



Layer Management Proposal

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Components of a complete RPR proposal

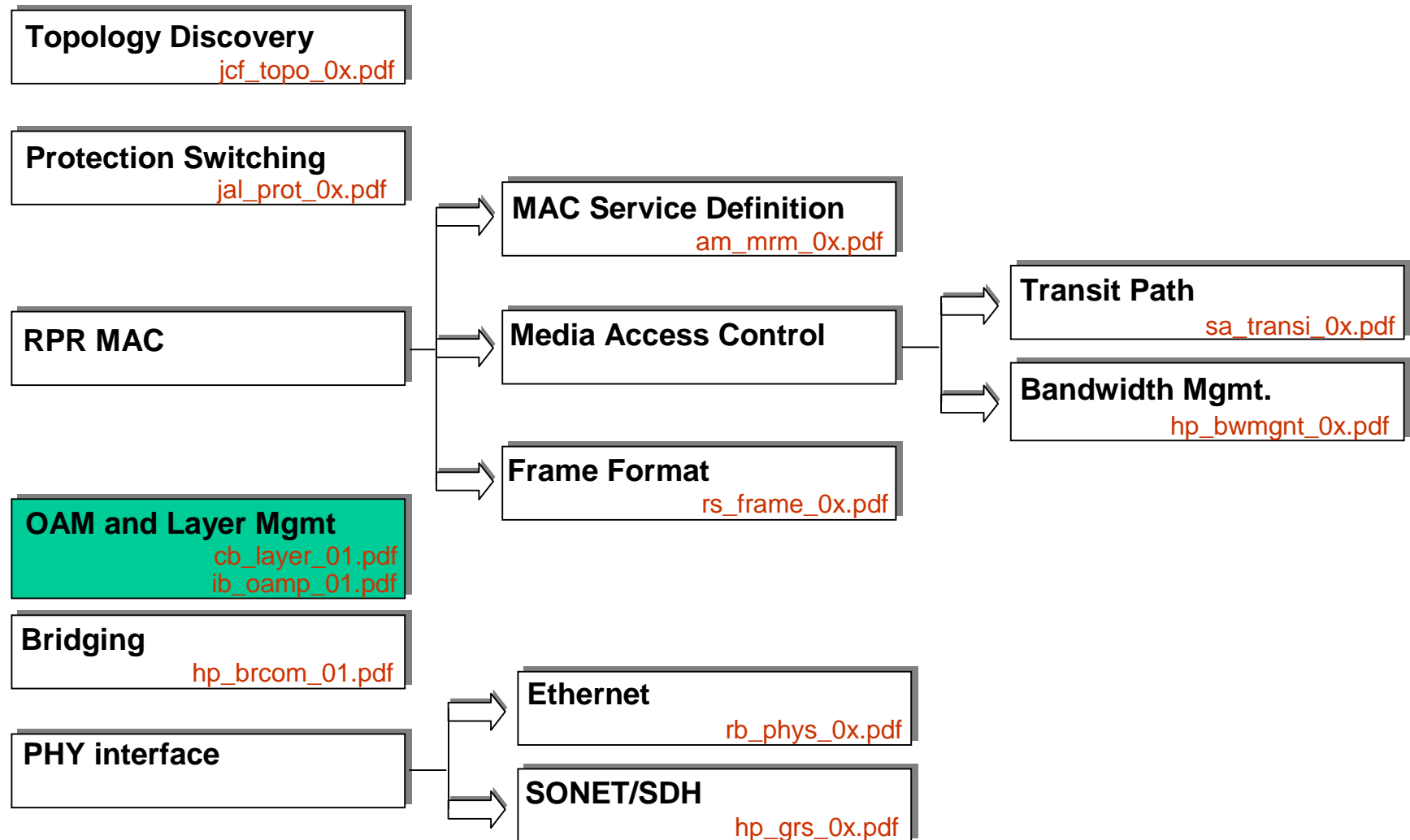




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Introduction



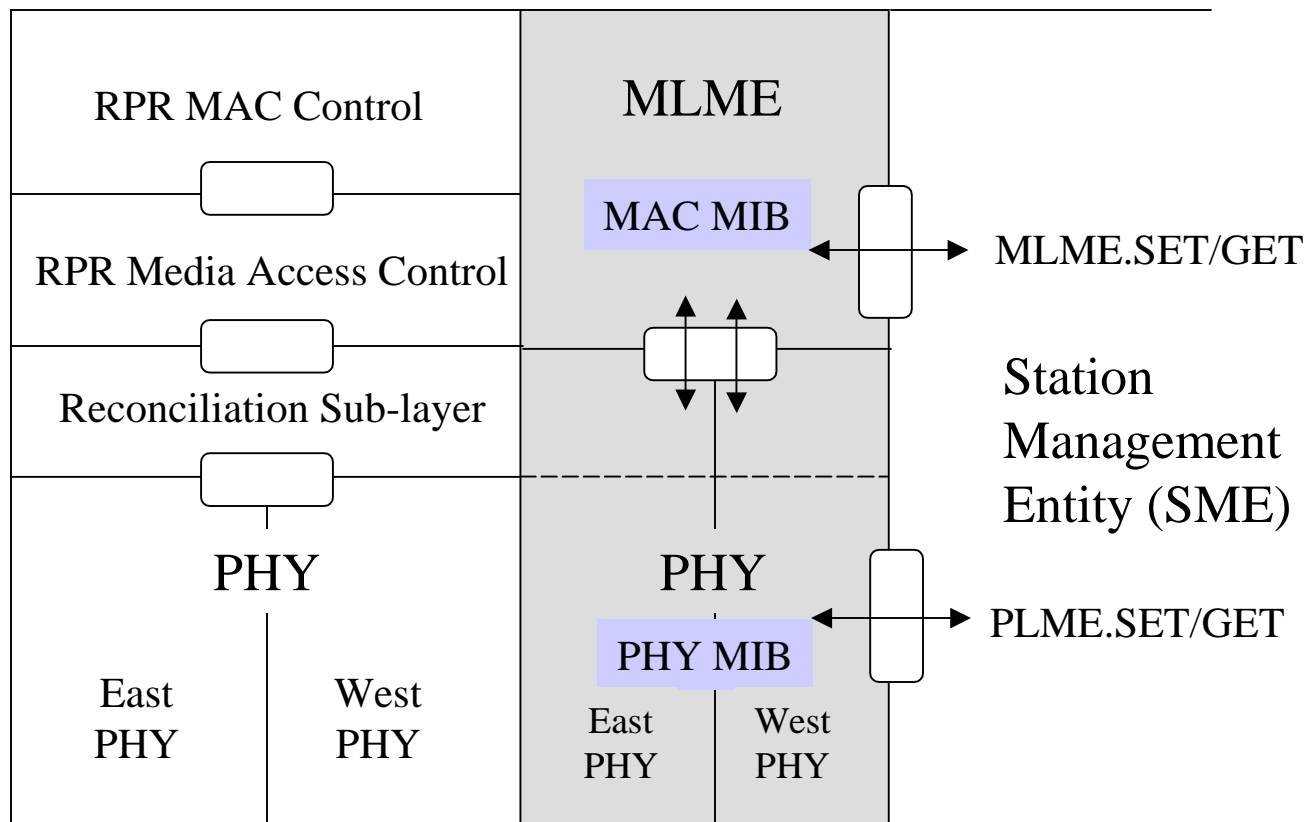
Scope of the Presentation

- Define a framework for Layer Management
- Provide for Configuration Management
- Provide for Fault Management
- Provide for Performance Monitoring
- Define the Service Access Point (SAP) between the Layer Management and the MAC Layer
- Define a Management Information Base (MIB)



