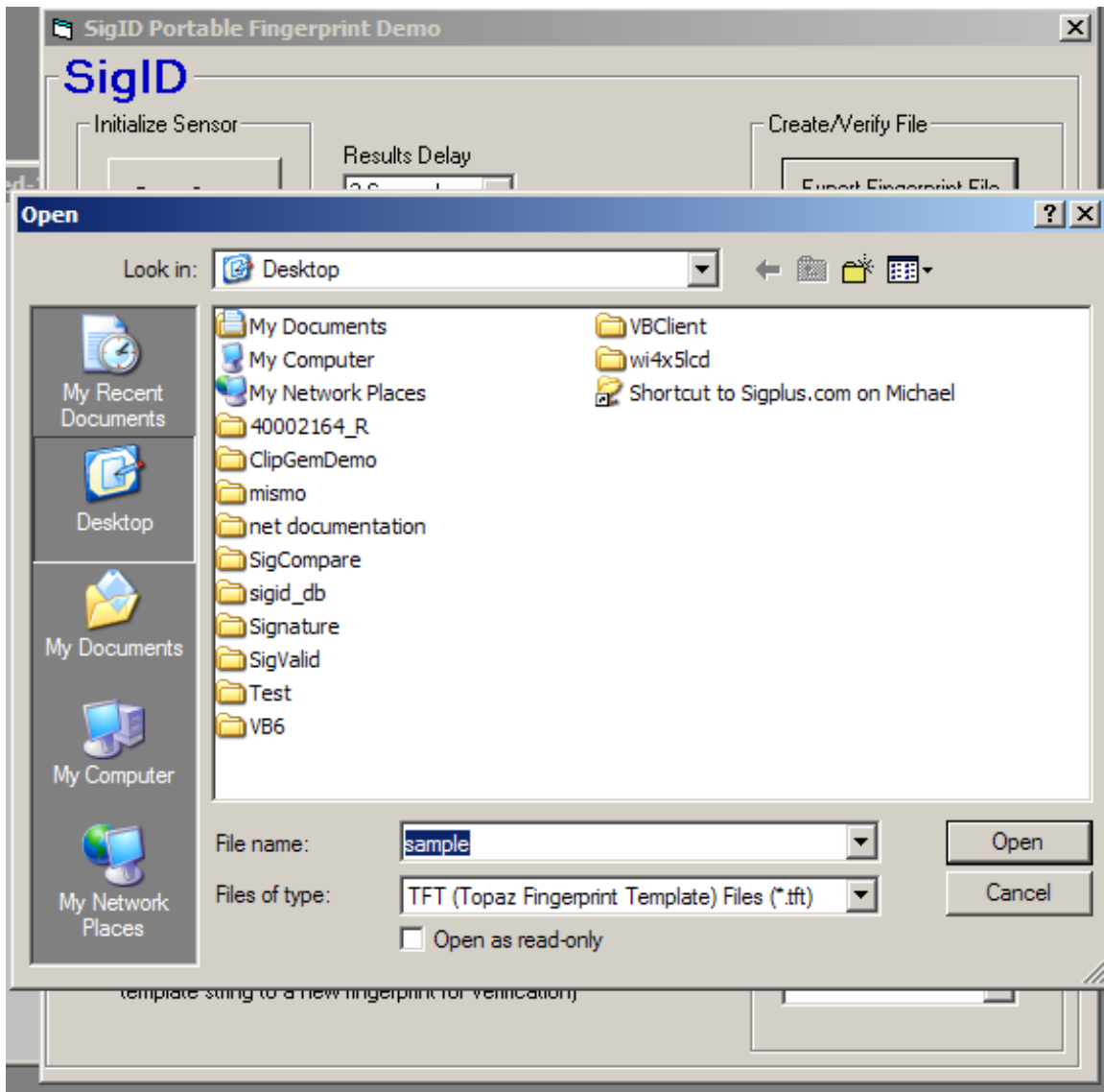
Topaz Systems, Inc.
SigID Demo.OCX How-To

Topaz Systems, Inc.
650 Cochran Street, Unit 6
Simi Valley, CA, 93065
©1995-2005, all rights reserved, US patent 6,307,955, and pending

www.topazsystems.com
tech support: 805 520-8286
support@topazsystems.com

Once the Sensor has been successfully initialized, the user can capture a fingerprint in either a string or a file (.TFT) format.

Choosing to '**Export Fingerprint File**' will bring up a 'Save As' window where the user will name the fingerprint file (in this case sample)

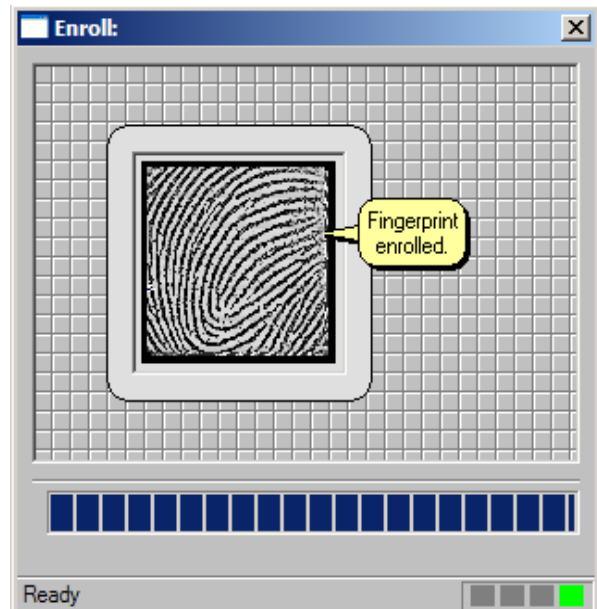
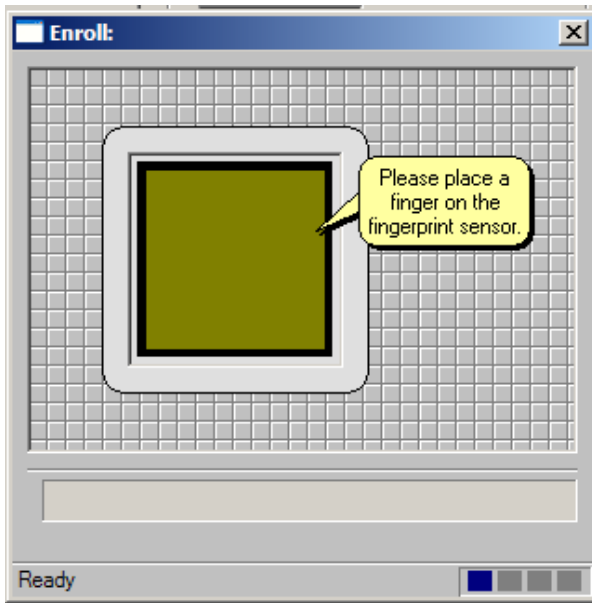


