

Stettbacher Signal Processing

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O-3000 Camera Series

First Steps

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Abstract: This application note provides information and help about getting started with the 'O-3000 Camera Series' camera.

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1 What You Need

In order to receive and display the camera’s raw data make sure you have the following items available:

- ‘O-3000 Camera Series’ camera (namely O-3010 or O-3020)
- USB mini or micro cable, depending on camera type (w/ or w/o housing)
- PC running:
 - WinXP: x86, Win7: x86, x64 or
 - Linux: x86, x64 or
 - MacOS: x64.

2 Using the Camera

- Download the latest O-3000 installer package from our website¹, suitable to your operating system.
- Install the package. There is an install script in each of the packages guiding you through the installation process. Please find further information in [1].
 - Note on Windows: In order to have the camera working on a Windows PC, the successful WDI driver installation is crucial. Pay attention when installer is coming up with the following question (see figure 1 below) that you select the option *install this driver software anyway*.

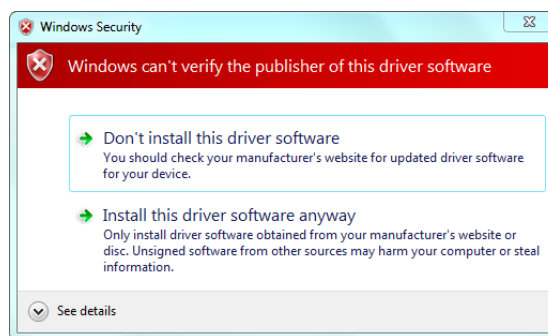


Figure 1: Installation of driver software.

- Connect the camera using the USB cable (note: the camera will be powered by this cable, no external power supply needed).
- Run the Java Demo Application from the installation directory. Further information in [1].

3 Using the Demo Application

The camera demo application can be started by executing the run script (either shell or batch script, depending on your operating system). It will look as follows: (cf. fig. 2 - 4)

¹ <http://www.stettbacher.ch/en/cameras>

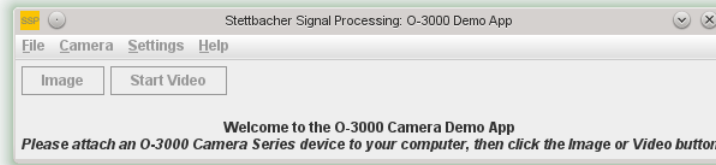


Figure 2: Application started, no O-3000 camera connected.

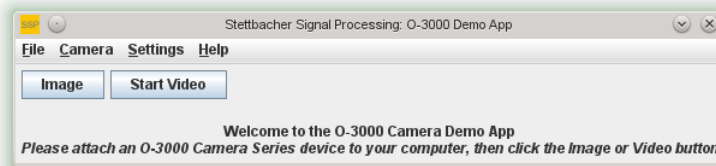


Figure 3: Application started, O-3000 camera connected.

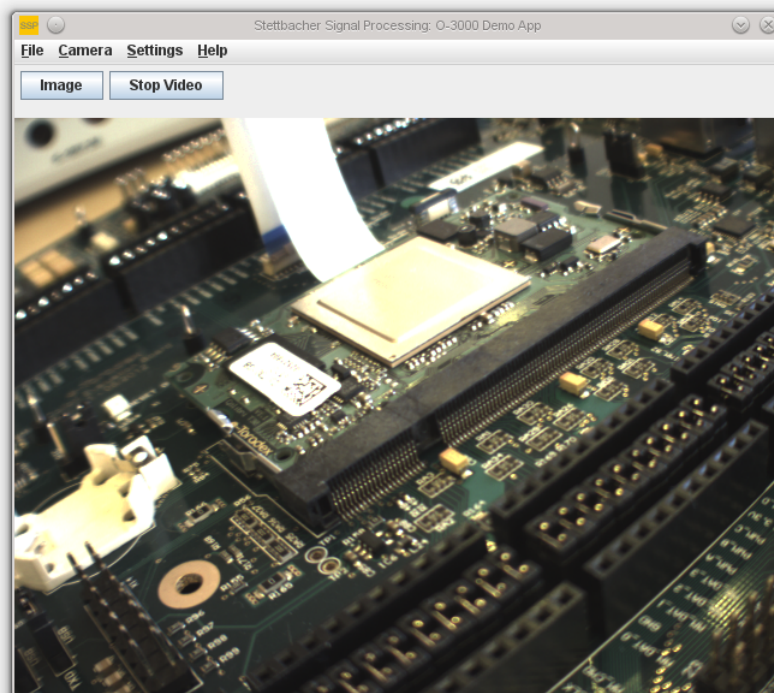


Figure 4: Application started, streaming active.

3.1 Menu Bar

When running, the application menu on top consists of the following items:

- File → You can save a configuration to disk and load it respectively. Additionally, you can quit the app.
- Camera → Query the camera for hardware specific information.
- Settings → Several settings can be done in this section: adjust acquisition, geometry, frame rate, data format, and white balancing parameters. You can, additionally, enable image mirroring and downscaling.
- Help → Information about the java software.

Further information of camera's scope of functions can be found in [2, 3, 4]. The appropriate XML commands behind it are documented in [5].