Reference Model

Reference Model





MIB Overview



Standard MIB References

- Generic interface objects defined in the IF-MIB (RFC 2863)
- IEEE 802.3 MAC objects defined in the EtherLike-MIB (RFC 2665)
 - Updated MIB in preparation (draft-ietf-hubmin-etherif-mib-v3-00)
- IEEE 802.3 PHY objects defined in the MAU-MIB (RFC 2668)
 - Updated MIBs in preparation (draft-ietf-hubmin-mau-mib-v3-00 and draft-ietf-hubmib-wis-mib-00)
- SONET/SDH PHY objects defined in the SONET-MIB (RFC 2558)
- GFP objects are not yet defined
- PoS objects defined in the LCP-MIB (RFC 1471)
 - The objects to manage the RPR NCP are not yet defined

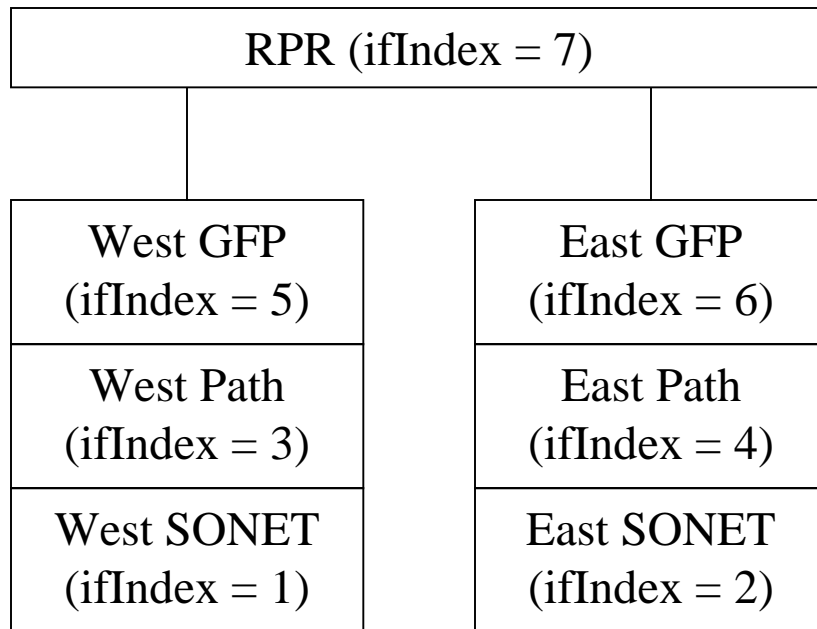


RPR Management Dependencies

- Relationship to the Interfaces MIB
 - The IF-MIB defines generic objects whose meaning is left vague. The media-specific MIB should define a semantic to these generic objects
- The RPR MIB shall define all the RPR specific objects that cannot be derived from the generic objects in the IF-MIB
- Layering Model
 - Any RPR interface is stacked over two lower-layer interfaces, representing the two spans
 - The layering relationship is defined in the ifStackTable



