Beschleunigung der Breitbandversorgung in der Netzebene 4

FRK-Tagung Leipzig / 11.09.2025

Svend Jessen

Broadband Solution Manager - Harmonic

Bestehenden NE4 Netze

USE CASE

Upgrade ohne aufwand

BEWÄLTIGTE HERAUSFORDERUNGEN

Langsam und teuer Neuverkabelung der Glasfaser
oder keine Option

Begrenzte Geschwindigkeiten
Begrenzte Gesamtbandbreite

NE4-Besitzer fordert separate Lösungen
oder nur Koax

JEDE TECHNOLOGIE, JEDES PROVISIONING,
SUPPORTING ALLE CM & ONT

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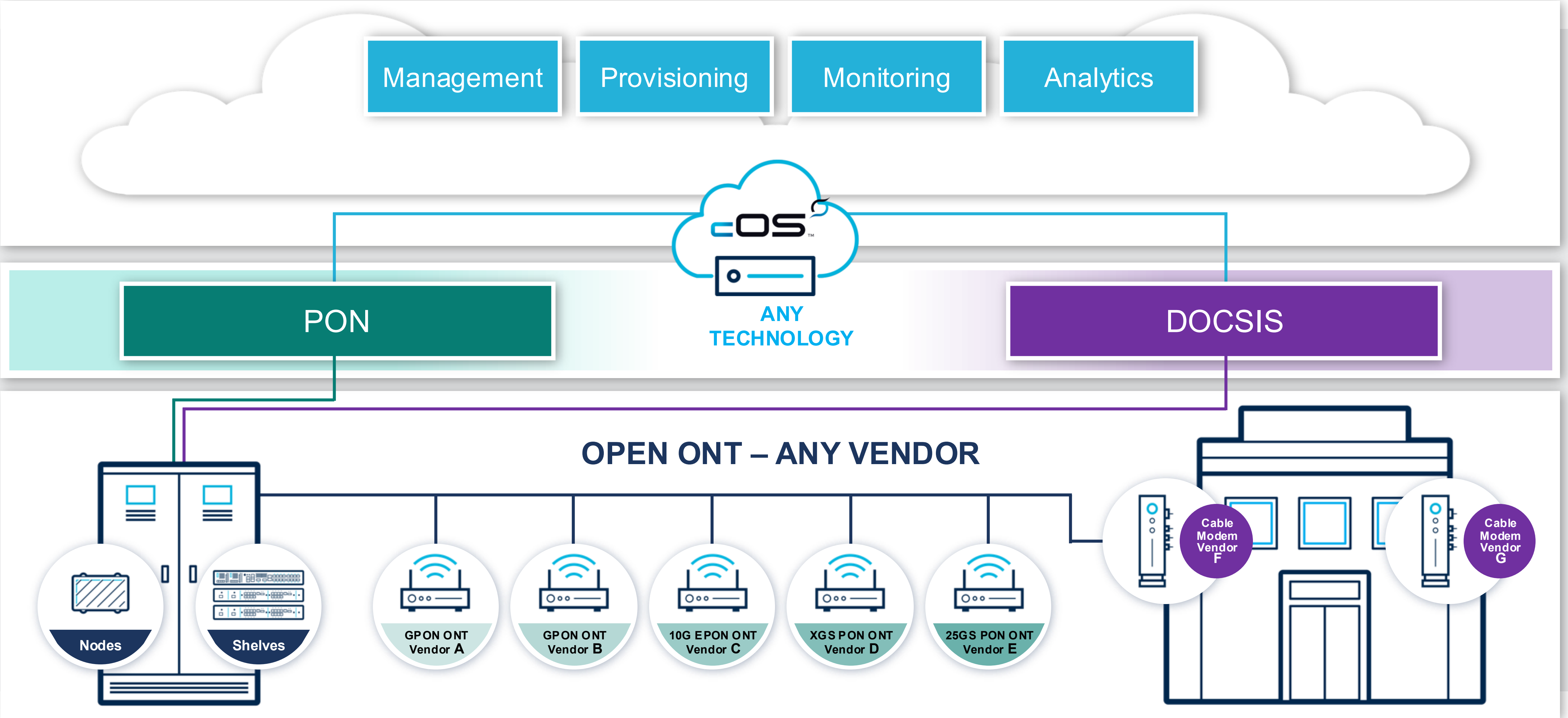
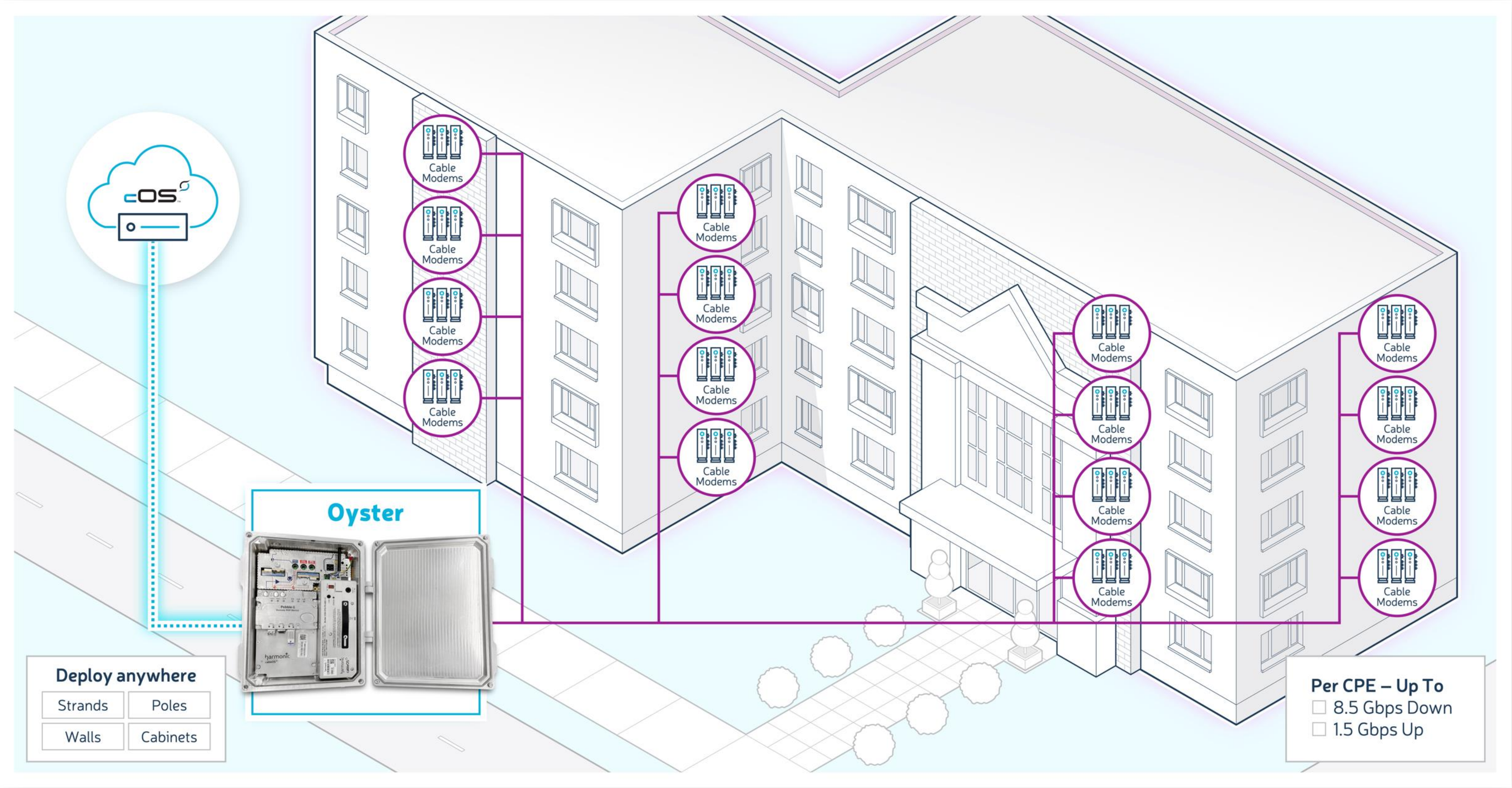


