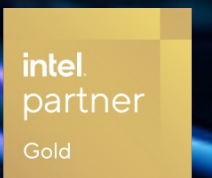


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Unleashing Speed

High Performance in HFT with
Hybrid FPGA and Software Solutions

Tom Coombs
VP Sales and Business Development



Why Hybrid Solution?

01

FPGAs **accelerate** specific functions and algorithms, while the CPU handles general-purpose and **complex** trading algorithms.

02

Balance the flexibility of **software-based** solutions and the performance of **hardware-based** solutions.

03

Highly flexible and **easy to customize**, resulting in ultra-low-latency **performance tailored** to trading needs and preferences.

All-FPGA:
Ultra-low latency but higher upfront costs.

All-CPU:
Moderate cost, versatile, but may sacrifice latency.

How to Unleash ULL Performance

Divide for ULL performance

SOFTWARE

- Better suited for complex processing tasks
 - Market handshakes
 - Algorithmic processing/AI
- Faster development cycles

FPGA

- ULL Protocol engines (TCP/UDP)
- OCA for preprogrammed transactions (cancellations, orders)
- OCA for symbol caching

ULL FPGA Framework

Innovatively resolve the trade-off between speed and flexibility in ultra-low latency systems.

Utilize your current infrastructure as you transition to a more updated platform.

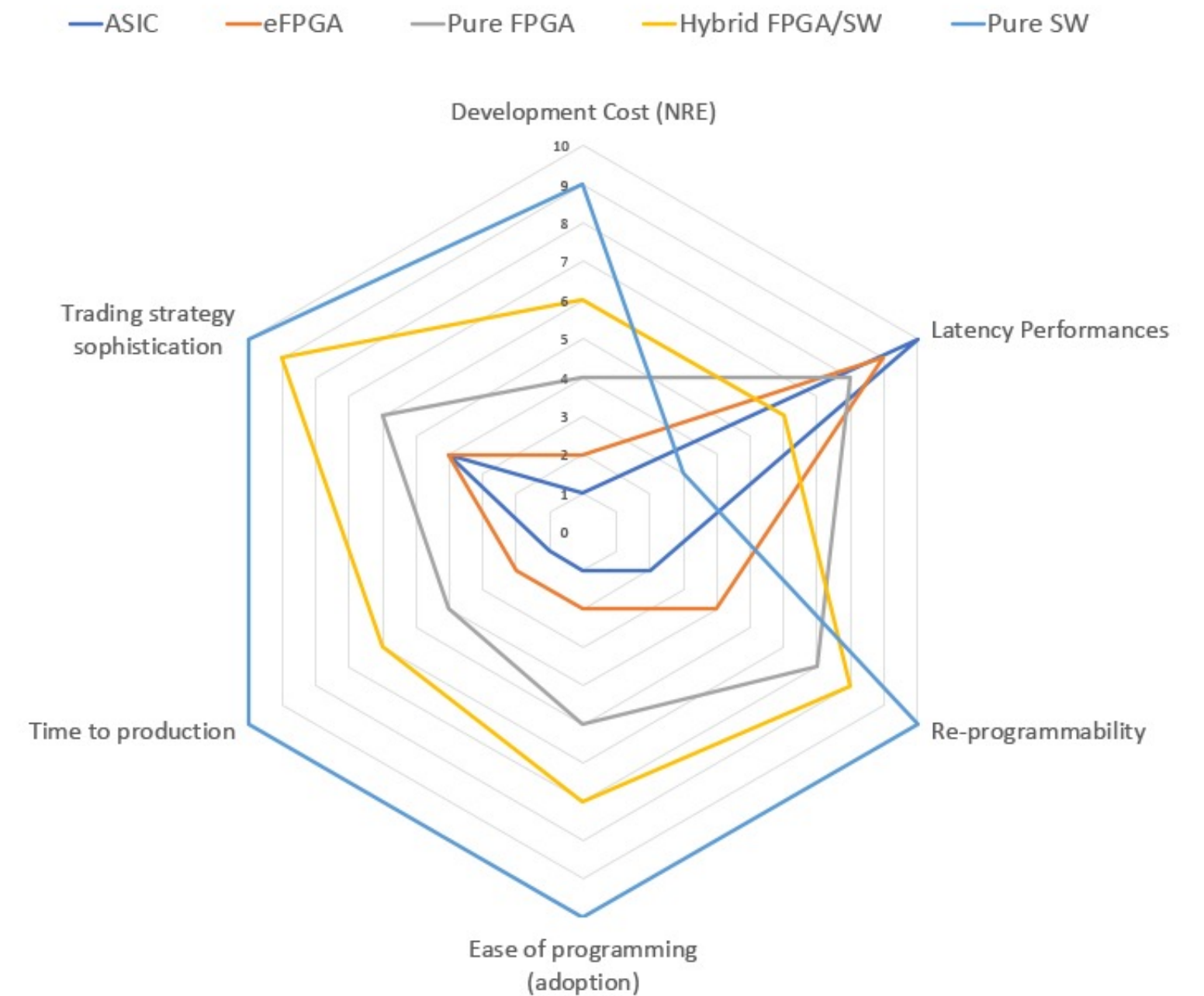
SOFTWARE

Hybrid

FPGA

Ensure that your system maintains high-performance levels over time while making it easy to upgrade without disrupting existing operations.

Benefits and limitations of different processing options



ULL FPGA Framework

Overview. / Features Functions

10G Ethernet
MAC/PCS

16b

Wire to Wire Round-Trip Latency
20.2ns

32b

Wire to Wire Round-Trip Latency
34.1ns

ULL TCP/IP, UDP/IP
Offload Engine

Hardware
acceleration

SoP=SoP
6.2ns Tx

ULL PCIe DMA
Controller

Bidirectional
data transfer

Roundtrip Time Under
640ns

Full RTL
implementations

- Layer 2,3,4 (ARP, IPv4, ICMP, TCP, UDP)
- FPGA development and simulation environments
- Alveo x3522pv reference design
 - Support Xilinx Ultrascale+ FPGAs

Summary

Meet our team at our table

Discuss your applications and how
the Orthogone Framework may help

Contact Us for 30/60 days evaluation license

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