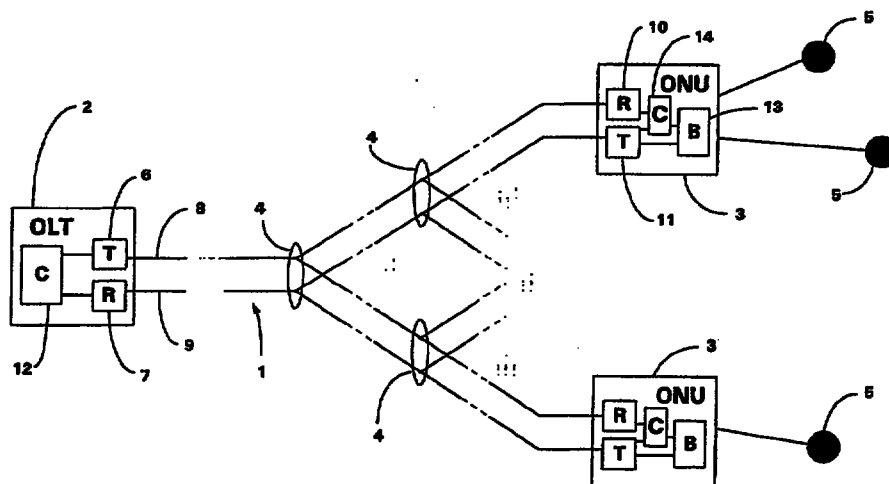


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(54) Title: COMMUNICATIONS NETWORK**(57) Abstract**

A communications network is provided comprising an optical waveguide (1) to which is connected a head-end station (2) and at least one optical network unit (ONU) (3), an ONU (3) providing an interface to the communications system for connected user equipment (5). Data received by an ONU (3) from connected user equipment (5) are stored in a buffer (13) prior to transmission to the head-end station (2). The head-end station (2) is arranged to implement, in conjunction with the ONUs (3), a demand-assignment protocol for the transfer of data upstream from the ONUs (3) to the head-end station (2) according to which an ONU (3) demands upstream capacity based upon a prediction of its future capacity requirements, calculated using at least one record of earlier granted capacity by the head-end station (2) and at least one measurement of a quantity of data awaiting transmission to the head-end station (2) in the buffer (13) of the ONU.