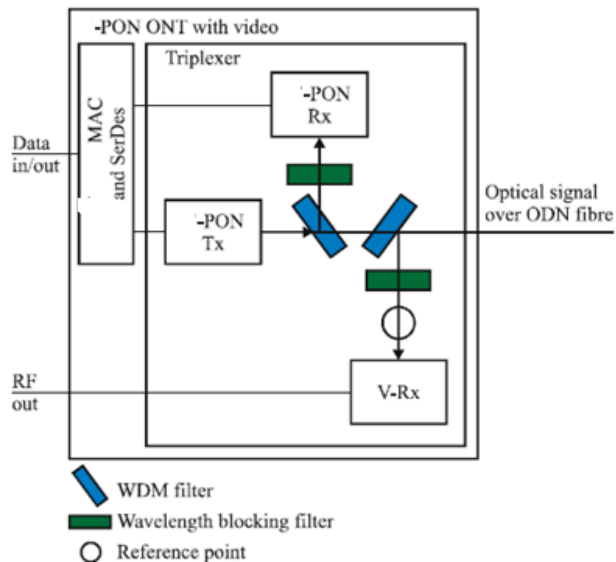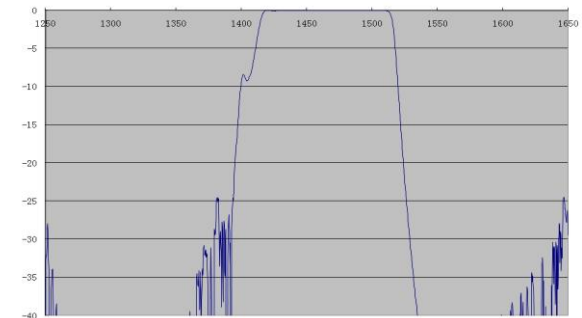# NG-EPON Coexistence scenarios and WBF

Zhiming Fu ZTE Corporation

Liquan Yuan ZTE Corporation

Quanlin Mi Accelink Technology

Qianggao Hu Accelink Technology

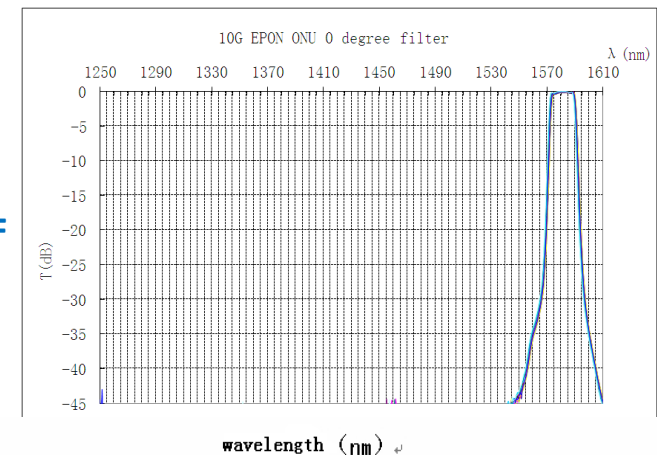# EPON's WBF characteristic with RF in current ODN
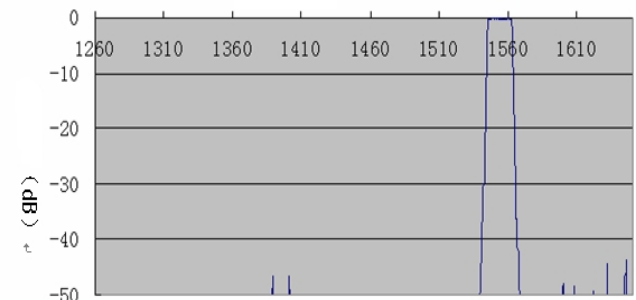

1G EPON WBF

EPON ONU 0 degree filter

10G EPON WBF

*	0.5dB IL		30dB IL	
E(G)PON	1416nm	1514nm	1371nm	1529nm
10G E(G)PON	1575nm	1590nm	1569nm	1596.2nm
RF	1545nm	1561.8nm	1542nm	1565.6nm

