Spatial Aware Bridging on RPR Call For Interest

IEEE 802.17 Working Group
Portland, Oregon
July, 2004

Supporters

- Nortel Networks
- Cisco Systems
- Road Runner
- Lucent Technologies

Agenda

- Objectives
- Overview
- Technical Focus
- Market Potential
- Polling for Interest

Objectives of the CFI

- Stimulate interest and discussion
- Introduce the subject of Spatial Aware Bridging on RPR
- Gauge the level of interest in the subject
- Key question to be answered
  - Should we request at the 802.17 closing session to authorize the formation of a Study Group to develop a standards project proposal (PAR and 5 Criteria) for "Spatial Aware Bridging on RPR"

Spatial Reuse

- As per IEEE 802.17 specification

  "The concurrent transfer of independent traffic on non-overlapping portions of a ringlet"

  That is, traffic flows are directly addressed from one RPR station to another and are not flooded over the ring by default

Efficient Packet Transport over RPR

- One of the key features of RPR that can distinguish it from other network interconnects, include *efficiency*:

  "… *Design strategies increase effective bandwidths beyond those of a broadcast ring* …"

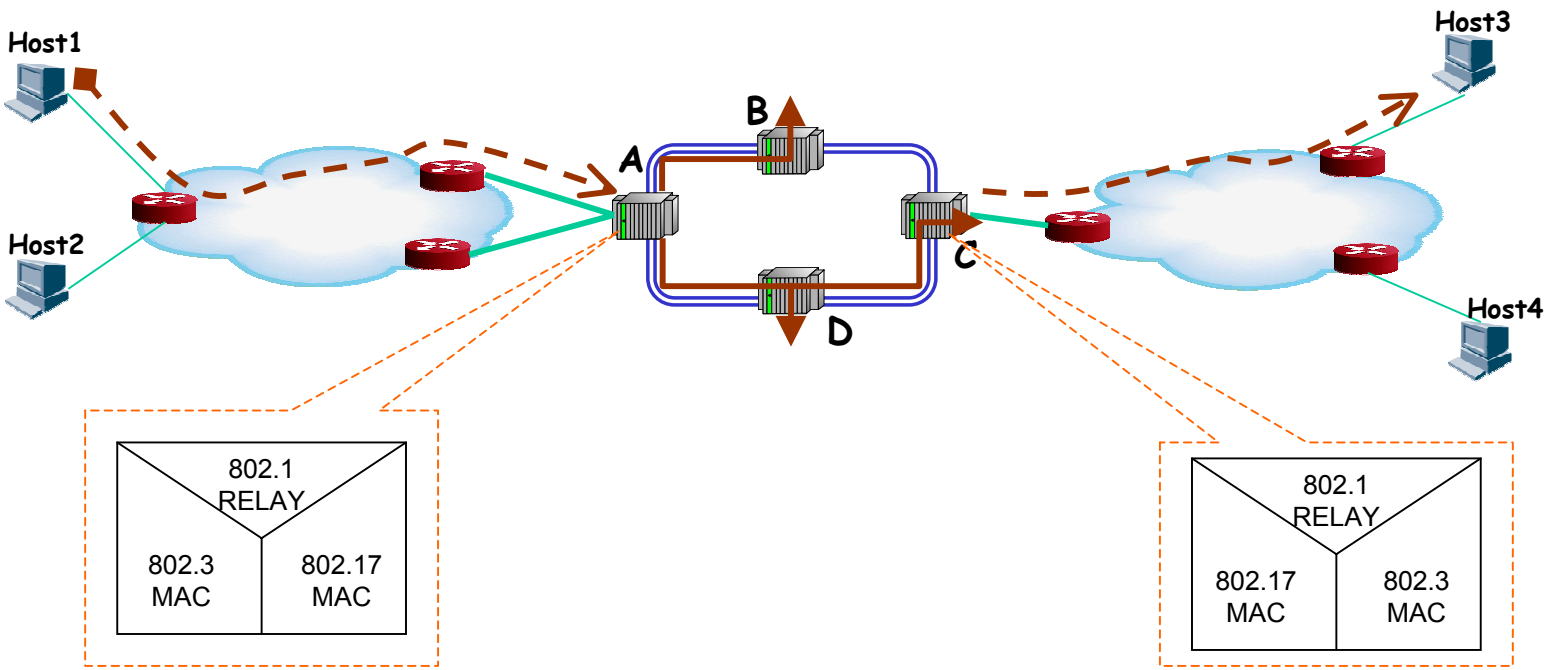
- Higher *efficiency* should be supported for the various packet switching technologies, including those defined by IEEE 802.1

