



# Taara SNMPv3 implementation guide

## About Taara's SNMPv3 implementation

Taara Lightbridge terminals have two mechanisms that allow monitoring of link status, performance, and hardware issues. The first method is Taara Cloud streaming, where a terminal that has internet access can automatically send telemetry data to a database which is then used by Taara Prism to monitor the state of each link under a customer's account.

The second method, described in the present document, is SNMPv3, which allows customers to monitor their Lightbridge links using on-prem Network Management System (NMS) solutions such as SolarWinds or Zabbix.

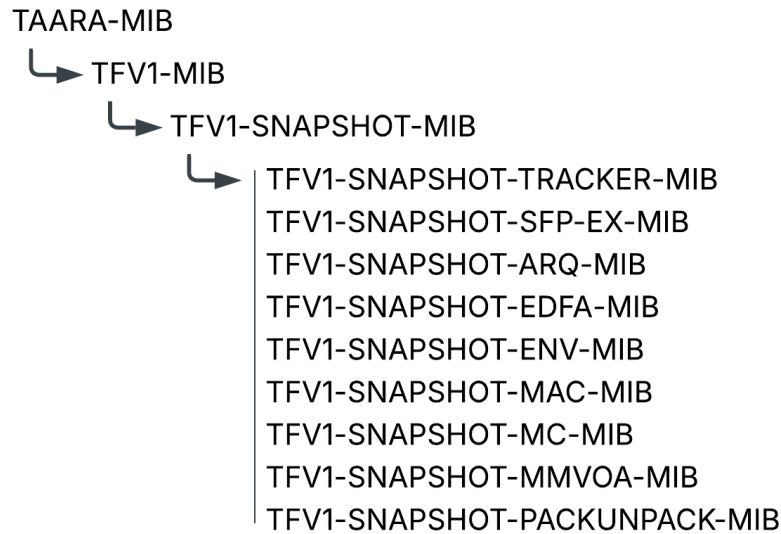
This guide describes the structure of the MIB files supplied by Taara, how to import them into an NMS, and what each OID represents and what are its acceptable values.

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# SNMPv3 MIB structure

The structure of the Taara Instrumentation package is shown in the figure below:



The TaaraMIB in the supplied .zip file contains the MIB files applicable to Taara Lightbridge terminals, and also contains four SNMPv2 standard support files, which provide variable type definitions.

## OID descriptions

For each OID, where an X is shown at the end, it signifies that the OID contains values for both channels. Channel number takes the form of 0 for channel 1, and 1 for channel 2.

### Tracker - fast steering mirror and beacon

Indicates the position of the fast steering mirror and RSSI value of the tracking system.

**tfV1SnapshotTrackerFSMAvg - .1.3.6.1.4.1.52747.1.1.3.1.3.2.1.9**

Average azimuth position of the FSM.

**tfV1SnapshotTrackerFSMAvg - .1.3.6.1.4.1.52747.1.1.3.1.3.2.1.12**

Average elevation position of the FSM.

**tfV1SnapshotTrackerRSSIAvg - .1.3.6.1.4.1.52747.1.1.3.1.3.2.1.3**

Average RSSI of the tracking beacon. Nominal links show around -20 dBm, the limit for traffic to flow through the link is -39 dBm.

## SFPEX - External client SFP modules

### **tfV1SnapshotSFPEXPresent - .1.3.6.1.4.1.52747.1.1.3.1.19.2.1.3.X**

Indicates a client SFP is present and detected by the terminal in each of the Octis connector slots.

### **tfV1SnapshotSFPEXRxPower - .1.3.6.1.4.1.52747.1.1.3.1.19.2.1.5.X**

Received laser power level from the device (e.g. router or switch) connected to the terminal via fiber cable.

### **tfV1SnapshotSFPEXTxPower - .1.3.6.1.4.1.52747.1.1.3.1.19.2.1.4.X**

Transmit power level of the client SFP in each channel.

## ARQ - Modem

### **tfV1SnapshotARQLatencyAvg - .1.3.6.1.4.1.52747.1.1.3.1.12.2.1.1.26.X**

Indicates the average latency through the link, as caused by ARQ use. When the link operates nominally, latency will be around 0.16 ms in each direction, for 0.32 ms RTT. The maximum latency before frame loss occurs is 100 ms.

### **tfV1SnapshotARQPacketLossRate - .1.3.6.1.4.1.52747.1.1.3.1.12.2.1.22.X**

Indicates the current packet loss rate per channel, due to degraded link conditions.

