

GENICAM SOLUTIONS

Consumer and Producer

- Support for GenAPI, GenTL, GenCP and CLProtocol
- FireBird CoaXPress and Camera Link frame grabbers supported

FEATURES

- GenTL Producer for FireBird CoaXPress and Camera Link frame grabbers.
- Compatible with CLProtocol and GenCP Camera Link cameras.
- Develop hardware independent applications.
- Easily migrate from GigE Vision or USB3 Vision applications to high-speed Camera Link and CoaXPress solutions.
- GenICam consumer applications ActiveCapture (Windows) and Harvester GUI (Linux) provided.



OVERVIEW

GenICam is a generic application programming interface (API) for vision related hardware such as cameras and frame grabbers from a variety of manufacturers which use different physical interface technologies (Camera Link, CoaXPress, GigE Vision, USB3 Vision). The standard is hosted by the European Machine Vision Association (EMVA) and provided free of charge. The **GenICam** Standard Working Group is comprised of key machine vision companies and is responsible for the continual development of the standard.

One of the key benefits with using **GenICam** is interoperability - any **GenICam** compliant hardware should work with any **GenICam** compliant software. This means that applications already using the **GenICam** environment, for example with GigE Vision or USB3 Vision cameras, can now target Active Silicon's high-speed and high-quality Camera Link and CoaXPress frame grabbers with minimal change to the application.

When a FireBird frame grabber is installed along with the FireBird GenTL Producer, the FireBird hardware is readily available to the **GenICam** compliant application. A developer does not need to be familiar with the frame grabber specific API because access to the FireBird hardware is the same as it would be if a **GenICam**/GenTL compliant GigE Vision or USB3 Vision camera were used.

The FireBird GenTL Producer will work with a range of 3rd-party packages such as HALCON and Common Vision Blox, as well as many other **GenICam**/GenTL compliant software packages.

It is important to note that Active Silicon's GenTL Producer supports CoaXPress and Camera Link (CLProtocol/GenCP), allowing an application to target either technology seamlessly.

As part of the software installation, Active Silicon also provides the **GenICam** standard reference implementation and examples of **GenICam** applications targeting FireBird hardware. These can be used by customers to form the basis of custom **GenICam** programs.



For easy access and control of cameras and frame grabbers, Active Silicon developed the **GenICam**-compliant front-end software ActiveCapture (available under Windows). It provides an intuitive GUI and allows users to configure the hardware system and the control of various image acquisition features such as triggering, image resolution, etc. For CoaXPress systems on Linux we provide a modified version of Harvester GUI as front-end software tool, updated to allow control of the grabber as well as the camera.

