

Field test on Coherent Alien Waves over GARR DWDM network

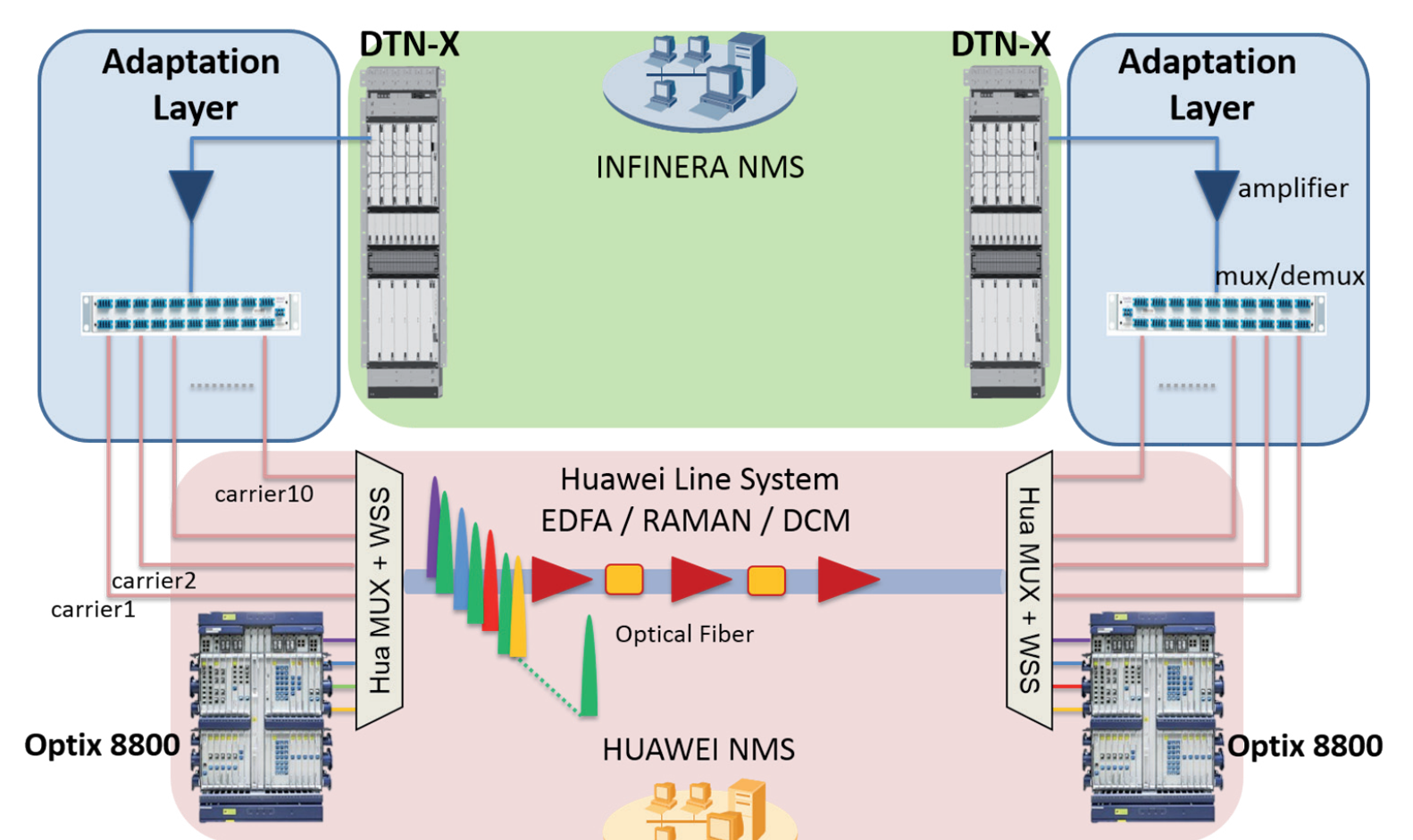
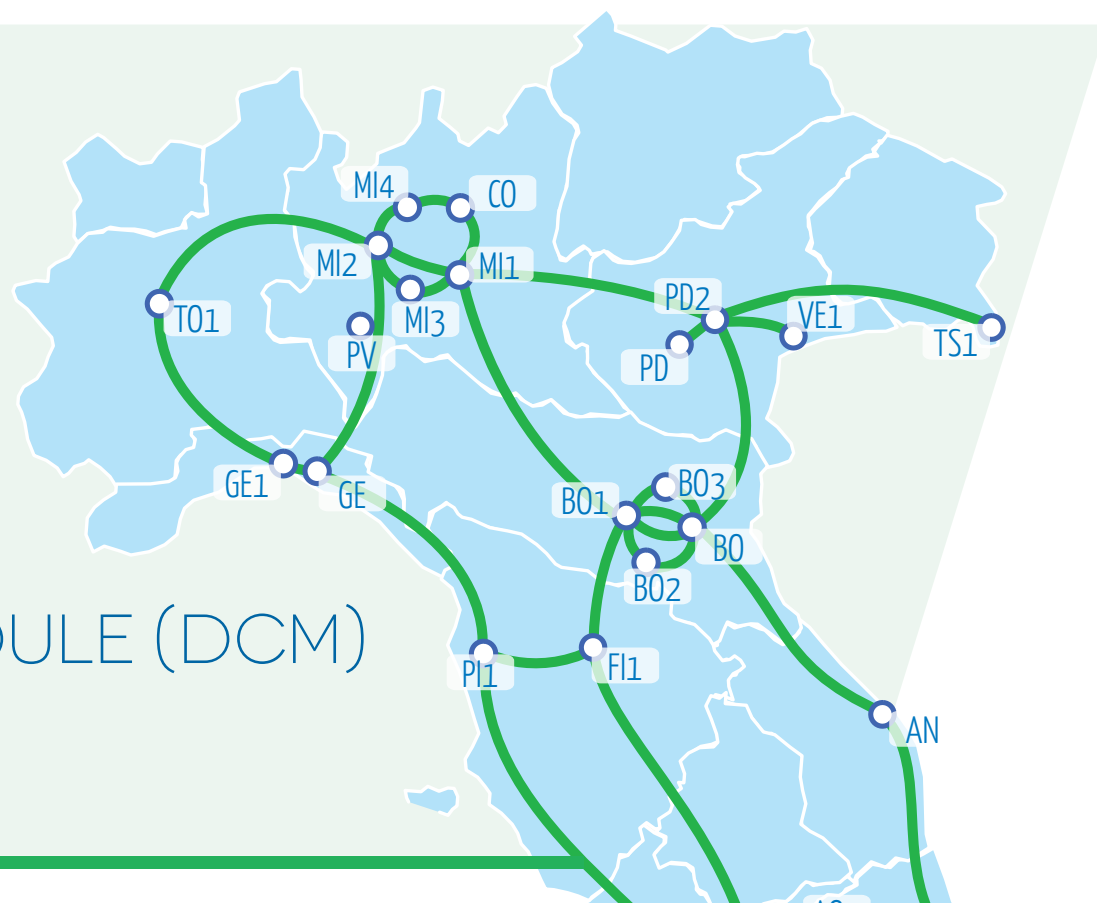
P. Bolletta, M. Carboni, A. Di Peo, A. Gervasi, L. Puccio, G. Vuagnin (GARR)

