

IMAGE QUALITY AND AUTOMATED TEST



IAS-SDK User's Manual

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IAS-SDK User's Manual - A

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Purpose

The purpose of this document is to describe the operational use of the Image Analysis Suite Software Development Kit.

Scope

The scope of this document will cover the navigation of the IAS Utility user interface, and deploying IAS algorithms to a runtime only test system.

Requirements

Item	Minimum
Processor	Duo Core or equivalent
RAM	4 GB
Screen Resolution	1280 x 700 pixels
Operating System	Windows 8/7 (32-bit or 64-bit)
Disk Space	50 MB

Figure 1 Minimum Requirements

IAS-SDK Overview

IAS-SDK is a set of image analysis algorithms designed for deploying to a target runtime test system. IAS-SDK is used for the analysis of digital images produced from Digital Camera Modules/Image Sensors. The IAS-SDK contains a number of image analysis algorithms that can accept image data and output measurement results. The IAS-SDK consists of the analysis algorithms in DLL form, Labview form, and an Utility to list them with their descriptions and verify and activate a software License key or a hardware USB dongle License key.

IAS-SDK Utility Page Descriptions

During installation a shortcut to this Utility application is created. The utility application consist of four pages selectable from the menu bar on the left side of the window. These are "Algorithm List", "Function List", "Software Key", "USB Key".

Algorithm List

This page shows all of the algorithms contained in the IAS-SDK. The revision of the complete IAS SDK is shown in the upper right hand corner of the panel.

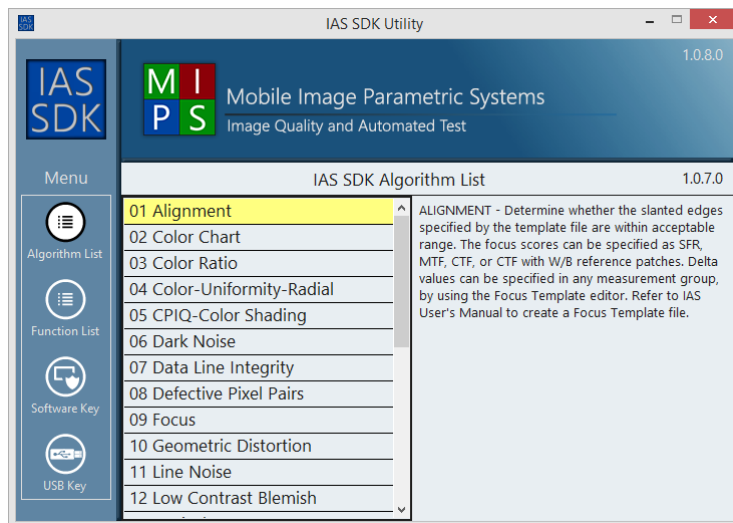


Figure 2 IAS-SDK Utility-Algorithm List Page

You can click on an algorithm and the description will show on the right side of the window. The revision of the algorithm DLL is shown just above the algorithm description.

Function List

The Function list shows all function contained in the IAS-SDK. These are useful function for image manipulation using conversion, decoding, and extraction functions. There is a write file utility for saving image data to disk support several image formats including the IAS format; which is RAW file format for opening images in the Image Analysis Suite application for further analysis.

