THE 5 CRITERIA (1000 Mbit/s)

- 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 gigabit 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

26 Participants have expressed interest in working on this project.

For: 16 Against: 0 Abstain: 2

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 straightforward bridging and interconnect to the legacy installation with a minimal increase in network complexity.

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

26 participants representing at least 15 companies indicate that they plan to participate in Gigabit Token Ring standardization.

For: 16 Against: 0 Abstain: 2

REQUIREMENT:

- Balanced costs (LAN versus attached stations)

RESPONSE:

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.

For: 14 Against: 0 Abstain: 4

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 Gigabit Token Ring proposal is conformant to 802 Functional Requirements.

It is compatible with 802.1 architecture.

For: 17 Against: 0 Abstain: 3

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 gigabit LAN solutions, including 802.3, as this solution is the only one to provide support for all the following capabilities:

- Eight native user priority levels allowing for priority differentiation in bridging and routing across the LAN.
- Variable frame sizes ranging from 22 to 18200 octets.
- Compatibility with present applications designed for 802.5 Token Ring.
- Compatibility with existing Token Ring management applications.
- Native source routing support.
- Leverage Customers' and Implementers' knowledge and experience base with regard to: Building, managing, and running their networks.

For: 16 Against: 0 Abstain: 4

REQUIREMENT:

– One unique solution per problem

RESPONSE:

Gigabit Token Ring is unique since it is the only proposed technology addressing the native 802.5 transport of Token Ring frames at these speeds.

For: 16 Against: 0 Abstain: 4

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.

For: 17 Against: 0 Abstain: 3

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:

Token Ring MAC devices are available today and have a proven track record.

Gigabit PMDs will soon be available for 802.3.

It will be possible to develop a solution from these subsystems to implement Gigabit Token Ring.

For: 15 Against: 0 Abstain: 5

REQUIREMENT:

- Proven technology, reasonable testing

RESPONSE:

The MAC technology is similar to 4 and 16 Mbit/s Token Ring entities.

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.

For: 14 Against:0 Abstain: 6

REQUIREMENT:

- Confidence in reliability

RESPONSE:

The reliability of existing Token Ring products provide adequate confirmation that the High Speed Token Ring interface will be reliable.

High Speed Token Ring will be based on technology which has evolved specifically for Local Area Networks.

For: 14 Against: 0 Abstain: 6

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:

Gigabit Token Ring will reuse the technology developed for High Speed Token Ring MAC devices, together with Ethernet gigabit PHY devices.

For: 17 Against: 0 Abstain: 4

REQUIREMENT:

- Reasonable cost for performance

RESPONSE:

Gigabit Token Ring will offer considerably better cost/performance than existing 16/4 Mbit/s Token Ring.

For: 15 Against: 0 Abstain: 6

REQUIREMENT:

- Consideration of installation costs

RESPONSE:

Provides a graceful upgrade path for existing Token Ring users.

Migration changes will be targeted to the backbone, wiring center equipment, servers, and those work stations requiring Gigabit network bandwidth.

For: 17 Against: 0 Abstain: 4