GOAL AND SETUP

- ENABLE 100GE SERVICES BASED ON COHERENT OPTICAL TRANSPORT OVER GARR DCM-BASED DWDM NETWORK
- GAIN FIRST-HAND EXPERIENCE ON TECHNICAL AND OPERATIONAL ISSUES ON SPECTRUM SHARING

2011 GARR-X HUAWEI

- IM-DD (OOK) NETWORK
- 10 GBPS / 40 GBPS CHANNELS
- DISPERSION COMPENSATION MODULE (DCM) BASED INFRASTRUCTURE
- CLIENT 1GE / 10GE



○ GARR Network PoP
FIBER FOOTPRINT
 - IM-DD optical network
 - coherent optical network

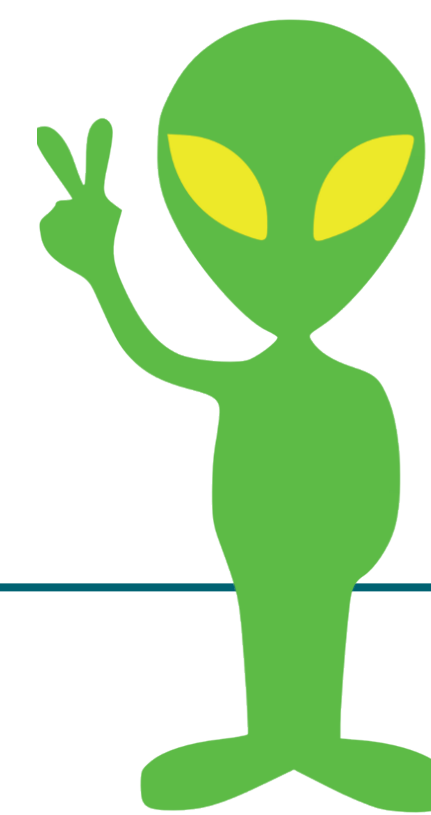
	AW Fase1	AW Fase2
Path	RM2-NA1	RM2-BA1-NA1
Distance	345 km	1.181 km
Line Att	93 dB	314 dB
# Opt. Amplifier	3	12
# Raman Span	1	3
# ROADM	2	6

