

802.17b

Spatially Aware Bridging on RPR

5 Criteria

Preliminary

IEEE 5 Criteria

1. Broad Market Potential

- Broad set of applications
- Multiple vendors, multiple users
- Balanced cost (LAN vs. attached stations)

2. Compatibility

- Compatible with 802 Overview and Architecture
- Conformance with 802.17, 802.1D, 802.1Q

3. Distinct Identity

- Substantially different from other IEEE 802 standards
- One unique solution for problem (not two alternatives/problems)
- Easy for document reader to select relevant specifications

IEEE 5 Criteria

4. Technical Feasibility

- Demonstrated feasibility; reports – working models
- Proven technology, reasonable testing
- Confidence in reliability

5. Economic Feasibility

- Cost factors known, reliable data
- Reasonable cost for performance expected
- Total installation costs considered

Broad Market Potential

- Target market for RPR are service providers and network operators offering Ethernet services
 - In particular, service providers and network operators with a strong drive for bandwidth efficiency on the media in that market
- Efficiency improvements of RPR ring BW utilization widens the adoption of RPR for LAN/MAN networks
 - “Bridging in RPR Networks” – Amund Kvalbein (University of Oslo) shows the improvement in network performance when Spatially Aware Bridging is used
 - Similar savings/benefits to BLSR versus UPSR
 - Comparable savings/benefits when moving from a Hub (un-switched) network to a switched network

Compatibility

- Compatible/consistent with base 802.17 and 802.17a standards
- Makes no changes to 802.1 sub layer service interfaces (802.1D ISS, 802.1Q E-ISS)

Distinct Identity

- There is no 802 standard specifying Spatially Aware Bridging over RPR

Technical Feasibility

- Proprietary implementations of Spatially Aware Bridging exist in the industry and are currently deployed by major Service Providers

Economic Feasibility

- The optional RPR MAC sublayer that provides Spatially Aware Bridging can be reasonably implemented in Network Processor, FPGA or ASIC technologies
- By not changing base 802.17 specification and 802.1 specifications, existing implementations can be leveraged, minimizing vendor costs
- This Spatially Aware Bridging sublayer can be implemented with small incremental cost