

144.1.1.3 ONU discovery and registration

As was explained in 144.1.1.1, the upstream transmissions in EPON are arbitrated by the OLT. Before any newly-connected ONU can be scheduled for the upstream transmission, it needs to be discovered by the OLT. The Discovery Process is used to detect the newly-connected ONUs.

At a high level, the Discovery Process schedules a periodic discovery window – a timeslot during which only the unregistered ONUs are allowed to transmit their registration requests. These registration requests messages allow the OLT to learn the MAC address and to measure the round-trip propagation time of the each new ONU. As part of the discovery process, the new ONU is assigned its initial LLID values (see 144.1.1.2) and that allows this ONU to receive downstream traffic and also be scheduled for the upstream transmission.

The Discovery Process is described in more details in 144.3.5.