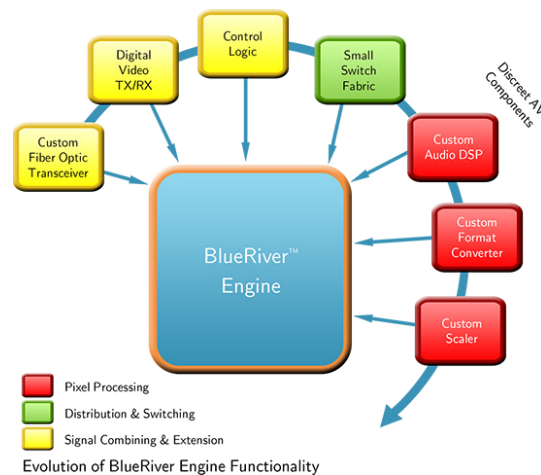# BlueRiver Engine

Advancement in high-definition display technology is changing the way Pro AV equipment is being used to communicate, broadcast, interact, collaborate and advertise in commercial environments. Dynamic digital displays are replacing static billboards and traditional printed signage mediums. While this trend has fueled exponential growth in the professional audio/video (Pro AV) market, the rapid change in consumer electronics technologies driving this growth continues to outpace the technical innovation in complementary Pro AV technologies required for AV signal processing and distribution systems, the backbone of any AV installation.

BlueRiver™ Engine redefines the AV signal processing and distribution system architecture by delivering a single, cost-effective and scalable AV signal processing and distribution unit which integrates the functionality of several costly, discreet, single-function components. The feasibility of such a platform has, so far, been gated by a variety of technical barriers which have been overcome by the unique IP in AptoVision products. The platform delivers 50% to 80% reduction in system costs, up to 10x performance gains over comparable solutions and enables the only products in the world which scale with current and evolving AV signal distribution requirements for ultra-high definition & ultra-high bandwidth video, multi-format support, and advanced pixel processing.

Evolution of BlueRiver Engine Functionality

Compared to current solutions which rely on custom, single purpose devices such as expensive AV fiber-optic transceivers, the BlueRiver architecture leverages inexpensive off-the-shelf components from the networking industry (e.g. FPGAs and optics) combining them with unique technology for use in AV signal distribution applications. While there are some existing solutions using similar architectures, these solutions are unable to offer synchronous and/or genlocked video transmission moreover, they offer limited video bandwidth and have to rely on frame buffers resulting in latencies and artifacts such as frame drops and frame repeats. BlueRiver Engine integrates AptoVision's unique Adaptive BlueRiver Clock Re-synchronization (ACR) technology to overcome these issues.