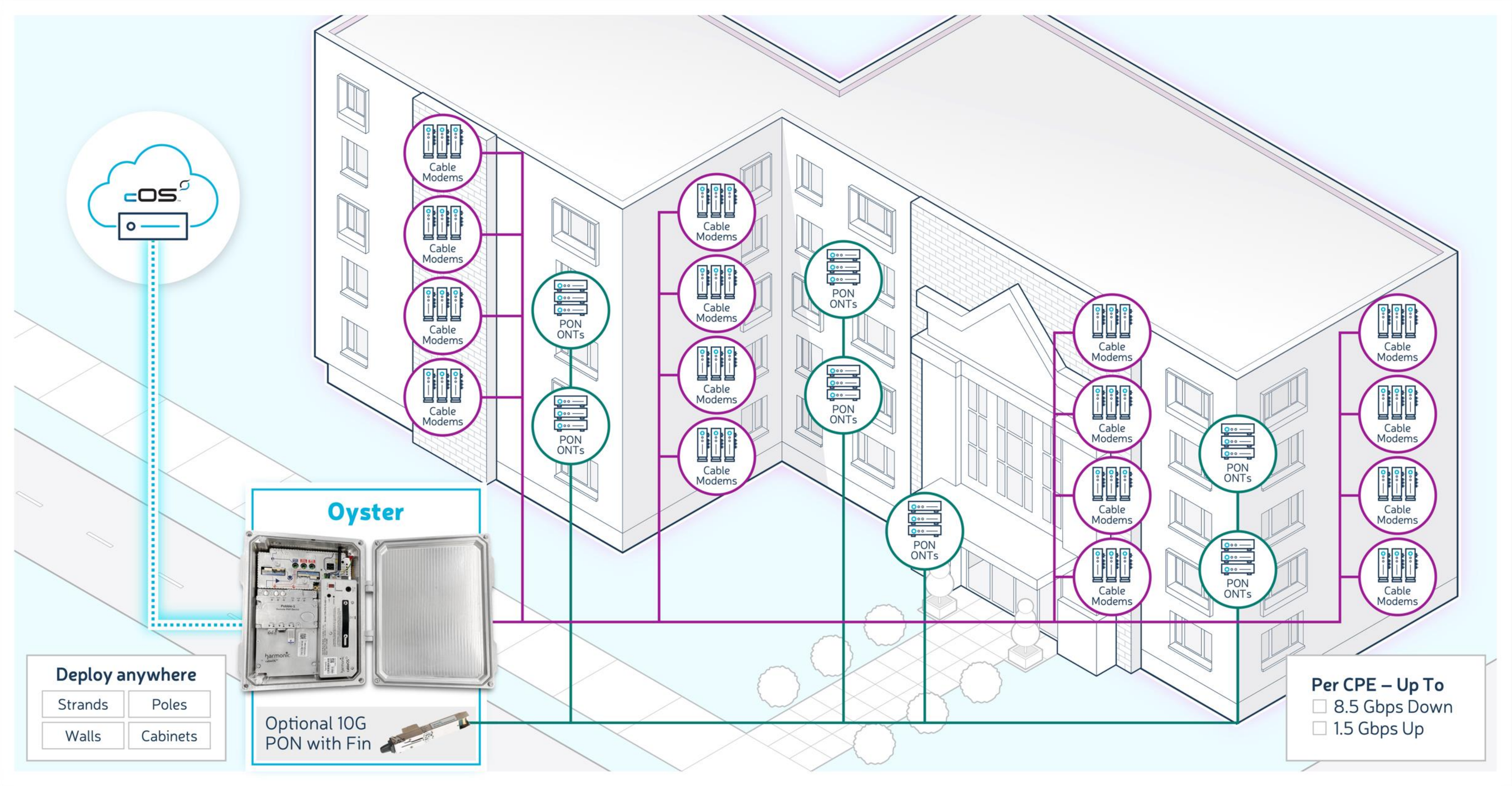
OYSTER NODE HIGHER-DENSITY MDUs



Optical Uplink
Optionally use PON SFP+ ONT

Coaxial

OYSTER NODE HIGHER-DENSITY MDUs



Optical Uplink
Optionally use PON SFP+ ONT

Fiber

Coaxial

NE4 mit geringeren Modemdichte

USE CASE

NE4 mit geringerer Modemdichte, die nur über Koaxialkabel verfügen

