

# eBUS-ISR SDK for Defense Applications

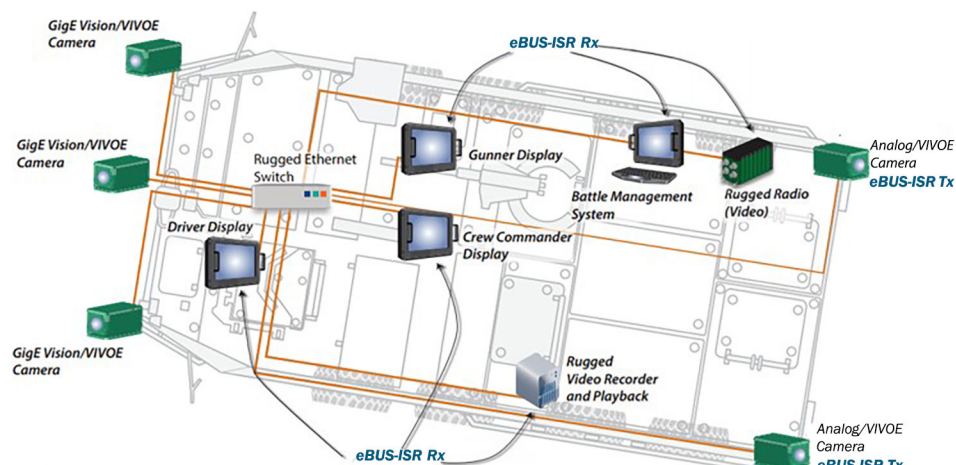
Feature-rich SDK for developing LSA and C4ISR platforms transmitting and receiving VIVOE and GigE Vision video

## Overview

Pleora's eBUS-ISR SDK helps manufacturers and integrators design standards-compliant software applications that transmit and receive both Def Stan 00-082 Vetronics Infrastructure for Video Over Ethernet (VIVOE) and GigE Vision video streams in GVA (Def Stan 23-009) and NGVA (STANAG 4754) local situational awareness (LSA) and C4ISR platforms.

Building on Pleora's decades of expertise in image capture, display, and transmission for mission-critical imaging applications, the eBUS-ISR SDK networks ruggedized GigE Vision and VIVOE cameras, sensors, and video equipment from multiple vendors through a comprehensive API that is portable across Linux and Windows operating systems. Building image processing applications on top of eBUS-ISR users are no longer tied to manufacturer-specific SDKs and can develop systems using any GigE Vision and VIVOE compliant camera or image sensor. By using a shared SDK for all transport functions, designers can preserve existing software investments while adding advanced systems capabilities to help increase mission effectiveness.

eBUS-ISR is an off-the-shelf solution that reduces costs and risks by eliminating the need to design and test proprietary code. Instead, developers can focus their expertise and investment on value-added functionality for end-users. In addition, complete lifecycle management of the SDK by Pleora helps ensure a secure, reliable, and cost-effective supply chain while reducing interoperability risks and long-term support burden.



### **eBUS-ISR SDK (Developer Seat License)**

eBUS-ISR SDK is built on a single API to transmit and receive GigE Vision and VIOVE video over GigE and 10 GigE that is portable across Windows and Linux operating systems. With an eBUS-ISR Developer Seat License, designers can develop production-ready software applications in the same environment as their end-users, quickly and easily modify applications for different media, while avoiding supporting multiple APIs from various vendors. Compared to camera vendor provided SDKs, eBUS-ISR frees developers from being tied to a specific camera, and instead they can choose the device that is best for the application.

eBUS-ISR complies fully with the GigE Vision, GenICam, GVA, and NGVA standards. It interoperates seamlessly with Pleora's video, as well as with standards-compliant products from other manufacturers. The eBUS-ISR SDK Developer Seat License includes available receive and transmit modules and access to online support and technical documentation. For dedicated technical expertise, including installation and configuration support, a Developer Support Subscription is available. Applications written with eBUS-ISR libraries will require an eBUS-ISR Rx runtime license for deployment to a target device.

### **eBUS-ISR Rx for Host Applications**

eBUS-ISR Rx manages high-speed reception of GigE Vision and VIOVE images or data into buffers for hand-off to the end application for further analysis. Developers can write applications that run on a host computer to seamlessly control and configure an unlimited number of GigE Vision and VIOVE compliant sensors. The eBUS Universal Pro Driver reduces CPU usage when receiving images or data in GigE Vision-based platforms, leaving more processing power for analysis and inspection applications while helping meet latency and throughput requirements for real-time applications. The eBUS Universal Pro Driver is easily integrated into third-party processing software to bring performance advantages to end-user applications.

