



Balex Technologies' Scalable Data Access System: SDAS

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Monday 1:30 PM; Exhibit Hall Booth #1620

- **Solution for latency**, the most significant problem for high performance computers
- **Patented** technology **accelerates** I/O, data access speeds (latency) **by 100X**
- **Works with existing** hardware & software
- **Reduces costs** by 65-90% for a given level of computing
- **Serious interest** from DoD
- **Global market** >> \$100 billion
- **Seed round** funding in progress – capital raise of \$1.5 million

Ongoing DoD Interest

19S3011 BAA Package

January 7, 2019

Jan 7, 2019

COMBATING TERRORISM TECHNICAL SUPPORT OFFICE/
Technical Support Working Group
(CTTSO/TSWG)

BROAD AGENCY ANNOUNCEMENT (BAA)

R4341 Super Computing Input and Output Nexus (SCION)

In legacy architecture, computer processors submit queries to input or output (I/O) data from permanent memory, waiting for available data transfer pathways - called back-end storage area networks (BE SANs) - to be free of other tasks. This is an inefficient approach for moving large amounts of data and, in super computing applications, is often several orders of magnitude slower than the processors.

Develop and test a solution that enhances data I/O in battlefield mobile supercomputers to accelerate data throughput to and from permanent memory to the Central Processing Unit/Graphics Processing Unit (CPU/GPU) via data transfer pathways. The solution must reduce or eliminate bottlenecks that occur when traffic exceeds the capacity of the data transfer pathways.

SCION must deliver the following capabilities:

1. Improved efficiencies that enable data input/output throughput speeds to meet or exceed 10 TB/s in transfer pathways between permanent memory and CPU/GPU;
2. Improved efficiencies in queries submitted for an available SAN controller to transfer data between CPUs/GPUs and permanent memory which result in latency that is less than 0.01 ms;
3. Reduced power demands in all processing tasks that allow a battlefield mobile supercomputer to operate at or below a threshold of 5 kW power consumption; and
4. The implemented solution must be compatible with commonly used architectures including but not limited to:
 - a. A single BE SAN controller;
 - b. A dedicated FE SANs linked to a dedicated BE SANs; and
 - c. Multiple FE SANs and BE SANs connected in parallel.



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