BEWÄLTIGTE HERAUSFORDERUNGEN

Langsam und teuer Neuverkabelung der Glasfaser
oder keine Option

Nicht kosteneffiziente
bestehende Lösungen bei geringer Dichte

Einzelne oder weitverzweigte
NE4-Netzwerke

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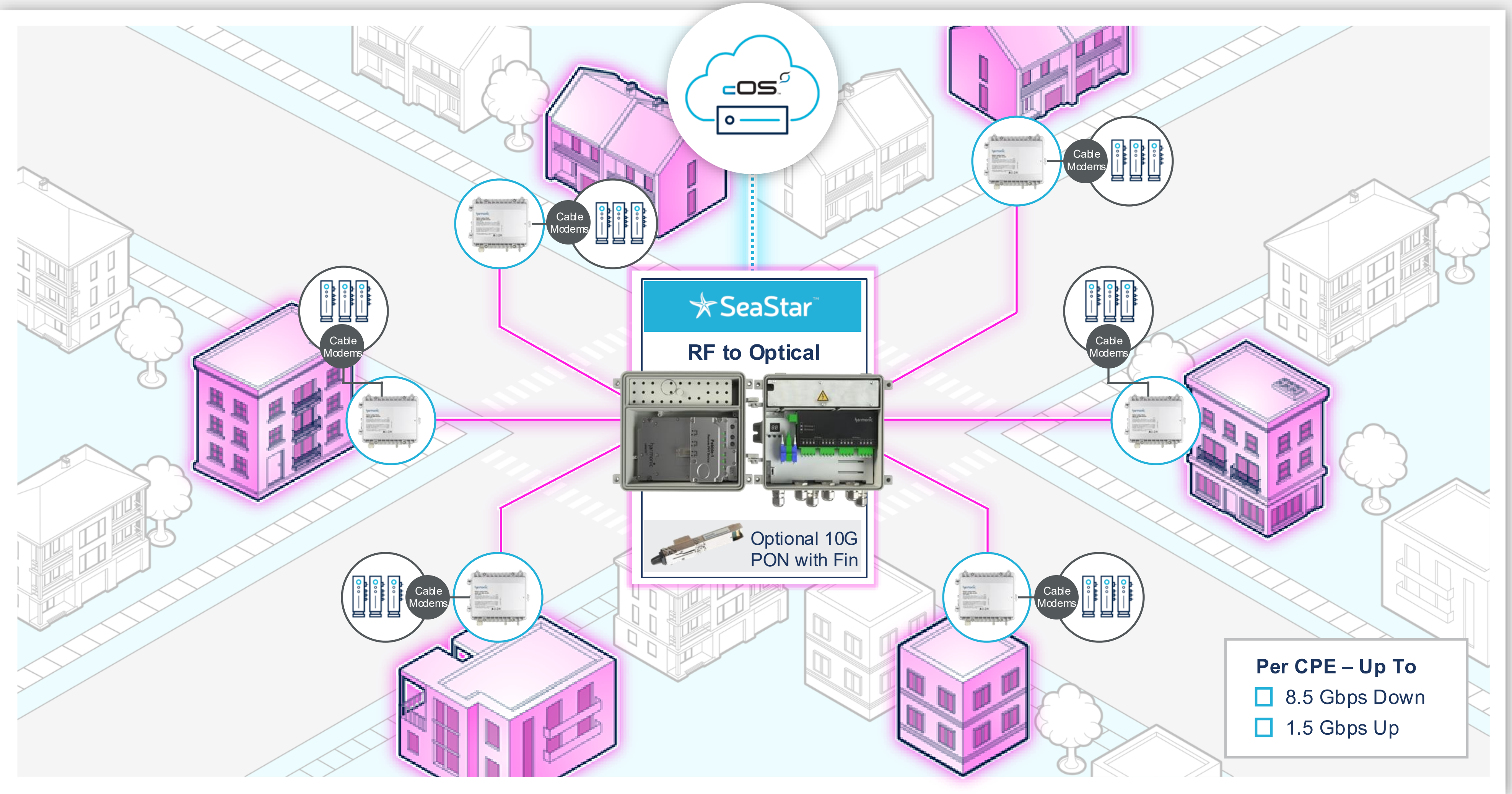
Video Link:

