



# VeinID Five: Windows Password Replacement Administration and Installation Guide

50 years of passwords, time to wave goodbye



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**VeinID Five Windows Password Replacement** leverages the next generation of Hitachi's Finger Vein technology to provide a passwordless biometric Windows 10 login authentication experience. Hitachi's market-leading Finger Vein technology has been successfully deployed over the past 25 years and is proven as one of the most reliable biometrics for enterprise identity access and management. Outperforming other biometric methods such as fingerprint and facial. By looking at the unique vein patterns within the user's fingers, Hitachi's Finger Vein technology authenticates against a non-replicable and permanent biometric feature, not affected by age, cultural or socio-economic user factors and settings

**VeinID Five Windows Password Replacement** builds on this legacy by providing a 'deviceless' and flexible out-of-the-box offering for Windows 10 login. This technology utilises a standard inbuilt desktop/laptop camera to seamlessly perform finger vein biometric enrolment and matching, at pace.

The **VeinID Five Windows Password Replacement** provides the software necessary for the user to authenticate to Windows by presenting the enrolled hand to the desktop/laptop camera. Enrolled biometric templates are converted into a mathematical representation and encrypted with AES256 algorithms. These cannot be reverse engineered and align with privacy compliance regulations.

Once installed, **VeinID Five Windows Password Replacement** allows end-users to:

1. Login to Windows 10 using their enrolled finger vein biometric.
2. Change their Windows 10 password using their enrolled finger vein biometric.
3. Unlock their Windows 10 session using their enrolled finger vein biometric.

All this by simply raising the hand in front of the desktop/laptop camera.

**50 years of passwords, time to wave goodbye.**

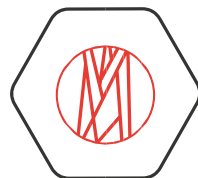
## Biometric Enrolment and Matching

**VeinID Five** authentication consists of two steps, common to most type of biometrics:



**Step 1:**  
Template Enrolment.

Step 1 requires the user to raise their hand in front of their desktop/laptop camera so that it can capture three separate images of the user's finger vein patterns. The **VeinID Five** software extracts the features of the user's finger vein patterns, creating an enrolment template that is subsequently stored as a mathematical representation and encrypted with AES256 algorithms. A fourth verification capture is performed to ensure that the user is able to match against the created template.



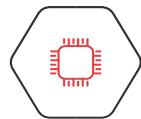
**Step 2:**  
Template Matching.

Once the user has successfully enrolled their biometric template, they are able to start using the benefits offered by **VeinID Five Windows Password Replacement**. On next login, the user will be able to login to Windows 10 by raising their hand in front of their desktop/laptop camera – the **VeinID Five** software will then match the presented biometric against the enrolled template and authenticate the user for access.

The following prerequisites need to be met at minimum for **VeinID Five** to function correctly, however there are external factors that may affect performance of the software:



Laptop/desktop with Windows 10 Pro 64 bit with recent updates and drivers.



Intel i5 and above processor with AVX2 support



8GB of RAM or more; 200MB disk space or more



Web cam with 720p or better resolution and the latest available drivers



Windows MP4 video playback compatible (for viewing instructional videos)



Standalone desktop/laptop or a member of an Active Directory domain



Appropriately configured security software and policy settings that enable:

- Installation of new Windows credential providers
- The use of the camera by VeinID Five software and credential provider
- The display of the VeinID Five sign-in option at the Windows 10 login screen
- Authentication of a user against a local user profile or an ActiveDirectory profile.
- Ability to install a windows service and execute it as "Local System"

### Environment:

- Please ensure that the camera is located on top of the screen and allows the user to comfortably present their hand in the following manner,
  - Present hand parallel to the camera to fill the guide as much as possible.
  - Keep the fingers fully extend and separated as shown on screen.
  - Present the hand away from the face while sitting facing the screen with the camera.
- While capturing, Background should not have
  - Strong light sources or brightly lit windows within the capture frame
  - skin toned backgrounds or warm colour lights
- VeinID Five is designed to function in the 400-1000 lux light range, but for optimum performance 800 lux is recommended.
- Direct sunlight should not be present on hand on camera.
- Virtual environments are not supported.
- Portrait mode of display (when camera is not on the top of the screen) is not supported.

Installer is delivered as a Zip file in the download package which also contains the user documentation.