Topaz Systems, Inc.
SigID Demo.OCX How-To

Topaz Systems, Inc.
650 Cochran Street, Unit 6
Simi Valley, CA, 93065
©1995-2005, all rights reserved, US patent 6,307,955, and pending

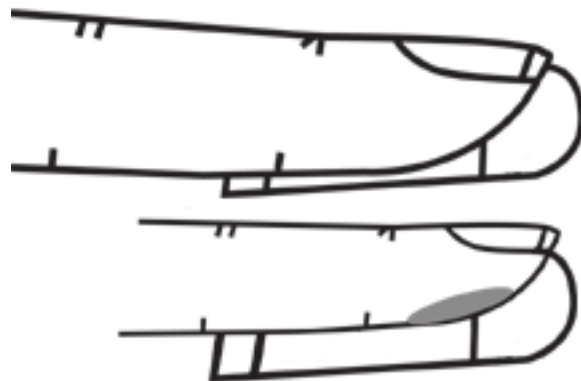
www.topazsystems.com
tech support: 805 520-8286
support@topazsystems.com

After naming the file, SigID will open a window with instructions as well as the fingerprint display. SigID is now ready to capture a fingerprint.



As the user places their finger on the sensor the image will appear in the olive box. To enroll a fingerprint for a file (and string) the user will need to place their finger on the sensor three times as SigID instructs. After the third scan the fingerprint will be enrolled.

Finger Alignment: The ID Gem fingerprint sensor is a reliable and high-quality electronic fingerprint capture device. To capture the best fingerprint image, it is important for the user to align the center of the fingertip's whorl in the center of the sensor. The fingerprint alignment guide on the ID Gem sensor is designed to fit an average adult thumb. Persons with small fingers, such as children, may instinctively align their fingers with the top of the alignment guide, resulting in a low-quality image that doesn't fully capture the finger's



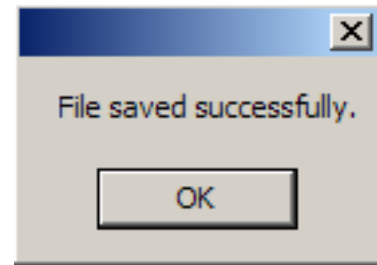
Topaz Systems, Inc.
SigID Demo.OCX How-To

Topaz Systems, Inc.
650 Cochran Street, Unit 6
Simi Valley, CA, 93065
©1995-2005, all rights reserved, US patent 6,307,955, and pending

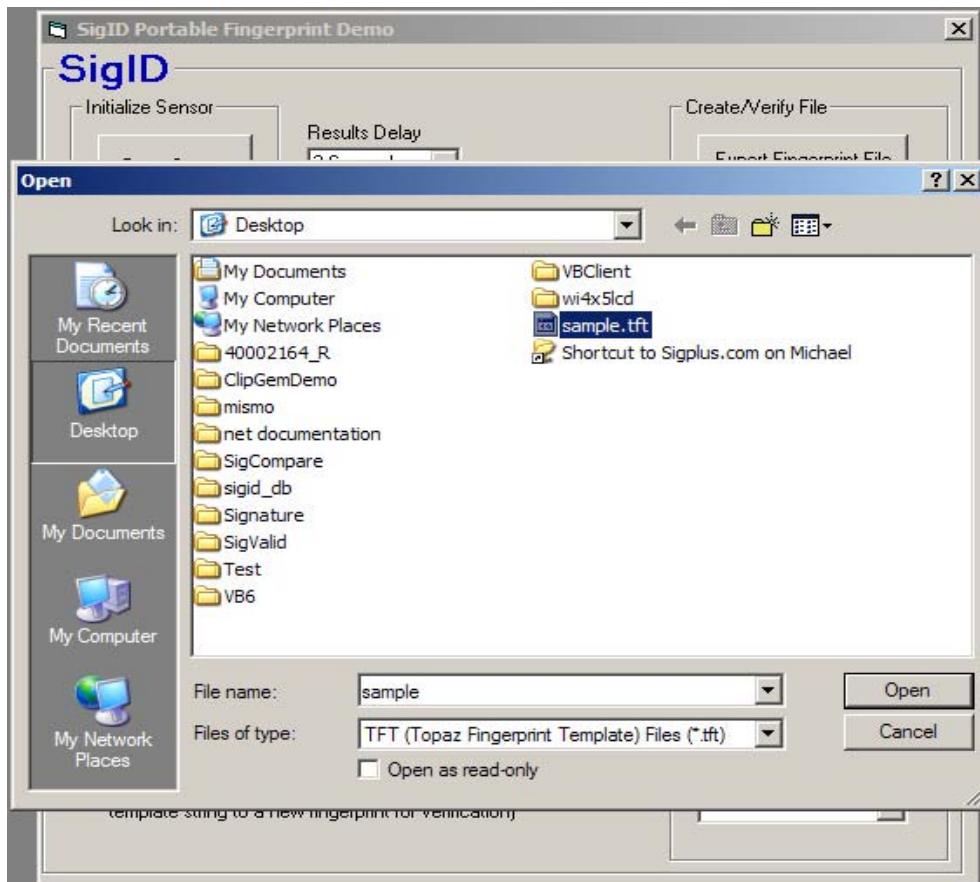
www.topazsystems.com
tech support: 805 520-8286
support@topazsystems.com

whorl. Most fingers will naturally align with the top of the guide. If users with small fingers have difficulty aligning their whorl with the center of the sensor, take extra care to place the center of the whorl in the center of the sensor. For most people, the whorl center is directly opposite the fingernail's cuticle. IF in doubt, use the cuticle as a guide.