https://www.youtube.com/watch?v=xafqkUHY9po

SEASTAR LOWER-DENSITY MDUs

CABLE

- Avoid the cost of RPD per MDU
- Multi-gig speeds with DAA & vCMTS
- Eliminate HFC
- Enable transition to fiber



Optical fan-out (1:16, up to 5 km)

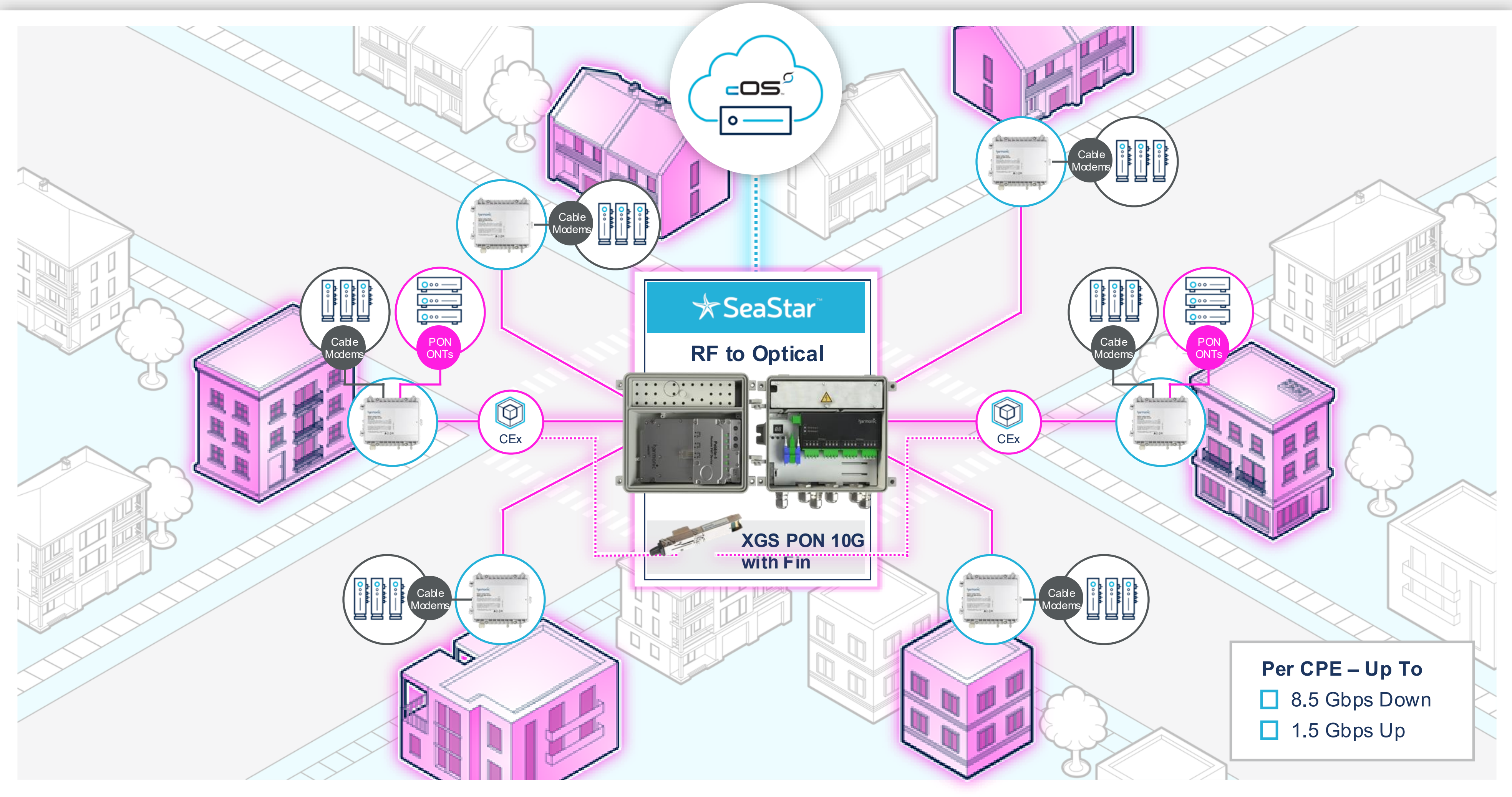
In-building Optical Nodes Optical to RF Converter

