

## **Project : P802.1ai - Five Criteria:**

### **1. Broad Market Potential**

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

- a) Broad sets of applicability.
- b) Multiple vendors and numerous users
- c) Balanced costs (LAN versus attached stations)

Public networks represent a new and very broad application space for IEEE 802 technologies and specifically for Provider Bridges (P802.1ad). Operators of such networks require rapid convergence of optimized VLAN and Group MAC Address paths through their networks following a change of network topology.

Numerous vendors and potential users (the Service Providers) of P802.1ad Provider Bridges have expressed the need both to improve the VLAN and MAC topology convergence time, to reduce the amount of processing required to serve the existing GVRP and GMRP protocols, and to reduce the disruption of traffic in a very large network by a topology change in a small portion of that network.

MRP is a control protocol, presumably executed in software. It makes no new demands on a bridge's data forwarding capabilities, and no additional demands on stations. Therefore, it does not upset the IEEE 802 model for balanced costs.

### **2. Compatibility**

IEEE 802 defines a family of standards. All standards shall be in conformance with the IEEE 802.1 Architecture, Management and Interworking documents as follows: 802 Overview and Architecture, 802.1D, 802.1Q and parts of 802.1f. If any variances in conformance emerge, they shall be thoroughly disclosed and reviewed with 802.

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

1. The service provided by MRP is precisely the same as the current GARP, so is fully compatible with the needs of Bridges.
2. Very few implementations of the existing GVRP and GMRP protocols exist, and the use of these protocols in operational networks is very small. Compatibility between MRP and GARP is therefore of little importance.
3. Minor, additions to the Spanning Tree Protocol descriptions may be required to support the operation of MVRP. Backward compatibility with the existing RSTP and MSTP protocols will be maintained.

### **3. Distinct Identity**

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

- a) Substantially different from other IEEE 802 standards.
  - b) One unique solution per problem (not two solutions to a problem).
  - c) Easy for the document reader to select the relevant specification.
1. Considering “the problem” to be the slow convergence of GMRP and GVRP in the face of large numbers of registered attributes, there is no existing solution to the problem.
  2. No other related activities in IEEE 802 or any other standards body are known.

#### **4. Technical Feasibility**

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

- a) Demonstrated system feasibility.
  - b) Proven technology, reasonable testing.
  - c) Confidence in reliability.
1. The method of shrinking the number of octets required to represent the registered information between GARP and MVRP is mathematically identical, and therefore no risk.
  2. Inspection of the proposals submitted to 802.1 to date have been found sound by the members of 802.1. Actual protocol simulations have proven the technology to be both sound and useful.

#### **5. Economic Feasibility**

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:

- a) Known cost factors, reliable data.
  - b) Reasonable cost for performance.
  - c) Consideration of installation costs.
1. Long experience with similar improvements to other protocols indicates that, if the definition of MVRP is correct, the cost of deploying it will be far outweighed by the tangible benefits in improved error recovery times.
  2. Simulations have shown feasibility within economically acceptable parameters.