

**NOVAPARKS**<sup>™</sup>

*Pure FPGA Market  
Data Solutions*

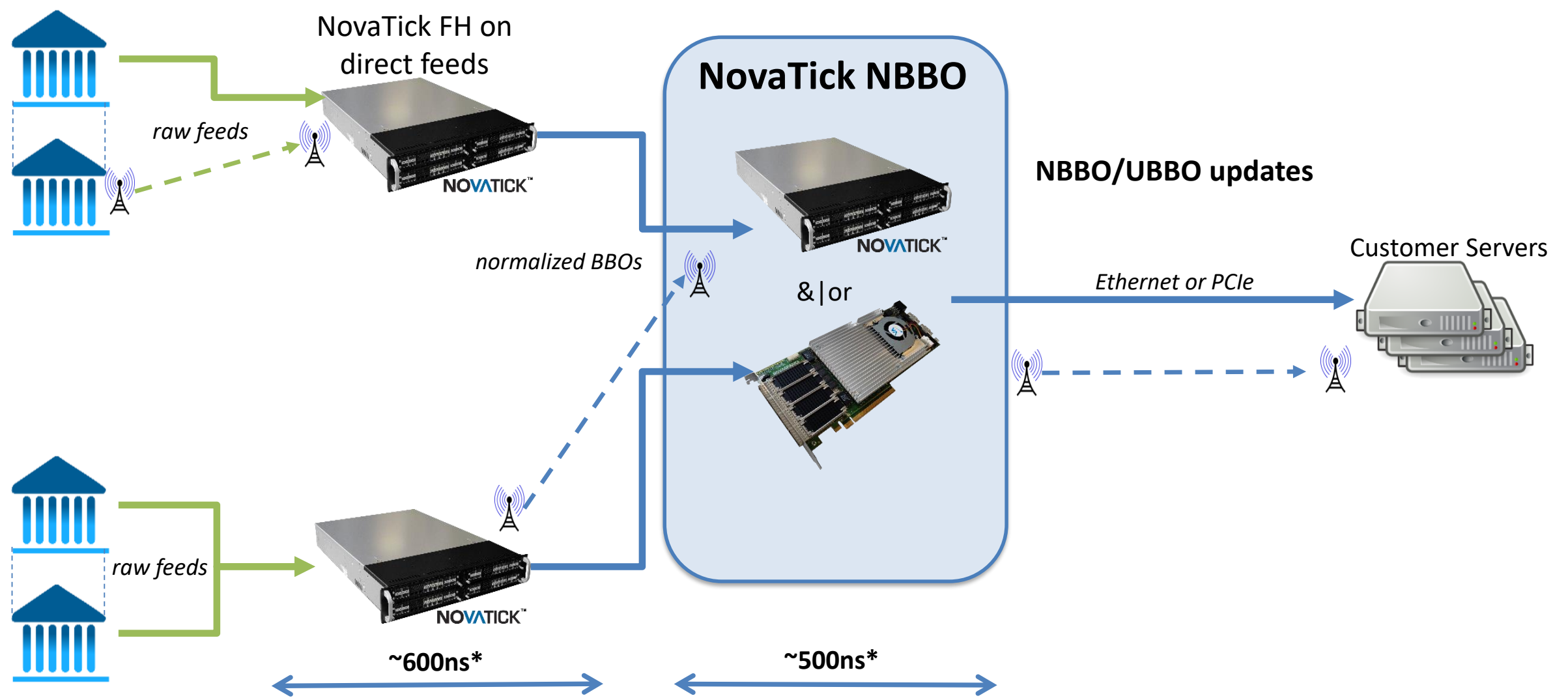
# Full FPGA NBBO and ETF Calculators

*Cliff Maddox*

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