Once the fingerprint is successfully enrolled and the file saved in its .TFT format a window will appear notifying the user.



Once the fingerprint file is saved, the user can then verify that file by simply clicking on the 'Validate Fingerprint File'. This will open an open window to choose what file to verify (in this case *sample.tft*)



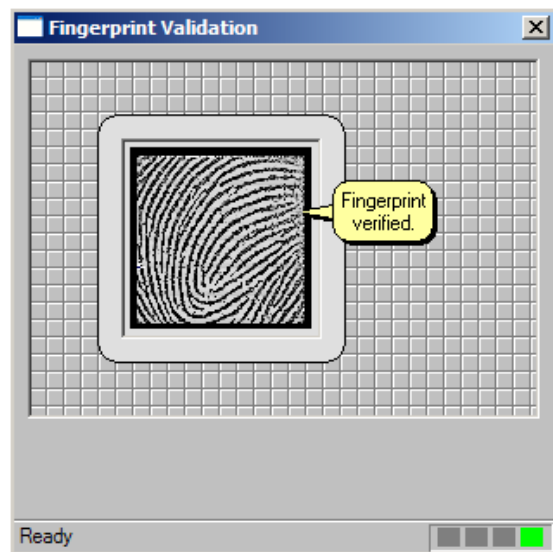
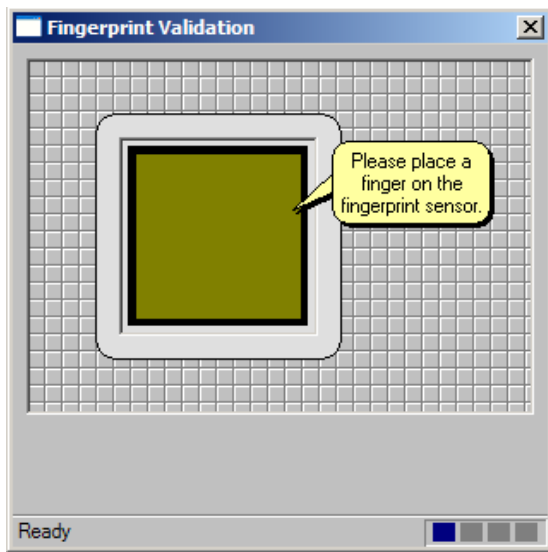
Topaz Systems, Inc.
SigID Demo.OCX How-To

Topaz Systems, Inc.
650 Cochran Street, Unit 6
Simi Valley, CA, 93065
©1995-2005, all rights reserved, US patent 6,307,955, and pending

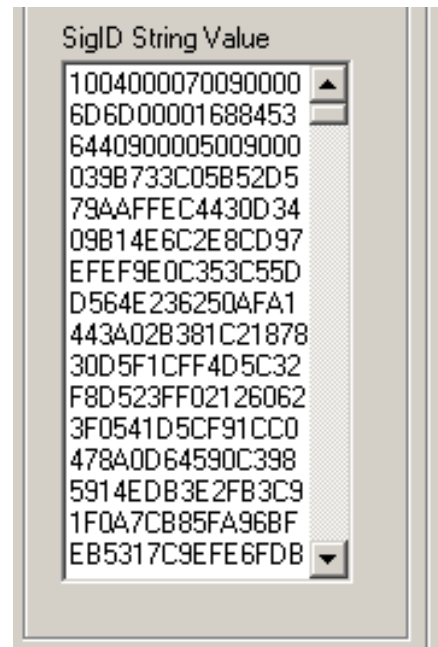
www.topazsystems.com
tech support: 805 520-8286
support@topazsystems.com

Once the user has chosen which file to verify, SigID will then open another fingerprint capture window will appear.

Verifying a signature only requires one scan of the users finger. Once the fingerprint is verified a message will appear in the dialogue box within the 'Fingerprint Verification' window.



If the user desires they can also save the fingerprint as a string. To do this, click on '**Create Fingerprint String**'. This will open a fingerprint capture enroll window just like if the user were creating a file. Just like creating a file, to enroll a fingerprint will require three scans. Once the fingerprint is enrolled, a message will appear in the dialogue box denoting a successful enrollment. After that, the ASCII hex representation of a TFT file will be visible in the 'SigID String Value' box.



Topaz Systems, Inc.
SigID Demo.OCX How-To

Topaz Systems, Inc.
650 Cochran Street, Unit 6
Simi Valley, CA, 93065
©1995-2005, all rights reserved, US patent 6,307,955, and pending

www.topazsystems.com
tech support: 805 520-8286
support@topazsystems.com

Maximized DAT Methodology

The screenshot shows a software window titled "SigID DAT file Database Example". On the left, there are three numbered instructions:

- 1** To Start, click 'Init'. Choose the DAT file database you wish to open, or create a new database by choosing a filename and location where a DAT file database does not currently exist. Click 'Close Sensor' to close the fingerprint sensor.
- 2** Once a database is open, you can choose to:
 - 'Enroll': Adds a new user's fingerprint template to the database. The demo will ask you to provide the user's name.
 - 'Validate ID': Based on the user currently selected in the Users combo box, Validate ID will capture a new fingerprint, and determine if the new fingerprint matches a specific user in the database.
 - 'Identify': A new fingerprint is captured, and a match is requested from the users in the database. If a match is found, SigID will return that user.
 - 'Delete User': The user currently selected in the Users combo box will be deleted from the database
 - 'Delete All Users': All the users in the current database are deleted
- 3** The Users combo box displays all of the users in the current database. Use the combo box to select the user when performing either the Validate ID function or the Delete User function

On the right side of the window, there is a control panel with the following elements:

