

Proposal For Layer Management

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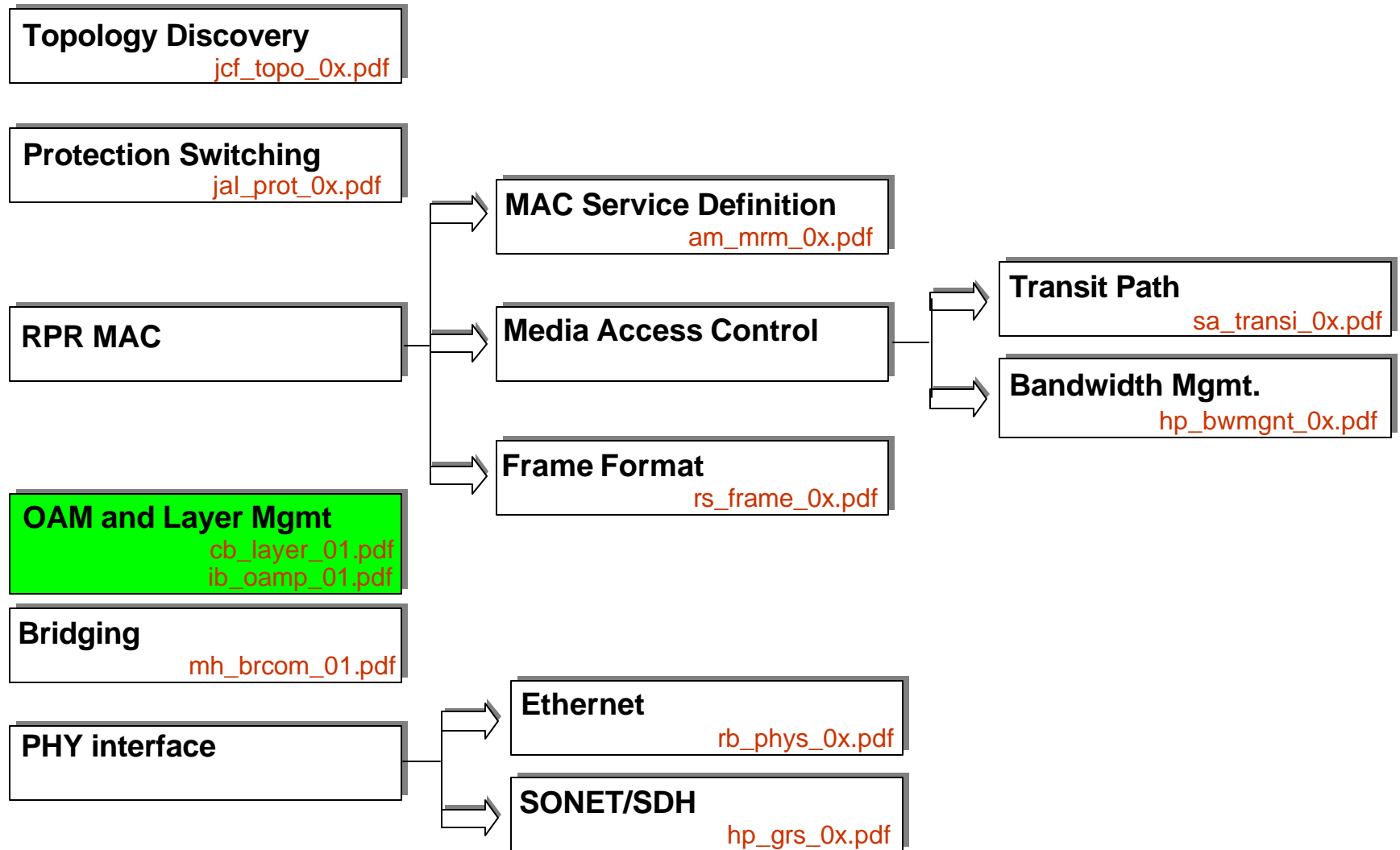
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Components of a complete RPR proposal



