Spatially aware bridging topology change handling

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Agenda

- Objectives
- Problem overview
- Solution overview

Objectives

- Outline procedures by which RPR spatially aware bridging handles topology or protection changes on RPR

Terminology and terms

- Directed transmissions – Refers to a RPR source station transmitting to a designated (unicast) destination address on the ring
- Undirected transmission – Refers to a RPR source station flooding a frame over the ring
- Remote address – A MAC address of a client that is not resident on the ring

Problem overview

- RPR protection or topology changes may invalidate entries within the spatially aware sublayer/shim (SAS) DB
  - For example, a RPR station may be removed from the ring, or is not accessible from a given source RPR MAC

NOTE: Handling network topology changes is out of scope. For example, network topology changes in a bridged network in which RPR participates is out of scope.

Solution overview

- Whenever a topology (or protection) change is detected on the ring, then all entries in the SAS FDB are cleared
  - This results in all subsequent frame transmissions to be undirected until re-learning takes place

Spatially aware shim (SAS)

- SAS is below MAC service interface (and within data link layer)
- An optional sublayer of RPR MAC

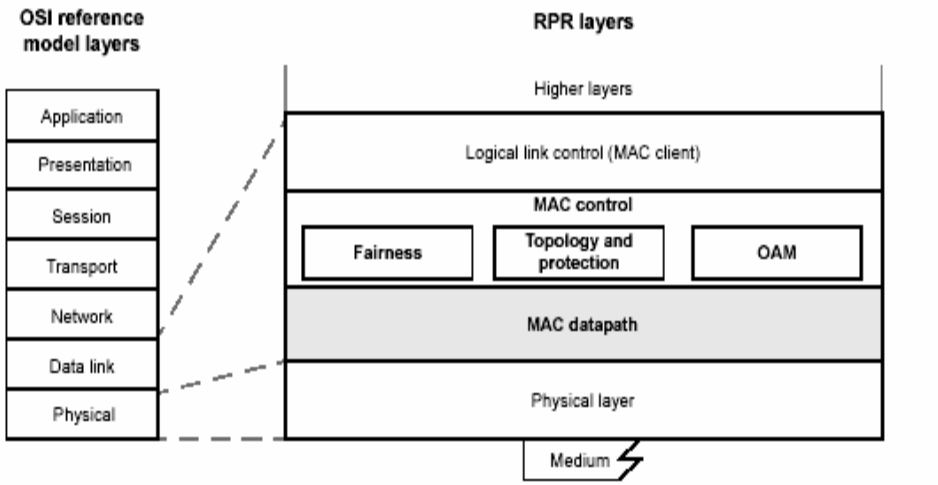
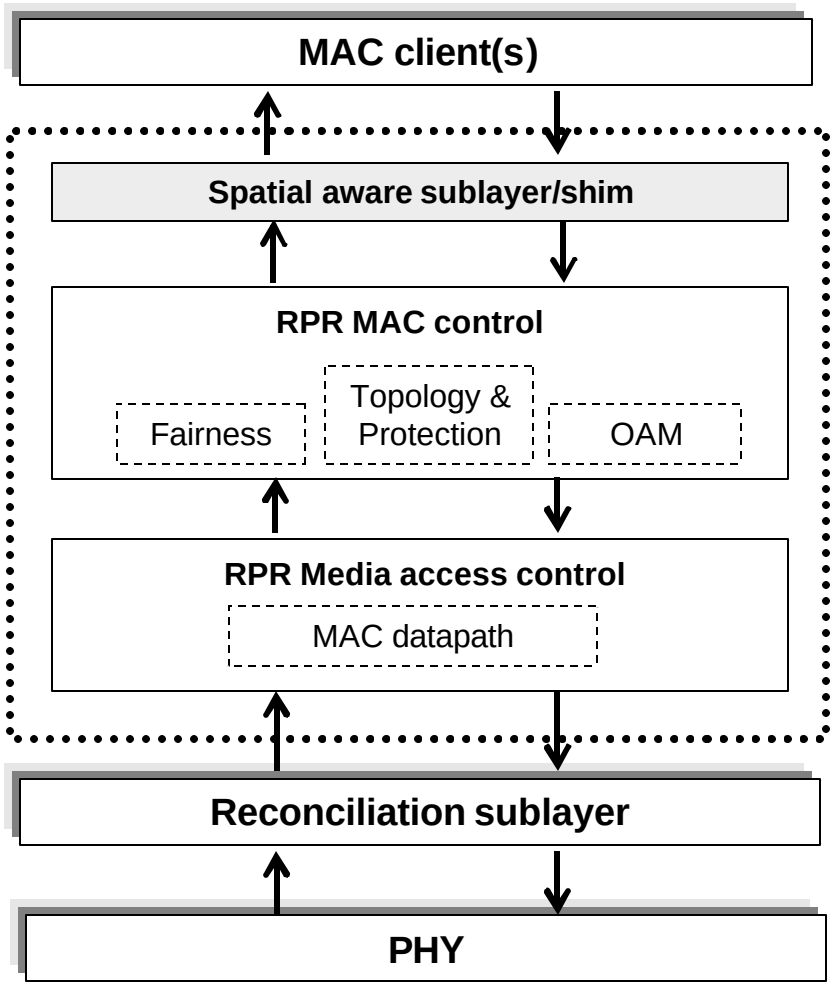
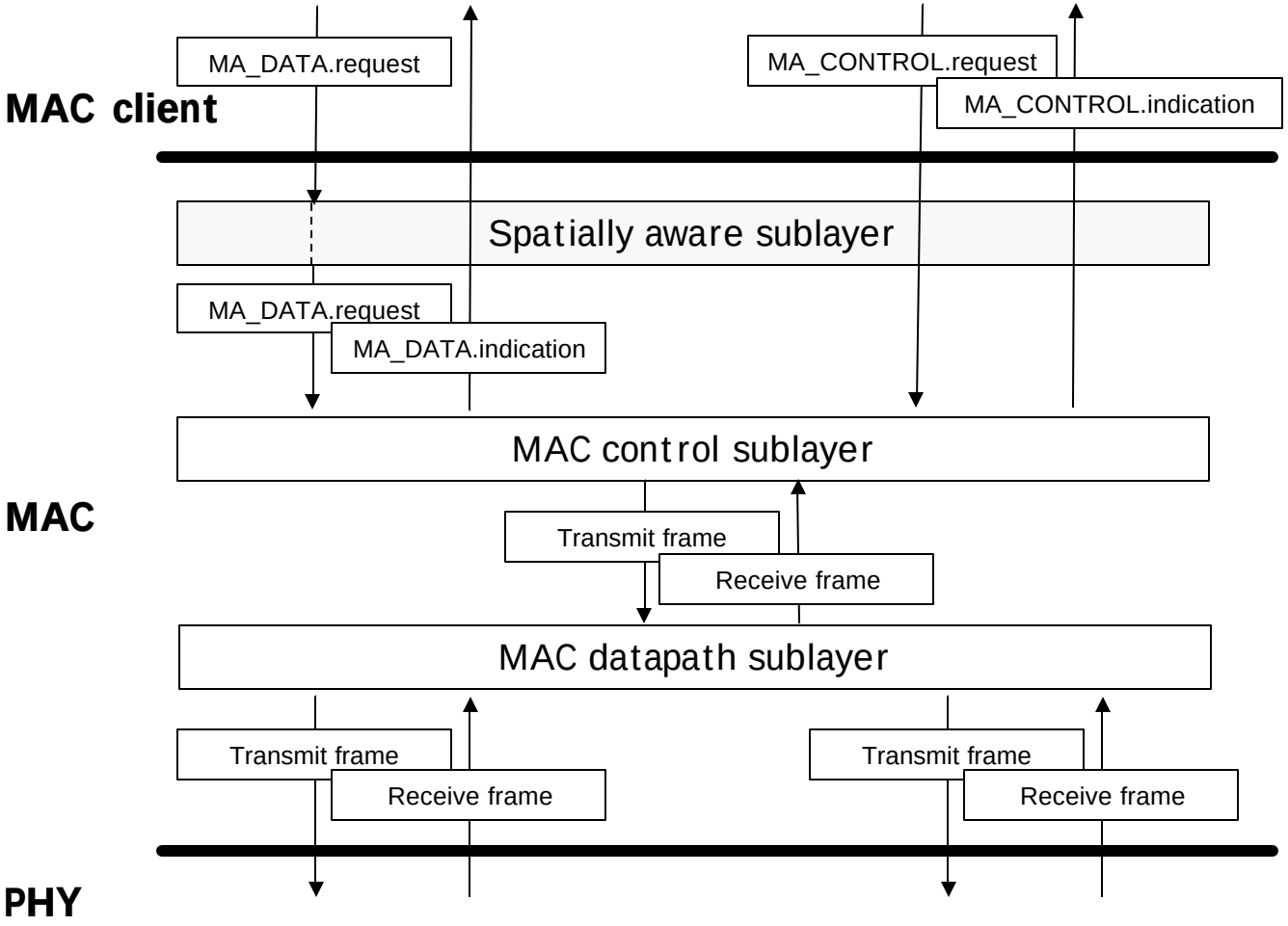


Figure 7.1—MAC datapath sublayer relationship to the ISO/IEC OSI reference model



Service primitives



Solution overview

- SAS will clear SAS FDB when a MA_CONTROL indication primitive is received, where
  - Opcode value is TOPO_CHANGE or PROT_CHANGE

MA_CONTROL.indication(opcode, indication_operand_list)