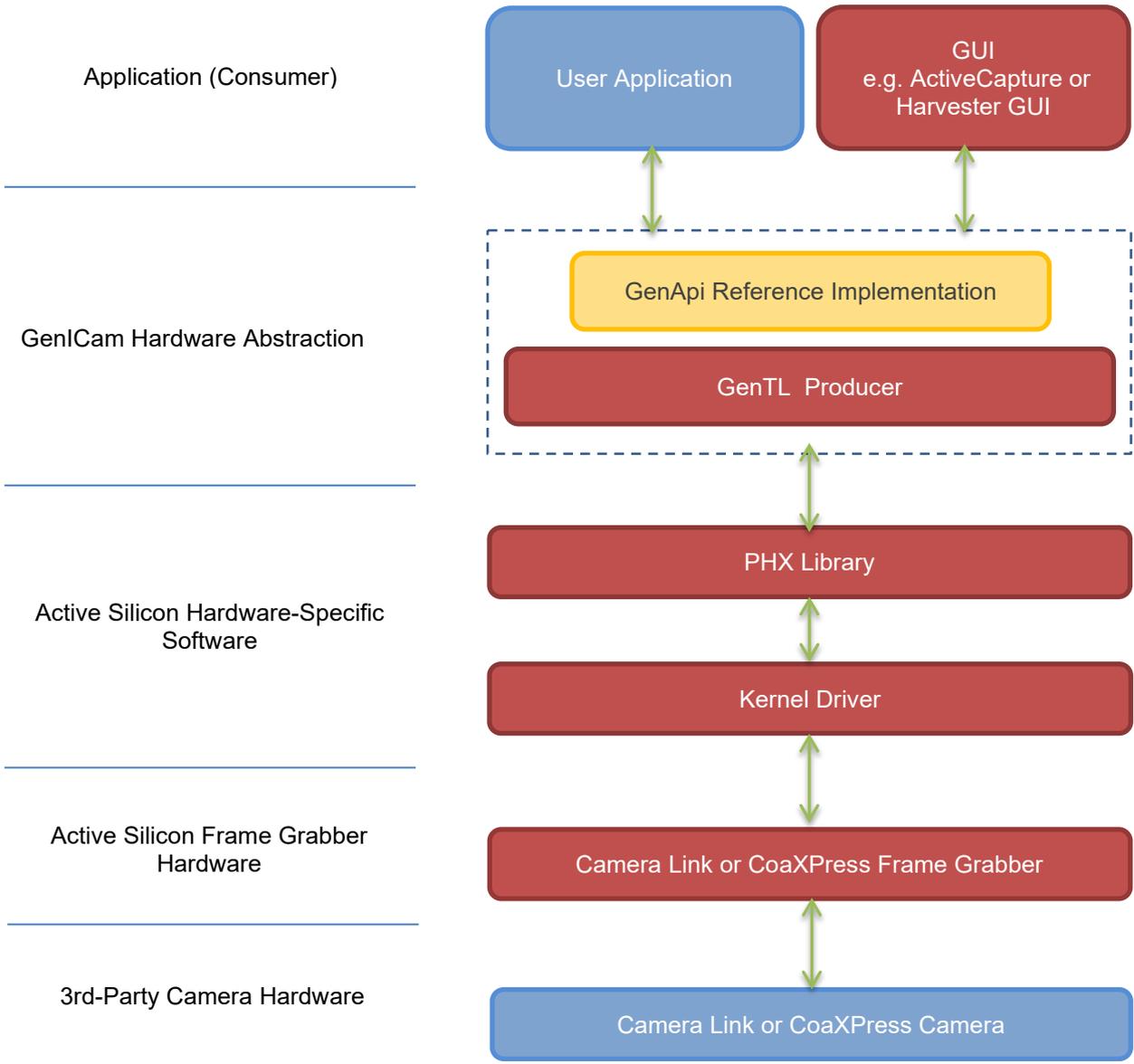
GENICAM COMPONENTS

GenICam consists of several key components:

- **GenAPI**: Defines the mechanism used to provide the generic interface via XML file that describes the properties of the device. This includes the specification for the standard and the schema that defines the format of the XML file. It is also the name of the C++ reference implementation of the **GenICam** standard available from the EMVA.
- **SFNC (Standard Feature Naming Convention)**: Standardizes the name, type and meaning of the features available on devices, so that devices from different manufacturers always use the same name for the same functionality.
- **GenTL (Transport Layer)**: The GenTL API provides a standard interface to a device regardless of the underlying transport layer technology. The API allows to enumerate devices, access their registers, stream images and receive asynchronous events.
- **GenDC (Data Container)**: Defines a Generic Data Container (GenDC) format, which allows devices to send any form of data (including 3D, multispectral, metadata etc) in the TL protocol independent of its format.
- **GenCP (Generic Control Protocol)**: Hardware independent protocol which defines register access and events. GenCP is currently used by USB3 Vision and some Camera Link cameras.
- **CLProtocol**: A software protocol allowing the use of **GenICam** with non-GenCP Camera Link cameras. CLProtocol enables compatibility with serial port protocols used on Camera Link cameras. Note that the camera vendor will provide a separate DLL to support their specific camera's protocol.



BLOCK DIAGRAM



Key

-  Written by user or provided by 3rd-Party
-  GenICam core (provided by EMVA)
-  Provided by Active Silicon



THE FIREBIRD RANGE

The following products have GenICam support:

- High performance CoaXPress CXP-12 and CXP-6 frame grabbers in single, dual and quad configurations.
- Camera Link frame grabbers in Base, Medium, Full and 80-bit (Deca) configurations.



CONTACT DETAILS

Headquarters:

Active Silicon Ltd
1 Waterside Court, Waterside Drive,
Langley, Berks, SL3 6EZ, UK.

Tel: +44 (0)1753 650600
Email: info@activesilicon.com
Website: www.activesilicon.com

North America:

Active Silicon, Inc.
479 Jumpers Hole Road, Suite 301,
Severna Park, MD 21146, USA.

Tel: +1 410-696-7642
Email: info@activesilicon.com
Website: www.activesilicon.com

14-Jul-2024