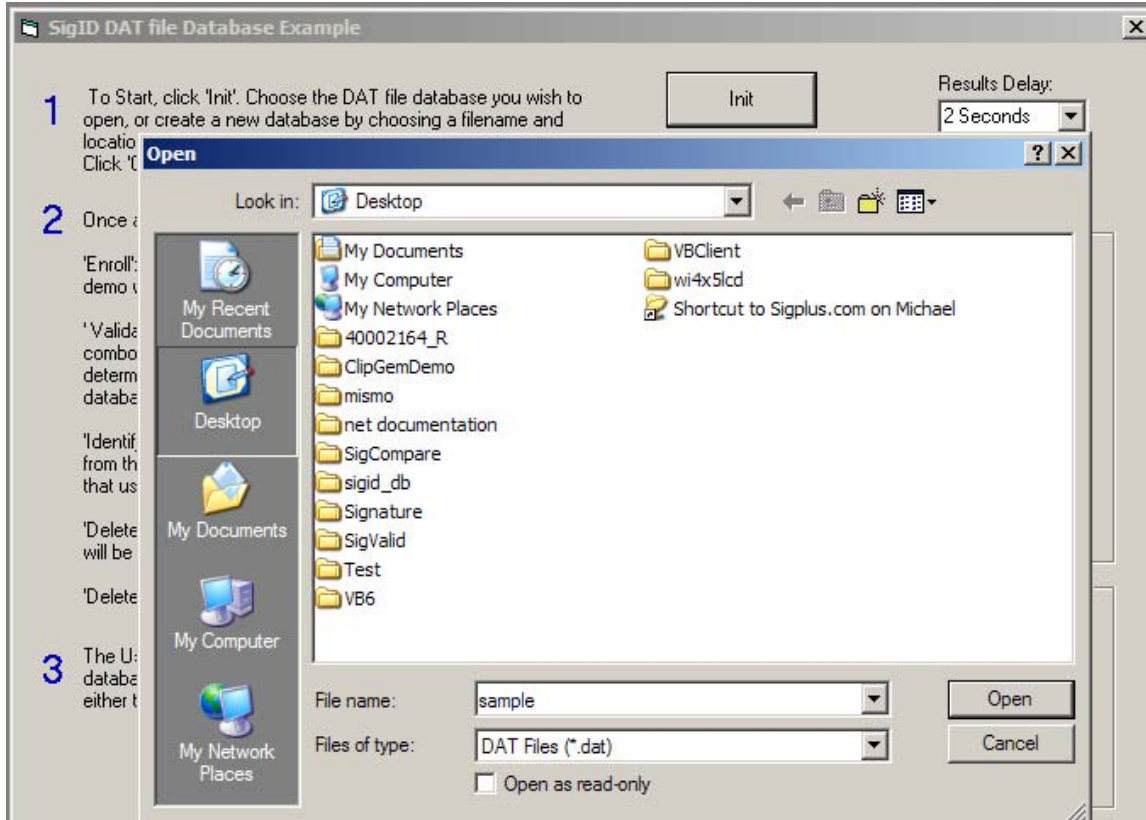
- An "Init" button.
- A "Results Delay:" dropdown menu set to "2 Seconds".
- A "Close Sensor" button.
- A "Back To Main" button.
- A "Users" dropdown menu.
- Buttons for "Enroll", "Validate ID", "Identify", "Delete User", "Delete All Users", and "# Enrolled Users".
- A section titled "Extract/Import User (using the currently-opened db)" containing buttons for "Extract User String", "Import User String", "Extract User File", and "Import User File".

This is the Maximized DAT file demo. To begin, click on the 'Init' button. This will open an existing DAT file, or the user can choose to name and create a new one. This also opens the sensor and enables fingerprint capture within SigID.

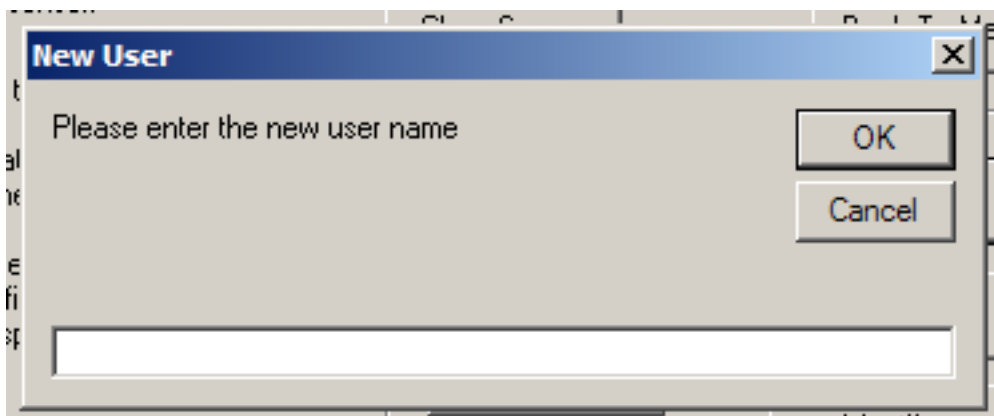
Topaz Systems, Inc.
SigID Demo.OCX How-To

Topaz Systems, Inc.
650 Cochran Street, Unit 6
Simi Valley, CA, 93065
©1995-2005, all rights reserved, US patent 6,307,955, and pending

www.topazsystems.com
tech support: 805 520-8286
support@topazsystems.com



Once the DAT file is created, SigID is then ready to capture signatures. To enroll a new user into the database, click the 'Enroll' button. This will open a window to input the name of the new enrollee.