2014 GARR-X PROGRESS INFINERA

- COHERENT NETWORK
- SUPERCHANNEL 500 GBPS
- DCM-FREE INFRASTRUCTURE
- CLIENT 10GE / 40GE / 100GE

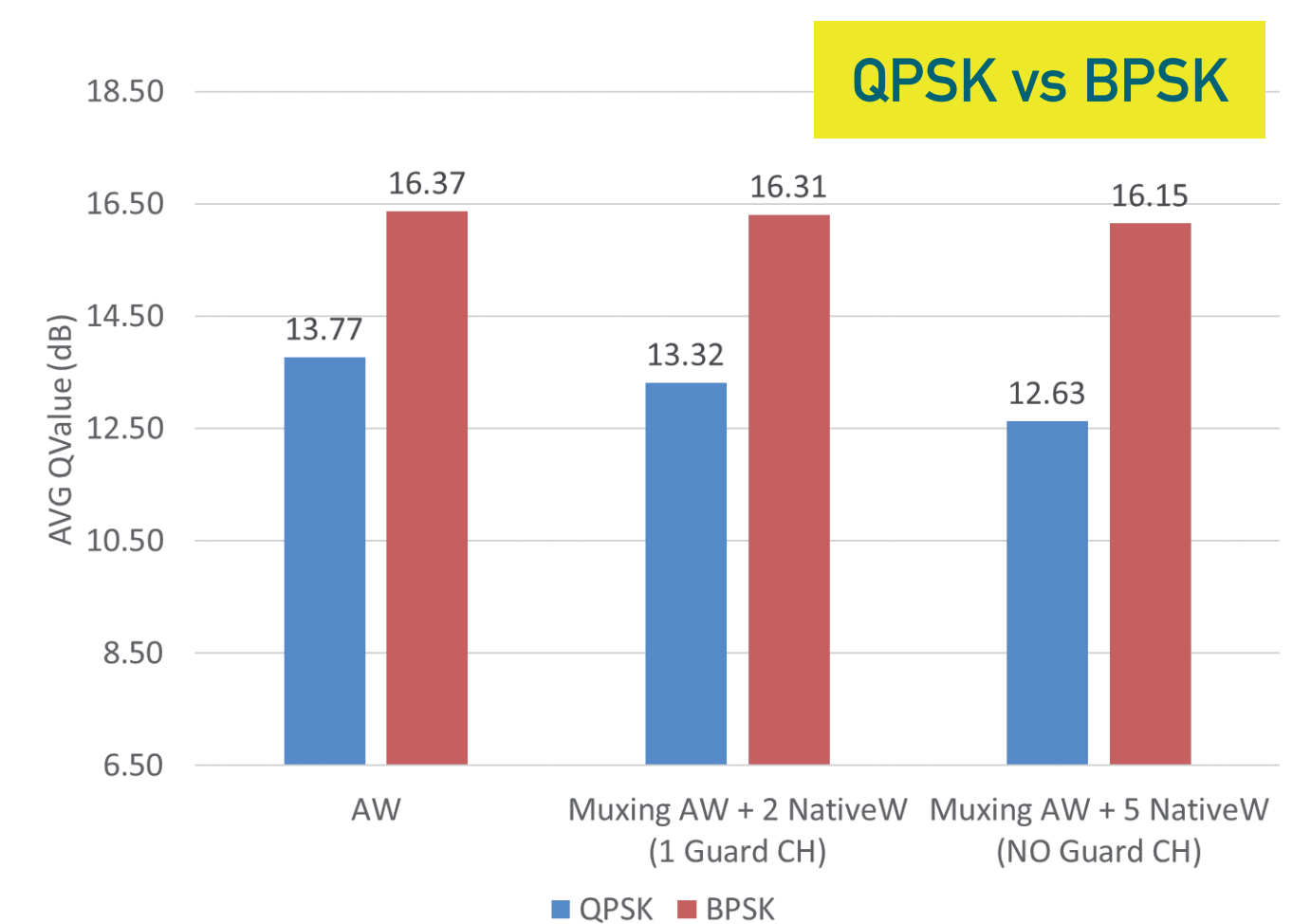
