

ABSTRACT

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COMMUNICATIONS NETWORK

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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-end
10 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
15 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.

Figure 1