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**A SNMP MIB to manage GMPLS TED with WSON specific support  
draft-gmngm-ccamp-wson-snmp-mib-00**

**Abstract**

This memo defines a portion of the Management Information Base (MIB) used by Simple Network Management Protocol (SNMP) for GMPLS based networks.

In particular in the context Wavelength Switching Optical Network (WSON) two sets of information were defined: a general constrains set (reusable by other technologies) and a WSON specific set. This document defines a MIB module for supporting GMPLS WSON specific information.

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## **1. Introduction**

This memo defines a portion of the Management Information Base (MIB) used by Simple Network Management Protocol (SNMP) in GMPLS networks.

Extensions to current GMPLS to support Wavelength Switched Optical Networks (WSON) [[RFC6163](#)] include new objects with specific protocol extensions. Some information was selected as a generic constraint since they could be easily applied to other technologies than WSON. As such this [[I-D.ietf-ccamp-gmpls-general-constraints-ospf-te](#)] OSPF-TE was proposed and that information will be managed through a separated MIB [ref required].

In case of WSON some technology specific information are required and defined through [[I-D.ietf-ccamp-rwa-info](#)] and [[I-D.ietf-ccamp-wson-signal-compatibility-ospf](#)]. This MIB module will define objects related to WSON specific information.

[EDITOR NOTE] Very early draft to start MIB activity on GMPLS-WSON related extensions and collect feedback from working group.

## **2. The Internet-Standard Management Framework**

For a detailed overview of the documents that describe the current Internet-Standard Management Framework, please refer to [section 7 of RFC 3410](#) [[RFC3410](#)].

Managed objects are accessed via a virtual information store, termed the Management Information Base or MIB. MIB objects are generally accessed through the Simple Network Management Protocol (SNMP). Objects in the MIB are defined using the mechanisms defined in the Structure of Management Information (SMI). This memo specifies a MIB module that is compliant to the SMIv2, which is described in STD 58, [RFC 2578](#) [[RFC2578](#)], STD 58, [RFC 2579](#) [[RFC2579](#)] and STD 58, [RFC 2580](#) [[RFC2580](#)].

## **3. Conventions**

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](#)]. In the description of OIDs the convention: Set (S) Get (G) and Trap (T) conventions will describe the action allowed by the parameter.



## **4. Overview**

This MIB module should be used in conjunction with [I-D.ietf-ccamp-gmpls-ted-mib] since it only defines additional parameters to GMPLS TED MIB.

## **5. Structure of the MIB Module**

### **5.1. tedWsonNodeTable**

#### **5.1.1. tedWsonResourceBlockInformation**

#### **5.1.2. tedWsonResourcePoolAccessibility**

#### **5.1.3. tedWsonResourceBlockWavelengthConstraints**

#### **5.1.4. tedWsonResourcePoolState**

#### **5.1.5. tedWsonBlockSharedAccessWavelengthAvailability**

## **6. Relationship to Other MIB Modules**

### **6.1. Relationship to the [TEMPLATE TODO] MIB**

### **6.2. MIB modules required for IMPORTS**

## **7. Definitions**

[TEMPLATE TODO]: put your valid MIB module here.  
A list of tools that can help automate the process of checking MIB definitions can be found at <http://www.ops.ietf.org/mib-review-tools.html>

## **8. Security Considerations**

There are a number of management objects defined in this MIB module with a MAX-ACCESS clause of read-write and/or read-create. Such objects may be considered sensitive or vulnerable in some network environments. The support for SET operations in a non-secure environment without proper protection can have a negative effect on network operations. These are the tables and objects and their sensitivity/vulnerability:



0

Some of the readable objects in this MIB module (i.e., objects with a MAX-ACCESS other than not-accessible) may be considered sensitive or vulnerable in some network environments. It is thus important to control even GET and/or NOTIFY access to these objects and possibly to even encrypt the values of these objects when sending them over the network via SNMP.

SNMP versions prior to SNMPv3 did not include adequate security. Even if the network itself is secure (for example by using IPsec), even then, there is no control as to who on the secure network is allowed to access and GET/SET (read/change/create/delete) the objects in this MIB module.

It is RECOMMENDED that implementers consider the security features as provided by the SNMPv3 framework (see [\[RFC3410\]](#), [section 8](#)), including full support for the SNMPv3 cryptographic mechanisms (for authentication and privacy).

Further, deployment of SNMP versions prior to SNMPv3 is NOT RECOMMENDED. Instead, it is RECOMMENDED to deploy SNMPv3 and to enable cryptographic security. It is then a customer/operator responsibility to ensure that the SNMP entity giving access to an instance of this MIB module is properly configured to give access to the objects only to those principals (users) that have legitimate rights to indeed GET or SET (change/create/delete) them.

## **9. IANA Considerations**

Option #1:

The MIB module in this document uses the following IANA-assigned OBJECT IDENTIFIER values recorded in the SMI Numbers registry:

Descriptor	OBJECT IDENTIFIER value
-----	-----
sampleMIB	{ mib-2 XXX }

Option #2:

Editor's Note (to be removed prior to publication): the IANA is requested to assign a value for "XXX" under the 'mib-2' subtree and to record the assignment in the SMI Numbers registry. When the assignment has been made, the RFC Editor is asked to replace "XXX"





(here and in the MIB module) with the assigned value and to remove this note.

Note well: prior to official assignment by the IANA, an internet draft MUST use placeholders (such as "XXX" above) rather than actual numbers. See [RFC4181 Section 4.5](#) for an example of how this is done in an internet draft MIB module.

Option #3:

This memo includes no request to IANA.

## **10. Contributors**

to be added.

## **11. References**

### **11.1. Normative References**

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- [RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [BCP 14](#), [RFC 2119](#), March 1997.
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## **[11.2. Informative References](#)**

[RFC3410] Case, J., Mundy, R., Partain, D., and B. Stewart, "Introduction and Applicability Statements for Internet-Standard Management Framework", [RFC 3410](#), December 2002.

[RFC2629] Rose, M., "Writing I-Ds and RFCs using XML", [RFC 2629](#), June 1999.

[RFC4181] Heard, C., "Guidelines for Authors and Reviewers of MIB Documents", [BCP 111](#), [RFC 4181](#), September 2005.

[RFC6163] Lee, Y., Bernstein, G., and W. Imajuku, "Framework for GMPLS and Path Computation Element (PCE) Control of Wavelength Switched Optical Networks (WSONs)", [RFC 6163](#), April 2011.

[I-D.ietf-ccamp-rwa-info]

Lee, Y., Bernstein, G., Li, D., and W. Imajuku, "Routing and Wavelength Assignment Information Model for Wavelength Switched Optical Networks", [draft-ietf-ccamp-rwa-info-14](#) (work in progress), March 2012.

## **[Appendix A. Change Log](#)**

This optional section should be removed before the internet draft is submitted to the IESG for publication as an RFC.

Note to RFC Editor: please remove this appendix before publication as an RFC.



## **Appendix B. Open Issues**

Note to RFC Editor: please remove this appendix before publication as an RFC.

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