Optical RPD Uplink Optionally use PON SFP+ ONT

SEASTAR LOWER-DENSITY MDUs ADD INTERNAL OLT WITH FIN

CABLE

- Avoid the cost of RPD per MDU
- Multi-gig speeds with DAA & vCMTS
- Eliminate HFC
- Enable transition to fiber



Optical fan-out (1:16, up to 5 km)

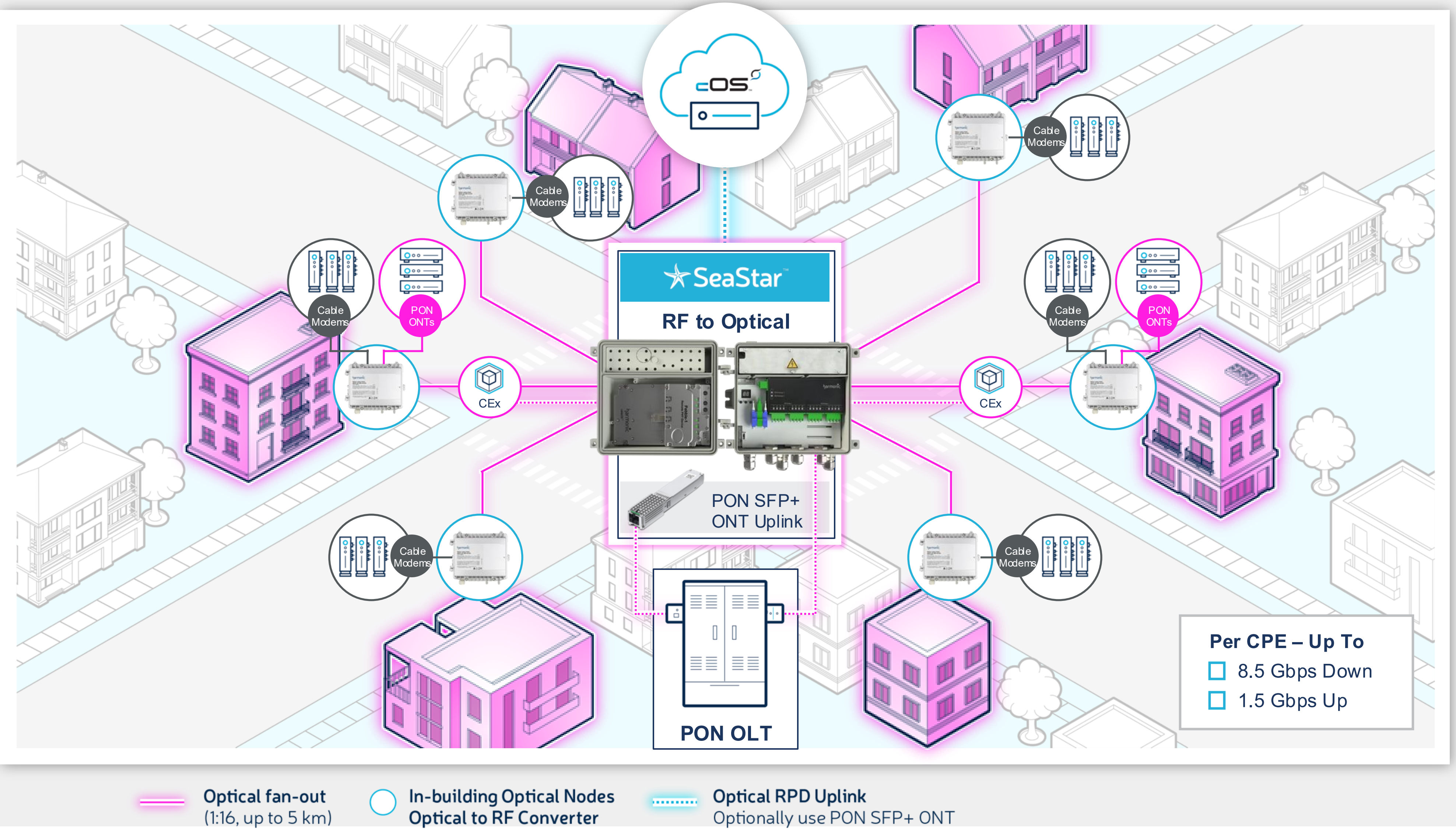
In-building Optical Nodes Optical to RF Converter

