

AimValley and OE Solutions celebrate 100.000 Smart SFPs

May 26, 2022, Hilversum, The Netherlands – International telecommunications design services company AimValley, today announces that it built 100.000 Smart SFPs. This milestone enables over 2.1 million TDM circuit emulation pseudowires in telecom networks worldwide.

Just over 10 Years ago, OE Solutions and AimValley jointly conceived the Smart SFP idea and started to build a comprehensive and feature-rich Smart SFP portfolio. The idea was built upon the strengths of both companies, by joining transceiver technology with systems and network technology.

[This milestone was celebrated in April 2022.](#) A match made in technology heaven!

Smart SFPs are deployed in networks for major 5G mobile operators, communications service providers, as well as mission-critical networks for Utility, Transport, Oil & Gas, Government, and Energy.

Smart SFP Technology

While ‘regular’ transceivers perform Electrical/Optical and O/E conversion, Smart SFPs integrate additional network functions inside the transceiver. These functions range from Layer2/Layer3 OAM (line monitoring) to TDM circuit emulation over Ethernet and IP/MPLS networks.

The Smart SFPs meet carrier-class requirements such as -40°C/+85°C case operating temperature for operating in harsh conditions and remote locations.

To enable the integration of Very Large Scale Integration (VLSI) semiconductor chips inside the very limited space of the MSA industry-standard SFP form factor, bare die and wire bonding techniques have been applied. Next to this, significant VLSI capacity and a robust Real-Time Operating System (RTOS) are added inside the devices. The low Smart SFP power consumption is achieved by AimValley’s patented power reduction technology and allows for operation in -40°C/+85°C environments.

Smart SFPs Deployment

Smart SFPs are utilized on a large range of telecommunication network equipment, such as:

- Ethernet and IP/MPLS switches and access and cell site routers
- Ethernet and IP/MPLS microwave radio systems
- xWDM systems
- Packet/optical systems

The Smart SFP portfolio

Over the past 10 years, the circuit emulation Smart SFP portfolio has grown to support solutions for ANSI and ETSI markets for all TDM rates. The complete portfolio is available as a Plug & Play solution.

Using the Smart SFP technology, customer-specific options can be provided

- T1 1.5 Mb/s
- E1 2.0 Mb/s
- T3 45 Mb/s
- SONET/SDH OC-3/STM-1, 155 Mb/s
- SONET/SDH OC-12/STM-4 622 Mb/s
- SONET/SDH OC-48/STM-16 2.5 Gb/s

Smart SFP Applications

- 5G mobile fronthaul networks
- Fixed-line networks
- Packet-based microwave radio for 5G mobile fronthaul networks
- Mission-critical networks

Future Products

While the Smart SFP portfolio is already very comprehensive, it is by far from complete.

At AimValley we are currently working on a variety of future products. Just to name a few:

- The Ethernet over SONET/SDH Smart SFP. This Smart SFP plugs into a 10GE router port and tunnels the 10GE signal over an OC-48/STM-16 transport network, similar to a 10G over SONET/SDH POS card. A solution to enable the opposite: "Packet over TDM".
- A solution to resolve the business-specific legacy interfaces of the verticals (an IoT-solution)
- A custom DPI solution in an SPF form factor
- SD-WAN ML-PPP/HDLC Enterprise/Business Access

The common theme, is the requirement to offload the new hardware with the legacy services, while still maintaining support of the required solutions for the end customer.

If you can imagine it – we likely have a solution for it - or we can build one for you!

Louis Stoer

AimValley's Smart SFP Authority

About OE Solutions

OE Solutions is a global technology leader and vertically integrated supplier, specializing in direct-detect as well as coherent transceivers for mobile fronthaul and cable network applications at speeds up to 400G. For more information, please visit the [OE Solutions website](#).

About AimValley

AimValley is a world-class engineering and innovation center that develops high-reliability system designs and products (Hardware, Embedded Software, ASIC & FPGA) for Telecom, Industrial, Healthcare, Governmental, Aerospace, and Energy mission-critical applications. For more information, please visit the [AimValley website](#).

More information

[Bare Die Technology](#)

[AimValley Development Process](#)

[TDM over Packet Solutions](#)

[TDM Network Migration](#)