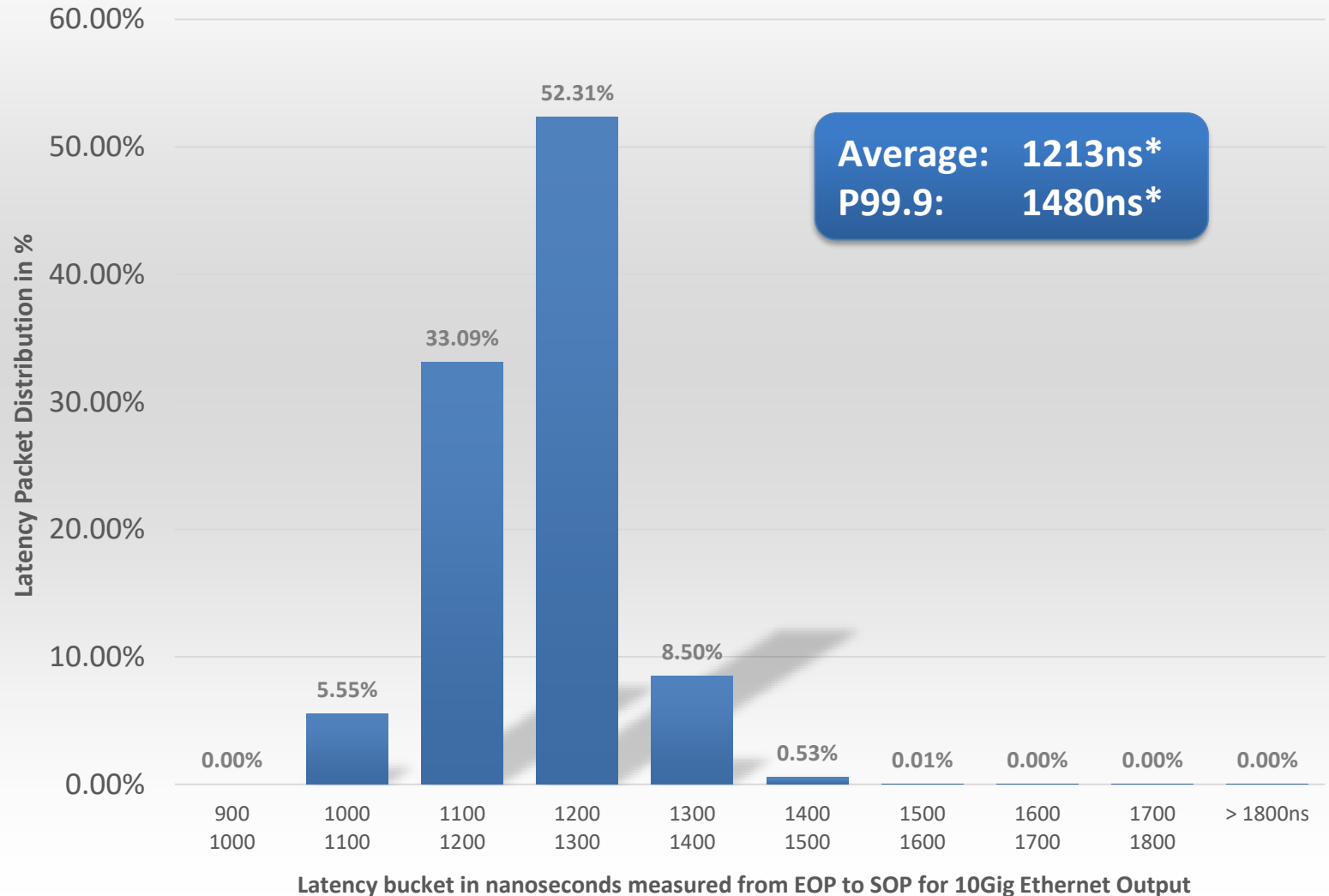


# NBBO Calculator



# Consolidated US Equities on NovaTick Appliance

Book Building + NBBO - Entire symbol universe for  
NASDAQ 3 markets, CBOE 4 markets, NYSE 3 markets