4 Next steps

Surely, the demo application is just a small example of a use case of this camera system. Most likely, you want to integrate the O-3000 camera in your own system. There are several possibilities to do so. The following illustration 5 gives a bigger picture:

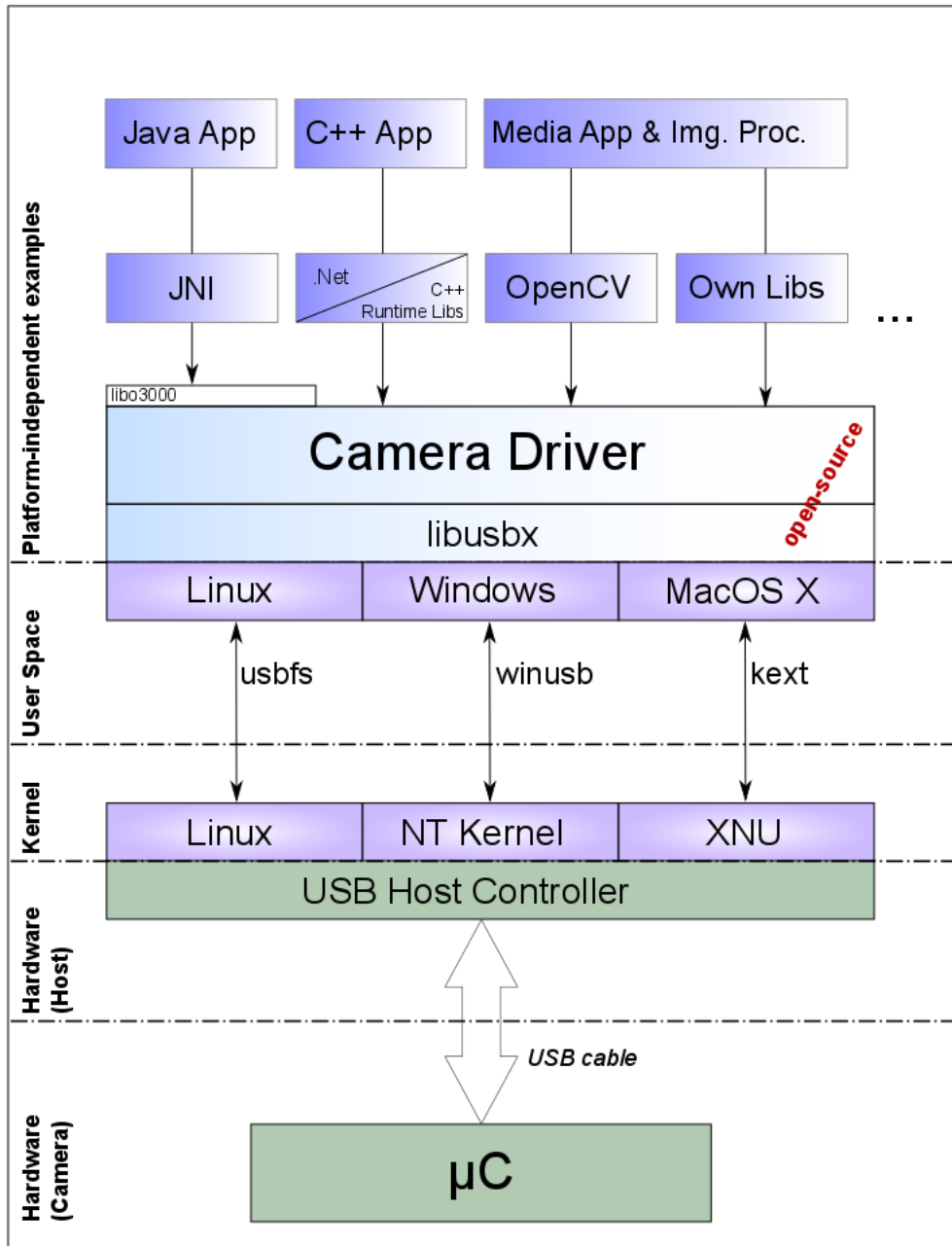


Figure 5: Use cases for the camera implementation.

As you can see, there are plenty of applications for the camera as the data format is raw data. You can either write your own java application or use the .NET framework to write your Windows application. Another examples are machine vision / learning, image processing, surveillance, augmented reality, and more applications, with the use of openCV² e.g. As the host-based driver is open-source there are

² <http://opencv.org>

no boundaries for a further development. Even the source code of the demo application is available.

5 Finding Help

We provide detailed insights in the host-based o3000 driver and in our applications through the according documentations/manuals. They can be found on our website. Please see the section 'Literature and References' for more information. Of course, you can always make a support request via e-mail: cam@stettbacher.ch.

6 Literature and References

- [1] Stettbacher Signal Processing (2013). "O-3000 Camera Series, Documentation of Driver Package and Demo Application", Stettbacher Signal Processing, Zürich, Schweiz, Version 1.20, 2013-05-24.
- [2] Stettbacher Signal Processing (2013). "O-3000 Camera Series, User Guide", Stettbacher Signal Processing, Zürich, Schweiz, Version 1.20, 2013-05-24.
- [3] Stettbacher Signal Processing (2013). "O-3000 Camera Series, Image Frame Format", Stettbacher Signal Processing, Zürich, Schweiz, Version 1.20, 2013-05-24.
- [4] Stettbacher Signal Processing (2014). "O-3000 Camera Series, White Balancing", Application Note, Stettbacher Signal Processing, Dübendorf, Schweiz, Version 1.10, 2014-09-16.
- [5] Stettbacher Signal Processing (2013). "O-3000 Camera Series, XML Command Specification", Stettbacher Signal Processing, Zürich, Schweiz, Version 1.20, 2013-06-19.
- [6] Stettbacher Signal Processing (2014). "O-3000 Camera Series, Low-Level Programming Interface", Stettbacher Signal Processing, Zürich, Schweiz, Version 1.20, 2014-07-17.