



High Performance FPGA Market Data Solutions

Ultra Low Latency Market Data for Everyone

STAC - May 4, 2023

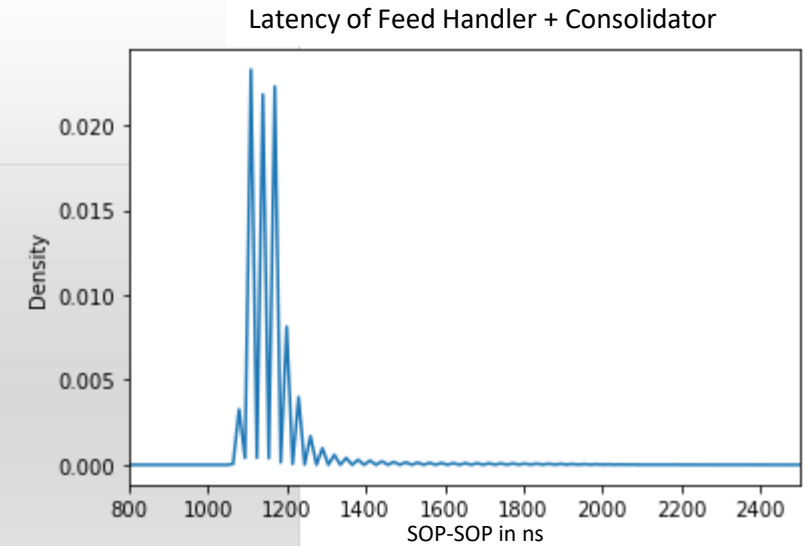
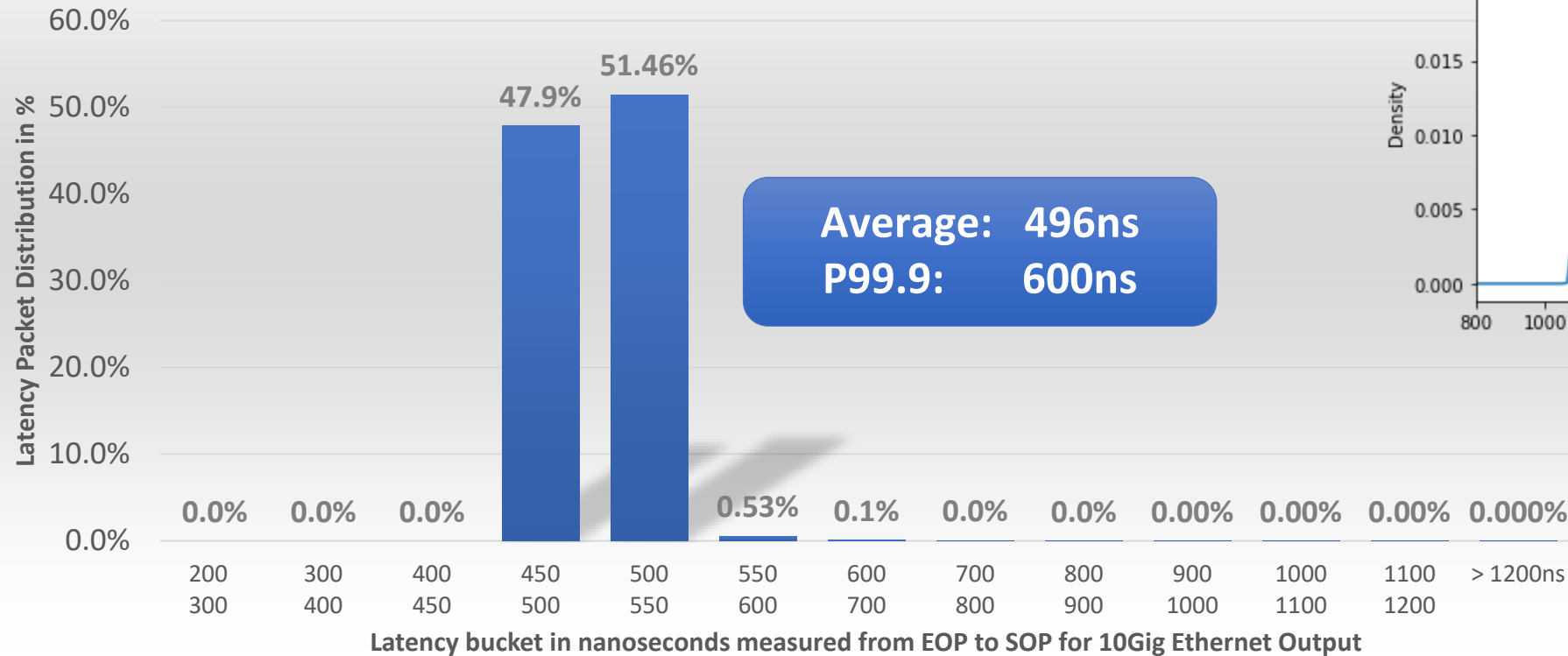
Cliff Maddox, Director of Business
Development

