

## **Odin<sup>™</sup> CPO Platform Overview**

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EPIC Online Technology Meeting on CPO Roadmap By: Hojjat Salemi

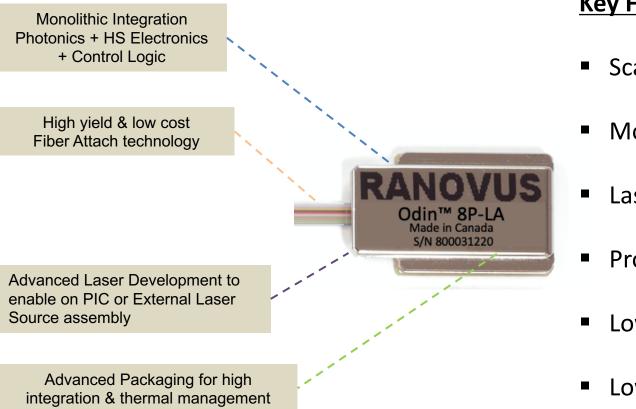
# How to Scale Compute & Minimize TCO?

# RANOVUS

Moore's Law Definition? **Available Options** Doubling Performance / 2 years 48 Years of Microprocessor Trend Data  $10^{7}$ Transistors Process Node: 5nm, 3nm, ... (thousands)  $10^{6}$ **Application Specific Compute** Single-Thread 10<sup>5</sup> Performance  $(SpecINT \times 10^3)$ Disaggregation  $10^{4}$ Frequency (MHz)  $10^{3}$ Heterogeneous Packaging **Typical Power** 10<sup>2</sup> (Watts) **Co-Packaged Optics** Number of 10<sup>1</sup> Logical Cores 10<sup>0</sup> 1970 1980 1990 2000 2010 2020 Year

Original data up to the year 2010 collected and plotted by M. Horowitz, F. Labonte, O. Shacham, K. Olukotun, L. Hammond, and C. Batten New plot and data collected for 2010-2019 by K. Rupp

# Odin<sup>™</sup> CPO Platform Overview Scalable Optical Engine



## Key Features

Scalable Optical Engine

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- Monolithic Integration
- Laser Attached or ELS
- Protocol Agnostic
- Low Latency
- Lower Power & Cost
- Tier1 Ecosystem

# Importance Of Standards & Tier1 Ecosystem **RANOVUS**



### OIF Launches Co-Packaging Framework Implementation Agreement Project

November 10, 2020

Press Releases, Press Room

### Fabs:

- Taking advantage of 300mm high-volume CMOS manufacturing
- Mature PDK and CAD tool support
- Qualified IP, Fiber & laser Attach
- Flip-chip compatible

#### Laser Technology

- Single wavelength and Multi-wavelength
- High efficiency high temperature operation
- Qualified Laser attached

### **Connectors**

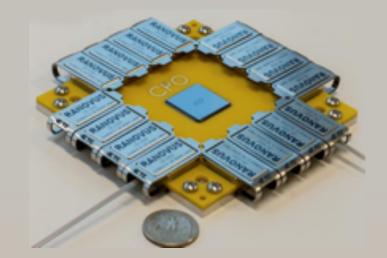
- LGA Sockets
- Optical Connectors
- Fiber Array / Ribbons

### <u>OSATs</u>

- Fiber & Laser Attach
- High Volume Tests with Optical & Electrical Capabilities
- High volume manufacturing of Optical Engines
- Test Equipment



Thank You!



# **RANOVUS Odin**<sup>™</sup>

Multi Terabit platform for optical interconnect