Technology Demonstration Requirements

Ken Herrity, Bill Wiedemann

Blaze Network Products Inc.

Kenh@blazenp.com billw@blazenp.com

(925) 558-2131 (925) 558-2169

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Why Do We Need A Technology Demonstration?

4. Technical Feasibility

Demonstrated feasibility: reports - - working models

Proven technology, reasonable testing

Confidence in reliability

- Technical presentations, given to 802.3, have demonstrated the feasibility of using the 802.3 in useful network topologies at a rate of 10 Gb/s.
- The principle of scaling the 802.3 MAC to higher speeds has been well established by previous work within 802.3. The 10 Gb/s work will build on this experience.
- The principle of building bridging equipment which performs rate adaptation between 802.3 networks operating at different speeds has been amply demonstrated by the broad set of product offerings that bridge between 10, 100, and 1000 Mb/s.
- Vendors of optical components and systems are building reliable products which operate at 10 Gb/s, and meet worldwide regulatory and operational requirements.
- Component vendors have presented research on the feasibility of physical layer signaling at a rate of 10 Gb/s on fiber optic media using a wide variety of innovative low cost technologies.
- 10 Gb/s Ethernet technology will be demonstrated during the course of the project, prior to the completion of the sponsor ballot.

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What Does A Technology Demonstration Require?

- Our primary goal should be to demonstrate interoperability
  - Products that comply with the standard will interoperate with all other standard compliant products within the limitations defined by the standard.
- We should also be concerned with demonstrating:
  - "Reasonable Testing"
  - "Confidence In Reliability"

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A Simple Connectivity Demonstration Is Not Sufficient

- Connectivity demonstrations do not guarantee interoperability.
  - We do not know if products comply with the standard's requirements.
  - We have not demonstrated that is possible to make products that comply with the standard.
  - We have not demonstrated that standard compliant products will interoperate.
- Connectivity demonstrations do not guarantee "reasonable testing".
- Connectivity demonstrations do not ensure "confidence in reliability" since they may not consider:
  - Prototype vs. production (you can make one or two of anything)
  - Different Manufacturers (Implementation, Components, Process)
  - Different Lots (Component Variation, Process Variation)
  - In production environment (no just lab)

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What Is A Reasonable Technology Demonstration?

- Demonstrate that standard compliant products will interoperate analytically.
- Demonstrate that multiple vendors can produce *standard compliant* products.
  - Demonstrate that it is possible to verify compliance with *all* standard requirements.
- Demonstrate that standard compliant products do interoperate.
  - Different manufacturers and lots
  - Production products in production environments (not just prototypes, not just in the lab).

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