Our FPGA based solution is Fast and Deterministic

Book Consolidation on Main US Equities Markets

Entire Instrument Universe - 5 Level Aggregation

Full Day from March 5th, 2021



Not a STAC Benchmark

Two Models

Single box algo



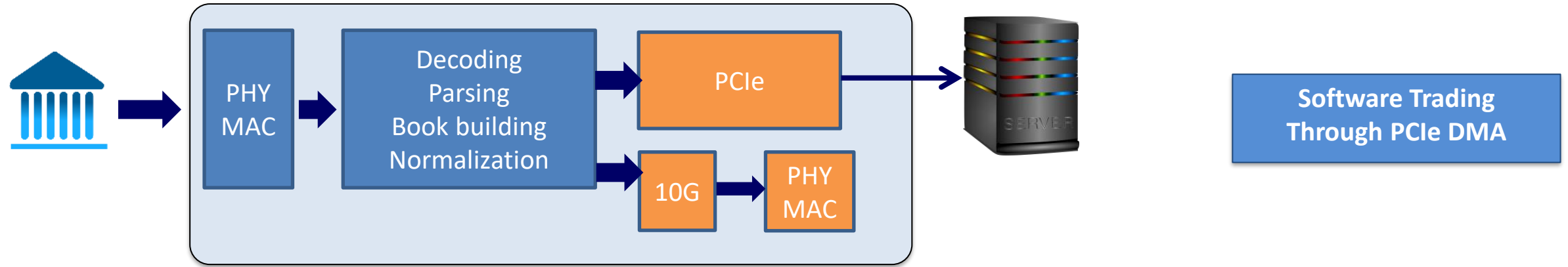
- Direct PCIe Interface
- Very high bandwidth
- Ability to spread across multiple message buffer
- Second network output for Risk, capture or anything else

Enterprise Deployment

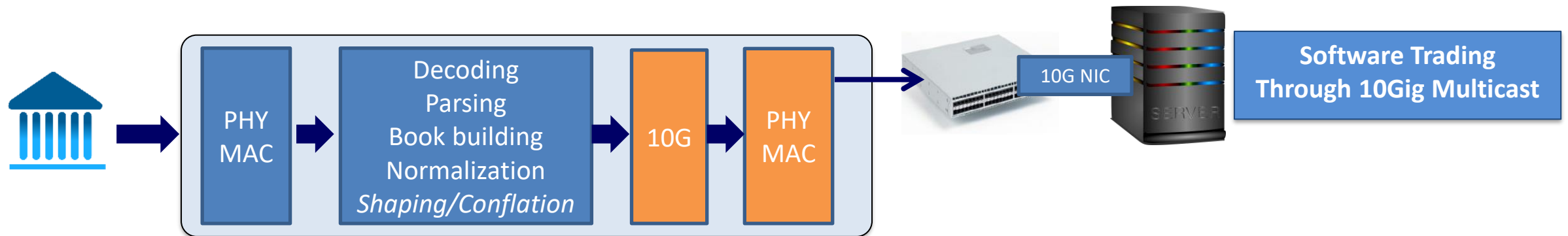


- 4 physical output interfaces per market 10/25/40Gb
- 4 cards per appliance
- 32 Configurable multicast per Interface
 - Symbol
 - Exchange
 - Message Type
- Entire US Equity deployment on a box

