



InVeo Designs LLC Company History

InVeo Designs LLC was formed in 2010 by the former main principals of Lumitron. InVeo's founders had a clear vision of a next generation embedded camera product that was needed in the marketplace and had the skills to make it a reality. The embedded camera core would be based upon a configurable, common architecture that could be interfaced to any sensor technology with up to full HD resolution. Supporting the core would be an extensible list of camera support functions to provide the necessary interface options required by the customer base.

InVeo has developed its' AgileCore™ technology to facilitate this vision. AgileCore™ is a modular embeddable camera platform with extreme functionality and performance. This single architecture can support any standard definition (SD) or high definition (HD) sensor while providing multiple, application specific I/O options. The highly integrated electronics system has the baseline capability to drive and receive data from analog or digital sensors, to perform non-uniformity correction, to filter defective pixels, to provide true color processing (i.e. Bayer demosaic), to provide image enhancement, to provide contrast optimization (AGC/ALC) and to provide digital zoom. Full intensity digital video is available via Camera Link (or CoaXPress) and GigE for machine vision applications. Simultaneously, intensity optimized video may be output to a standard monitor in NTSC / PAL / CCIR or Component analog format or in SMPTE parallel or SD/HD-SDI digital format. An important natively supported option is H.264 compressed video output via Ethernet for security and other bandwidth limited applications (with no additional hardware required). All of this is done via a small form factor / low power board set with integrated embedded operational software.

Ancillary functions supported by AgileCore™ include on-screen display (OSD) overlay, reticle generation, true and pseudo color palette operation (with gamma correction) and Lens-Direct™ technology. InVeo's Lens-Direct™ technology allows AgileCore™ camera electronics to directly drive supported continuous zoom lenses without any intermediate circuitry (UARTs, microprocessors, firmware latency, etc.). This results in superior commanded auto-focus, continuous auto-focus and manual focus operations. In addition, Lens-Direct™ includes focus calibration tables that are continuously compensated to operate over a wide ambient temperature range for smooth zooming under all conditions.

As stated, the AgileCore™ architecture allows for cameras to be constructed from different sensor technologies and formats while maintaining completely consistent electrical and protocol interfaces across the resulting product line. This approach makes system integration easier on the end-user. Once a customer has incorporated one of InVeo's cameras into a product, all other cameras will integrate in the same manner. This is especially important in multi-sensor platforms.

A final note, to maximize opportunities for AgileCore™ sales, InVeo operates using an OEM-driven business model. In other words, InVeo does not supply "standard" pre-configured products but rather applies our camera technology to solve our customer's applications. This includes configuring the AgileCore™ components and then customizing mechanical packaging, interface connections, software protocols and GUIs. Furthermore, InVeo can select the optimal optics for a given application. The result is a camera product that can drop right into an end-user's socket.