

SOLUTION BRIEF

Alien Wavelengths Capacity Made Easy

What's Different About Aliens

Alien wavelengths are simply any wavelength originating from a system, platform or device other than that used for the optical line system (amplifiers, ROADMs, filters). Those systems, platforms and devices can either be transponders or pluggable optics from another vendor, or it could even be from an Ethernet switch or IP router from the same vendor running across its optical transport network equipment.

In either case, the optical channel parameters—output power, attenuation, dispersion, target OSNR etc.—will differ from those of the native transponders for which the network was designed. Even though the physics is the same for all

vendors, proper implementation takes experience and know-how to optimize the performance of the channel. This is true whether you are running an alien wavelength over someone else's line system or they are running on over yours.

Ekinops has a long history of deploying alien wavelengths going back over two decades. Ekinops wavelengths have been successfully deployed over virtually every competitor line system, including submarine cables. Now, Ekinops line systems are also capable of supporting and monitoring channels from any competitor so we cover both scenarios.

Facts & Figures:

- Global internet traffic reached 521.9 exabytes per month in 2025¹.
- Interconnection bandwidth is growing at twice the rate of the internet and is 20X the size.²
- AI generated traffic is growing 8X faster than human generated traffic and now accounts for over 50% of all internet traffic at the end of 2025³ (see Figure 1).
- Agentic AI is growing at nearly 8,000% per year⁴.
- Average monthly broadband usage was 767.4GB in Q4 2025, a 9.9% year-over-year increase⁵.

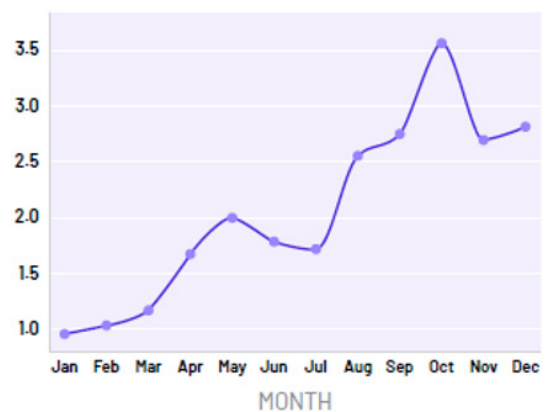


Figure 1 - AI-driven traffic by month; indexed to January 2025 (Source: Human Defense Platform telemetry, 2026)

¹ Ibis World
² Equinix GWI report
³ humansecurity.com

⁴ Ibid
⁵ 2026 State of AI Traffic & Cyberthreat Benchmark Report

The Challenge

The increasing rate of traffic growth is making it more difficult for service providers to keep up with demand, and the problem is only going to get worse. In an era of rising interest rates, the cost of capital is going up making it more expensive to invest in the infrastructure necessary to expand and upgrade networks. Keeping CAPEX to a minimum is therefore a must.

The challenge then is being able to add capacity where and when you need it without large capital outlays and being able to do it quickly so you can begin generating revenue faster to satisfy the business case.

Impact

The impact of AI has completely changed the equation when it comes to bandwidth growth. The question becomes how to add capacity quickly on the spans where you need it to meet rising demand but also cost-effectively to maintain a sustainable business model. As a service provider in this market, you need to ask the following questions:

- How do I extend the life of my existing transport infrastructure?
- How much capacity do I need to add and where do I need to add it?
- How do I get this capacity operational as quickly and easily as possible?
- How do I minimize my CAPEX to do this?
- What if my incumbent transport vendor can't deliver the solution I need or in the timeframe I need it?

You also need to determine whether your current vendor is able to meet the increasingly strict security requirements being imposed in some countries.

The Ekinops Solution

Deploying “alien wavelengths” over your existing line system using Ekinops’ Optical Networking Solutions delivers the capacity you need to solve your service issues with the cost-efficiency required to solve your business issues. (see Figure 2).

