High-Level Requirements for the RPR MAC Client Interface

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Disclaimer

The following points are presented at a very high level. No attempt is being made to dive down to specific interface details

The RPRWG has not yet agreed upon objectives and requirements, hence the following should be viewed only as general ideas

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Assumptions on the Model

- Single client/single server model
  - Multiplexing is done above by the client
- The RPR layer is *thin* to allow vendors to offer value and to build RPR devices for different markets
- Fairness and BW management is by the client!
- Congestion management is split
  - The MAC provides basic flow control
  - The client uses this to control ingress traffic

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Data Forwarding

Send_Pkt (buffer, direction, priority)

Receive_Pkt (buffer, direction, priority)

Selective flow control per direction and priority

3-8 priority levels

- Or just 1 to avoid reordering (?)

Minimal size for thru and add buffers

- Handling of instantaneous contention only
- Mechanisms to report on watermarks

RPR header size must be n*32bits to allow for efficient alignment

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Payload Types

In the data path, we should not assume that the payload is Ethernet

Bridging issues?

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Topology Discovery

- The ring topology should be communicated to the client
- At start-up
- When a new node is inserted
  - It should get a fresh copy of the topology
  - Other nodes should be notified
- A way to communicate with East/West neighbors
  - The SONET/SDH HELLO (J1 path trace) should be left alone

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Protection

- Protection events and corrective actions should be communicated to the client based on topology
- Source squelching should be supported (and a notification propagated)
- If both wrapping and rerouting is supported, client should have control
- The client should be able to inject forced protection events

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Performance Monitoring

Counters maintained by the RPR MAC layer should be available to the client via MIBs

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Proposal

Consider:

- The general approach
- The specific requirement

Add to the WG agreed-upon list of requirements

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Thank You

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