Optical RPD Uplink Optionally use PON SFP+ ONT

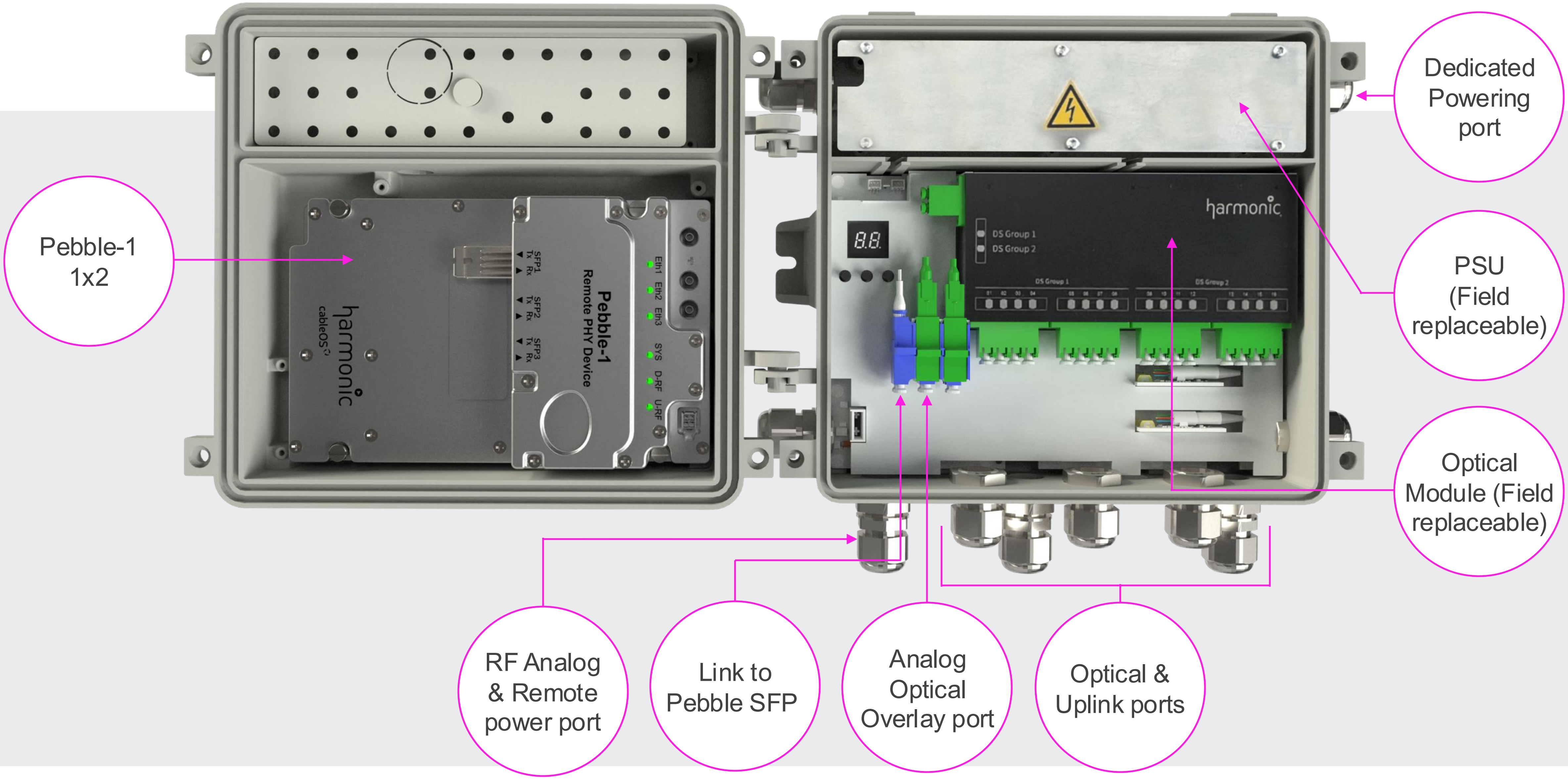
SEASTAR LOWER-DENSITY MDUs
EXTERNAL OLT & PON UPLINK

CABLE

- Avoid the cost of RPD per MDU
- Multi-gig speeds with DAA & vCMTS
- Eliminate HFC
- Enable transition to fiber



