Multidimensional, High-Throughput and Low-Latency Connectivity

Overview
GiDEL’s ProceV PCIe FPGA based board combines Altera Stratix V’s powerful, low-power processing unit with up to 325 Gb/s of inter-FPGA low-latency, full-duplex direct connectivity. The ProceV’s cutting-edge technology has no CPU overhead enabling achieving diverse topologies while sustaining very low latency. Examples of such topologies include:
- **3D-Torus** and **6D-Hypercube** with full 6-way connections at 32-50 Gb/s each.
- **12D-Torus** and **24D-Hypercube** with full 24-way connections at 8-12.5 Gb/s each.
- **3-Way Tree** with with 4-way connections at 40-62.5 Gb/s each.
- **14-Way Star** at 8-12.5 Gb/s each.

Key Features
- Flexibility to achieve system optimal topology including **3D** and **12D-Torus**, **6D** and **24D-Hypercube**, **3-Way Tree**, **Star**, etc.
- Unit throughput of up to 325 Gb/s in addition to PCIe
- Light protocol - reducing latency, power and logic resources.
- Flexibility to linearly increase system size: addition of processing units does not reduce unit average performance and power.
- Algorithm selectable throughput / BER enabling No-Retry Architecture.

26 Links
- **CXP**: 12 full duplex transceivers.
- **3 × QSFP**: 3 × 4 full duplex transceivers.
- **2 × SFP+**: 2 full duplex transceivers.