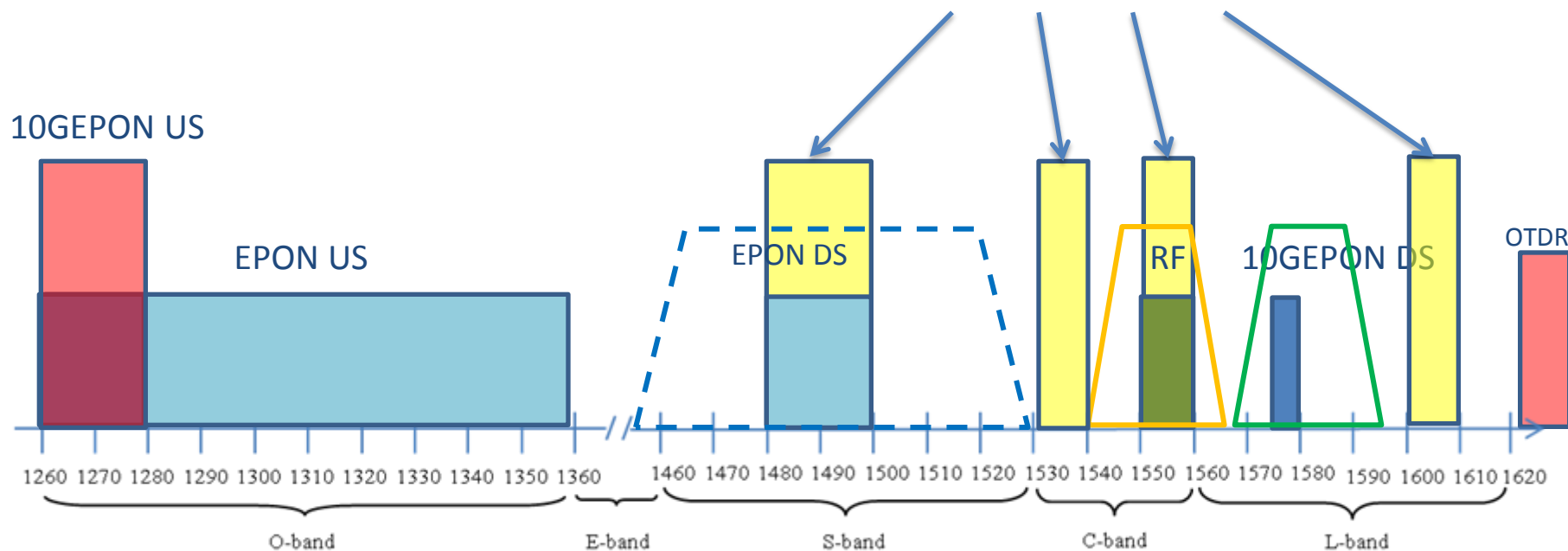*:the typical data from accelink

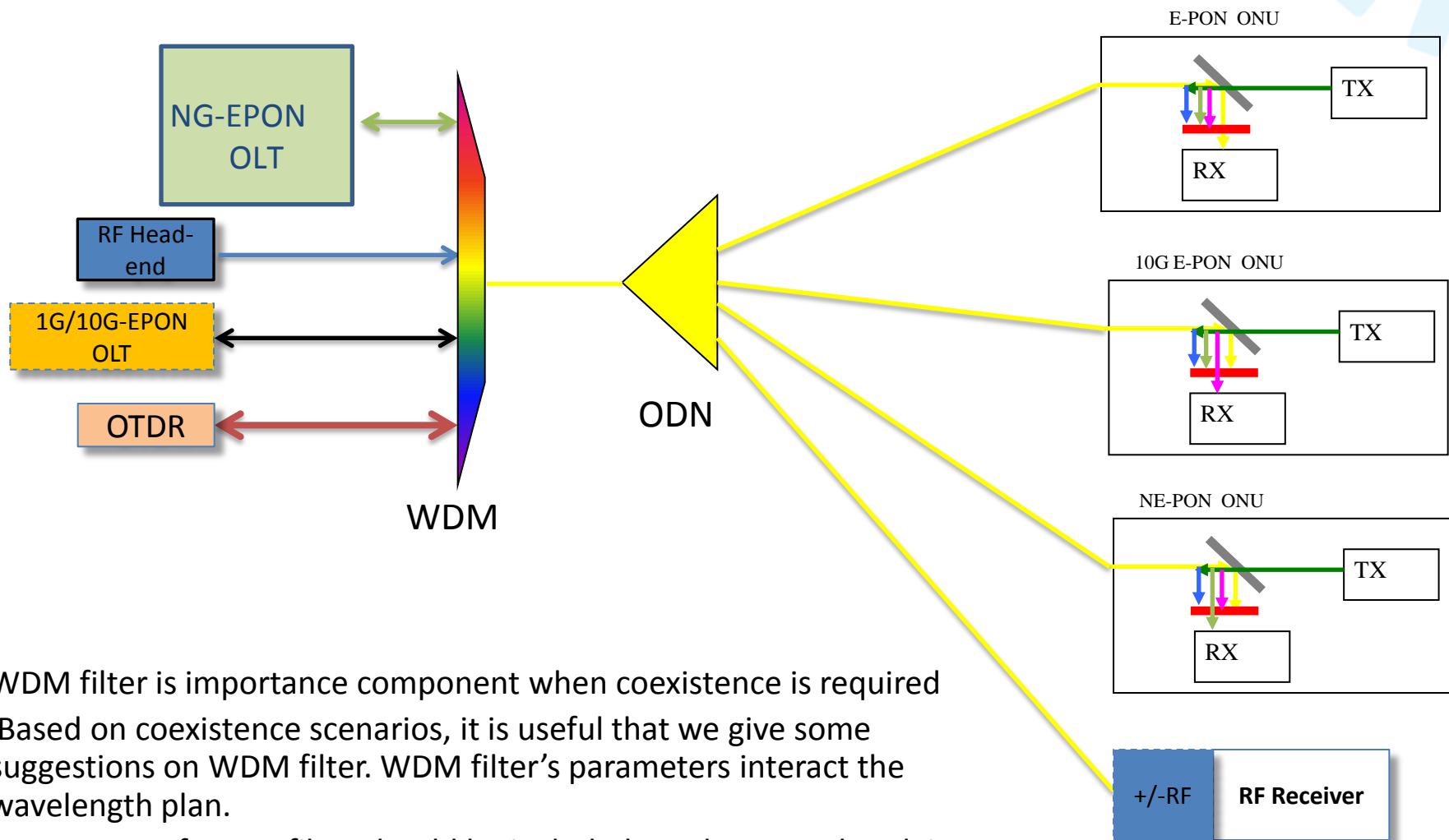**RF WBF**

RF 0 degree filter

