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## GMPLS MIB family update

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### Abstract

This memo describes the necessity of generalized multi-protocol label switching (GMPLS) management information base (MIB) family update. Since the establishment of basic GMPLS protocol specifications, additional functionalities has been proposed and standardized so far, such as recovery, call support, optical transport network (OTN) support and so forth. Coinciding with these additional specifications, GMPLS MIB family is also desired to be updated to manage GMPLS networks appropriately. This document is to clarify missing pieces in currently defined GMPLS MIB family due to the enhancement of original GMPLS protocols.

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## [1](#). Introduction

With standardizing basic GMPLS protocols, ccamp WG has also defined related GMPLS MIBs to manage label switched routers (LSRs), label switched paths (LSPs) and TE links. However, as the time being, additional functionalities have been proposed and standardized so far, such as recovery, call support, OTN support and so forth. Coinciding with these specifications, GMPLS MIB family is desired to be updated to manage GMPLS networks appropriately. This document is to clarify missing pieces in currently defined GMPLS MIB family due to the enhancement of GMPLS protocols and to propose to start the update work of GMPLS MIB family.

## [2](#). Conventions used in this document

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [RFC-2119](#) [[RFC2119](#)].

## [3](#). GMPLS MIB family

CCAMP WG created series of GMPLS MIB specification so far to manage label switched routers (LSRs), label switched paths (LSPs) and traffic engineering (TE) links, accompanying with MPLS MIBs created in MPLS WG, summarized as follows,

- (1) GMPLS TC MIB: [[RFC4801](#)]
- (2) LSRs (Nodes)

- GMPLS LSR MIB: [[RFC4803](#)]  
     (MPLS LSR MIB: [[RFC3813](#)])
- (3) LSPs (Paths)
- GMPLS TE MIB: [[RFC4802](#)]  
     (MPLS TE MIB: [[RFC3812](#)])
- (4) TE Links (Links)
- LMP MIB: [[RFC4631](#)]  
     (TE link MIB: [[RFC4220](#)])

CCAMP WG is also working for the MIB specification to manage TE database information.

- (5) TE database (routing)
- TEDB MIB: [[GMPLS-TED-MIB](#)]

#### **4. GMPLS protocol updates**

Since the establishment of the original GMPLS protocol specifications, additional functionalities have been added so far summarized as follows.

Original signaling specifications [RFC3471, [RFC3473](#)] were mainly updated for the inclusion of

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- Egress support [[RFC4003](#)]
- OTN support [[RFC4328](#)]
- Exclude route [[RFC4874](#)]
- Recovery of end-to-end and segment-by-segment [RFC4872, [RFC4873](#)]
- Call support [[RFC4974](#)]

Moreover, in the future, this will be also updated by

- Ethernet support
- Lambda support

#### **5. Missing pieces of GMPLS MIB Family**

Here is a possible list of future inclusion to GMPLS MIB Family. Inclusion will be determined according to GMPLS OAM requirements [[GMPLS-OAM-REQ](#)].

- (1) Node
  - Ingress and Egress port control information of each LSP
  - OTN label as GMPLS label types
  - Administrative status of cross-connections for recovery purpose
- (2) Paths
  - GMPLS recovery types of LSPs

- LSP status information related with recovery
- Ingress/Egress port information of GMPLS LSPs

(3) Link

- OTN as an encoding type

## 6. Security consideration

This document introduces no new security considerations in [[RFC3471](#)] and [[RFC3471](#)].

## 7. IANA Considerations

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- C. See "Guidelines for Writing an IANA Considerations Section in RFCs" [[RFC2434](#)] (Narten, T. and H. Alvestrand, "Guidelines for Writing an IANA Considerations Section in RFCs, " October 1998.) and in some cases also "IANA Allocation Guidelines For Values In the Internet Protocol and Related Headers" [[RFC2780](#)] (Bradner, S. and V. Paxson, "IANA Allocation Guidelines For Values In the Internet Protocol and Related Headers, " March 2000.). In some case "Assigning Experimental and Testing Numbers Considered Useful" [[RFC3692](#)] (Narten, T., "Assigning Experimental and Testing Numbers Considered Useful," January 2004.) may help as well.
- D.

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## 8. Acknowledgement

The authors would like to express their thanks to Adrian Farrel for the discussion.

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