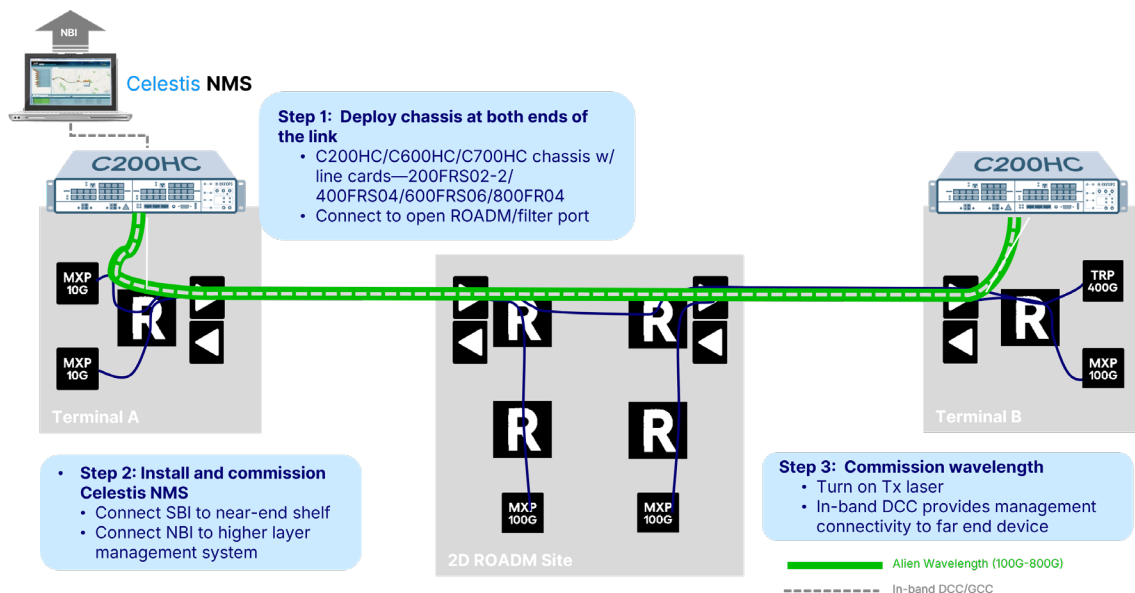


Figure 2 - Ekinops alien wave over 3rd party line system

It extends the life of your existing infrastructure by replacing multiple 10G circuits with a single high speed connection with line rates of 100G to 800G optimizing spectrum while delivering the high performance required of a fully-featured optical transport system.

Using either chassis-based modular or stackable 1RU “pizza box” solutions (or a combination of both), you can easily add new channels over your existing line (see Figure 3).

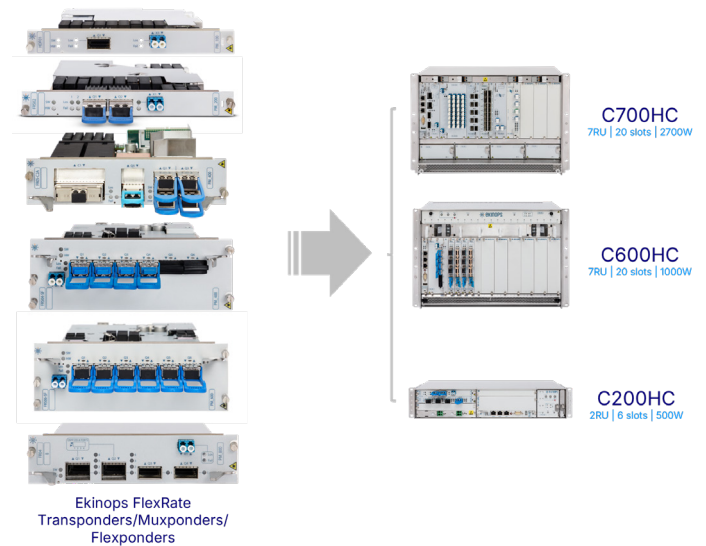


Figure 3 - Ekinops Alien Wavelength Solutions

Alternately, you can also transport third-party channels—either transponder or IPoWDM based—across an Ekinops line system with full monitoring from ingress port to egress port (see Figure 4).