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Impact to NG-EPON wavelength plan

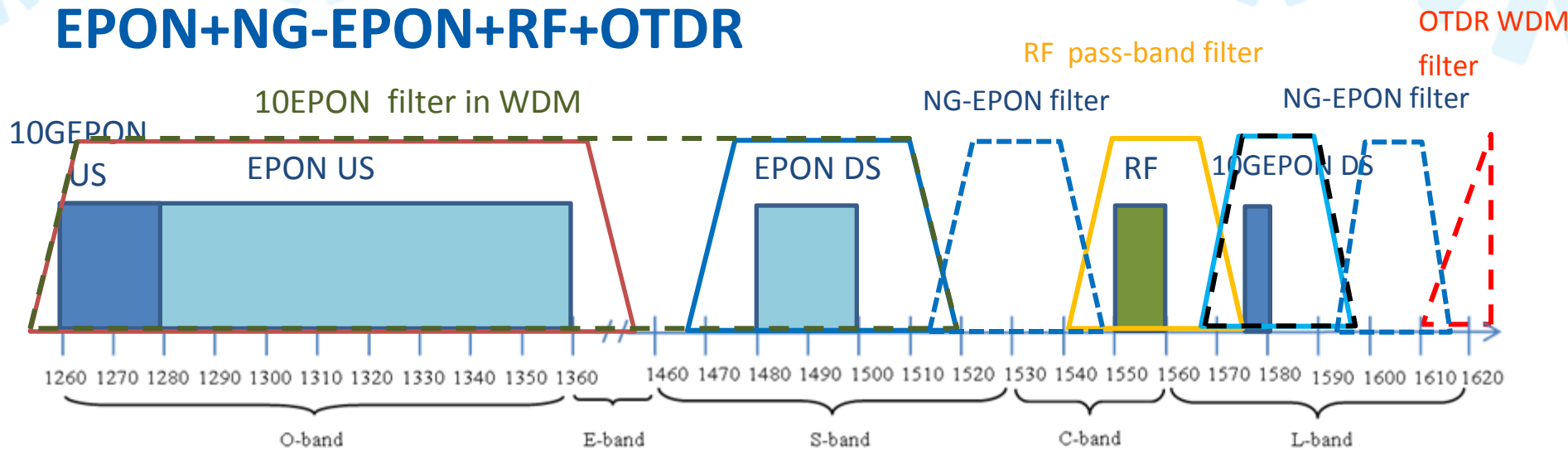**Possible** bands could be used for NG-EPON

