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March 31, 2015

CERN and IDT to Collaborate

Off The Wire **Most Read**

SAN JOSE, Calif., March 31 — Integrated Device Technology, Inc. (IDT) announced today that it has entered a three-year collaboration with the European Organization for Nuclear Research (CERN) to use IDT's RapidIO technology to help improve data acquisition and analysis in some of the world's most advanced fundamental physics research. Massive volumes of data are collected by the experiments on CERN's Large Hadron Collider (LHC), the world's largest and most powerful particle accelerator. Teams from IDT and CERN will use the IDT technology to improve the quality and timeliness of this data collection, as well as the initial analysis and reconstruction work at the experiments' data farms and the CERN Data Centre.

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. The RapidIO technology provides a low-latency connection between clusters of computer processors, dramatically speeding the movement of data. Widely used for 4G base stations, IDT's low-latency RapidIO products can also enable real-time data analytics and data management for high-performance computing (HPC) and data centers.

As part of the mandate for the fifth phase of the CERN openlab partnership, several of the LHC experiments are exploring the possibility of moving from custom-built hardware and backplanes to fully programmable heterogeneous computing with low-latency interconnect between large clusters of processors. IDT's current RapidIO 20 Gbps interconnect products will be used in the first stage of the collaboration with an upgrade path to RapidIO 10xN 40 Gbps technology in the future as research at CERN progresses.

"This CERN collaboration is about enabling programmable real-time mission critical data analytics," said Sailesh Chittipeddi, IDT's vice president of Global Operations and chief technology officer. "Since the job spans multiple processors, the interconnect between them has to be ultra-low latency, and our technology—already used across 4G wireless base station deployments worldwide—is ideally suited to CERN's real-time interconnect needs."

Because of the volume of real-time data CERN collects, current implementations are done in custom-built ASIC hardware. Using algorithms implemented in hardware, the data is sampled, and only 1 percent is selected for further analysis.

"The bottleneck for better data acquisition, selection and analytics is superior real-time interconnect," said Alberto Di Meglio, head of CERN openlab. "Our collaboration with IDT to develop a RapidIO-based computing architecture should help solve CERN's real-time data filtering problem, enabling us to select and utilize more meaningful events from the LHC and improve efficiency of analytics in our data center monitoring and operations."

The collaboration is based on industry standard IT form factor solutions suitable for deployment in HPC clusters and data centers. Engineers will use heterogeneous servers based on specifications from RapidIO.org that are targeted towards the Open Compute Project High Performance Computing initiative that IDT co-chairs.

"We established the HPC initiative to service the unique needs of those end users with the highest compute-centric workloads in the industry," said Corey Bell, CEO of the Open Compute Project. "CERN has some of the most stringent workloads for low-latency computing, so this collaboration is a great opportunity to see the benefits of RapidIO in action."

The computing platform used for the collaboration is based on commercially available RapidIO-enabled 1U heterogeneous servers capable of supporting industry-standard servers, GPU, FPGA and low-power 64-bit SoCs, as well as top-of-rack RapidIO switches available from Prodrive Technologies.

About CERN openlab

CERN openlab, which is now entering its fifth three-year phase, is a unique public-private partnership between CERN and leading ICT companies. Its mission is to accelerate the development of innovative new solutions to be used by the worldwide LHC community. CERN openlab provides companies with a framework to test and validate cutting-edge information technologies and services in partnership with CERN.

About CERN

CERN, the European Organization for Nuclear Research, is the world's leading laboratory for particle physics. It has its headquarters in Geneva. At CERN, physicists and engineers are probing the fundamental structure of the universe. They use the world's largest and most complex scientific instruments to study the basic constituents of matter – the fundamental particles.

About IDT

Integrated Device Technology, Inc. develops system-level solutions that optimize its customers' applications. IDT uses its market leadership in timing, serial switching and interfaces, and adds analog and system expertise to provide complete application-optimized, mixed-signal solutions for the communications, computing and consumer segments. Headquartered in San Jose, Calif., IDT has design, manufacturing, sales facilities and distribution partners throughout the world. IDT stock is traded on the NASDAQ Global Select Stock Market under the symbol "IDTI."

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Source: IDT

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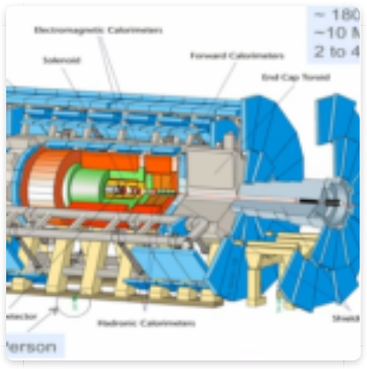

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