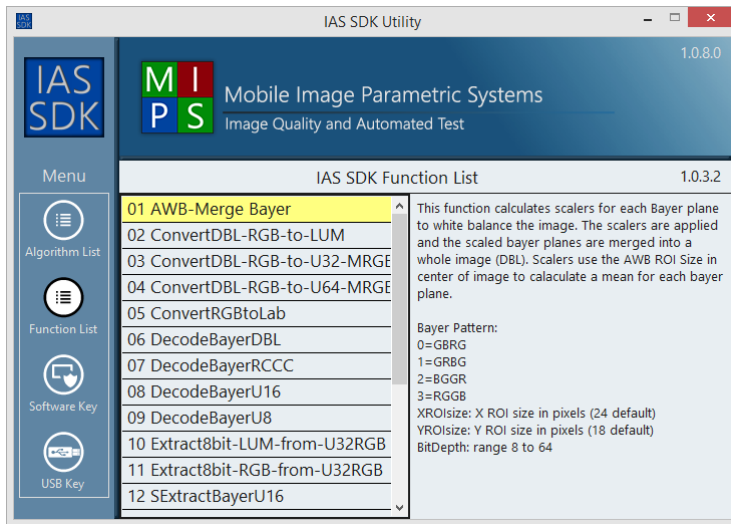


Figure 3 IAS-SDK Utility-Function List Page

You can click on a function and the description will show on the right side of the window. The revision of the function DLL is shown just above the algorithm description.

Software Key

This page shows the software license key activation status. If the software license key is not valid you can click the “Activate Now” button and this will launch the Activation Wizard for you to enter in the activation code you received from MIP Systems. If you are using a USB dongle license key you can ignore this page. If there is no license key on the computer either hardware or software the algorithms will return measurements of -1 and there will be an error message outputted via the report extras string.

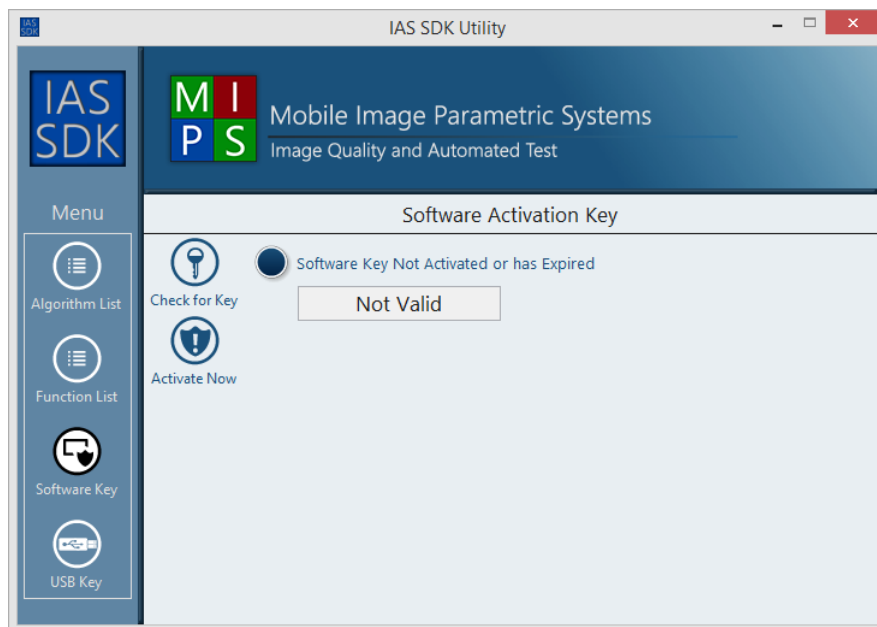


Figure 4 IAS-SDK Utility-Software Key Page

You can click on the “Check for Key” button to invoke another software license key check.

USB Key

This page shows the USB dongle License key status. If there is no USB license key inserted into the computer (or software key) the algorithms will return measurements of -1 and there will be an error message outputted via the report extras string.



Figure 5 IAS-SDK Utility-USB Key Page

You can click on the "Check for Key" button to invoke another USB dongle License key check.

Deploying Algorithms

Target Directory Structure

This section describes where IAS-SDK items need to be located relative to the Calling Executable for both Labview and Non-Labview executables when deploying your application to a target computer. All of the files mentioned below can be found in the IAS-SDK directory. You can also download the "TestCC.zip" example from our website; which installs a the "TestDLExe" application so you can run and verify the algorithm returns measurements. The "TestCCProject" example contains the Labview project directories so you can use as an example to build your application.