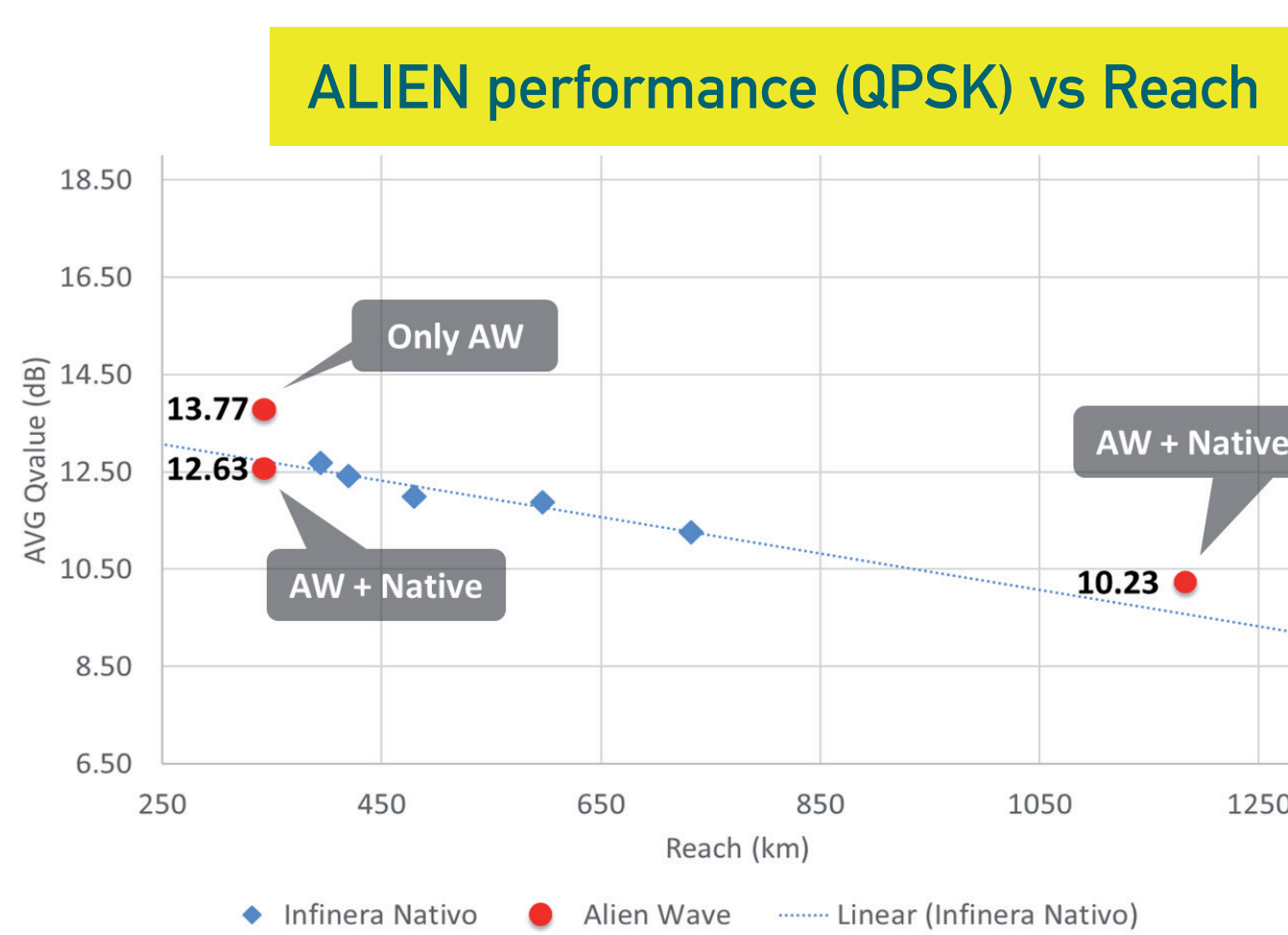
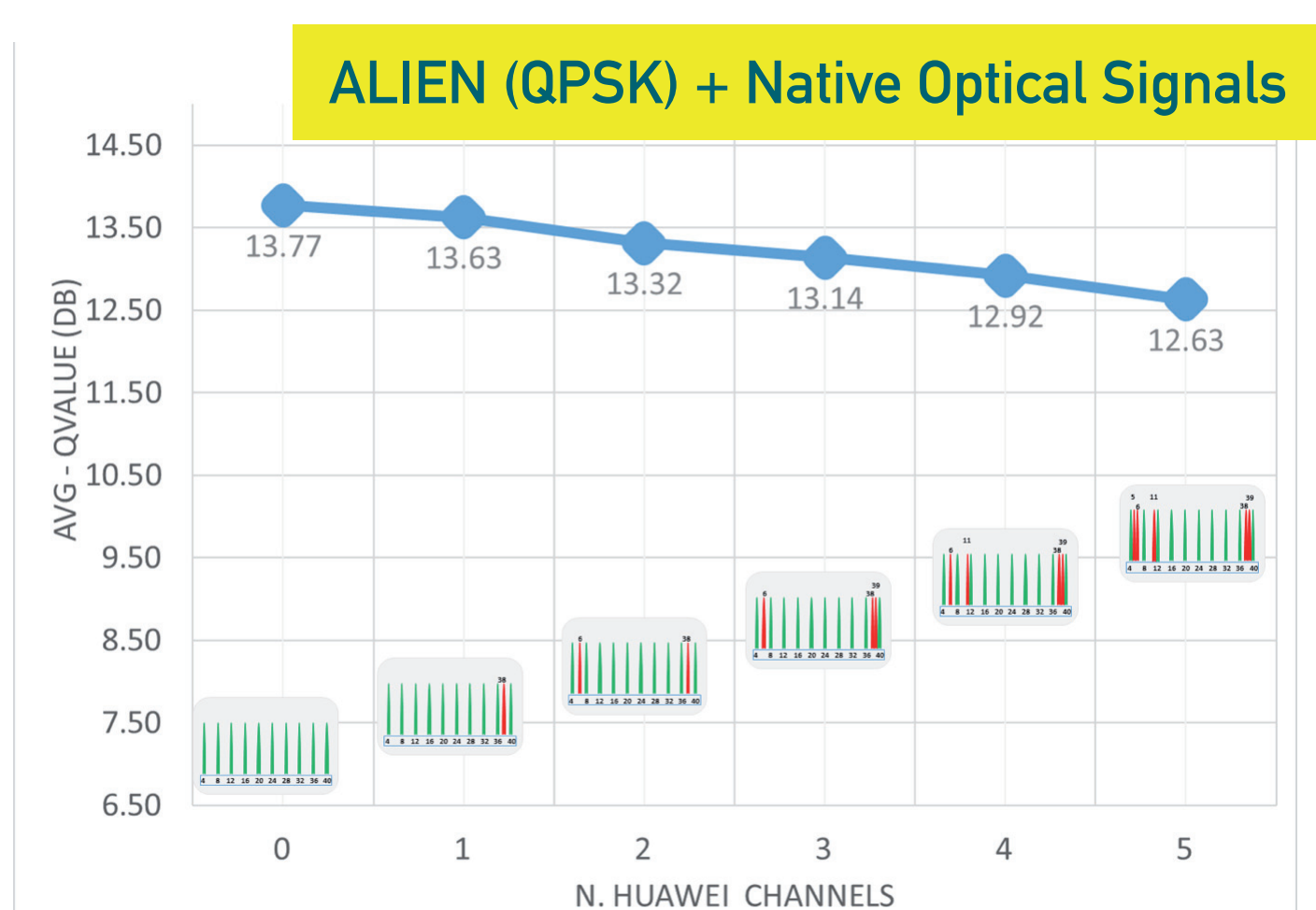
DEPLOYMENT & MANAGEMENT TOOLS

