DESIGN BRIEF

Traffic Monitoring and Toll Collection

Cabling and multicasting advantages for automated vehicle monitoring systems

Gigabit Ethernet (GigE) is a natural choice for video transmission within electronic toll collection systems, due to its long-distance reach, networking capabilities, and ability to support a range of different computing platforms.

GigE Vision cameras are useful in these systems, but may not be practical in installations where video transmission is already designed around analog or Camera Link interfaces, or in new systems based on existing designs where changing the camera, sensor, or optics is not desirable. In these situations, manufacturers and integrators can use Pleora's external frame grabbers to simplify system implementation and maintenance, extend the life of legacy systems, future-proof designs, and enhance performance.

In the diagram below, existing Camera Link cameras are converted to GigE by Pleora's **iPORT CL-GigE** External Frame Grabber. Alternatively, existing analog cameras could become part of a fully digital video connectivity system by deploying Pleora's **iPORT Analog-Pro** External Frame Grabber.

In both instances, Ethernet's long cabling reach allows designers to move the processing computers off the gantry and place them at the side of the road – a convenient location for maintenance. At the PC, all the interfaces connect via GigE, eliminating the need for a computing platform with an available peripheral card slot. As a result, system designers can reduce system size, cost, and power consumption by using computing platforms with smaller form factors, such as laptops, embedded PCs, and single board computers.

To enhance reliability, Pleora's external frame grabbers can be set to multicast image data to multiple computing platforms simultaneously, using an off-the-shelf GigE switch. If the primary PC is taken offline for maintenance or live testing of new image processing algorithms, the license plate recognition and billing functions can be assumed by the backup PC, without the need to switch cables or change software settings.

Pleora's external frame grabbers contain a sophisticated programmable logic controller (PLC). This PLC can accept triggers from laser sensors or induction loops, and accurately synchronize both the camera's sensor and the strobe light.