Once the new enrollee's name is entered, click 'OK' and a fingerprint capture window will open. Much like the portable methodology, enrolling a new user into the database

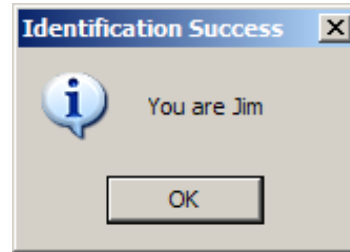
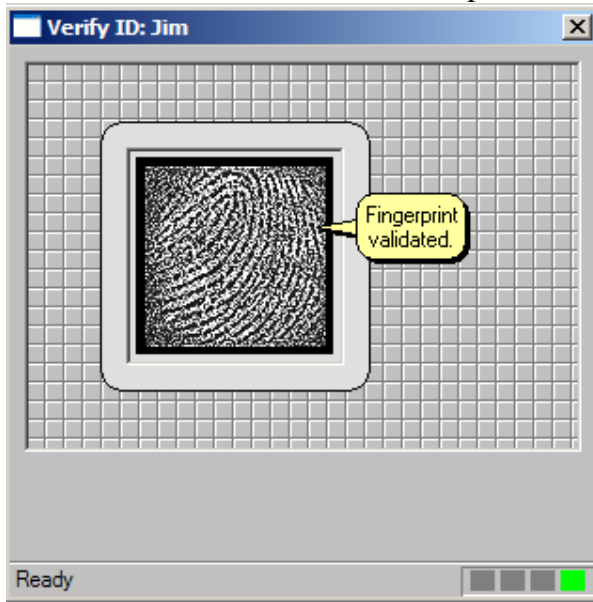
Topaz Systems, Inc.
SigID Demo.OCX How-To

Topaz Systems, Inc.
650 Cochran Street, Unit 6
Simi Valley, CA, 93065
©1995-2005, all rights reserved, US patent 6,307,955, and pending

www.topazsystems.com
tech support: 805 520-8286
support@topazsystems.com

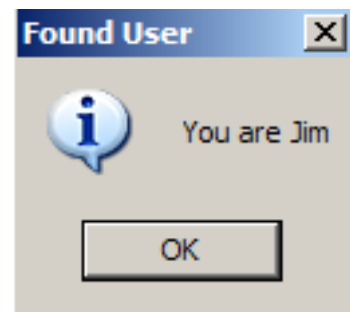
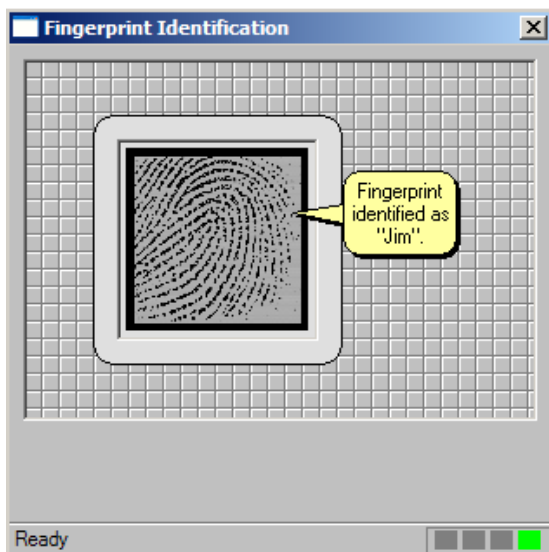
will require three scans, and once successfully enrolled a message will appear in the dialogue box in the Enroll window. Once the new user is enrolled, that identity can be verified. Simply highlight the identity you want to identify, and then click on the 'Validate ID' button. This will open another fingerprint capture window. Identity validation works much like in the portable methodology. When successful a window will

appear confirming the signature



Not only can a person's identity be validated through the database by utilizing fingerprint capture, but an administrator can also use the database to identify a single fingerprint of many, which Topaz calls a "one-to-many search". This is a feature that is only available in the Maximized DAT Methodology.

To find the identity of a user, simply click the 'Identity' button. This will once again open a fingerprint capture window. Once the user's fingerprint is scanned the dialogue box will name the person.