- Q-Value of coherent alien wave measured at line module by Infinera NMS (DNA)
- BER-preFEC of native IM-DD lambda measured at line module by Huawei NMS (U2000)
- Tx/Rx Optical Power of Alien/Native Waves measured on remote controlled OSA Board
- For each Optical Channel remote controlled VOA available to equalize Native/Alien Waves

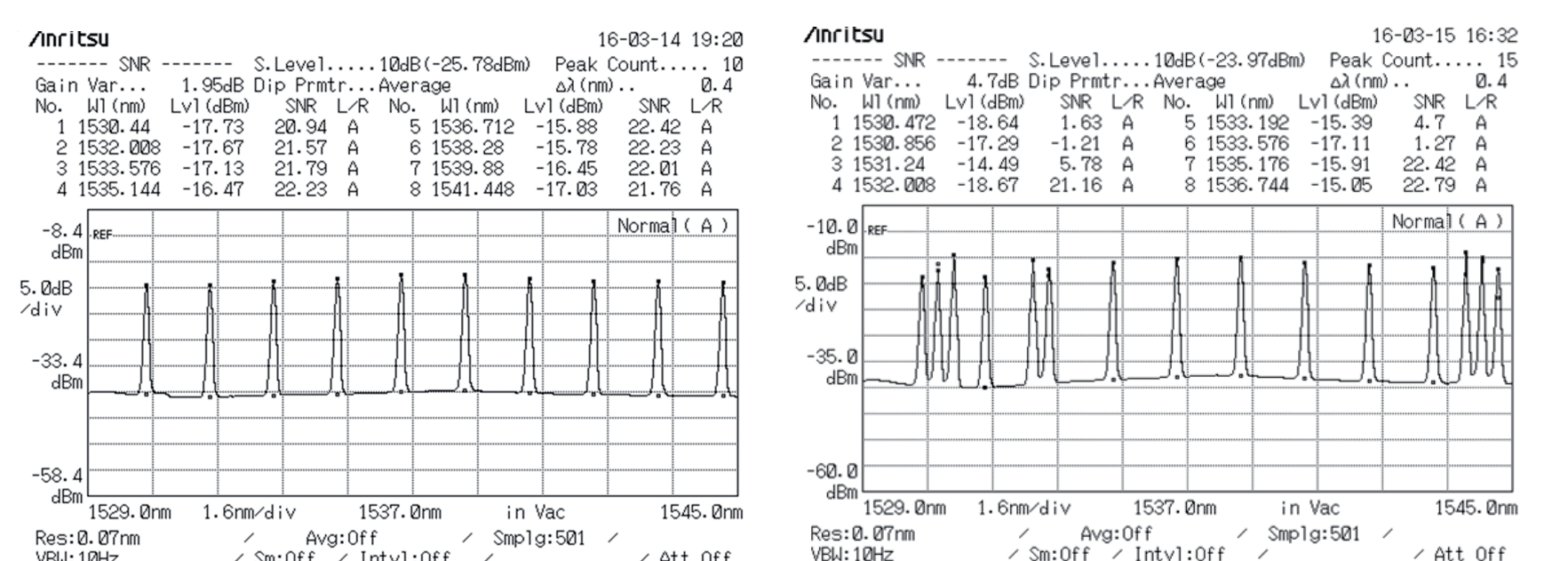


RESULTS

Alien Performances



Native Performances: Unchanged BER-preFEC values



www.garr.it info@garr.it
 ConsortiumGARR

OSA Measurements