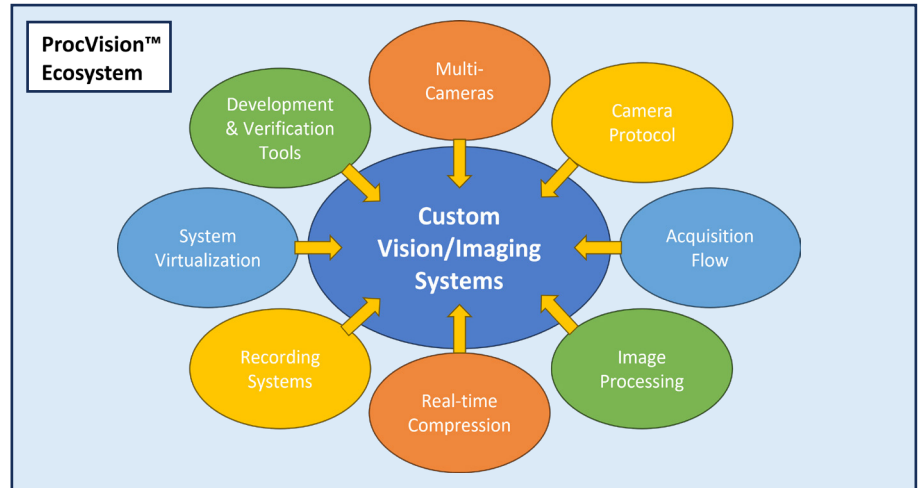


ProcVision Suite

Toolchain for Developing Custom Vision/Imaging Systems

Key Features

- Toolchain for developing custom Vision and Imaging system:
 - Fully customizable FPGA-based frame grabbers and edge computers
 - Multi-Camera support:
 - Synchronization
 - Multi-stream processing
 - Flexible topology
 - Camera Protocols: GigE, CoaXPress, Camera Link and user defined
 - Acquisition path architecture:
 - **ProcFG**: optimized for line scan camera application, and enables selective on-the-fly ROI capture
 - **InfiniVision**: optimized for multi-camera processing and synchronization, and enables inline compression
 - Flexibility to tailor acquisition flow to meet complex processing needs
 - Real-time on-FPGA:
 - Image processing
 - Compression: Quality+, JPEG, Lossless @ >1 G Pixel/s
 - High-performance recording systems utilizing storage optimization via real-time compression and ROI capabilities
 - System virtualization enabling multi-applications to access simultaneously and fully independently the system resources.
 - Innovative ecosystem for development of Vision and Imaging systems:
 - **ProcWizard** application for accelerated and simplified development on FPGA and integration with software
 - **GIL**: Gidel's FPGA Imaging Libraries
 - **CertifEye** suite: testing and validation toolchain via direct simulation data streaming into the user's IP.



Gidel's **ProcVision™** suite provides a market-unique ecosystem for developing high-performance custom imaging and vision systems. Gidel offers the world's only fully customizable image acquisition and processing systems. Using Gidel's vision systems and development eco-system, powerful tailored systems can be achieved within remarkable short time spans - a truly market-unique solution.

The **ProcVision** offers two unique open image acquisition architectures, **ProcFG** and **InfiniVision**, that can be tailored to the target system specifications. **ProcFG** is optimized for line scan applications and offers ROI acquisition. **InfiniVision** is optimized for synchronized acquisition from multiple cameras and for real-time compression. Both architectures enable adding the inline image processing, including pre- and post-processing.

The Gidel **ProcWizard** application greatly simplifies the development on FPGA by automatically generating the HDL project and the software driver, ensuring seamless integration between the FPGA design and the software application. The **ProcWizard** also includes powerful tools for embedding Gidel IPs, and for testing and debugging the FPGA design. Furthermore, the Gidel **CertifEye** testbench enables testing and verification by using the Gidel **CamSim** camera simulator to stream data directly to the user's inline image processing block and then to capture the output data for analysis.

Gidel's customizable Vision architecture is also unique in its resource virtualization capability that enables multiple software applications to attend different parts of the data pipeline simultaneously and independently.