Original PAR & 5 Criteria

- This work was originally part of the base standard for 802.17
  - The work was deferred until later in order to concentrate on other sections of the base standard
  - The appropriate hooks were placed in P802.17 in order to allow this work to be done as a follow-on project

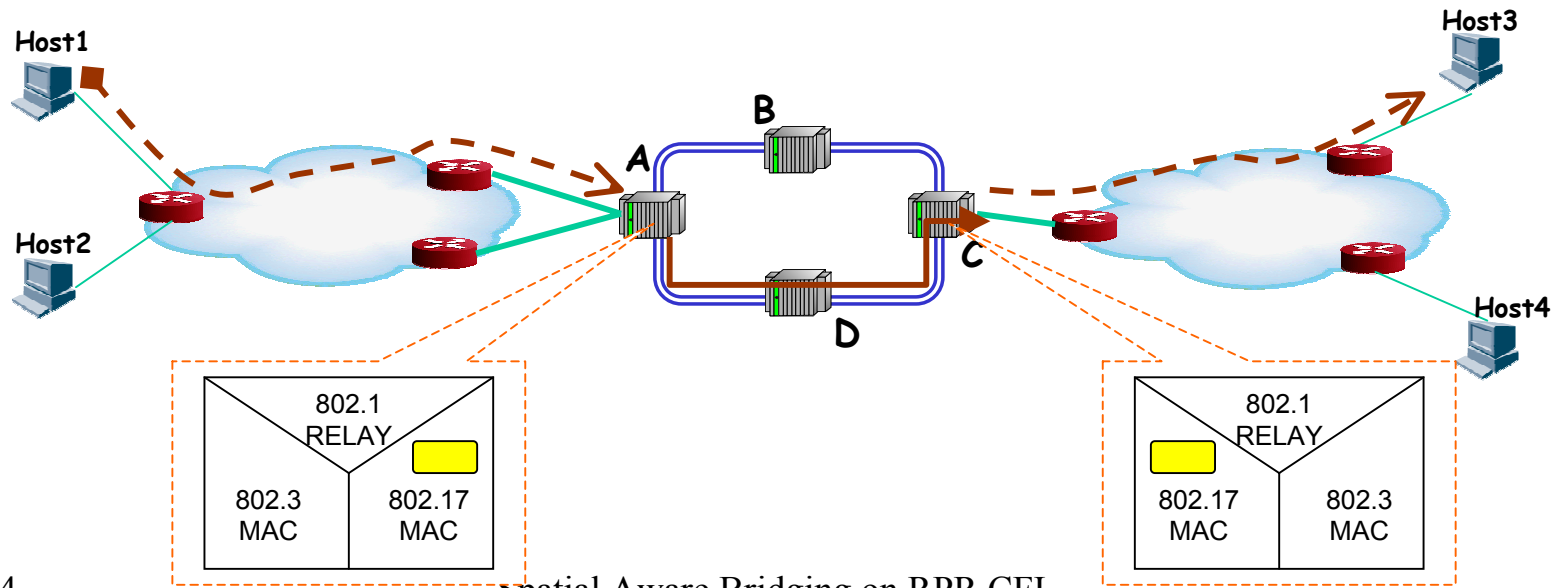
Bridging on RPR (802.17)

- Current specifications support bridging (IEEE 802.1) client frames on the RPR
- End result of bridged frames is that *no spatial reuse* is achieved on RPR



