

OCP – ODSA Project

Commercialization Use Case



Fourth Generation SmartNIC Architectural Imperatives

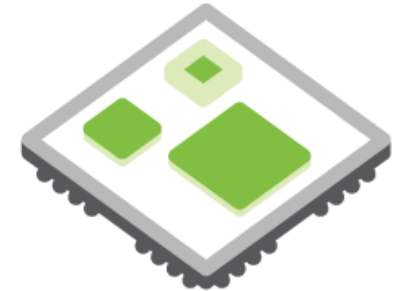
Jim Finnegan

Why ODSA at Corigine &

Motivation to use OCP/ODSA philosophy and standards

- Netronome and Corigine are building Fourth Generation SmartNICs which have several specific requirements including..
 - ❑ **Flexibility** – ability to integrate specialized subsystems components from different vendors e.g. I/O chiplet, datapath processors, management plane processors, crypto, ML/AI cores
 - ❑ **Composability** – heterogeneous elements from 3rd parties and different foundry nodes
 - ❑ **Open standards** – not just interface standards, but also open instruction set (RiscV)
 - ❑ **Scalability** – link speeds scaling from 25G to nX100Gbps, processing and bandwidth to assure line rate without blocking or dropped packets (including very large packets)
 - ❑ **Power-Performance-Area** – Denard Scaling and Moore's Law dictate that a chiplet based implementation is vastly superior to a monolithic implementation from PPA, yield and cost perspectives

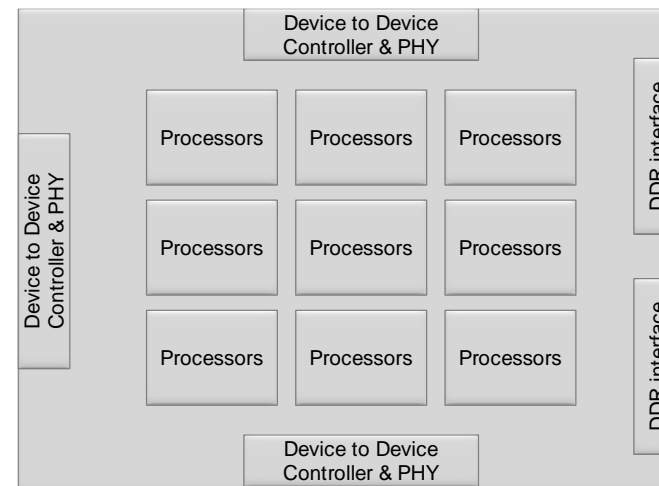
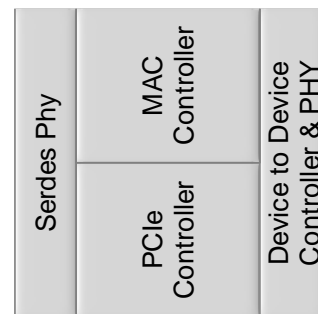
- Netronome has been involved with ODSA
 - ❑ Since inception in 2019
 - ❑ Early evangelists / proselytizers



ODSA Use Case at &

Product intersection with ODSA specifications

1. Implementing multiple interfaces using D2D controller with BOW phy supporting non-blocking line rate up to 20 X 100Gbps serdes
2. Scalable datapath processors (>1000+ core MIMD configurations)
3. Target process is advanced TSMC node/ product availability 2023; early access on Corigine MIMIC™ emulation platform



What is Next for ODSA at &

- Roadmap using (truly) open standards to offer a range of SmartNICs from 2x25G to 800Gbps
 - Propagate chiplet methodology to adjacent markets e.g. SDWAN etc.
- Composable Architecture that enables the integration of 3rd party chiplets with domain specific capabilities e.g. ML, photonic I/O chiplet etc.
- Demonstrable solutions based on heterogeneous technology (different process nodes, different foundries, different vendors)
- Early Ecosystem enablement through MIMIC™ emulation platform of different chiplets
- Practical establishment of a chiplet marketplace through pragmatic demonstrable implementations (substrate modelling, packaging, test etc.)
- Provide Technical Leadership for the APAC ecosystem, establishing a regional chapter under the auspices of the OCP/ODSA leadership





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Questions