

For Immediate Release:

## Low-Cost Ticker Plant Achieves Line-speed NASDAQ ITCH Parsing and Processing

Stone Ridge and Impulse C-to-FPGA system makes line-speed ticker processing affordable with ultra-low, deterministic latency

**Bel Air, MD | Bellevue, WA, 21 September 2010** - Impulse and Stone Ridge Technology presented the first public demonstration of a customizable NASDAQ ITCH message parsing system built on the Stone Ridge HFT-X FPGA platform at the Flagg HPC Financial Markets meeting in New York on Monday, September 20, 2010. The Stone Ridge platform processes market data in the same manner as a customized Network Interface Card, maintaining an order spread for an arbitrary number of equities. The system pushes order information to the network every second on receipt of the ITCH heartbeat to measure and compare latency directly with a CPU equivalent. The demonstration graphically shows the lower deterministic latency of the FPGA system vs. the higher variable latency on the CPU. The system employs the Impulse Co-Developer C-to-FPGA compiler to allow system programmability.

Financial organizations strive for microsecond advantages over their competition. With the HFT-X system, Stone Ridge has put "Trigger-to-Trade" capability into the FPGA and bypassed CPU processing entirely. The advantages of FPGAs are extremely low and highly deterministic latency systems that can operate at line-rate speeds. In practical terms this means traders can be confident they are getting the same latency on every trade regardless of market conditions. Variability is greatly reduced on FPGAs since hardware based parsing does not utilize an OS and is not subject to periodic interruption by other system processes. Hardware without an OS has significantly greater parsing capacity.

*"FPGAs are ideal for network processing," commented Vincent Natoli, President of Stone Ridge Technology. "They can operate at line rates with extremely low and deterministic latency. One of the most disconcerting situations for traders occurs when their systems get overwhelmed in market surges. The HFT-X can process data as fast as it can be sent on Ethernet and turns it around with completely deterministic latency measured in a few micro-seconds. Our partnership with Impulse provides a path for C programmability which we think will be very attractive to our clients in the Financial sector."*

*"Network-connected hardware-based parsing offers disruptive, compelling infrastructure changes for financial trading organizations," said David Buechner, Vice President of Impulse Accelerated Technologies.*

The Stone Ridge/Impulse collaboration is an example of hardware/software co-

design where computational resources are optimized for the software problem being addressed. System teams can contact Stone Ridge and Impulse to evaluate this high-throughput, high-data integrity solution for their specific trading applications.

### **About Impulse**

Founded in 2002, Impulse Accelerated Technologies provides C-to-FPGA tools, financial feed and UDP parsing IP, training and custom solutions. Impulse C tools are used by hedge funds to automate their network connected trading systems. Impulse products were initially developed in United States National Labs and today are used by national security, financial, defense and automotive suppliers worldwide with over 450 licenses sold. [www.ImpulseAccelerated.com](http://www.ImpulseAccelerated.com)

### **About Stone Ridge Technology**

Founded in 2005, Stone Ridge Technology employs a team of physicists, computer scientists and electrical engineers and provides products and services for high-performance computing on heterogeneous platforms. Headquartered in Bel Air, Maryland, the company markets a line of reconfigurable computing systems based on hardware of its own design. [www.stoneridgetechnology.com](http://www.stoneridgetechnology.com)

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