- This Zip file contains
  - an executable file for setup. This should be executed as Administrator.
  - an answerscript XML for configuration

```
<?xml version="1.0" encoding="utf-8" ?>
```

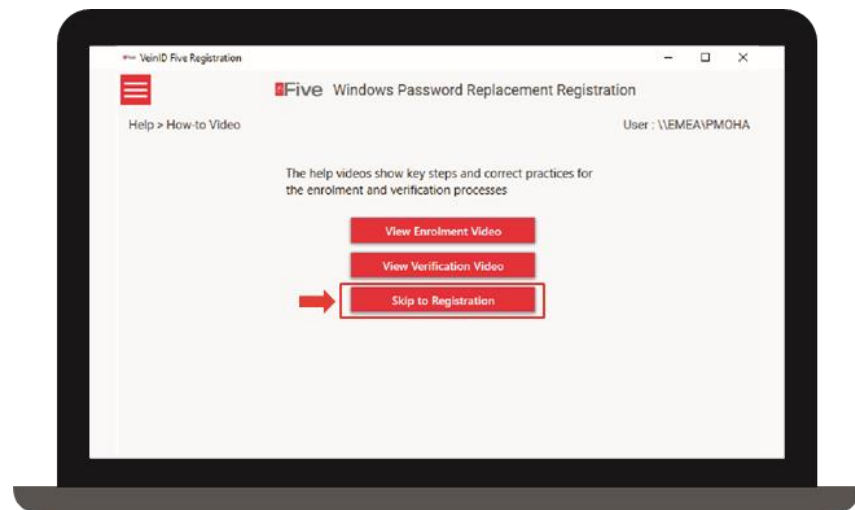
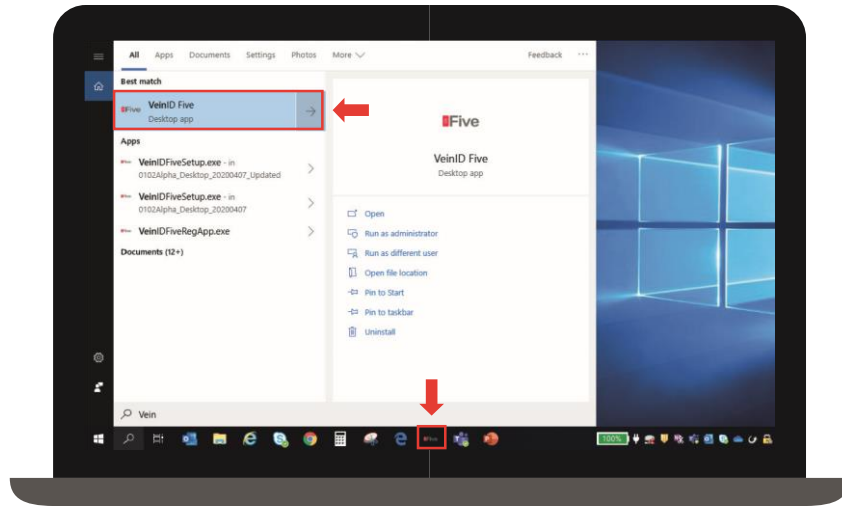
```
<VeinIDFiveInstallerInputs>
```

```
<FAVeinIDFiveAdminGroup>Local</FAVeinIDFiveAdminGroup>
```

```
</VeinIDFiveInstallerInputs>
```

- a lic file containing licence details
- Software can be installed by executing the setup file "as an administrator". It will install
  - A registration Application
  - A Windows Credential provider
  - Secure Data vault service
  - Places the log files at C:\ProgramData\HITACHI\VeinID Five

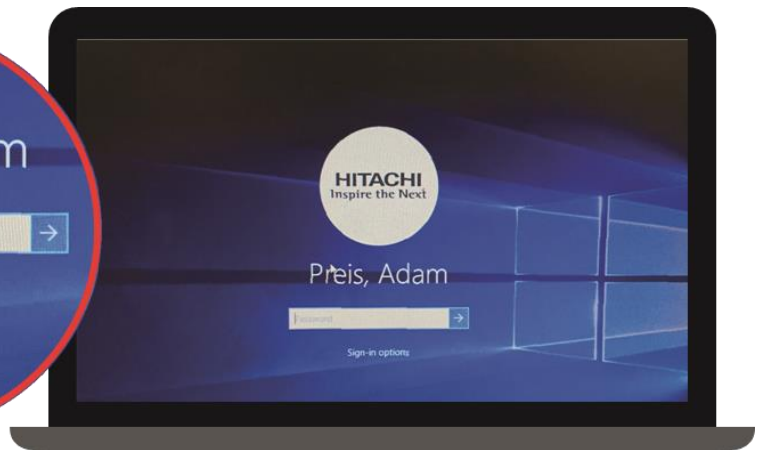
- Start the VeinID Five Registration application from the "Start" menu as described in the user guide and Enrol one or both the hands.