SEASTAR NODE INTERNALS

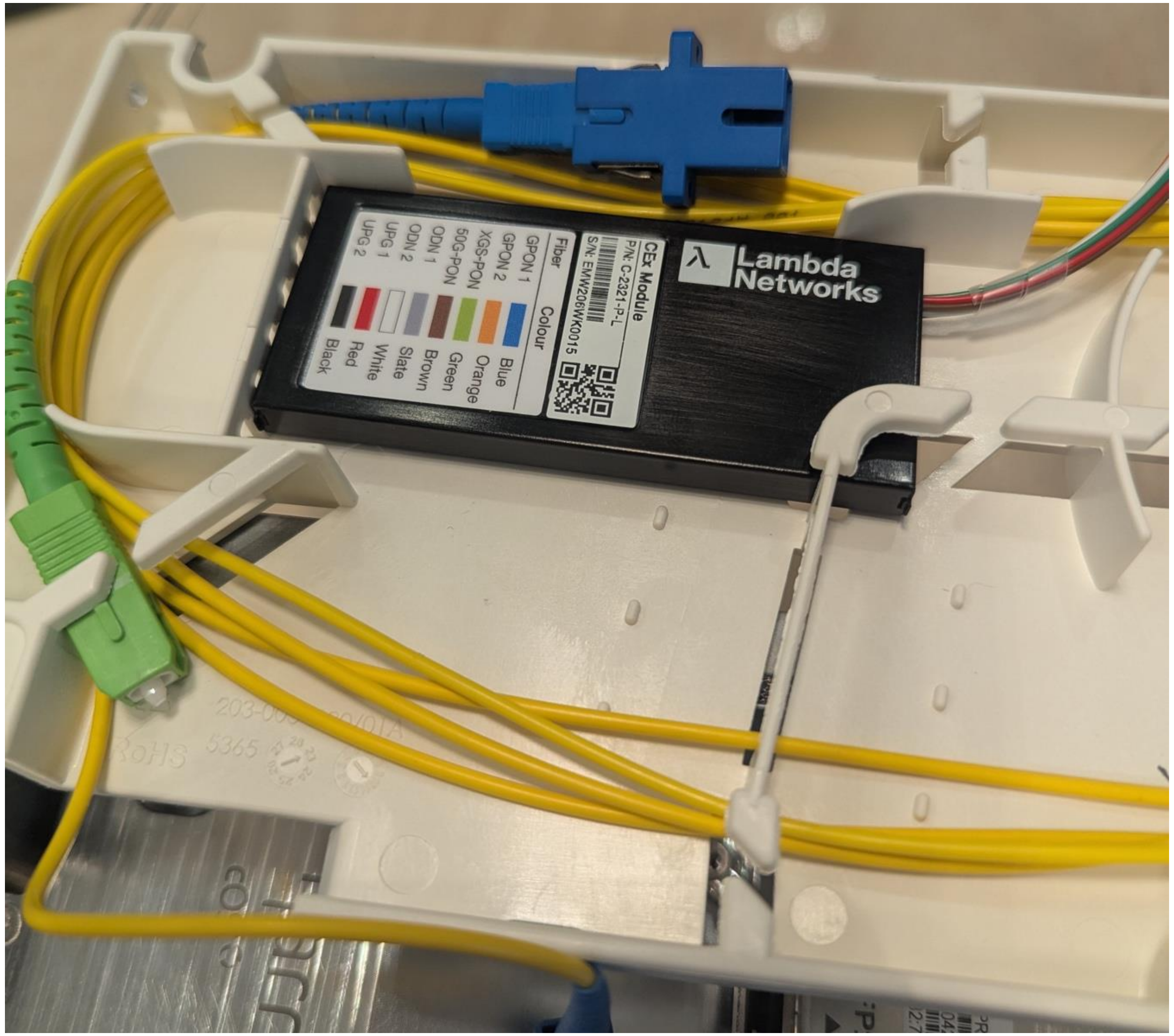


SEASTAR SOLUTION OVERVIEW

Example Coexistence Element

Coexist with one fiber to MDU

- Optical RF Node
- GPON
- XGS PON
- Future Pon



SEASTAR TECHNICAL SPECIFICATIONS HIGHLIGHTS

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SEASTAR NODE

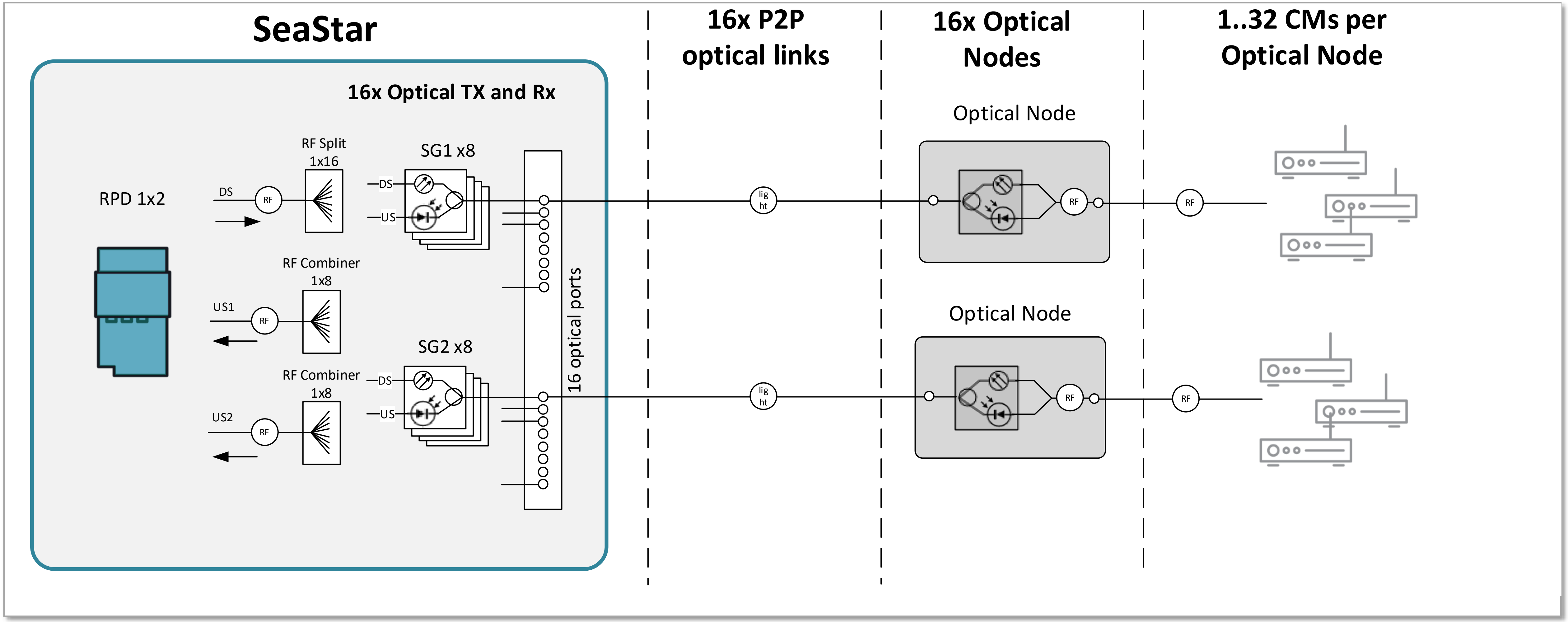
Attribute	Spec
GbE interfaces	3x SFP+ (10G)
PON port	1 x “Fin-1” R-OLT (optional)
Optical DS	16 splits @ 1550 nm, -1.0 dBm
Optical US	CWDM channels 1260-1620 nm, on same fiber as DS
Analog video overlay	Supported via both Optical and RF inputs
Powering	Remote 28-90VAC Local (110/230VAC): In 2026:
Power hold-up	Up to 6 sec.
Mounting	Strand / Pedestal / Wall
Control	Fully integrated with cOS

