



Private Line Emulation

<https://datatracker.ietf.org/doc/html/draft-schmutzer-pals-ple>

<https://datatracker.ietf.org/doc/html/draft-schmutzer-bess-ple-vpws-signalling>

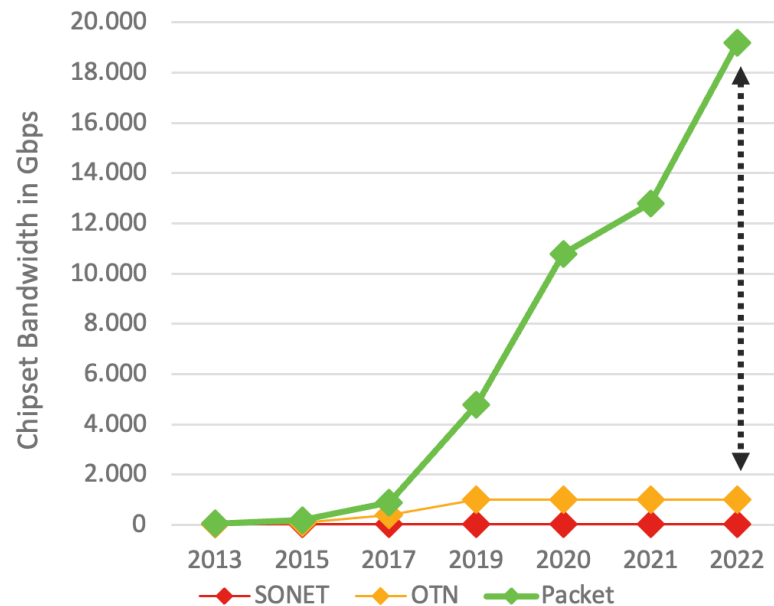
C. Schmutzer (presenter), S. Gringeri, J. Whittaker, N. Leymann, L. Della Chiesa, N. Nainar, C. Pignataro, G. Smallegange, C. Brown, F. Dada

IETF114, PALS WG

- Router
- OTN/POTS platform

Motivation

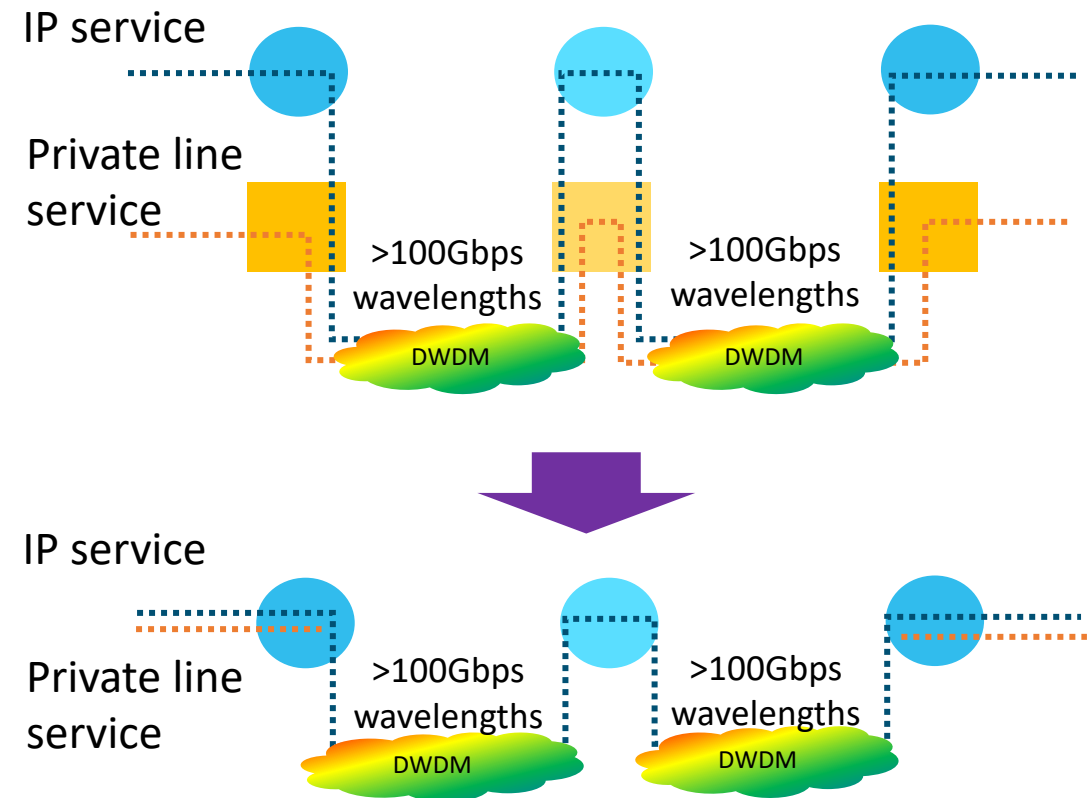
1. Chipset Evolution



2. DWDM Interface Evolution

- 400G coherent transceivers
- Rapid spec definition via MSAs and IEEE

3. Network Transformation



Overview

- [draft-schmutzer-pals-ple](#)
 - New encapsulation for bit-stream signals over PSN
 - Complements SAToP (RFC4553) to address new high-speed signals such as 10GE, 100GE, OC192, ODUk, and others
 - Underlay agnostic to address MPLS and SRv6 networks
- [draft-schmutzer-bess-ple-vpws-signalling](#)
 - Signalling mechanisms to setup PLE VPWS
 - Using BGP attribute and a series of TLVs

Control Plane

- Leverage existing EVPN-VPWS mechanisms
- Exchange of bit-stream specific endpoint parameters via BGP attribute TLVs
- Cover PLE and existing TDM types
- LDP extensions for further study

PLE Attribute TLVs

TLV Type	Name	Length	Mandatory
1	PW Type TLV	3	Y
2	PLE/CEP/TDM Bit-rate TLV	5	Y
3	PLE/CEP Options TLV	3	Y 1*
4	TDM Options TLV	13	Y 2*
5	PLE/CEP/TDM Payload Bytes TLV	3	N
6	Endpoint-ID TLV	0..80	N

1* PLE/CEP only, 2* TDM only

Data Plane Draft Progress 1/2

- Growing industry support
 - Verizon, [Deutsche Telekom](#), Cisco, [Ciena](#), [Xilinx](#)
- Review and feedback by several PWE experts
 - Alexander Vainshtein, Yaakov Stein, Stewart Bryant → Thank you!
- Changes / editorial improvements in -01/-02
 - Payload fill order
 - Increased default payload size
 - Change “ODUk aligned” mode to “byte aligned”
 - Correct use of FRG in control word
 - Increased timestamp frequency
 - Use of common clock and differential clock recovery (incl. quality targets)
 - Improve defect and performance monitoring section

Data Plane Draft Progress 2/2

- More feedback
 - Fan Yang and Andrew Malis → thank you !
- Add 10280 bit-block aligned payload to support 200GE and 400GE
- Rename draft to “draft-schmutzer-**pals**-ple”

Next Steps

- Further comments are welcome
- Suggesting **WG adoption of “draft-schmutzer-pals-ple”**
- Could “draft-schmutzer-bess-ple-vpws-signalling” address email thread “[spring] Martini Pseudowires and SR”?