### **tfV1SnapshotARQLatencyMax - .1.3.6.1.4.1.52747.1.1.3.1.12.2.1.25.X**

Maximum latency per channel, as caused by ARQ use.

## EDFA - Power amplifier

The EDFA amplifies the power of the optical train to enable the link to close at distances up to 20 kilometers. It has an output power range between 5 dB and 30 dB.

### **tfV1SnapshotEDFAAlarmLaserOff - .1.3.6.1.4.1.52747.1.1.3.1.5.2.1.19**

Indicates an alarm condition was detected by the EDFA which caused it to turn off.

### **tfV1SnapshotEDFAAlarmPowerSupply - .1.3.6.1.4.1.52747.1.1.3.1.5.2.1.20**

Indicates the EDFA has detected a fault in the power supply.

### **tfV1SnapshotEDFAEnabled - .1.3.6.1.4.1.52747.1.1.3.1.5.2.1.14**

Indicates whether the power amplifier is enabled. For normal link operation, the EDFA must be powered and enabled.

### **tfV1SnapshotEDFAOutputPowerSetpoint - .1.3.6.1.4.1.52747.1.1.3.1.5.2.1.8**

Indicates the current output power level of the EDFA.

## **tfV1SnapshotEDFAStatusPowerEnabled - .1.3.6.1.4.1.52747.1.1.3.1.5.2.1.2**

Indicates whether power to the EDFA has been enabled. This is required to enable the EDFA.

## **ENV - Environmental**

Internal conditions measured by the terminal.

## **tfV1SnapshotEnvUnitHumidity - .1.3.6.1.4.1.52747.1.1.3.1.8.2.1.5**

Indicates the current humidity inside the terminal housing.

## **tfV1SnapshotEnvUnitTemp - .1.3.6.1.4.1.52747.1.1.3.1.8.2.1.4**

Indicates the current terminal inside the terminal housing.

## **MAC - Traffic**

Captures modem utilization metrics.

## **tfV1SnapshotMACRxUtilization .1.3.6.1.4.1.52747.1.1.3.1.11.2.1.2.X**

Utilization of the receive modem, per channel, from 0 to 100% of 10 Gbps.

## **tfV1SnapshotMACTxUtilization .1.3.6.1.4.1.52747.1.1.3.1.11.2.1.3.X**

Utilization of the transmit modem, per channel, from 0 to 100% of 10 Gbps.

## **MC - Main controller, coarse tracking system**

Runs the tracking system, including the Coarse Pointing Mirror (CPM).

## **tfV1SnapshotMCCpmAzLtaUrad - .1.3.6.1.4.1.52747.1.1.3.1.17.2.1.30**

Last good tracking angle of the CPM in azimuth.

## **tfV1SnapshotMCCpmAzUrad - .1.3.6.1.4.1.52747.1.1.3.1.17.2.1.9**

Actual pointing angle of the CPM in azimuth.

## **tfV1SnapshotMCCpmElLtaUrad - .1.3.6.1.4.1.52747.1.1.3.1.17.2.1.31**

Last good tracking angle of the CPM in elevation.

## **tfV1SnapshotMCCpmElUrad - .1.3.6.1.4.1.52747.1.1.3.1.17.2.1.10**

Actual pointing angle of the CPM in elevation.

## **tfV1SnapshotMCSmNewState - .1.3.6.1.4.1.52747.1.1.3.1.17.2.1.5**

Tracking system state. 5 indicates idle, 11 indicates tracking. For normal operation, the terminals should be in tracking state.

## MMVOA - Communication system

Indicates damage or failures in the avalanche photodiode (APD), which can degrade or completely prevent data traffic through the link.

**tfV1SnapshotMMVOAApd0Failure .1.3.6.1.4.1.52747.1.1.3.1.16.2.1.8**

Indicates a failure of the channel 1 APD.

**tfV1SnapshotMMVOAApd1Failure .1.3.6.1.4.1.52747.1.1.3.1.16.2.1.9**

Indicates a failure of the channel 2 APD.

## PACKUNPACK - Layer 1 and Layer 2

Measures layer 1 and layer 2 ethernet throughput through the modem.

**tfV1SnapshotUnpackL1Throughput - .1.3.6.1.4.1.52747.1.1.3.1.13.2.1.10.X**

Current Layer 1 throughput through the modem.

**tfV1SnapshotUnpackL2Throughput - .1.3.6.1.4.1.52747.1.1.3.1.13.2.1.11.X**

Current Layer 2 throughput through the modem.