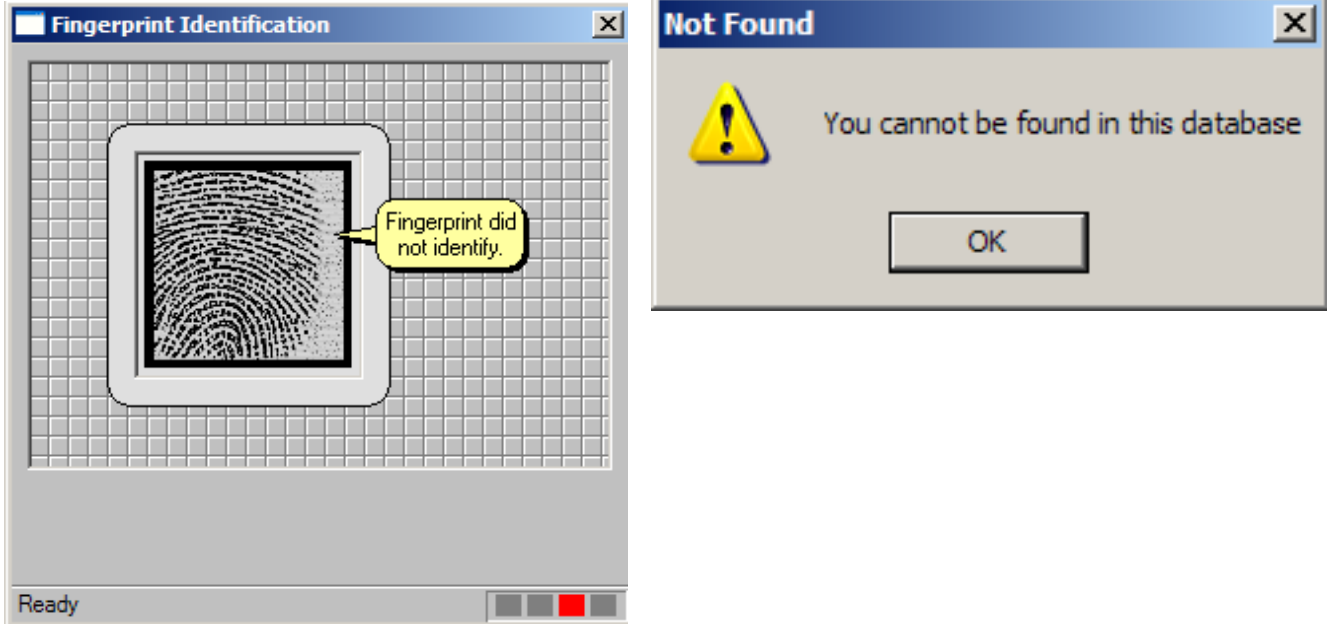


Topaz Systems, Inc.
SigID Demo.OCX How-To

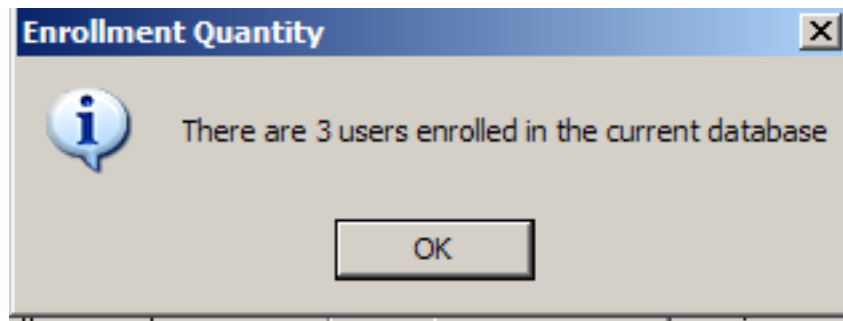
Topaz Systems, Inc.
650 Cochran Street, Unit 6
Simi Valley, CA, 93065
©1995-2005, all rights reserved, US patent 6,307,955, and pending

www.topazsystems.com
tech support: 805 520-8286
support@topazsystems.com

If the user is not in the open database, then an error message will be returned.



Another feature of using the database is that SigID can quickly return the amount of users in the current database when the user simply clicks '# Enrolled Users'.



Also when a database is open, the administrator can easily delete all users from that database or just one using the 'Delete User' or 'Delete All Users' buttons.

Another feature that the maximized DAT methodology has is its ability to move users from one database to another. Administrators can choose to do this in one of two ways, either by extracting and importing the individual user files from the database, or extracting the user information in the form of a string from the file and importing to another database in that format. Both actions move users from one database to another,

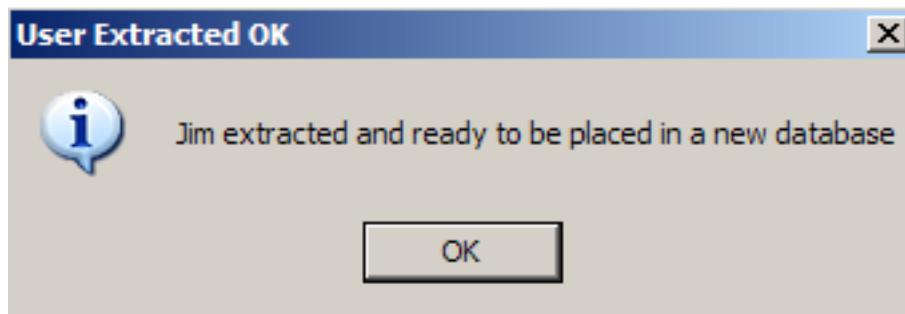
Topaz Systems, Inc.
SigID Demo.OCX How-To

Topaz Systems, Inc.
650 Cochran Street, Unit 6
Simi Valley, CA, 93065
©1995-2005, all rights reserved, US patent 6,307,955, and pending

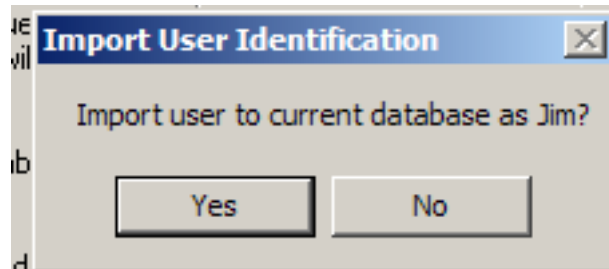
www.topazsystems.com
tech support: 805 520-8286
support@topazsystems.com

but which method is used depends on the individual needs and characteristics of the fingerprint capture solution each company employs. It is important to note that the string that is extracted from the DAT file is different from that used in the portable methodology and these two types are not interchangeable or compatible.

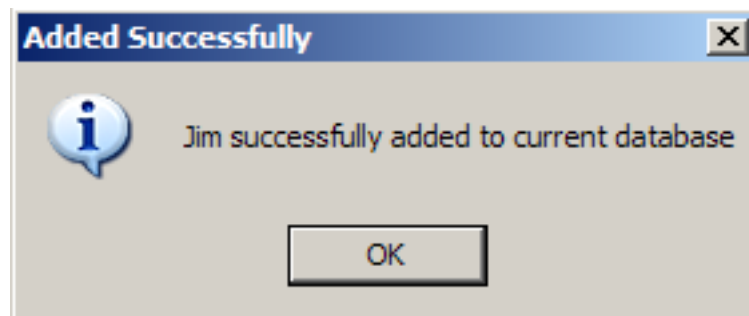
To move a user string from one database to another simply start by highlighting the user you wish to move in the 'Users' display and click on the 'Extract User String'. A window will open confirming the extraction.



Once the string has been extracted, close the database by clicking 'Close Sensor', then click 'Init' to open the new database where the user, in this case Jim, will be added. Once the database is open, click the 'Import User String' button. This will open a confirmation window.



Click 'Yes' and the string will be imported, opening a confirmation window.



