

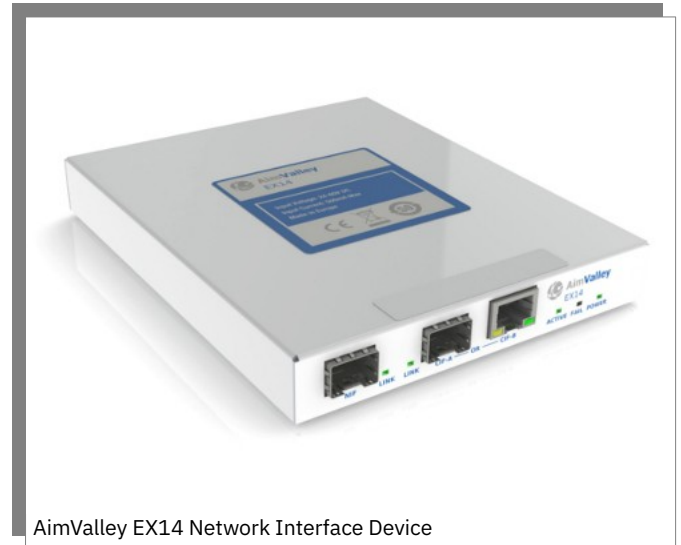
From the largest global telecommunications service providers to the smallest regional players, there is no such thing as a “stand alone” network. Telecom networks are comprised of a complex web of fiber optic cables, transport gear, switches, routers, gateways, servers and datacenters that provide the path over which telecom packets flow and data is stored. To support the services subscribers desire, such as internet, mobile smartphone, voice, telemetry, streaming video services, and others, telecom service providers interconnect with the networks of other telecom service providers who in turn connect to yet more thus creating access to the global subscriber base and the internet in its entirety.

There are many hand-off points in today’s networks and these are often referred to as demarcation points. These include external demarcations between two different service providers, between the telecom service provider and the end-customer, and they include internal demarcations that are needed for other purposes.

For example crossing the border between two countries in transition, between logical portions of the network, for example between core networks and wireless backhaul and between network and between metro and access networks.

The most prevalent use-case is between the network and the customer premise.

In almost all cases Network Interface Devices (NIDs) are installed for the purposes of testing, monitoring and segmentation of networks during troubleshooting. Instead of sending out a service technician to each demarcation location with a test instrument, the NID provides an automated way of providing a loop back or in fact even generating test patterns.



AimValley EX14 Network Interface Device

### AimValley proven track record

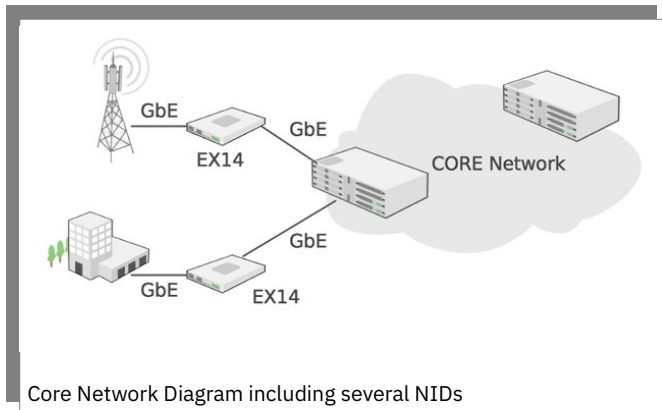
Pictured above is just one of many NIDs that Aimvalley has designed. This model featured two SFP ports, an electrical ethernet port, and featuring a full suite of OAM functionality, low latency, and wirespeed throughput.

### Types of Network Interface Devices

NID model variations are based on several factors:

- Number of ports to be managed.
- Data rates to be supported.
- The environment that might exist at the location of intended installation (for example an outdoor cabinet versus an indoor application).
- The specific interfaces to be connected.
- The scope of the features supported, from a simple loop back, all the way to a complex set of test and channelized features.
- The highest ‘wirespeed’ throughput required.
- Power supply type and capacity.

In terms of features, simple NIDs offer the ability to provide a loop-back of the received data. In that manner bits sent toward the NID are simply retransmitted back towards the source which is typically a telecom test instrument, an automated test system or network monitoring system



It is also possible to loop back only “some” of the data, which might include only 1 or 2 VLAN channels.

Overall, most transmission schemes include an Operations And Maintenance (OAM) channel that is defined by internationally accepted standards and as such NIDs supports specific commands and protocols for the various functions.

NIDs also provide the opportunity to convert the media, for example a different SFP for long haul, perhaps on a different wavelength.

### AimValley NID Expertise

Aimvalley has a long history and recent experiences in designing various carrier grade NIDs. These vary from simple single port, small box NIDs for GigE rates, both in and out up to multiport, multirate, multifunction units that act as mid or central NIDs in hubs.

Aimvalley is ready to design your next NID to serve your customers and we have and offer intellectual property blocks that we can adapt to various rates and ports to save time and cost during the design cycles.

Overall, we can provide compatibility with any chosen rates from 100 Mbit/s up to 100 GigE (typically GigE/10GigE) and higher.

Our team of design experts, support:

- High Speed Ethernet,
- OTN, MPLS, VLANs,
- OAM standards Y.1731
- Integrated RFC-2544 & Y.1564 service activation testing,
- TWAMP,
- MEF Carrier 2.0 certification,
- Transparent to Synchronous Ethernet ITU-T G.8261/G.8262/Y.1362.

Vital to the success of any NID is its reliability, low latency, and Transparency in so far as Synchronous Ethernet ITU-T G.8261/G.8262/Y.1362.

### Why AimValley?

AimValley is a reliable provider of packet switching technology since 2003, delivering solutions for:

- High speed data processing applications
- Complex FPGA-based accelerated systems
- High speed, low power hardware equipment
- Robust embedded software
- Early adopter of Acceleration Technology

AimValley understands the full complexities as well as the subtle nuances of designing great edge solutions. We excel in building complex systems that are part of your product in the fields of Industry 4.0, Big Data, Healthcare and Transportation markets.

Our combined skills represent all the important aspects required for the development of end-to-end systems. Our customers enjoy the benefits of working with a strong team with more than 2 000 years engineering experience. AimValley is a trusted partner of Tier 1 customers in Telecom and Industrial markets and has shipped more than 100 000 products.

### Quality Focus

- Outstanding track record of on-time delivery
- Best in Class Designs – Time, Budget & Quality
- ISO9001, ISO140001, Ecovadis Platinum CSR



# Network Interface Devices

## Expertise Brief

Delivering Solutions for a Connected World



Utrechtseweg 38  
1213 TV Hilversum  
The Netherlands

phone +31 35 689 1900  
sales@aimvalley.com  
www.aimvalley.com