

## Transforming Patient Care with High Performance Computing at the Edge

**Congatec's COM-HPC module delivers the design flexibility and high performance needed to power AI, graphics, and other data-intensive applications driving modern healthcare systems.**



*"The deep partnership between Congatec and Intel has been instrumental in carrying COM standards forward for the industry, enabling bigger, brighter innovations to emerge while reducing their time to market. Working together, we continue to make it easier for our customers to deploy amazing new healthcare technologies."*

—Christian Eder, director of marketing for EMEA at Congatec and chairman of the PICMG COM-HPC Subcommittee

Medical technologies are rapidly advancing, redefining many aspects of patient care. To remain at the forefront of innovation, OEMs and their customers serving this market must deliver high-performance edge computing solutions that can process near-real-time patient data wherever care is delivered. There is fierce competition across the industry as well, placing increasing pressure on OEMs and their customers to bring new products to market faster.

The new **PICMG COM-HPC** (high performance compute) standard for Computer-on-Modules (COMs) delivers the high performance and I/O bandwidth needed to meet the industry's increasing workload requirements. The COM-HPC's modular design enables the flexibility, scalability, and extensibility required to expedite product development and drive a growing array of new medical devices being deployed at the edge.

### **Challenge: Processing unprecedented volumes of healthcare data at the edge**

Medical data is proliferating at the edge, with graphics, video, AI, and robotics increasingly driving applications. The ability to capture, store, transmit, and analyze near-real-time data is essential today in use cases ranging from medical imaging (e.g., MRI, CT, ultrasound, and X-ray systems) to robotic-assisted surgeries and telehealth platforms. These data-intensive applications must perform in ruggedized environments such as ambulances and mobile medical units, as well as in urban hospitals and clinics. To meet customer needs, OEMs must deliver near-real-time edge computing and the design flexibility required to address the complexities of modern healthcare applications.

### **Solution: COM-HPC, PICMG's new, high-performance standard for COMs**

COMs refer to a class of small- to medium-sized circuit boards containing both processors and memory. COMs are plugged directly into an application-specific carrier board via a standard connector, delivering the processing power and performance characteristics required to power the application in one standard, interchangeable module.

Using a COM in the design process allows OEMs and their customers to focus solely on the system features driving their application, as the chip-level design work has already been done for them. This flexibility dramatically increases design efficiency, enabling easier customization and faster time to market.

Since 2005, PICMG's COM Express concept has been the industry standard for COMs. However, PICMG recently released the higher-performance COM-HPC specification,