

Fig.1. Backbone NWs with PSAs

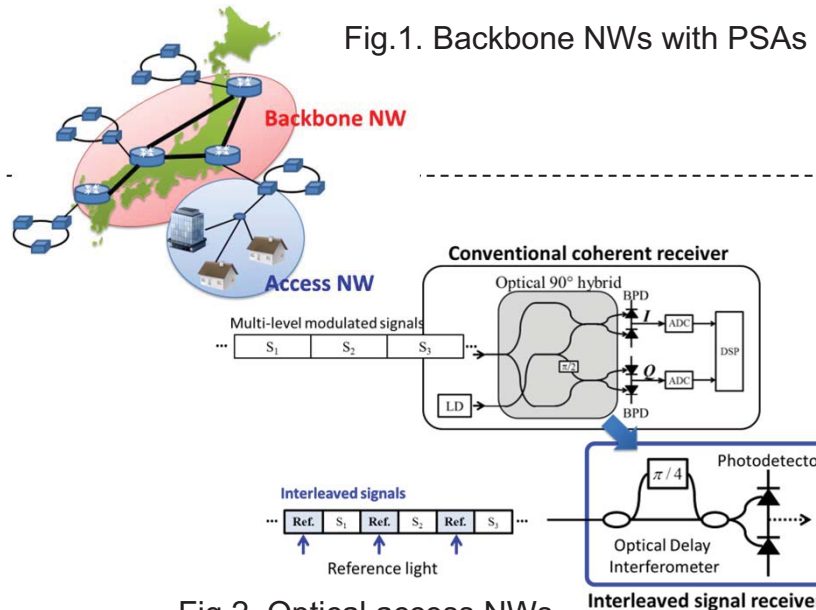


Fig.2. Optical access NWs based on interleaved scheme.

Content:

Coherent optical communication technologies have been studied to improve transmission capacity of optical fiber transmission systems that consist of backbone networks and access networks. However, each network has major issues concerning introduction of the coherent technologies.

[Backbone networks] The transmission distance is limited by additive noise from linear amplifiers; therefore, the transmitted optical signals frequently need to be regenerate to avoid such noise by repeaters that are relatively expensive.

[Access networks] Cost and power dissipation of the conventional coherent receiver are not acceptable for consumer use.

To solve the above problems, we are studying about phase-sensitive optical amplification as depicted in Fig. 1. and the access networks based on multi-level modulated signals interleaved with reference light as shown in Fig. 2.

Keywords : Coherent optical communications, Phase-sensitive optical amplifier, Multi-level modulated signals interleaved with reference light

E-mail: okamura@ee.tokushima-u.ac.jp

Tel. 088-656-4738