### **eBUS-ISR Tx for Sensor Devices**

eBUS-ISR Tx is a software implementation of a full device level GigE Vision or VIOVE transmitter, without requiring any additional hardware. Adding eBUS-ISR Tx to a CPU's software stack turns it into a fully compliant GigE Vision device that supports image transmission and enables the device to respond to control requests from a host controller. eBUS-ISR Tx is GigE Vision and GenICam compliant, meaning end-users can use any standards-compliant third-party image processing system.

### **eBUS-ISR Player Toolkit**

The eBUS-ISR Player Toolkit, which is included with the purchase of a Developer Seat license and can be freely downloaded as a standalone application from the Pleora website, includes useful functions to assist with setup, configuration, and troubleshooting. It includes:

- **eBUS-ISR Player:** Control the parameters of GigE/VIOVE devices. Player receives video and allows users to view streaming data and adjust device configuration settings.
- **eBUS-ISR Universal Pro Driver:** Assists in transferring video from a GigE Vision stream to vision system applications, ensuring delivery with low, consistent latency while reducing CPU resource utilization.
- **Raw Image Viewer:** View raw binary images saved with eBUS-ISR Player.
- **Camera Link Setup Assistant:** Allows you to specify the location of CL Protocol DLL files and automatically generates (or updates) the GENICAM\_CLPROTOCOL environment variable.

## Benefits

- Image capture, display, and transmission through a simple API portable across Windows and Linux — no need to support multiple APIs from different vendors
- Works with GigE Vision and VIOE compliant cameras, sensors, and other video equipment from devices from any vendor
  - Receive multicast uncompressed video streams from connected GigE Vision and VIOE devices
  - Pass through H.264 compressed transmit and receive video streams
- Accelerate application development
  - Sample applications in various programming languages and frameworks provides a quick start platform for development
  - eBUS-ISR Player Toolkit allows users to view streams and adjust configurations
  - First-class development support, including Developer Support Subscription, ensures optimal performance

## Developer Support Subscription

The Developer Support Subscription provides one year (365 days) of functional support for the eBUS-ISR SDK by a dedicated team of senior application engineers. This support offering is suited for customers requiring ongoing support during testing and development stages. The subscription includes:

- Configuration, installation, and troubleshooting support during basic installation and setup
- Best practice guidance analysis, and recommendations during development of customer's application to ensure optimal performance
- Source code samples to help speed design time
- Access to dedicated technical support and documentation

## Software Includes

- **eBUS-ISR** – Provides versatile, robust, and easy-to-understand classes, methods, and properties that allow developers to quickly build high-performance vision applications. Support for high performance image acquisition using eBUS Universal Pro Driver or NIC manufacturer's driver.
- **eBUS Universal Pro driver** – Enhances existing general-purpose drivers shipped with NICs. Increases image acquisition throughput and performance, decreases latency and jitter, while minimizing CPU utilization.
- **DirectShow filter** – Enables easy integration of GigE Vision and VIOE cameras with image display, analysis, and compression filters in the DirectShow ecosystem.
- **OEM Integration** - Includes merge modules for inclusion in installation packages built with Microsoft Visual Studio, or with applications such as Flexera Installshield
- **Quick Start Guides**
- **Class and method documentation**
- **eBUS Player Toolkit**
- **Sample applications** – Demonstrates advanced networking topics, such as VIOE/GigE Vision compliant image stream transmission, multicast communication, and link recovery.

## Supported Operating Systems

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| <ul style="list-style-type: none"><li>• Debian 64-bit Linux version</li><li>• 9.4.0 and higher running on Intel architecture</li></ul>              |
| <ul style="list-style-type: none"><li>• Red Hat Enterprise Linux (RHEL) 64-bit Linux version 7.4 and higher running on Intel architecture</li></ul> |
| <ul style="list-style-type: none"><li>• Windows 64-bit 7/8/8.1/10</li><li>• operating system running on Intel architecture</li></ul>                |

## Supported Application Layer Protocols

VIOE	GigE Vision
<ul style="list-style-type: none"><li>• Real-time Transport Protocol (RTP)</li><li>• Session Announcement Protocol (SAP)</li><li>• Session Description Protocol (SDP)</li></ul>	<ul style="list-style-type: none"><li>• GigE Vision Streaming Protocol (GVSP)</li><li>• GigE Vision Control Protocol (GVCP)</li></ul>