- Use screen lock to check the credential provider functionality.

## Installation Verification

- Click on 'Sign-in Options' and select VeinID Five tile. After successful installation, this tile will be present for all the users. However only enrolled users can use this option to successfully login to windows.

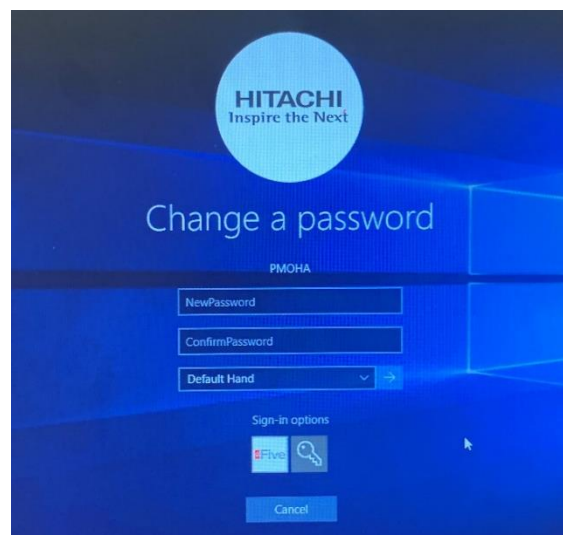


## Password Management

As part of enrolment process, user's current windows password is validated against the AD to ensure that the right user is enrolling the biometric. For additional security, a supervised enrolment can be implemented when someone physically ensures that the right biometrics are enrolled against the user-id.

Once the password is authenticated and biometric template is successfully created, current password is also stored in our secured vault.

It is expected that any future password change by the user will be done via Hitachi Credential provider. While using this route, it does not require the user to enter old passwords as in the case of password-based option shown below.



On successful authentication, new password will be updated in active directory and local vault.

When a user's windows password is changed using other sign-in options or reset externally by the support team, the new password needs to be updated in local repository using Password Synchronisation option in VeinID Five Windows Password Replacement menu.

## Local Administration – Manage users

For VeinID Five administration access, the user should be a member of VeinID Five administration group on the PC. The default administration group name is 'Local' and all the users on the PC have VeinID administration access. The VeinID Five administration group name is defined in the answerscript file at the time of installation. Later, it can be changed using registry editor

Tag In Answerscript.XML:

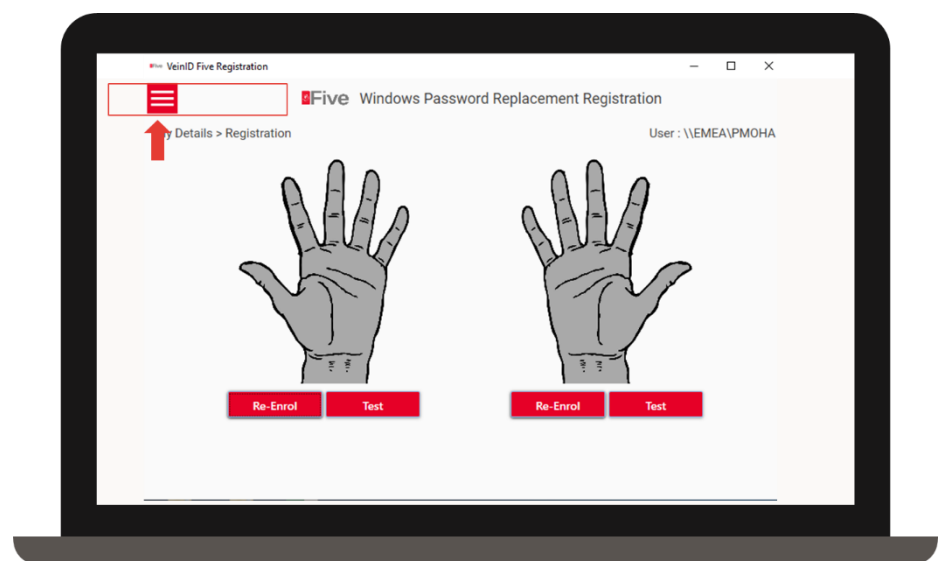
```
<!-- FAVeinIDFiveAdminGroup - Active directory group name for VeinID Five administrators -->  
<FAVeinIDFiveAdminGroup>Local</FAVeinIDFiveAdminGroup>
```

**Key in registry: FAVeinIDFiveAdminGroup** at  
'Computer\HKEY\_LOCAL\_MACHINE\SOFTWARE\Hitachi\VeinID Five'

Additionally, an existing administrator can grant Admin role to any user in that PC.

