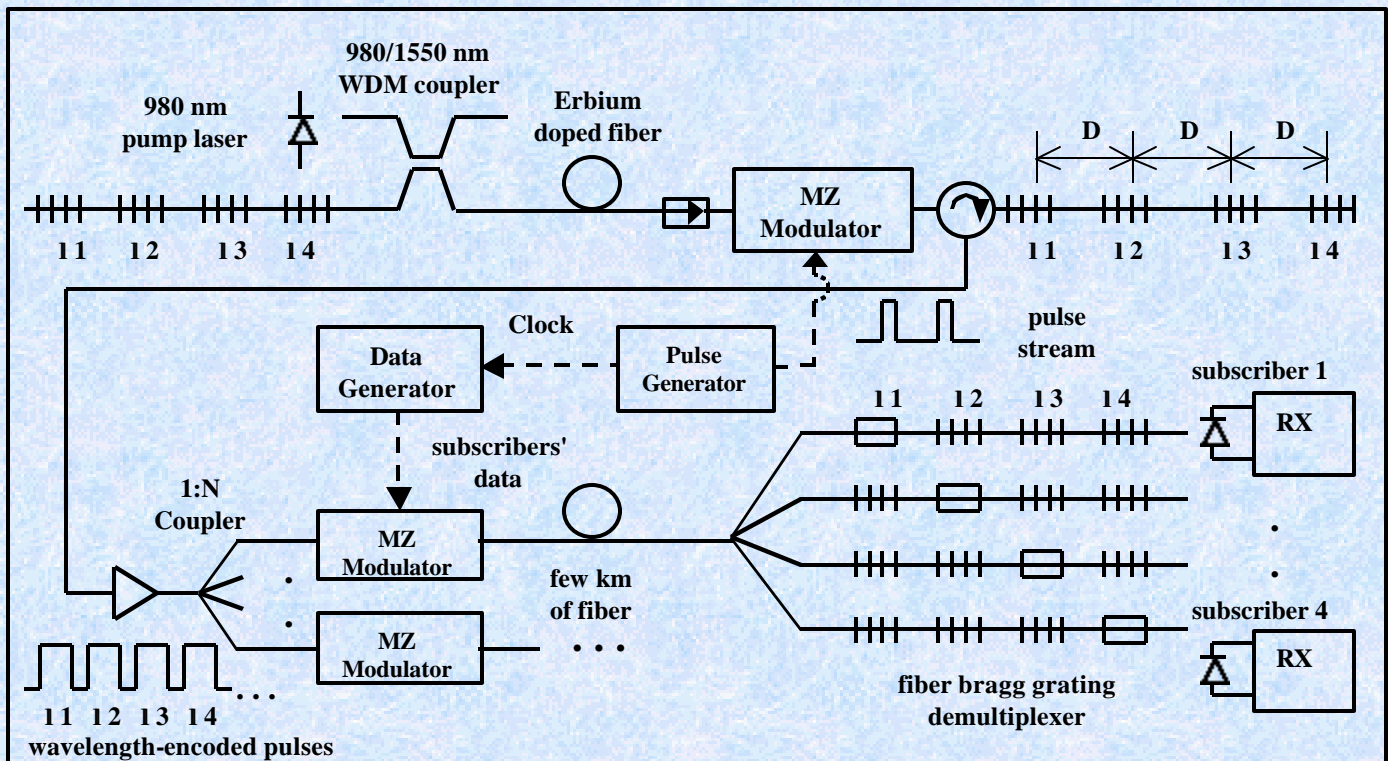




Local Access Network Employing a Spectrum-Sliced Fiber Amplifier Light Source



We propose and demonstrate a novel spectrum-sliced and delay-line multiplexed multiple-wavelength source and its use in a local access system. In the proposed system, the pulsed output of the amplified spontaneous emission (ASE) from an erbium-doped fiber amplifier (EDFA) is spectrally sliced by several fiber bragg gratings (FBGs). The FBGs separate at fixed distance filter out the unwanted ASE and introduce delay to separate wavelengths into individually addressable channels that can be modulated with an external modulator. The modulated wavelength-encoded pulses were then transmitted through a single mode fiber and were demultiplexed with FBG demultiplexer in the receiver site. Thus, this simple arrangement with an EDFA (requiring only one pump laser) can provide light sources for many WDM channels.