- For upstream of NG-EPON:
  - The band C-(1530-1540nm) maybe is a good choice, we need to evaluate the reflection impact of the NG-EPON upstream to EPON ONU and RF Receivers.
- For downstream of NG-EPON for different coexistence scenarios:
  - ✓ The L+ band (? Such as 1600-1610nm), 1G EPON+10G EPON+RF+NG-EPON
  - ✓ Reused EPON DS(1480-1500nm), 10G EPON+RF+NG-EPN
  - ✓ Reused RF(1550-1560nm), 1G EPON+10G EPON+NG-EPON, But the 45degree filter is difficult for separating the DS/US of NG-EPON
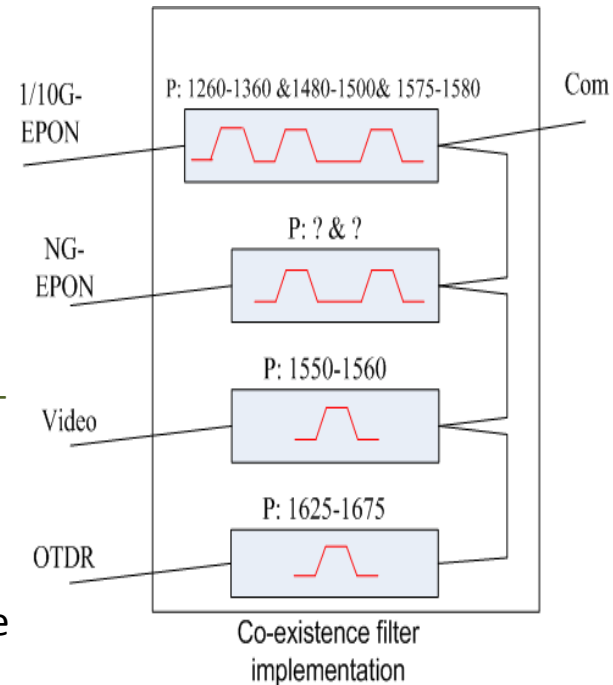
NG-EPON Co-existence scenario and WDM filter consideration

NG-EPON OLT

RF Head-end

1G/10G-EPON OLT

OTDR

WDM

ODN

E-PON ONU

TX

RX

10G E-PON ONU

TX

RX

NE-PON ONU

TX

RX

+/-RF   RF Receiver

- WDM filter is importance component when coexistence is required
- Based on coexistence scenarios, it is useful that we give some suggestions on WDM filter. WDM filter's parameters interact the wavelength plan.
- Parameters of WDM filter should be included, such as pass band, insert loss, isolation, etc.

WDM filters implementation example(1G EPON+10G EPON+NG-EPON+RF+OTDR

- **WDM filters in OLT side:** Implementation will depend on coexistence scenarios

- **For 1G/10GEPON filter in WDM:** two pass-band or three pass-band filter could be used.

- **RF pass-band filter in WDM:** The edges of pass-band need to be defined

- **OTDR pass-band filter in WDM:** The edges of pass-band need to be defined.

Bringing you Closer

Thanks!