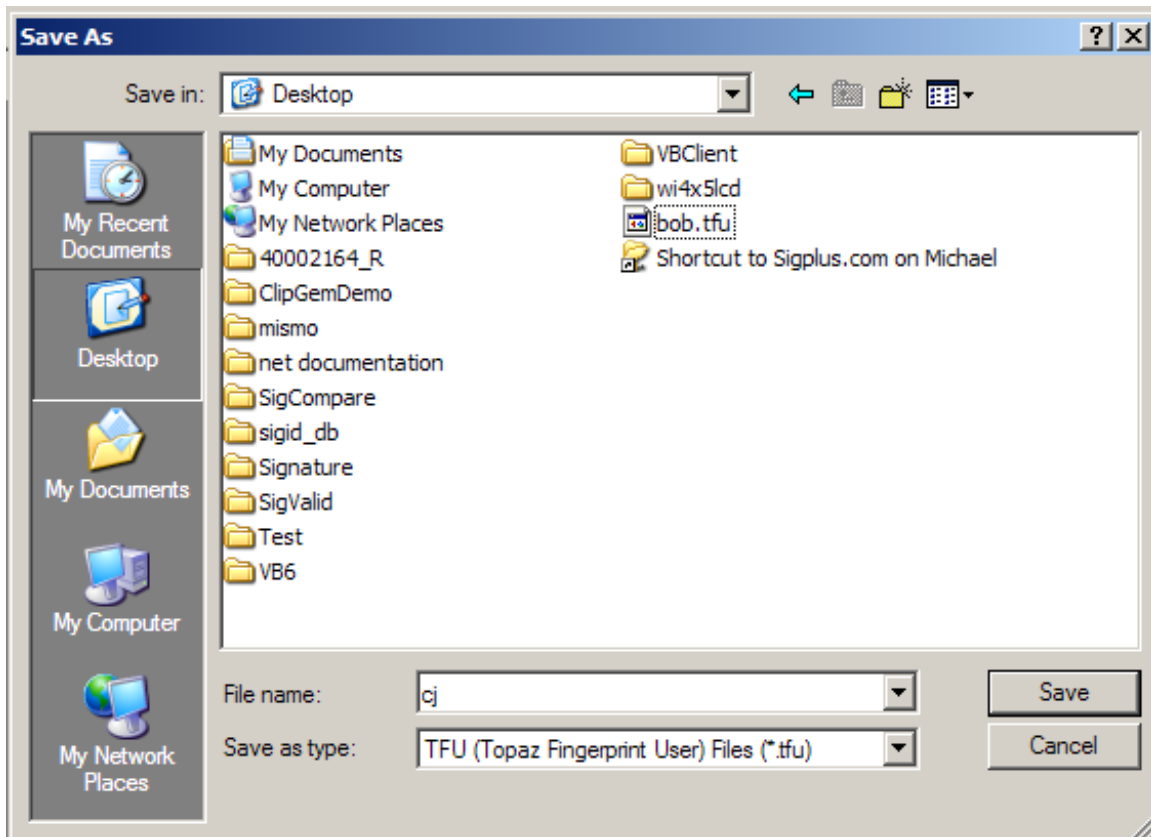
Topaz Systems, Inc.
SigID Demo.OCX How-To

Topaz Systems, Inc.
650 Cochran Street, Unit 6
Simi Valley, CA, 93065
©1995-2005, all rights reserved, US patent 6,307,955, and pending

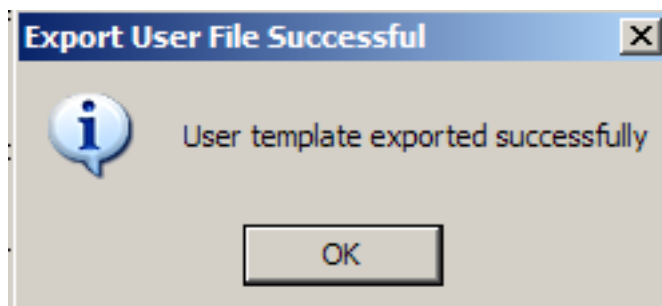
www.topazsystems.com
tech support: 805 520-8286
support@topazsystems.com

If 'No' is chosen, then the administrator will be given the option to rename the user (using the same interface as when enrolling a new user) and place them into the current database. If the user is already present in the current database then SigID will not allow a duplicate to be placed in the database.

To move a user file from one database to another, click on the 'Extract User File' button. This will open a 'Save As' window where you will choose what to name the .TFU file that will be extracted, in this case cj.



Once the .TFU file is named and saved a window will open confirming the file extraction.