RPR over SONET (GFP) Layering

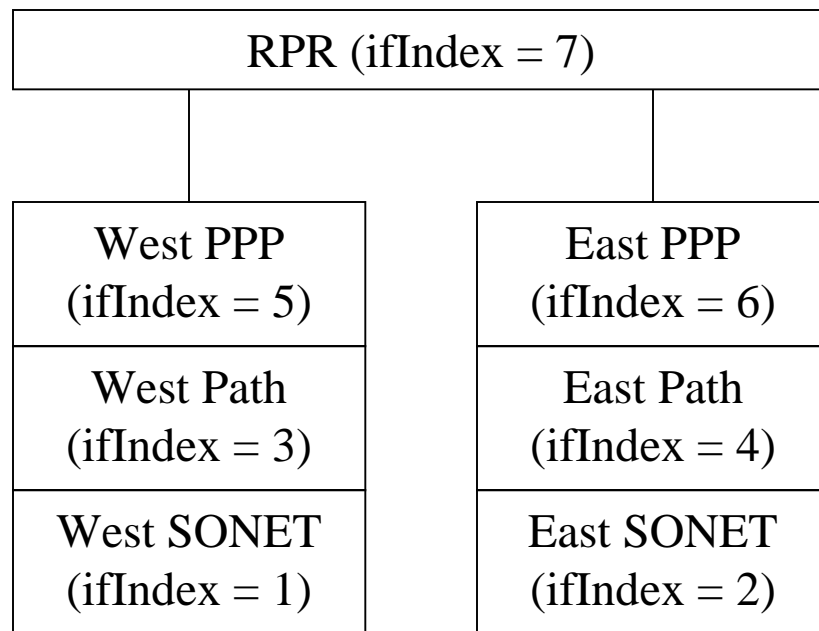


ifTable (IF-MIB)

ifIndex	ifType
1	sonet (39)
2	sonet (39)
3	sonetPath (50)
4	sonetPath (50)
5	gfp (tbd)
6	gfp (tbd)
7	ieee80217 (tbd)



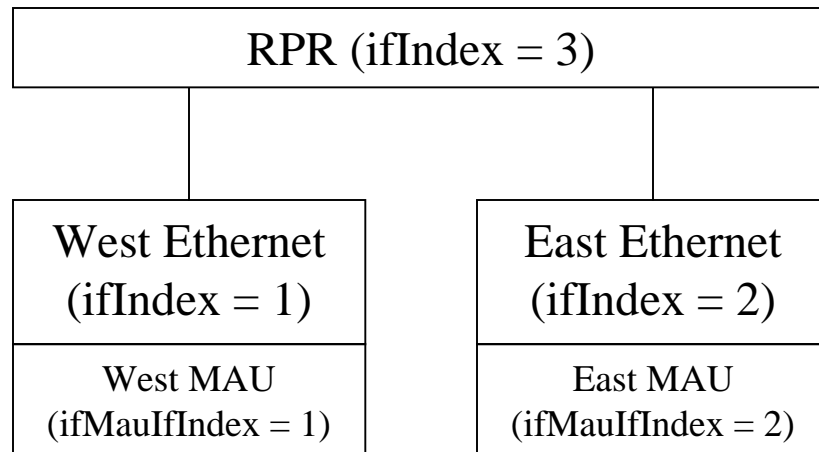
RPR over SONET (PoS) Layering



ifTable (IF-MIB)

ifIndex	ifType
1	sonet (39)
2	sonet (39)
3	sonetPath (50)
4	sonetPath (50)
5	ppp (23)
6	ppp (23)
7	ieee80217 (tbd)

RPR over Ethernet Layering



ifTable (IF-MIB)

ifIndex	ifType
1	(Note 1)
2	(Note 1)
3	ieee80217 (tbd)

ifMauTable (MAU-MIB)

ifMauIfIndex	...
1	...
2	...

Note 1 – We have two options

1. Reuse the existing ethernetCsmaCd
2. Define a new ifType



PHY Management Issues

- **The idea is to reuse as much as possible the existing MIB**
- SONET/SDH MIBs can be reused
- **GFP MIB is missing**
- PoS MIBs are partially ready
 - LCP MIB can be reused
 - **RPRCP MIB is missing**
- MAU MIBs can be reused
- **Ethernet MIB cannot be reused**



RPR MIB Components

- The RPR Media Specific Group
 - A new ieee80217 value for the ifType is required
- The Topology Map table
- The RPR MAC to PHY side table
- The RPR Bw Management and Monitoring table
- The RPR Counters table
- The RPR Notifications



Conclusions on Layer Management



Layer Management



This Proposal:

Defines the Management of the RPR MAC interfaces according to the IETF SNMP principles

Other Proposals:

No other proposals are currently addressing the Layer Management issues

Summary:

IEEE 802.17 WG shall ask to the IANA a new ieee80217 value for the ifType



Layer Management –2



This Proposal:

Addresses the issues of reusing as much as possible the already defined MIB modules for the PHY layer management

Other Proposals:

No other proposals are currently addressing the Layer Management issues

Summary:

IEEE 802.17 WG should liaise with IETF for the missing pieces required for the IEEE 802.17 PHY management