Goals

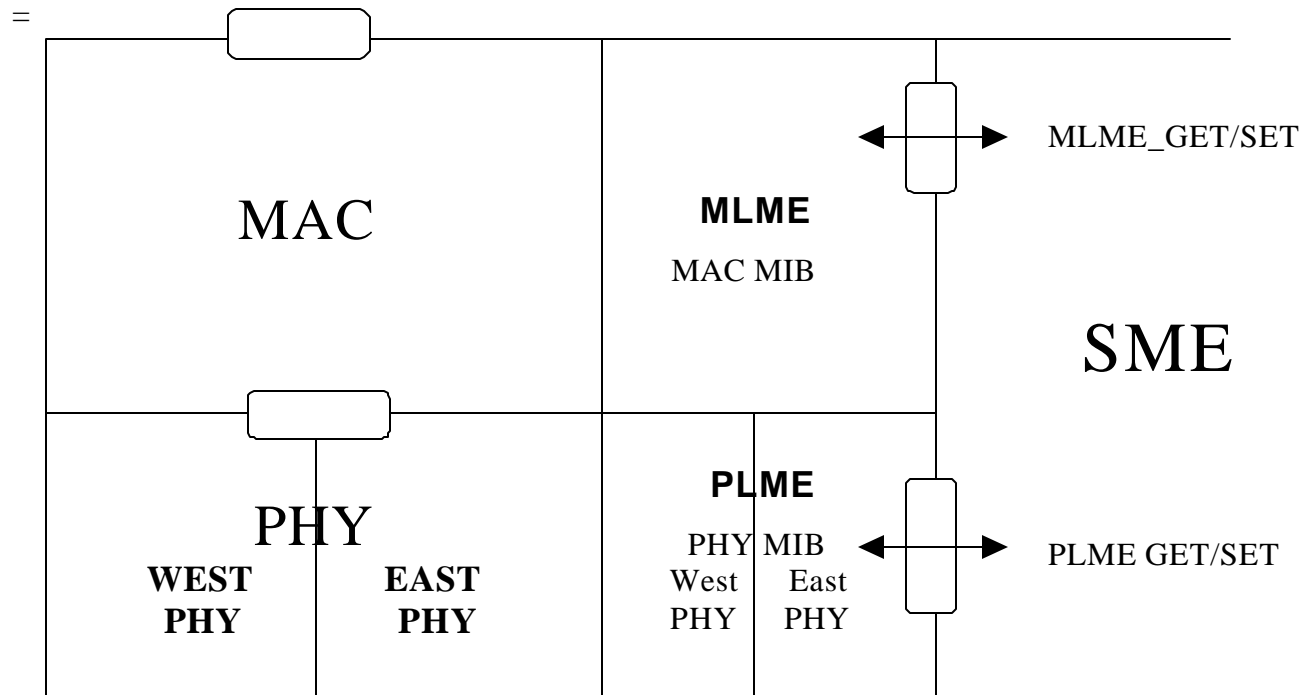
- Define a framework for Layer Management
- Provide for Configuration Management
- Provide for Fault Management
- Provide for Performance Monitoring
- Define the Service Access points between the Layer Management and the 802.17 MAC Layer.
- Propose to IETF a Management Information Base (MIB)

Overview

- Both RPR MAC and all applicable PHY layers conceptually include management entities, called MAC sub layer management and PHY layer management entities (MLME and PLME, respectively). These entities provide the layer management service interfaces through which layer management functions may be invoked. Also in order to provide correct RPR MAC operation, a station management entity (SME) must be present
- The management SAPs within this model are the following:
 - — SME-MLME SAP
 - — SME-PLME SAP
- The RPR interface is stacked over the two PHY interfaces (east and west). We will use standard layering principles to manage this stack of interfaces.

Reference Model

Relations between SME, MLME and PLME



MLME SAP Interface

- RPR interface configuration
- Topology discovery monitoring
- Protection switching
- Performance and Accounting Measurements
- Notifications and Fault Management
- Loop back Management

PLME SAP Interfaces

- The management of Sonet/SDH PHY as well as of Ethernet physical interfaces are already defined in the relevant standard recommendations. The IEEE 802.17 will reuse the already defined PLME SAP primitives to manage the Sonet/SDH and Ethernet PHY layers.
 - The Ethernet Reconciliation Sublayer management should be defined in the IEEE 802.3 specifications.
 - The GFP Adaptation Layer Management should be defined in the ITU GFP working group.

RPR Management Dependencies

- Relationship to the Interfaces MIB
 - The Interface MIB requires that any MIB, which is an adjunct of the Interface MIB, clarify specific areas within the Interface MIB. These areas were intentionally left vague in the Interface MIB to avoid over constraining the MIB, thereby precluding management of certain media-types. Each of these areas will be addressed.
- Layering Model
 - Any RPR interface is stacked over two lower-layer interfaces, representing the two spans. The layering relationship between the RPR interface and the lower-layer interfaces is defined in the ifStackTable.

RPR SNMP MIB Definition

- The RRP Media Specific group
- The topology map table
- The PRP MAC to PHY side table
- The RPR BW management and monitoring table
- The RPR MAC Protection switch thresholds table
- The RPR MAC Counters tables
- The RPR MAC Notifications