- Directory List Description

- Directory of Calling Executable (this is the directory where the calling executable resides)

- IAS SDK 1.0.lw.xml (this file is for the software license key, this must be here even if you are using a USB dongle key)(the revision of the SDK is embedded in this filename so if you're using a later version of IAS-SDK then use that file)
- kl2dll64.dll or kl2dll32.dll (this is for the USB dongle license key, this must be here even if you are using a software license key)(if application is 32-bit you must have the kl2dll32.dll or if application is 64-bit you must have the kl2dll64.dll)
- QlmLicense.dll (this is for the software license key, this must be here even if you are using a USB dongle key)
- Data (this is a directory)
 - algorithm.dll (all algorithm DLLs will be in the "Data" directory once the application is built)
 - QlmLicense.dll (this is for the software license key, this must be here even if you are using a USB dongle key)
 - x64 (this is a directory)(this must be here for 32-bit or a 64-bit application running under a 64-bit OS)
 - IsLicense50.dll (this is for the software license key, this must be here even if you are using a USB dongle key) (this is a 64-bit DLL)
 - x86 (this is a directory)(this is only necessary for a 32-bit application)
 - IsLicense50.dll (this is for the software license key, this must be here even if you are using a USB dongle key) (this is a 32-bit DLL)

Deploying using Labview Application Builder

This section describes how to add the correct files and locations into the Labview application builder. The example shown is creating an application that calls the Optical Center algorithm. This example is performed on a 64-bit OS and the target is a 64-bit application, but can easily change to a 32-bit application by replacing "Optical Center-x64.vi" with "Optical Center -x86.vi", and "kl2dll64.dll"(the 64-bit version must remain if 64-bit OS) with "kl2dll32.dll". The target application directory (example: Test) is created first and a Data directory is added with items shown in [figure 6](#). Make sure to auto-populate your target directory so items will appear in installer build specification.

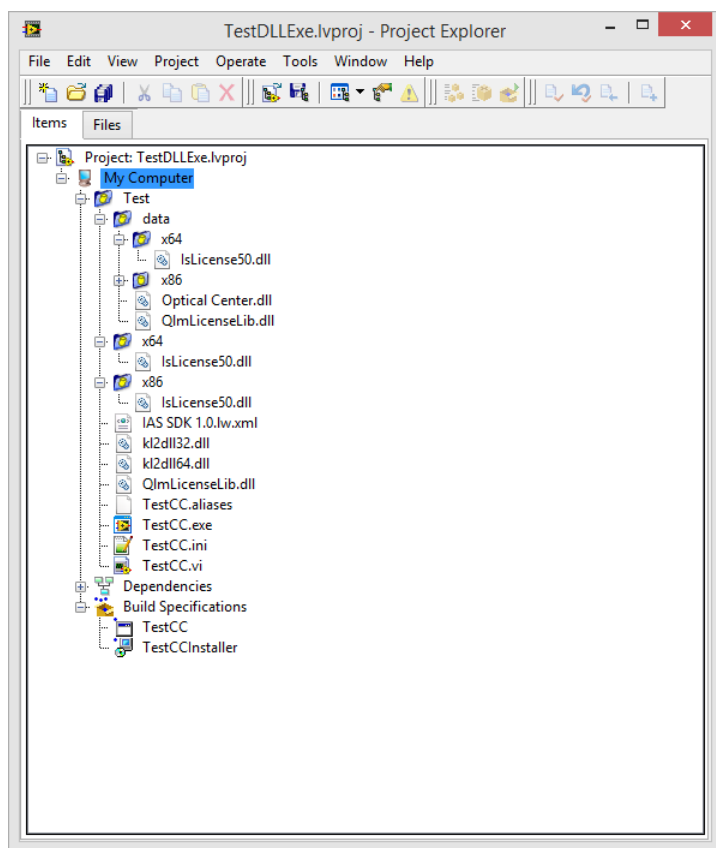


Figure 6 Labview Project File

The application build specification Information is shown in figure 7. This shows the target application is called "TestCC.exe" and its destination is the "Test" directory that was created before.

