802.3 RE
5 Criteria (DRAFT 1.0)

RESG

18 November 2004

1st. Draft

Straw Poll Y: 23 N: 0 A:0

Market Potential

- Moves Ethernet into big new markets with the potential to eventually dominate
  - Consumer electronics companies will be producing Ethernet equipment
- Current home Ethernet ports are in the millions; new capabilties will increase this number
- CE products (100's million of potential ports)
  - DVD, TV, AVR, DVRs, speakers, etc.
  - Portable A/V products, musical instruments
- Attractive alternative/upgrade to current 1394-based and proprietary solutions
  - Make Ethernet become a "household" word

Compatibility

- Fully 802.3 compatible
  - Fully compliant with existing frame format
  - Fully compatible with 802.3 in best-effort MAC services
  - May require augmentation of MAC with time-sensitive MAC services
  - RE will have to augment the MAC-client interface to exchange time information

- Fully 802.1 compatible
  - Anticipated that it will be fully compatible for best-effort service with possible 802.1 work to add time-sensitive service.

- RE features may need to be auto-negotiated
  - Time-sensitive mode is a highest-common denominator

- Based on existing PHYs
- Supports PoE

Distinct Identity

- No time-sensitive MAC services in 802.3
  - No provisioning in 802.3 yet
  - No latency max in 802.3 yet
  - RE may leverage parts of 802.3ah

- Expect to have a separate clause

Technical Feasibility

- Feasibility proven by existing 802.3 technologies
  - Existing PHYs
  - Add clock to MAC (already done for EPON)
- Mostly adding a set of rules for sending time-sensitive in addition to best-effort frames on existing MAC
- Requires some coordination with 802.1 for provisioning extensibility
- Time-sensitive services are already present in other common technologies, e.g. IEEE 1394, SONET, T-1, etc.

Economic Feasibility

- Development investment is relatively low

- High product value due to increased capabilities

- Significantly reduces system cost
  - Removes many connectors, cables etc.
  - Reduces processing core (cheaper CPU, memory)

- Leverage CE volumes for silicon (adds 100's of millions of ports)
  - Enable significantly higher levels of integration and functionality

- Incremental cost to consumer will be negligible in near term (1st or 2nd generation product)

- CE manufacturers (silicon customers) want it ASAP