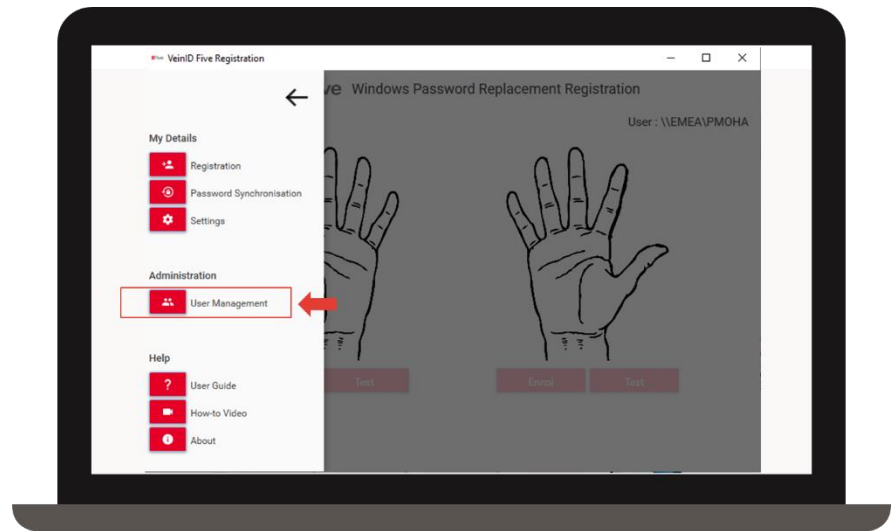
### Steps to follow:

- To access administration options, click on the menu icon at the top left in VeinID Five Windows Password Replacement Registration Application.