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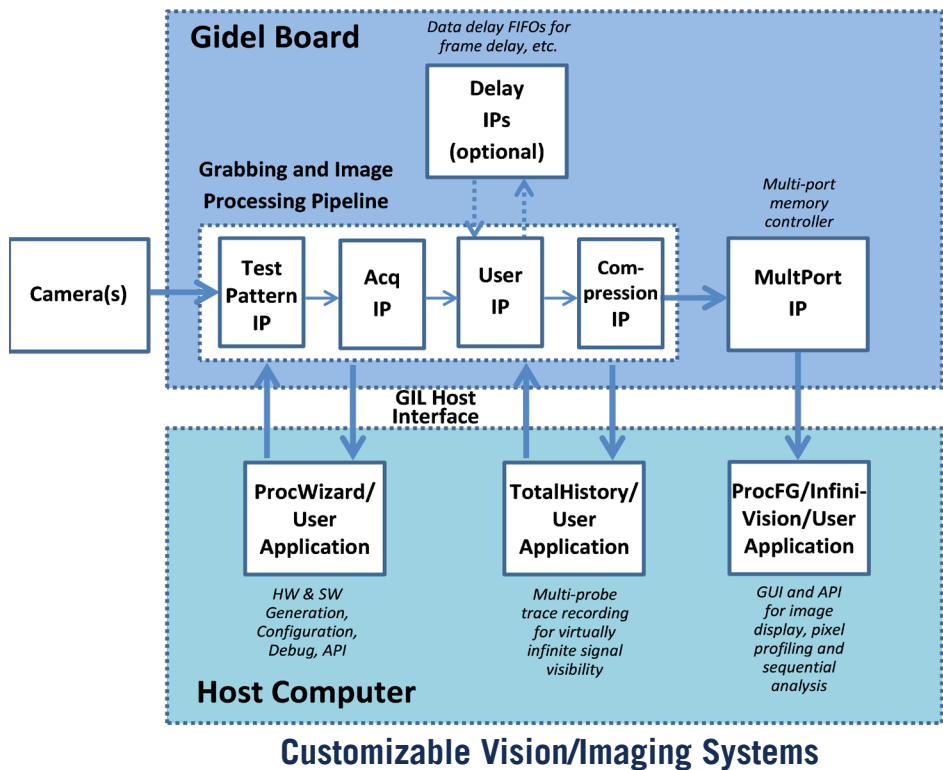
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With the **ProcVision** suite, it is possible to achieve multifaceted customization, including customization of the board support package, camera interface and protocol, acquisition architecture, image pre/post-processing, real-time inline compression, multi-camera processing and synchronization, and recording.



PV COMPONENTS	DESCRIPTION
ProcWizard	A powerful developer's application for simplifying the development task on FPGA and the integration with the software application. The ProcWizard enables multiple programs to access simultaneously the FPGA, full customization of the software driver, and programmable macros for automatic configuration and flow execution.
ProcVision Templates Libraries	The ProcVision templates enable customization such as defining the acquisition flow and camera protocol, and embedding Gidel libs (IPs) or the user's image processing block. Based on the templates, the flow can be used seamlessly on different Intel FPGA devices, including Arria 10 and Stratix 10N/M/S device families.
ProcFG Grabber Architecture	Grabber architecture enabling to capture the image data stream, perform vision and image processing, and offload image data to the host computer. This ProcFG flow can capture Regions Of Interest (ROIs) that are specified on-the-fly. The ability to grab ROIs reduces PCIe and memory bandwidth usage and enables balancing between the FPGA and host processing. The ProcFG supports GenICam standard and 3rd-party image processing libraries via the GenTL.
InfiniVision Multi-Camera Grabber Architecture	Grabber architecture enabling to capture multiple image streams of varying sensors, frame size and image formats. The InfiniVision may synchronize up to 100 cameras. InfiniVision has the capability to grab compressed heterogeneous image data. Gidel offers on-FPGA real-time Quality+, Lossless, and JPEG compression.
CertifEye	Gidel's CertifEye Kit enables developing, validating, demonstrating and evaluating Image Signal Processing (ISP) and pipeline designs on FPGA. The CertifEye flow is implemented fully on the board's FPGA and comprises a camera simulator (CamSim) that streams simulated data to the user ISP and then captures the design's output stream on host computer for displaying, validating, etc.
Compression, memory controller, and Gidel Imaging Libs (GIL IPs)	Gidel FPGA libraries (IPs) offer diverse powerful components that can be embedded in the vision and imaging acquisition pipeline. The libraries include compression libs, imaging libs, data processing and memory controller libs. Gidel's MultiPort IP is a unique configurable memory controller supporting multiple simultaneous access to the on-board memory resources enabling system virtualization capabilities.