NOVATICK Offers Three Ways to Distribute Market Data



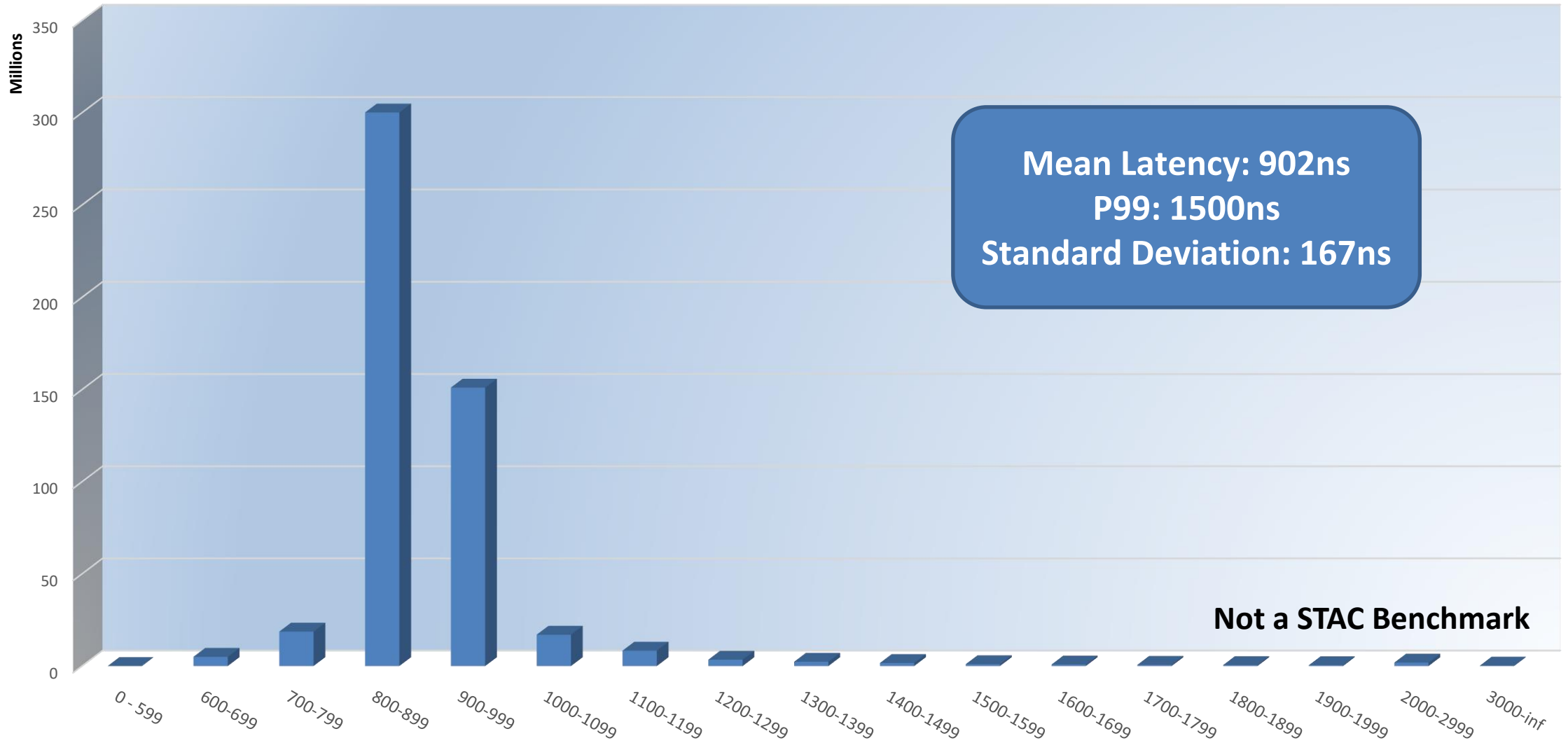
900ns



1100ns-1400ns

Not a STAC Benchmark

End to End Latency Nasdaq PCIe into Software Application



Full Function Enterprise Scale Market Data Platform

- Full Exchange Recover A/B Arb + Retransmission support – heavily used in NJ Triangle
- Client-Side Recover – Refresh loop
- Queryable Symbol Master
- NovaSparks Wire Format (NSWF) available to customers
- C++ Decoding and L2 API
 - Filtering
 - Kernel bypass support
 - Hides changes to underlying format changes
 - High Bandwidth low latency
- Enterprise Monitoring Support
- DACS Integration for entitlements



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