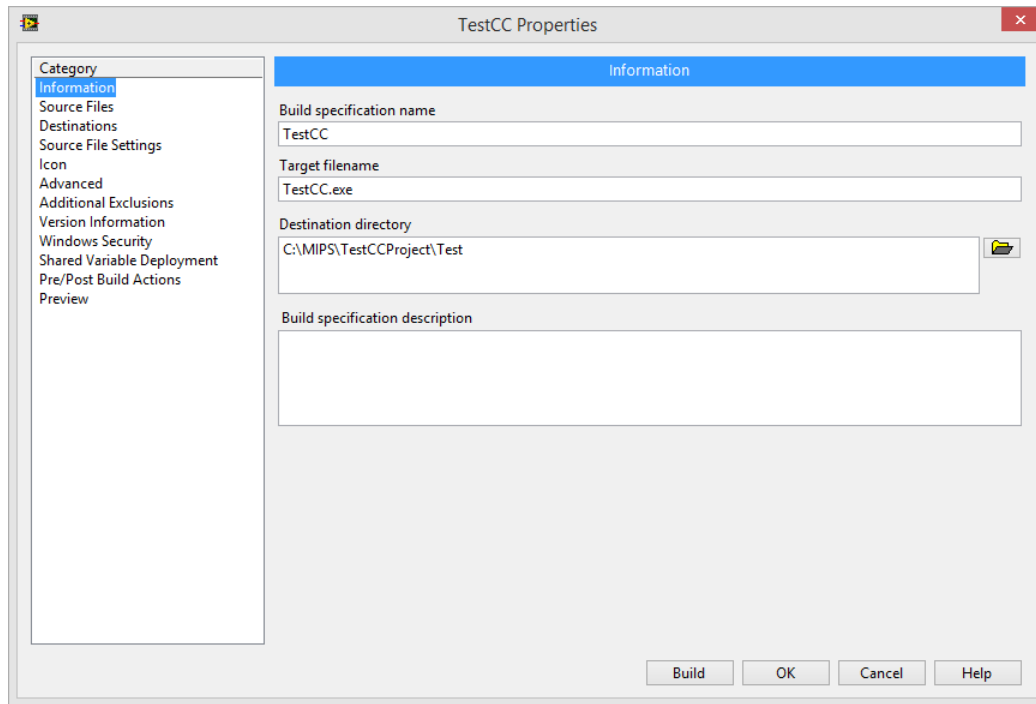


Figure 7 Labview Application Build Specification Information

The application build specification Source Files are shown in figure 8. This shows the project files and the Startup VIs. The Startup VI should be your source code Top Level application VI.