MINI ANALOG OPTICAL NODES (DCT DELTA Example)

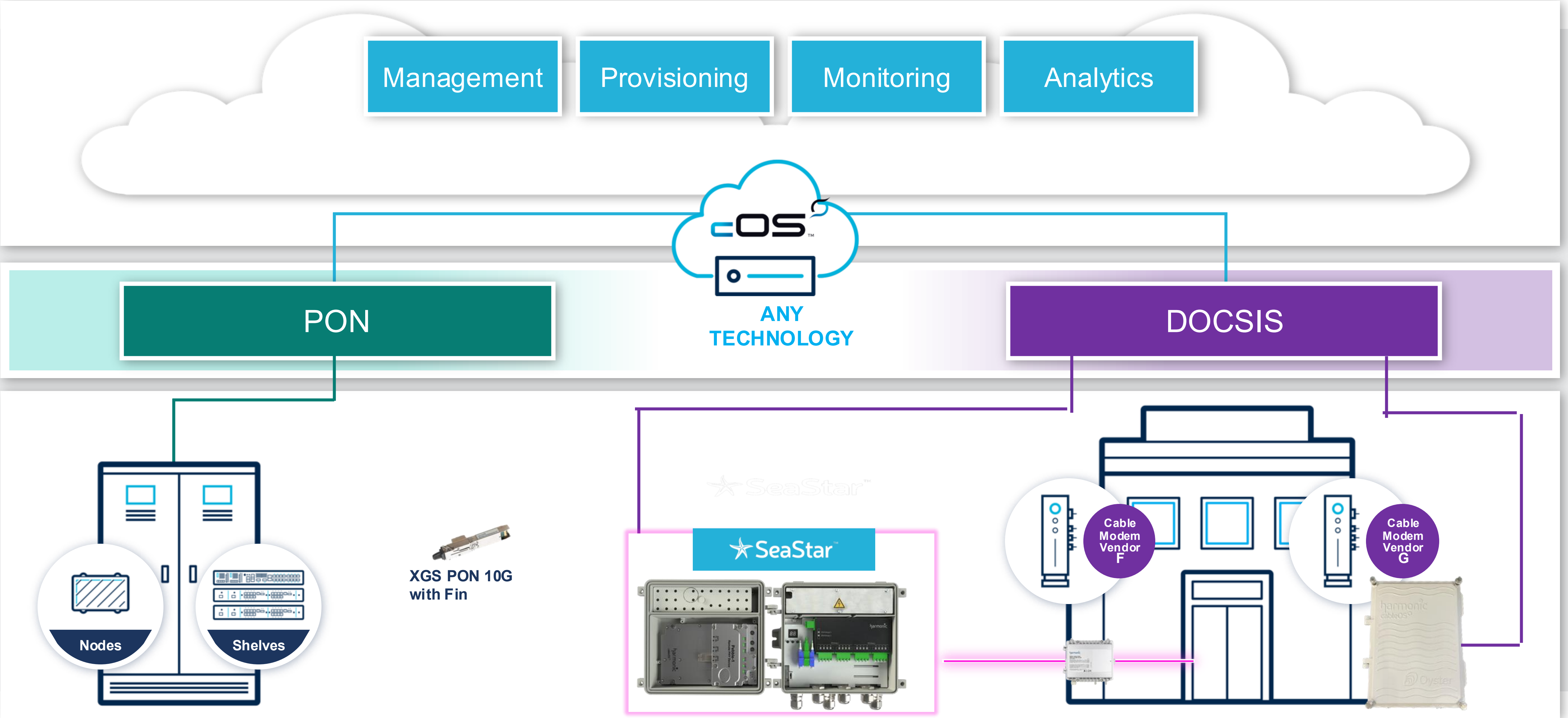
Attribute	Spec
Uplink	Single fiber to SeaStar
DS RF frequency	Up to 1,218 MHz
DS RF power	47.5 dBmV / 53 dBmV (two main models)
US RF frequency	5 up to 204 MHz
Diplexers	4 split options: Low 42/54, Euro 65/85, Mid 85/105, High 204/258 MHz
PON signal bypass	Available
Powering	Remote 30-90VAC / Local 230VAC
Mounting	Pedestal / Wall

Datasheets available, for SeaStar and Mini Analog Optical RF nodes

SeaStar Network Architecture



JEDE TECHNOLOGIE, JEDES PROVISIONING,
SUPPORTING DOCSIS and PON



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Please do not hesitate to contact for more info

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Advanced Broadband Technologies

THANK YOU.

Vielen Dank