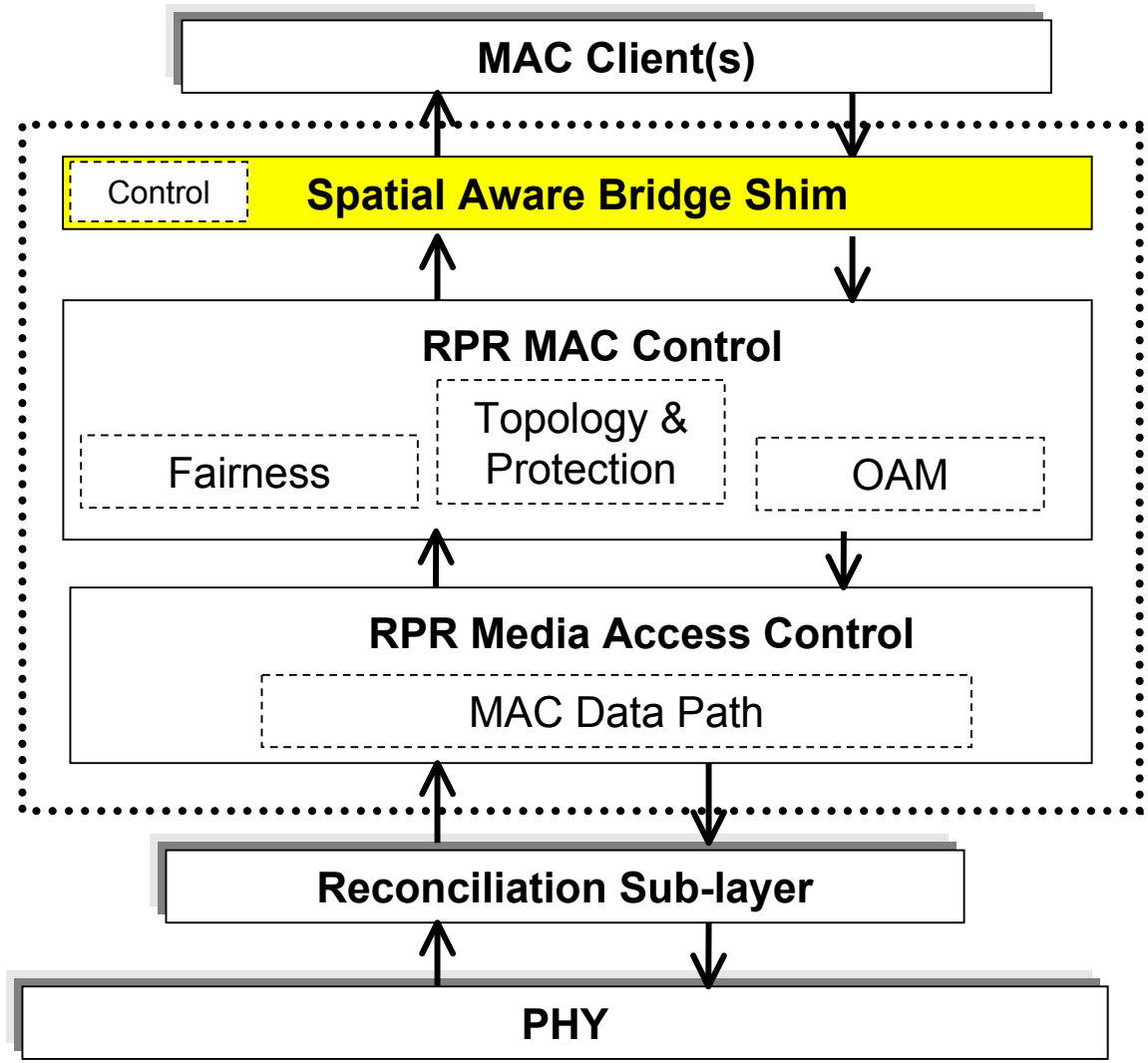
Spatial Aware Bridging on RPR

- Enhance RPR MAC to allow bridged (IEEE 802.1) packet transmissions over RPR to provide spatial reuse
- Bridging with spatial reuse supports efficient packet transport over RPR



Technical Focus

- Specify an RPR MAC (optional) sublayer that supports an *efficient* bridged (IEEE 802.1) packet switching paradigm over RPR
- Define control entity to manage bridged spatial reuse operations



Market Potential

- Target market for RPR are service providers offering Ethernet services
  - In particular, service providers with a strong drive for bandwidth efficiency on the media in that market as opposed to the LAN market segment

Market Potential (cont)

- Efficiency improvements of RPR ring BW utilization widens the adaptation of RPR for LAN/MAN networks
  - "Bridging in RPR Networks" – Amund Kvalbein (University of Oslo) shows the improvement in network performance when Spatial Aware Bridging is used.

Spatial Aware Bridging on RPR CFI

Next Steps

Call-For-Interest

- Should we request at this meeting to authorize the formation of a Study Group to develop a standards project proposal (PAR and 5 Criteria) for “Spatial Aware Bridging on RPR”

  Y: 20 N:0 A:0

Participation

- I would participate in the “Spatial Aware Bridging on RPR” Study Group in IEEE 802.17

  Tally:15

- My Company would support participation in the “Spatial Aware Bridging on RPR” Study Group in IEEE 802.17

  Tally: 7

Back Up

Bridging Client of RPR MAC