



GLID in IEEE 802.3ca and possible MR

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144.3.4.4 Group link ID (GLID)

To assist in traffic management the Nx25G-EPON system supports consolidation of several LLIDs into arbitrary groups using the group link ID (GLID). For example, all LLIDs for a specific subscriber hosted on an ONU servicing numerous subscribers could be grouped together into a single GLID; in another example all LLIDs supporting a specific traffic class (e.g., best-effort traffic) on a multi-subscriber ONU could be grouped together. GLID values are used only for the purposes of bandwidth granting by the OLT and reporting by the ONU. The GLID report contains the sum of all queue lengths of member LLIDs from that ONU. The bandwidth granted to a GLID is distributed among its member LLIDs. The method by which the granted bandwidth is distributed among the member LLIDs is outside the scope of this standard. The actual envelope transmission is identified by a PLID, an MLID, or a ULID value, associated with a specific MAC instance that sourced the data (i.e., the LLID field in the envelope headers may only contain a PLID, MLID, or ULID, but never a GLID).

← **144.3.4.4 says that GLIDs shall not appear in env. headers.**

144.3.5 says that ONU shall accept GLID envelopes transmitted downstream →

Upon successful registration, an ONU shall no longer accept envelopes with DISC_PLID. Instead, a registered ONU shall accept all envelopes containing any of the following LLID values:

- The specific PLID value assigned to this ONU during registration
- The specific MLID value assigned to this ONU during registration
- Broadcast PLID (BCAST_PLID)
- Broadcast MLID (BCAST_MLID)
- Any ULID or GLID assigned to this ONU by management⁷

Can the two requirements both be correct?

- ❑ Can the preceding two statements be reconciled? For example, when GLID is provisioned, ONU does two things:
 1. Creates a group repository to hold member LLIDs. Upstream envelopes always use member LLID values.
 2. Creates a downstream-only LLID that uses GLID value.
- ❑ This approach would make other attributes ambiguous:
 - When ONU LLID capabilities are reported, should the *sUnidirectional* sub-attribute report only true downstream-only LLIDs or also include all the GLIDs?
- ❑ Downstream-only LLIDs always have a specific type that tells ONU where to direct the received frames: PLID to MPCP Client, MLID to OAM Client, ULID to MAC Client. Where would frames received on downstream GLID be directed?
- ❑ For upstream transmission, GLID can include LLID members of many types: PLID, MLID, ULID. But what the downstream GLID type would be? Can it carry MPCPDUs, OAMPDUs, and data PDUs?
- ❑ Traffic-bearing LLIDs consume ONU resources, such as a number of 64-bit statistic counters, or instantiation of a MAC/LLID interface to MAC Client. If operator wants to group several LLIDs for upstream scheduling, there is no reason to force the ONU to lock down resources for downstream-only GLID that won't be used.

- ❑ OAM always shall be very specific about the requested actions
 - If downstream-only LLID is required, provision it as just the downstream-only LLID (already does that with the *acConfigLlid* action)
 - If upstream grouping is required to offload the OLT scheduler, provision just the GLID (using *acConfigGlid* action) and not waste any additional resources in the downstream path.
 - LLID tags must be unique. Don't allow the same LLID tag to represent both downstream-only ULID and upstream GLID.
 - GLID value should never appear in any envelope header, upstream or downstream

Strike "or GLID" in 144.3.5

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