

# **Five Criteria for 802.1AXb? – Link Aggregation Amendment: Resilient Network Network Interface**

## **1. Broad Market Potential**

### **a. Broad sets of applicability**

Redundant connections between two networks, or a network and an end station, with both sides under separate administration, are increasingly common, especially in the Ethernet service provider market.

### **b. Multiple vendors and numerous users**

Several vendors offer non-interoperable implementations of Link Aggregation with resilient external network interconnect capabilities, and they are widely deployed.

### **c. Balanced costs (LAN versus attached stations)**

The changes to Link Aggregation have no effect on the balance of costs with respect to existing technology other than the well-known trade-offs between enhanced capabilities and enhanced software complexity.

## **2. Compatibility**

A device implementing the new version of LACP will interoperate with devices implementing previous versions of LACP.

## **3. Distinct Identity**

### **a. Substantially different from other IEEE 802 standards**

There is only one link aggregation standard in IEEE 802. There are none for resilient multi-node interconnects.

### **b. One unique solution per problem (not two solutions to a problem)**

As this project enhances the only existing IEEE 802 standard for link aggregation, it does not create a second solution.

### **c. Easy for the document reader to select the relevant specification**

IEEE Std 802.1AX is the only current IEEE 802 standard for link aggregation, and there are none for resilient multi-node interconnects.

## **4. Technical Feasibility**

### **a. Demonstrated system feasibility**

Similar techniques have been deployed as proprietary enhancements to IEEE 802 link aggregation. The redundancy and isolation techniques of RENI are straightforward applications of existing bridge components as described in IEEE 802.1Q and its amendments.

#### **b. Proven technology, reasonable testing**

Link aggregation and bridge component definitions are proven technologies, and test methodologies are well understood.

#### **c. Confidence in reliability**

Link Aggregation is often deployed to enhance the reliability of data communication networks. The intended changes improve this aspect of the Link Aggregation capability. By isolating the fault recovery and load sharing capabilities of different networks that are interconnected by this new standard, the reliability of the combined network is enhanced.

#### **d. Coexistence of 802 wireless standards specifying devices for unlicensed operation**

Not applicable.

### **5. Economic Feasibility**

#### **a. Known cost factors, reliable data**

Existing implementations have demonstrated that the impact of the proposed changes are commensurate with the benefits obtained.

#### **b. Reasonable cost for performance**

The proposed changes have negligible impact on the cost factors applicable to Link Aggregation or bridging.

#### **c. Consideration of installation costs**

The proposed standard specifies the negotiation required between network administrations to interconnect their networks. This is consequent to and commensurate to the new capabilities offered, and eliminates a large amount of effort currently expended in the absence of a standard.