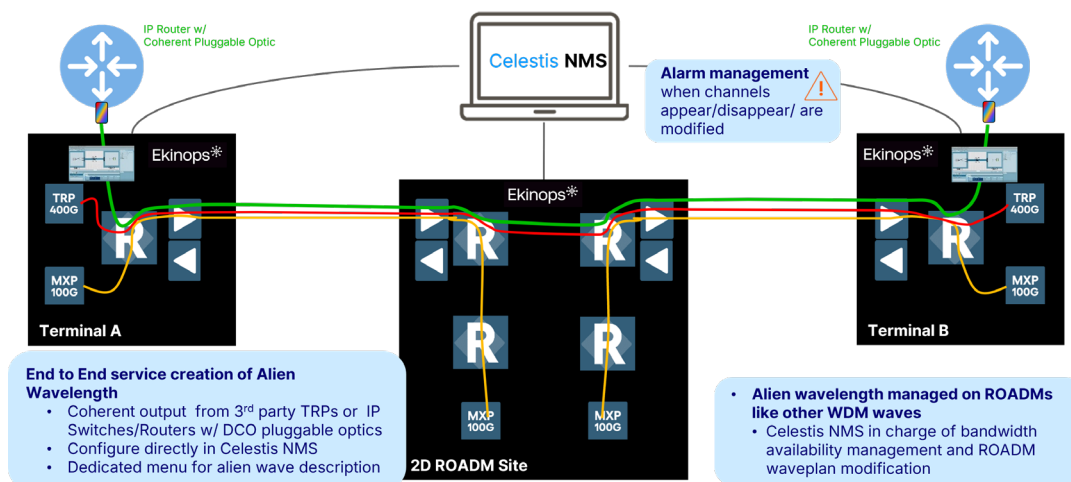


Figure 4 - Alien wave over Ekinops line system

Features

- FlexRate™ programmable line interface—100G to 800G—no license fee to upgrade
- Multi-level service aggregation for low-speed transport over high-speed links
- Multiprotocol support—Ethernet, Fibre Channel, SONET/SDH, OTN, Anyrate
- Single-fiber operation on all line rates from 10G to 600G
- Small footprint—800G in 300mm depth
- Easy to install and commission—low OPEX and faster time to revenue
- Lowest equipment cost per 100G (incl. chassis, commons and optics)

Management

Managing your Ekinops Optical Networking equipment is easier than installing it. Using Ekinops Celestis NMS network management system, you can provision, monitor and troubleshoot your Ekinops alien wavelength end-to-end from your NOC.

Celestis NMS requires only a single DCN connection to the management interface of the near-end shelf using the in-band overhead to carry a 10 Mbps digital communication channel (DCC) to provide far-end management connectivity.

Celestis NMS also provides a standard northbound interface (NBI) for seamless integration with your existing higher layer OSS/BSS platform.

Conclusion

Alien wavelengths deliver instant capacity to your network and allow you to add it exactly where you need it without having to upgrade your entire network. With Ekinops, you can be sure to meet all your business, technical and regulatory requirements with a field-tested solution that has been deployed in over 100 networks worldwide both on land and undersea.

About Ekinops

Ekinops is a European leader in optical networking and secured connectivity solutions for service providers, enterprises and public organizations around the world.

Ekinops designs, develops and manufactures high-performance solutions with cutting-edge software used to deliver high-bandwidth connectivity and managed services in over 70 countries worldwide.

Ekinops leads in the areas of:

- Advanced coherent optical networking for all metropolitan, regional, long-distance and datacenter interconnection applications
- Secured connectivity solutions for enterprises, from voice and data routing devices to Secure Access Service Edge (SASE) capabilities, including ZTNA (Zero-Trust Network Access), SD-WAN, and SSE.

Ekinops operates globally and is listed on Euronext Paris (FR0011466069 - EKI).

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