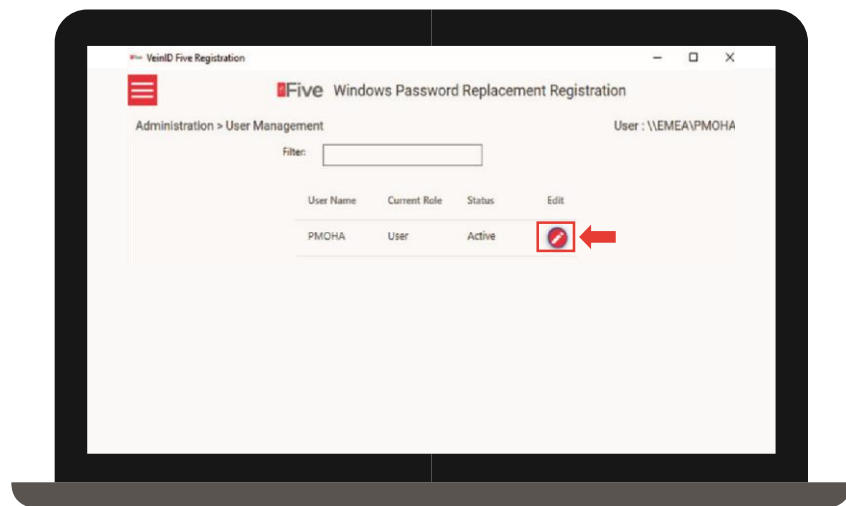


## Local Administration – Manage users

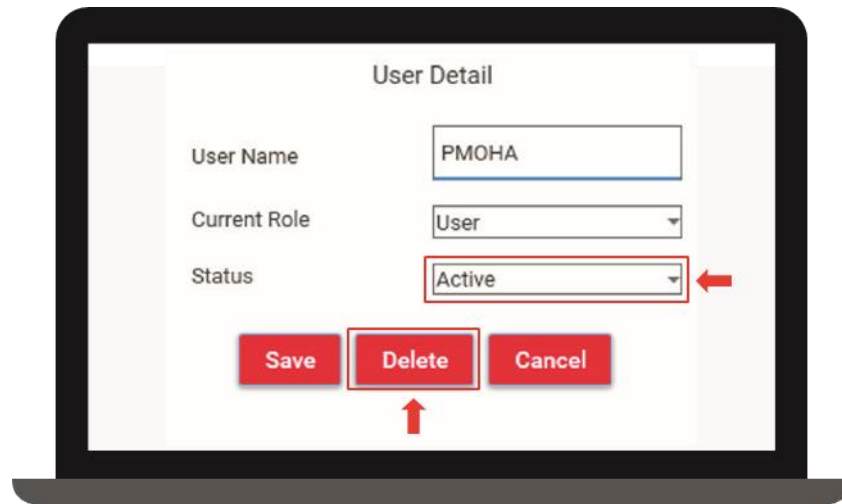
- Click on 'User Management' under Administration to view/update the details of users whose enrolment data is available on this computer.



- Click on edit icon to make changes to the user record.



## Local Administration – Manage users



### **Change Role:**

Admin can grant or remove Admin role to another user.

User Management screen only shows the enrolled users as “Admin” if they have been marked as “Admin” in this application and it is independent of the Admin privilege based on membership of “VeinID Five Admin” group membership

### **Change Status:**

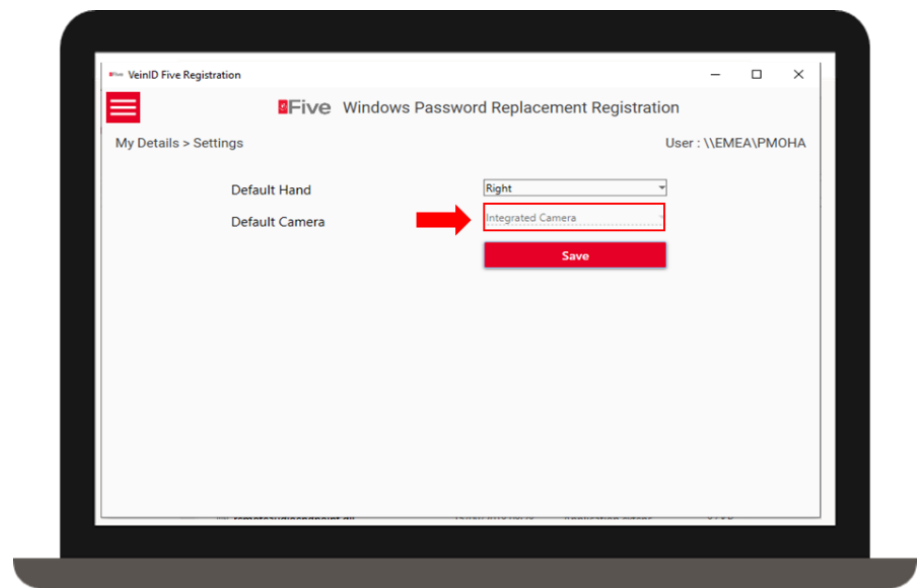
Admin can mark a user as Active or Non-Active. Marking a user as Non-Active removes access to VeinID, but the user’s registration details are stored until deleted.

### **Delete User:**

Admin can delete a user from this screen. This permanently deletes a user’s profile. User will need to enrol if they need to use VeinID again.

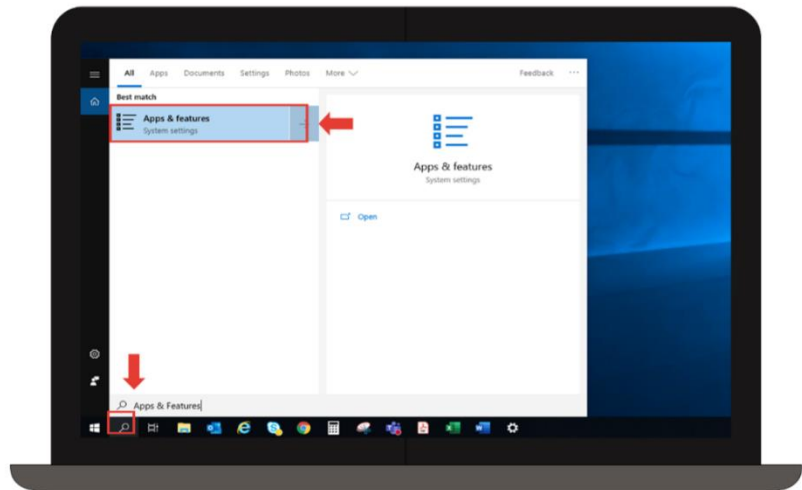
## Local Administration – Camera Settings

If a user has multiple camera's then the Administrator will be able to change the setting from 'Settings' section under the main menu. If a local user connects a new camera, they will need to request the Admin to make the requested changes for them via remote settings.