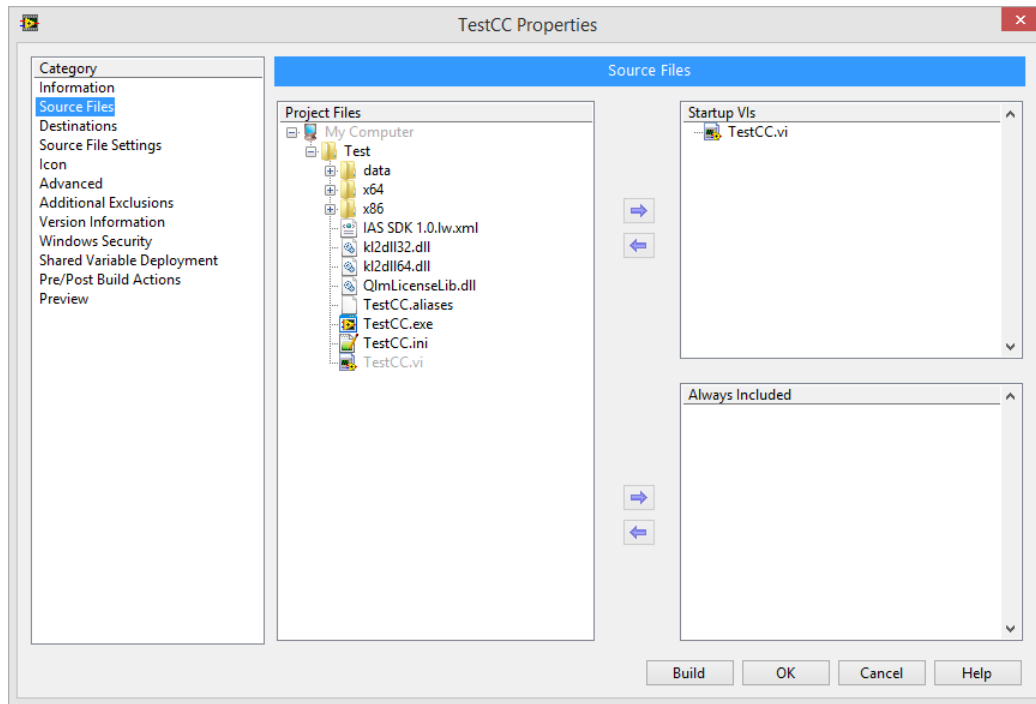


Figure 8 Labview Application Build Specification Source Files

The installation build specification Product Information is shown in figure 9. This shows the EXE name and its build destination.

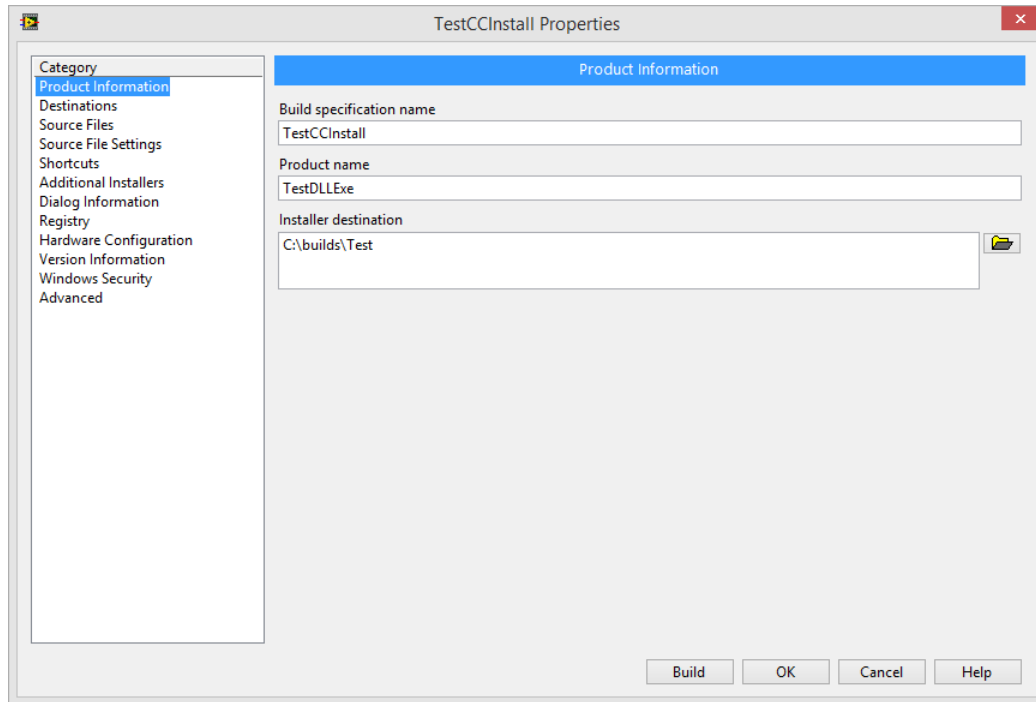


Figure 9 Labview Installer Build Specification Product Information

The installation build specification Source Files are shown in figure 10. This shows the Project Files View and the Destination View items. The Program Files directory tree is expanded just to show where the included items came from. The destination view shows all of the contents from "Test" directory were included minus the top level source VI. This complies with the description shown in section [Directory List Description](#).

