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ABSTRACT

COMMUNICATIONS NETWORK

5 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-
10 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
15 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.

20 Figure 1