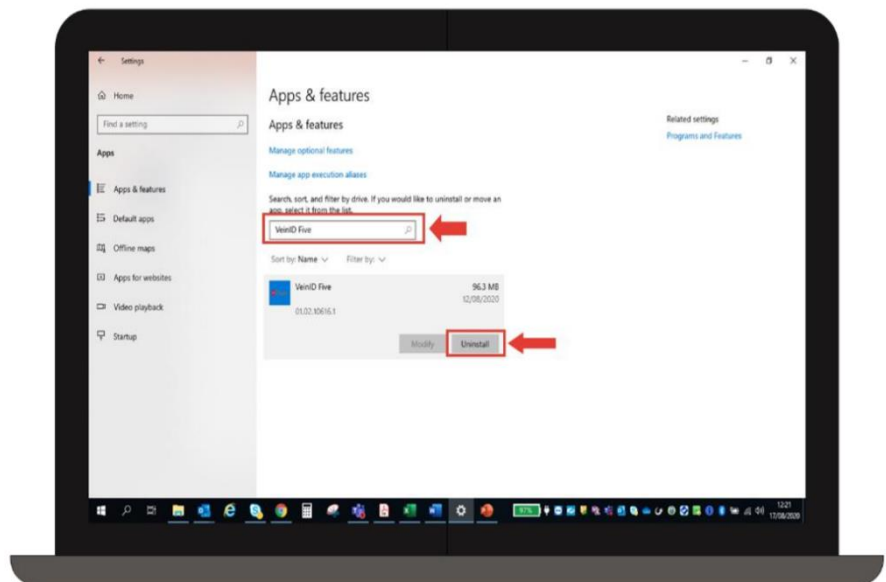


If a user needs to uninstall **VeinID Five Password Replacement** software, this can be done using the Apps & features Windows System Settings.

- Search for 'Apps & Features' to go to Windows System Settings.



- Search for VeinID Five and click on 'Uninstall' and follow instructions.



If a user is facing continued issues with the software after meeting minimum system requirements, Hitachi might request for additional logs from user's system to investigate the issue. Below are the steps to retrieve the logs.

**Increase user log level to capture additional data for issue investigation:**

- Go to Registry Editor by searching for the application in your Windows search menu
- Go to the below path or copy paste into Registry Editor 'Computer\HKEY\_LOCAL\_MACHINE\SOFTWARE\Hitachi\VeinID Five
- Data needs to be set to '5' for following Logs to capture additional data
  - a** CLogLevel
  - b** FALogLevel
  - c** FAServiceLogLevel
  - d** RALogLevel
- Double click on each label for prompt window to open, change data value to 5
- Repeat steps until updated for all the above three

**Steps to follow to capture logs:**

- Re-launch VeinIDFive Windows Password Replacement application and replicate issue
- Go to 'C:\ProgramData\Hitachi\VeinID Five' and copy below folders and save in folder 'Logs for Hitachi' in Desktop
  - a** DeviceLog
    - i** Function Log
    - ii** Sensor Log
  - b** UserLog
    - i** One subfolder for each user
    - ii** System
  - c** Create new folder 'Logs for Hitachi' in Desktop
- Compress folder 'Logs for Hitachi' and share with Hitachi VeinID Five Support Desk

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2	OpenCV	<a href="https://github.com/opencv/opencv/releases/">https://github.com/opencv/opencv/releases/</a>
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#### MaterialDesignColors

Description: ResourceDictionary instances containing standard Google Material Design swatches, for inclusion in a XAML application.

Author: James Willock

Version: 1.1.3

Project URL : <https://github.com/MaterialDesignInXAML/MaterialDesignInXamlToolkit>

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MaterialDesignThemes

Description: ResourceDictionary instances containing Material Design templates and styles for WPF controls in the MahApps library.

Author: James Willock

Version: 2.5.0.1205

Project URL : <https://github.com/MaterialDesignInXAML/MaterialDesignInXamlToolkit>

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libb64

libb64 project for base64 encode and decode

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Nullsoft Scriptable Install System

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