

THE 5 CRITERIA

- Show that the proposed solution satisfies the "5 Criteria"
- IEEE 802 5 Criteria
- 1. Broad Market Potential
- 2. Compatibility
- 3. Distinct Identity
- 4. Technical Feasibility
- 5. Economic Feasibility

1. BROAD MARKET POTENTIAL

REQUIREMENT:

A standards project authorized by IEEE Project 802 shall have a broad market potential. Specifically, it shall have the potential for:

- Broad Sets of Applicability

RESPONSE:

This standard will specifically address the needs of the Token Ring marketplace which is presently estimated to be more than \$2 Billion/year. The following classes of applications have been identified that would benefit from the availability of higher bandwidth technology:

- Gigabit Speed transfer of traditional data
- Client/Server Computing
- Database
- Imaging
- Computer Aided Design and Modeling

There are also emerging applications which will benefit from higher throughput with bounded latency including:

- Video and teleconferencing
- Interactive Video training
- Real time control

___ Participants have expressed interest in working on this project.

(Note: The number will be supplied at the November Plenary Mtg)

REQUIREMENT

- Multiple vendors, numerous users

RESPONSE

As stated above, the Token Ring market exceeds \$2 Billion / year. A Gigabit Token Ring offering will provide that user base with a technology that allows straight forward bridging and interconnect to the legacy installation with a minimal increase in network complexity.

Gigabit Token Ring has frame format compatibility with existing 802.5 Token Ring applications will ensure a large number of users of this technology

___ participants representing at least ___ companies indicate that they plan to participate in Gigabit Token Ring standardization

(NOTE: The blanks will be supplied at the November meeting)

- Balanced costs (LAN versus attached stations)

Since Gigabit Token Ring will use much of the same MAC design used in Token Ring and PMD hardware similar to that which is under development for 802.3, the costs should be in line with these accepted technologies.

2. COMPATIBILITY

REQUIREMENT:

IEEE Project 802 defines a family of standards. All standards shall be in conformance with 802.1 Architecture, Management and Interworking.

All LLC and MAC standards shall be compatible with ISO/IEC 10039, MAC Service Definition at the LLC/MAC boundary. Within the LLC Working Group there shall be one LLC standard, including one or more LLC protocols, with a common LLC/MAC interface. Within a MAC Working Group there shall be one MAC standard and one or more Physical Layer standards with a common MAC / Physical Layer interface.

Each standard in the IEEE Project 802 family of standards shall include a definition of managed objects which are compatible with OSI systems management standards.

RESPONSE:

Gigabit Token Ring will be based on the 802.5 frame format and therefore, will be compatible with the LLC/ MAC boundary, and 802.1 interworking. Its scope includes managed objects consistent with 802.1 Management.

There will be a single MAC supporting multiple physical layers. The standard will have a single medium independent physical sublayer to adapt to various media. The Gigabit Token Ring proposal is conformant to 802 Functional Requirements.

It is compatible with 802.1 architecture.

3. DISTINCT IDENTITY

REQUIREMENT:

Each IEEE Project 802 standard shall have a distinct identity. To achieve this, each authorized project shall be:

- Substantially different from other 802 projects

RESPONSE:

Gigabit Token Ring is distinct from other LAN solutions including 802.3 and 802.12, because these do not provide support for all the following capabilities:

8 priority levels allowing for priority differentiation in bridging and routing across the LAN for the various classes of asynchronous, synchronous, and multi-media traffic.

Variable frame sizes exceeding 4K

Compatibility with present applications designed for 802.5 Token Ring.

Use of the Token Ring MAC.

Same Cable and pin usage as existing TR applications.

REQUIREMENT:

- One unique solution per problem

RESPONSE:

Gigabit Token Ring is unique since it is the only proposed technology addressing the native transport of Token Ring frames at speeds of 1000Mbit/s

or more.

REQUIREMENT:

- Easy for document reader to select relevant specification

RESPONSE:

The PICS Proforma of the standard will clearly identify the relevant specifications supported by conformant product.

4. TECHNICAL FEASIBILITY

REQUIREMENT:

For a project to be authorized, it shall be able to show its technical feasibility. At a minimum, the proposed project shall show:

- Demonstrated system feasibility

RESPONSE:

There is no perceived technical challenge

Token Ring MAC chips are available today and have a proven track record. DTR function is also available.

Gigabit PMDs will soon be available for 802.3, and there is no additional technical challenge to adapt these to carry 802.5 Token Ring frames. There are no new technologies, or technical invention required to combine the Token Ring MAC with a Gigabit PHY.

REQUIREMENT:

- Proven technology, reasonable testing

RESPONSE:

The MAC technology is the same as for Token Ring stations. The PMD hardware will be comparable to that used to deliver Gigabit 802.3. It is expected that no implementation breakthroughs will be required to implement this standard.

REQUIREMENT:

- Confidence in reliability

RESPONSE:

There are two aspects of reliability to address: hardware and architectural. The hardware reliability of existing token-ring adapters provides adequate confirmation that the Gigabit Token Ring interface hardware will be reliable. Gigabit Token Ring hardware will be based on technology which has evolved specifically for Local Area Networks.

5. ECONOMIC FEASIBILITY

REQUIREMENT:

For a project to be authorized, it shall be able to show economic feasibility (so far as can reasonably be estimated), for its intended applications. At a minimum, the proposed project shall show:

- Known cost factors, reliable data
-

RESPONSE:

Expect costs to be comparable with present Token Ring hardware. Low cost PHYs combined with Token Ring like MACs will provide costs in line with present Token Ring technology.

Gigabit Token Ring Adapters will deliver significantly increased bandwidth at a cost comparable cost to present dedicated 16/4 and proposed 100Mbit/s Token

Ring technology.

REQUIREMENT:

- Reasonable cost for performance

RESPONSE:

Gigabit Token Ring will offer considerably better cost/performance than existing 16/4 Token Ring or the proposed 100Mbit/s Token Ring

REQUIREMENT:

- Consideration of installation costs

RESPONSE:

In general, migration changes will be limited to the Backbone and Wiring Center equipment and those workstations requiring Gigabit Token Ring.

-----End of PAR-----