RTX64 Vision

Overview

RTX64 Vision provides functionality for using GigE Vision Cameras within the real-time RTX64 environment. Using RTX64 Vision, you can quickly discover cameras on the network, query different camera configurations, and acquire image data.

To do this, RTX64 Vision utilizes the GenICam™ GenAPI to read in the Camera Description File, and the GigE protocol to control the camera and receive its image data. A 3rd party vision library, such as OpenCV, can be layered on top of RTX64 Vision to provide all of the additional functionality within that library. Finally, RTX64 Vision provides a communication library for passing images between RTSS and Windows, which can be used to perform tasks that are more easily achieved in the Windows environment, such as displaying captured images in a GUI.

Supported Standards

- GigE Vision
- GenICam

Determinism

- Separation from Windows – Windows applications cannot interfere with RTX64 Vision applications
- Designed to support load-balancing of multiple cameras without impacting performance

Control

- Flexibility to configure and control the amount of processing capability used for RTX64 Vision
- Control of an image's width, height, and pixel format
- Triggers for controlling the frequency of images coming from cameras
- The ability to discover, control, and stream images from multiple GigE Vision cameras simultaneously
- Support for Continuous Software and Hardware Triggered Acquisition Modes
- Full control of RTX64 Vision and the RT-TCP/IP stack, including the ability to load-balance threads as needed and set thread and interrupt affinities
- Peace of mind that if Windows issues a STOP message or shutdown, RTX64 Vision will continue to run until communication is completed

Simplify

- Compatible with 3rd party vision libraries, like OpenCV, in RTSS Vision applications
- Communication library for simple image transfer between RTSS and Windows
- Camera Setup Tool to support cameras that do not fully support GeniCAM

Architecture
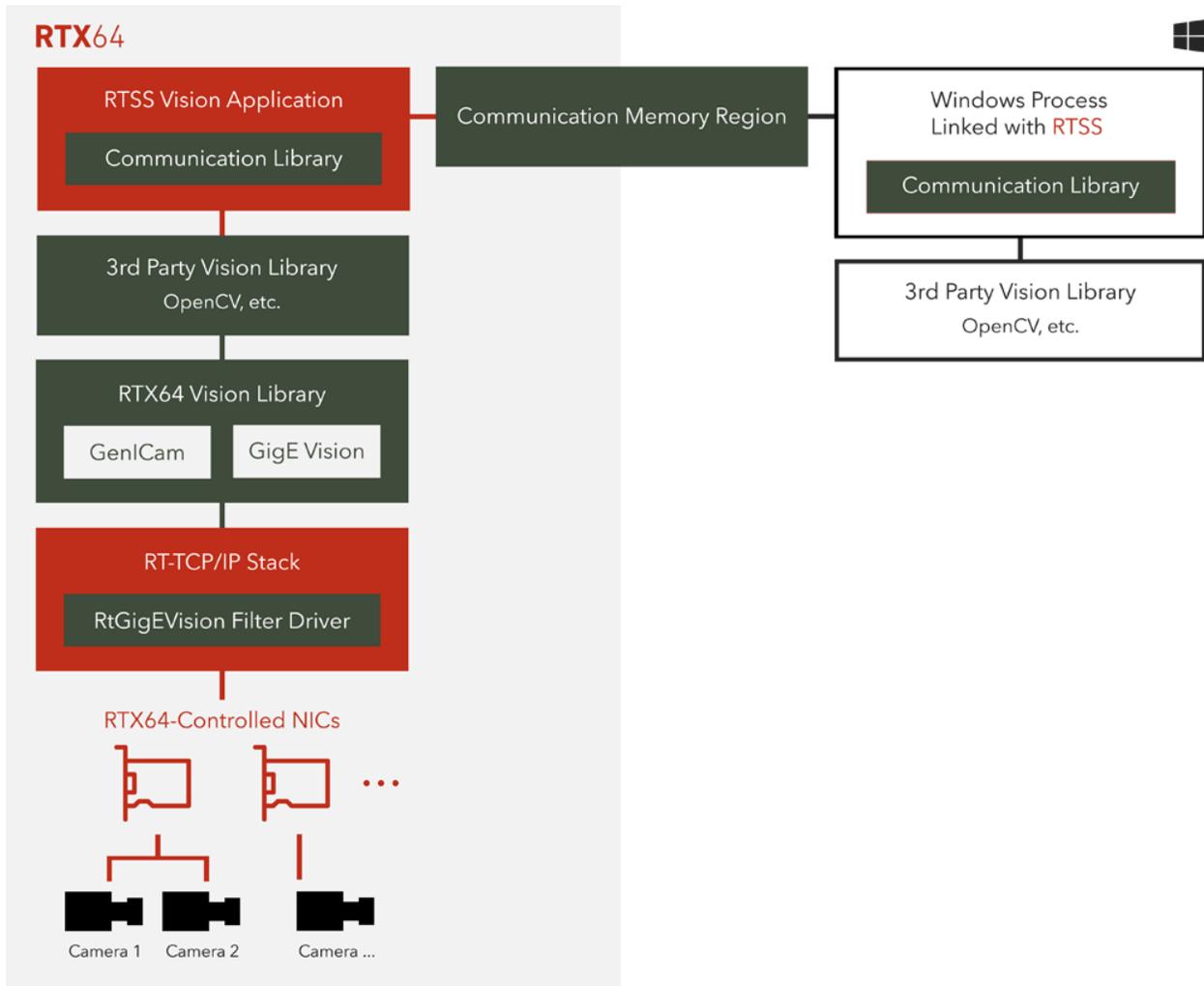
Key Features

Vision Runtime

- Real-time GigE Vision filter driver
- Support for a number of common NICs
- Camera Setup Tool

Vision SDK

- Real-time GigE Vision Interface
- Communication library
- Built version of OpenCV for use with RTSS Vision applications
- Documentation consisting of installation and user guides, API references, and details on Vision programming concepts