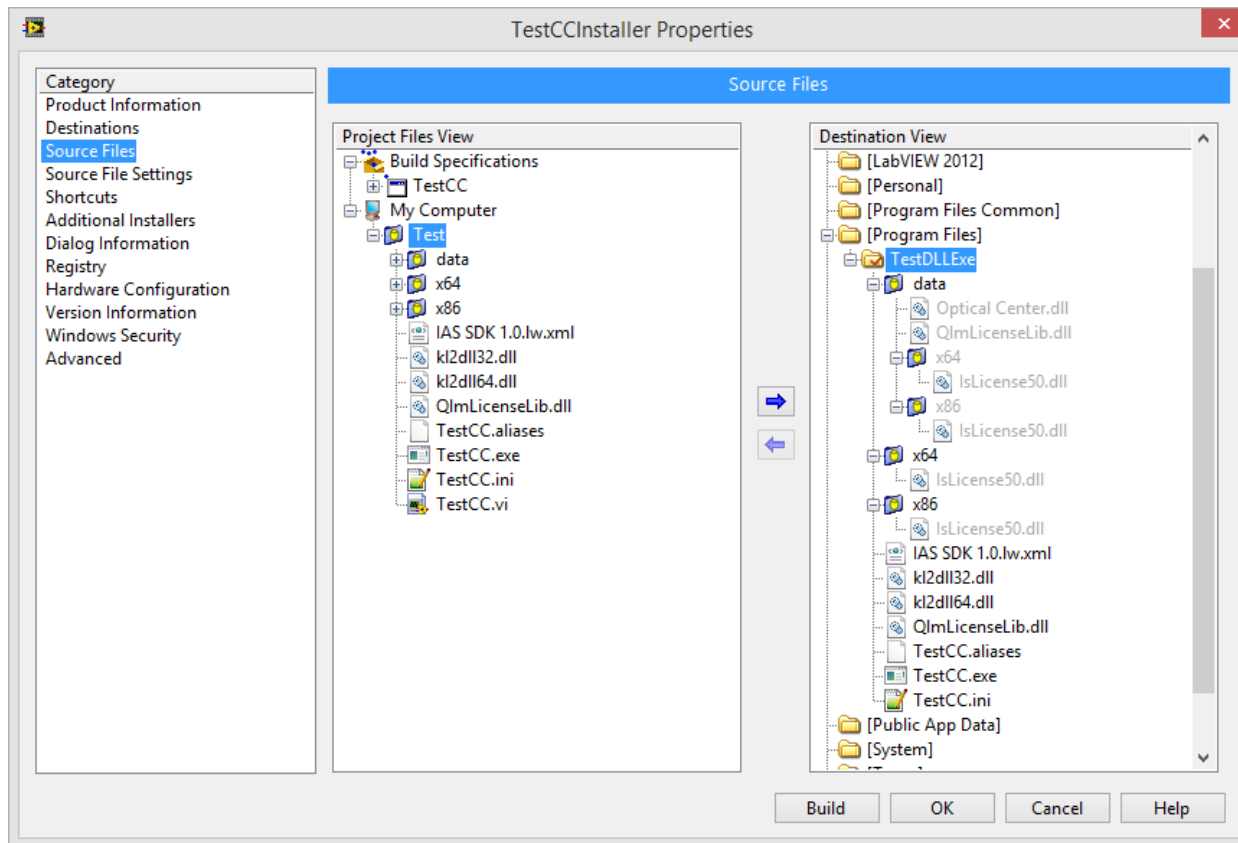


Figure 10 Labview Installer Build Specification Source Files