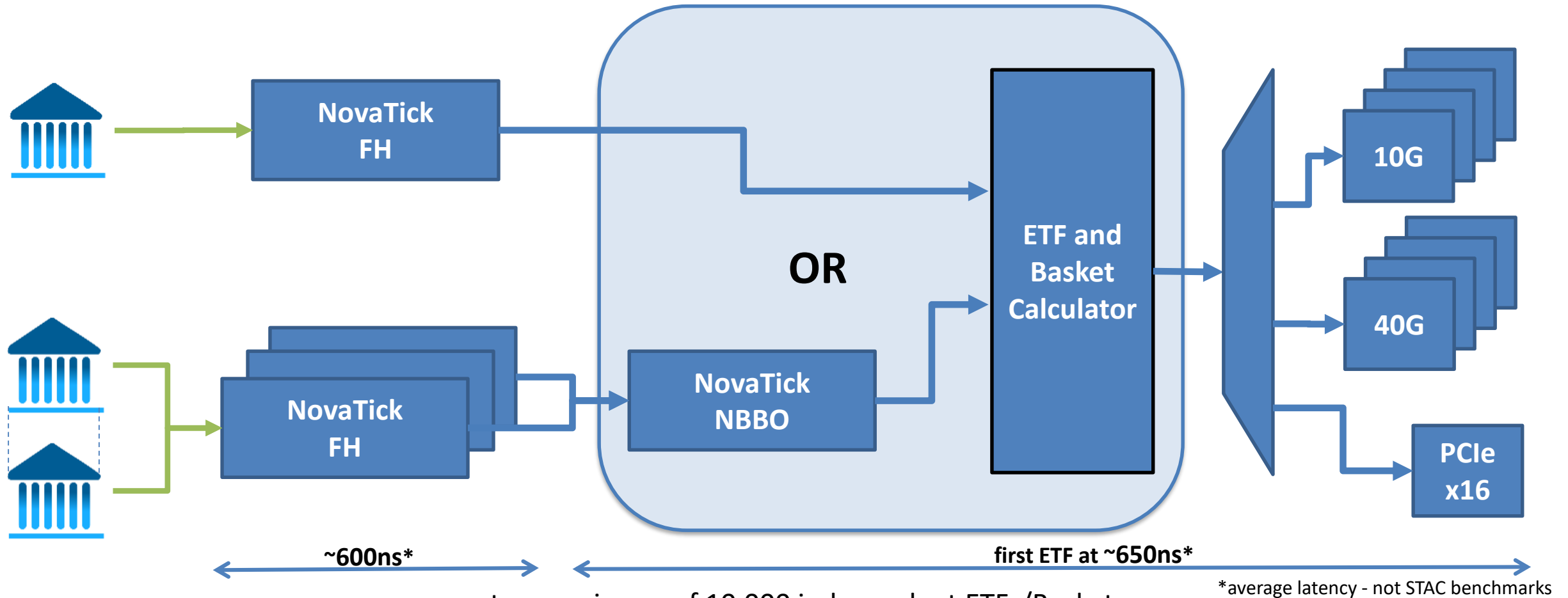


## NBBO Features

- **ultra low latency** consolidator: 500ns\*
- **ultra high throughput**: a quote every 6ns
- NBBO publication options:
  - aggregated quantity
  - participant markets
  - detail of quantity per participant
  - N levels (N from 1 to 5)
- can update up to 5 synthetic UBBOs per symbol
- user can dynamically during the day:
  - update set of markets of any UBBO
  - add new UBBO on any symbol
  - globally enable/disable any market
- NovaTick NBBO possible applications:
  - US, Canada, Europe, Japan, Australia NBBO
  - SIP like NBBO (on full lot) on US equities with SIP as backup
  - cash Equity Options consolidation
  - ...

\*not STAC benchmarks

## ETF Calculator



- supports a maximum of 10,000 independent ETFs/Baskets
- average 500 symbols per ETF, some ETF can have thousands
- internal throughput can reach 16 ETFs every 3ns
- ETF updates can be spread on lots of port (10G, 40G, PCIe x16)
- ETFs and weights can be added and modified dynamically

# Conclusion

- **NovaTick, an enterprise market data platform:**
  - 70 markets, all symbols, latency under 800ns (600ns equities/futures, 450ns CME, 800ns Options)
  - extremely scalable: all US Equities in a box, multiple US Option markets in a box
  - consolidated feeds in any region -- 500ns
  - thousands of ETF/basket prices -- 200ns
  - full tick-to-trade platform on a PCIe card with latency from 200ns to 500ns
- We are not just a low latency provider: ***Use us for all your enterprise market data needs!***
- check us off on the response card and look us up ;-)