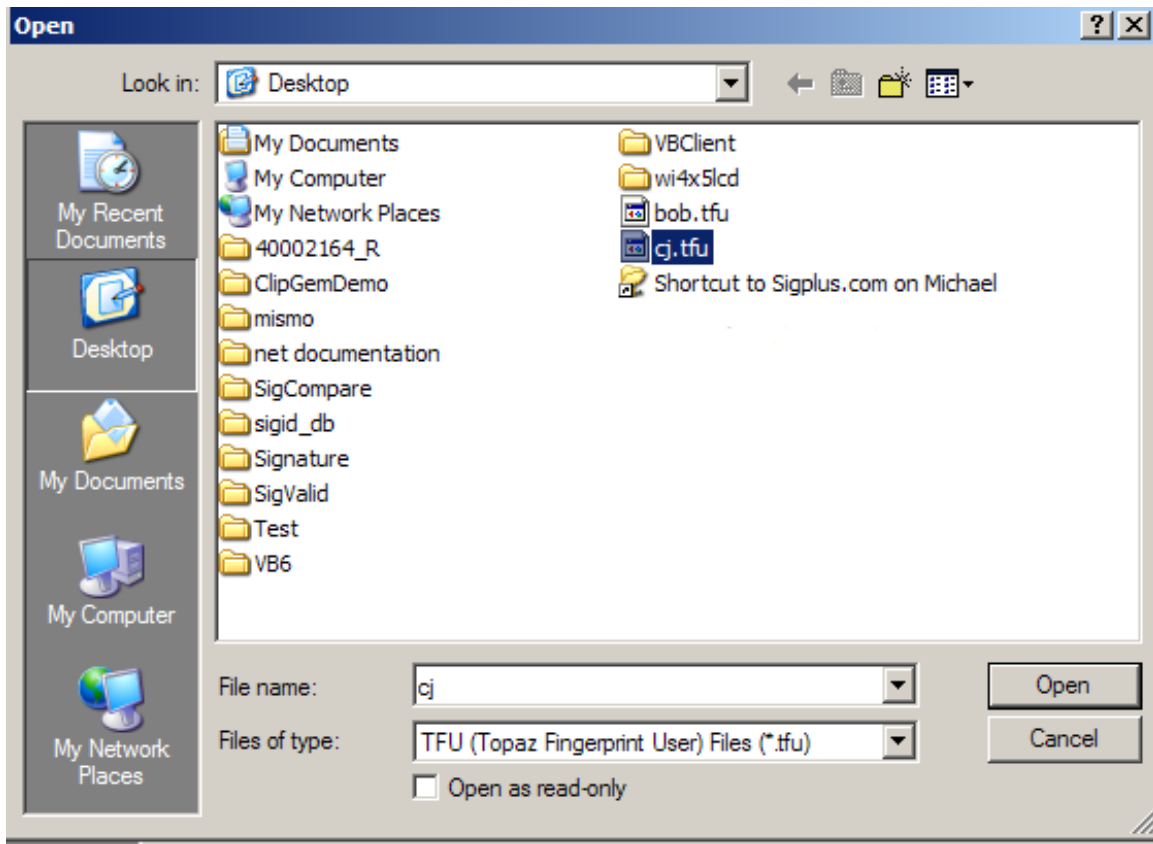


Topaz Systems, Inc.
SigID Demo.OCX How-To

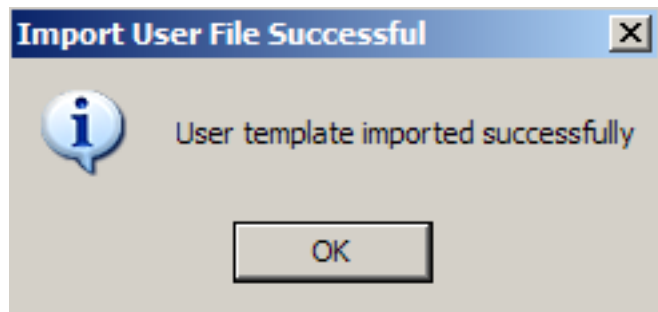
Topaz Systems, Inc.
650 Cochran Street, Unit 6
Simi Valley, CA, 93065
©1995-2005, all rights reserved, US patent 6,307,955, and pending

www.topazsystems.com
tech support: 805 520-8286
support@topazsystems.com

Now that the file has been extracted and saved, close the sensor and thus the current database and open the database where the file will be imported to by clicking on 'Init'. Now that the new database is open, click on the 'Import User File' button. This will open an 'Open' window. Choose the .TFU file to be imported (in this case cj.TFU).



Click 'Open', once the file has been imported a window will open confirming the file was imported successfully.



Topaz Systems, Inc.
SigID Demo.OCX How-To

Topaz Systems, Inc.
650 Cochran Street, Unit 6
Simi Valley, CA, 93065
©1995-2005, all rights reserved, US patent 6,307,955, and pending

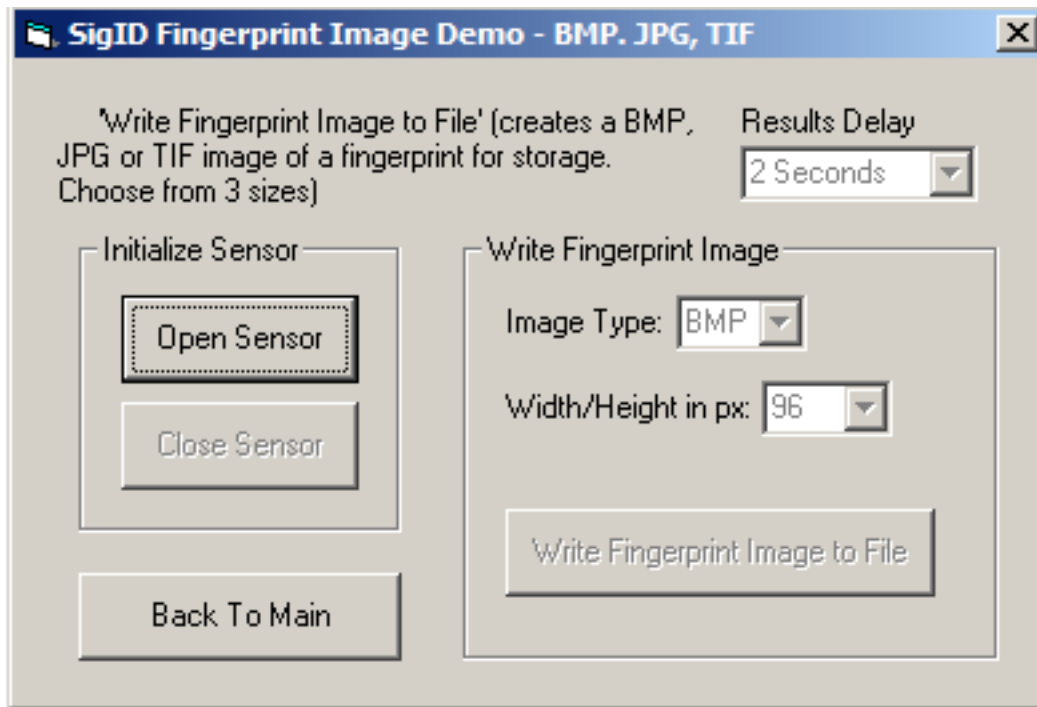
www.topazsystems.com
tech support: 805 520-8286
support@topazsystems.com

Now, the new user (in this case CJ) should be in the database, listed in the Users box.



Fingerprint Imaging

Additionally, SigID also allows for developers to create fingerprint images easily and quickly. From the main page, simply click on the 'Fingerprint Image Example' button. This will open the 'SigID Fingerprint Image Demo' window.



To create an image start by clicking 'Open Sensor' (which works like in the portable methodology). Then using the drop down menus choose the Image Type (BMP, JPG, GIF, etc.) and Width/Height in pixels for the image (all fingerprint images are square). Next, click the 'Write Fingerprint Image to File'. This will open a 'Save As' window; name the fingerprint file and where it will be saved and click 'Save'. This will open a

Topaz Systems, Inc.
SigID Demo.OCX How-To

Topaz Systems, Inc.
650 Cochran Street, Unit 6
Simi Valley, CA, 93065
©1995-2005, all rights reserved, US patent 6,307,955, and pending

www.topazsystems.com
tech support: 805 520-8286
support@topazsystems.com

fingerprint capture window. To make an image SigID requires only one scan. Once the scan is complete, a message will appear in the dialogue box signifying that the image has been saved.

Note: Through all three options offered in SigID, there is the Results Delay menu. This option determines how long after successful scanning the results will be displayed.