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IDT, CERN speed and improve analytics at Large Hadron Collider

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San Jose, CA. Integrated Device Technology (IDT) announced that it has developed with the European Organization for Nuclear Research (CERN) a low-latency platform to speed and improve the management of analytics at the organization's Large Hadron Collider (LHC) and data center. Developed at IDT's Open HPAC Lab and built upon the company's RapidIO technology, the platform marks the first major milestone in the three-year collaboration that IDT and CERN openlab announced in March.

CERN openlab is a unique public-private partnership that accelerates the development of cutting-edge solutions for the worldwide LHC community and wider scientific research. Through CERN openlab, CERN collaborates with leading ICT companies and research institutes.

"The key to achieving better data analytics performance is having superior real-time interconnect with low, deterministic latency," said Alberto Di Meglio, head of CERN openlab. "With its optimized usage of interconnects and processor resources, this first deliverable in our collaboration with IDT will provide us with the baseline computing platform that will scale to enable better usage of our analytics data."

The collaboration was driven by the need to improve overall data acquisition and analysis for the massive volumes of data collected by the experiments on the LHC, the world's largest and most powerful particle accelerator. The LHC produces millions of collisions every second in each detector, generating approximately one petabyte of data per second. This data is vital to CERN's quest to answer fundamental questions about the universe.

RapidIO technology provides a low-latency connection with deterministic transfer between clusters of computer processors, dramatically speeding the movement and processing of data. The new platform is based on x86 processing, a 200 GBaud RapidIO interconnect fabric, IDT's low-power RapidIO network interface card, and CERN's root analytics framework. The initial development is based on a small number of nodes that can be scaled to a much larger number of nodes at rack scale.

In subsequent phases of the three-year program, IDT and CERN engineers will build out larger scale computing systems with optimized performance and begin using the low latency rack scale processing power system to analyze data.

“This collaboration with CERN openlab is about implementing programmable real-time mission-critical data analytics,” said Sailesh Chittipeddi, IDT’s vice president of Global Operations and chief technology officer. “The development of the RapidIO-enabled analytics platform is the first big step toward maximizing the use of all the data generated by the important work conducted at CERN.”

Widely used for 4G base stations, IDT’s low-latency RapidIO products also enable real-time data analytics and data management for high-performance computing (HPC) and data centers.

<http://www.idt.com/landing/open-hpac-lab>

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