IOWN INTEGRAL

NTT R&D FORUM 2024

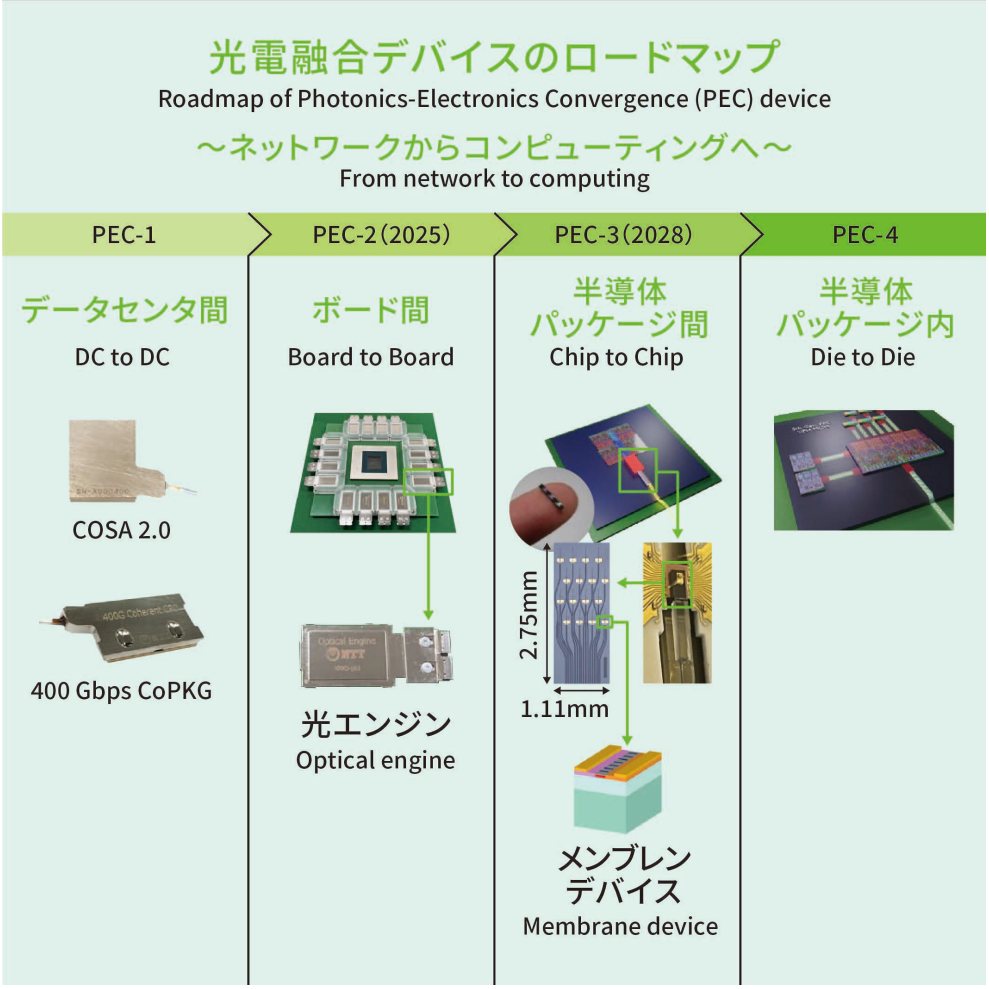
DEVELOPMENT

δ 03-02

Photonics-Electronics Convergence devices (PEC)

PEC contribute to low power consumption in everything from communications to computers

#Business Resilience



///Technical Issue

Electrical wiring alone has limitations in communication distance and cannot connect a large number of LSIs.

///Research Goal

Connecting remote LSIs with optical signals for low power consumption supports realization of optical disaggregated computing.

---Technology

- World's top level compact and highly efficient optical semiconductor device technology (Membrane photonics)
- Technology to connect an electric chip and an optical fiber on the same chip or substrate

---Novelty

- Our proprietary technology for fabricating optical semiconductor thin films (membranes) on silicon substrates provides a high-speed light source with low power consumption.

---Applicable Business

In the information and communications industry, PEC-1 applies to inter-data center communication, PEC-2 to inter-board communication, and PEC-3 to inter-semiconductor package communication. PEC-1 is already available from NTT Innovative Devices, PEC-2 will be available in FY 2025, and PEC-3 will be available at the end of FY 2028.

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