

**To:** 802exec@hepnc.hep.net@internet  
**cc:** stds-802-5@mail.ieee.org@internet  
**From:** Robert Love/Raleigh/IBM @ IBMUS  
**Subject:** Preliminary PAR and 5 Criteria for 802.5 Project: Virtual Bridged Local Area Networks: Source Routing

All, attached are the preliminary PAR and 5 Criteria responses for the IEEE 802.5 project: Virtual Bridged Local Area Networks: Source Routing. Final copies of the PAR and 5 Criteria responses, along with vote results will be available at the November 802 meeting. These will also be posted at the 802.5 web site ([www.8025.org](http://www.8025.org)) Click on [NEW] for a pointer to the files.

Best regards.

Robert D. Love  
Chair IEEE 802.5 Token Ring Working Group  
IBM  
800 Park Offices  
P. O. Box 12195 DGTA/664  
Research Triangle Park, NC 27709, USA  
Phone: +1 919 543-2746  
Fax: +1 919 254-5483  
E-Mail: [rdlove@us.ibm.com](mailto:rdlove@us.ibm.com)

----- Beginning of Proposed PAR -----

## **IEEE Standards Board**

### **Project Authorization Request (PAR) Form**

**1. Sponsor Date      2. Assigned Project      3. PAR Approval****of Request****Number****Date**

[1998 Nov 12]

[P802.5x]

\_\_\_\_\_

[...] PAR Signature Page  
received {IEEE Staff to  
check box}**4. Project Title, Recorder and Working Group/Sponsor for this Project**

Document type and title: {Place an X in only one option below}

 **Standard for** {document stressing the verb "shall"} **Recommended Practice for** {document stressing the verb "should"} **Guide for** {document stressing the verb "may"}**Title: [Supplement to - ~~Information technology Telecommunications and information exchange between systems - Local and metropolitan area networks~~ IEEE Std 802.1Q - Virtual Bridged Local Area Networks: Source Routing]**{Copyright release must be submitted with [appropriate signatures](#) by postal mail or FAX (1-732-562-1571)}

Name of Working Group: [IEEE 802.5 Token Ring Working Group]

Name of Official Reporter (usually the W.G. Chair) [Robert D. Love]

Title in WG: [Chair, IEEE 802.5 Working Group]      IEEE/Affiliate Member # [1609353]

Company: [IBM]      Telephone: [919 543-2746]

Address: [PO Box 12195 DGTA/664]      FAX: [919 254-5410]

City/State/Zip: [Research Triangle Park/NC/27709]      Email: [rdlove@us.ibm.com]

**Name of Working Group Chair (if different):** [...]

		IEEE/Affiliate Member #	[...]
Company:	[...]	Telephone:	[...]
Address:	[...]	FAX:	[...]
City/State/Zip:	[...]	Email:	[...]

**Name of Sponsoring Society and Committee:** [IEEE Computer Society / LAN MAN Standards Committee]

Name of Committee Sponsor Chair: [James Carlo]

		IEEE/Affiliate Member #	[05572953]
Company:	[Texas Instruments Inc.]	Telephone:	[972-480-2524]
Address:	[9208 Heatherdale Drive]	FAX:	[972-480-2611]
City/State/Zip:	[Dallas/TX/75243]	Email:	[jcarlo@ti.com]

## 5. Describe This Project; Answer each of four questions below:

a. [Update an existing PAR](#) [NO ]

If YES, indicate PAR Number/Approval Date [P####-YEAR]

If YES, attache a cover letter indicating changes/rationale for changes.

If YES, is this project in ballot now? [yes/no]

b. [Choose](#) one from the following:

[NO] New Standard

[NO] Revision of existing Standard {number and year} [NO]

[YES] Supplement to an existing standard {number and year} [802.1Q/1998]

c. [Choose](#) one from the following:

Full Use (5-year life cycle)

Trial Use (2-year life cycle)

d. Fill in [Target Completion Date](#) to IEEE RevCom : [11/99]

## 6. [Scope](#) of Proposed Project:

[

~~Specify extensions to~~[Extend](#) 802.1Q to ~~enhance~~[specify](#) support for the source route bridging method.

]

## 7. [Purpose](#) of Proposed Project:

[

To enable source routing users to take advantage of virtual bridged LANs, while retaining the capabilities of source routing.

]

## 8. Intellectual Property {Answer each of the questions below}

a. Are you aware of any [patents](#) relevant to this project?

[YES] {Yes, with detailed explanation below / No}

[Patents which apply to the present source routing technology still apply. Patent letters covering these patents are on file with IEEE. If other technology to be incorporated into the standard requires the use of other patents, the appropriate letters of permission will be sought.] {Explanation}

b. Are you aware of any [copyrights](#) relevant to this project?

[NO] {Yes, with detailed explanation below / No}

[...] {Explanation}

c. Are you aware of any [trademarks](#) relevant to this project?

[NO] {Yes, with detailed explanation below / No}

[...] {Explanation}

## 9. Are you aware of any other standards or projects with a [similar scope](#)?

[NO] {Yes, with detailed explanation below / No}

[...] {Explanation}

## 10. [International Harmonization](#)

Is this standard planned for adoption by another international organization?

[YES] {Yes/No/?? if you don't know at this time}

If Yes: Which International Organization [ISO/IEC JTC/1]

If Yes: Include coordination in question 13 below

If No: Explanation [...]

## 11. Is this project intended to focus on [health, safety or environmental issues](#)?

[NO] {Yes/No/?? if you don't know at this time}

If Yes: Explanation [...]

## 12. Proposed Coordination/Recommended Method of Coordination

### a. [Mandatory Coordination](#)

SCC 10 (IEEE Dictionary) by **DR** {Circulation of **DR**afts}

IEEE Staff Editorial Review by **DR**

SCC 14 (Quantities, Units and Letter symbols) by **DR**

b. [Coordination](#) requested by Sponsor:

[US TAG for JTC1/SC6 WG 1 & 3 ] by [DR] {circulation of **DR**afts/**LI**aision memb/**CO**mmon memb }

[X3.T12] by [DR] {circulation of **DR**afts/**LI**aision memb/**CO**mmon memb }

[US TAG for SC25/WG4] by [DR] {circulation of **DR**afts/**LI**aision memb/**CO**mmon memb }

[.....] by [...] {circulation of **DR**afts/**LI**aision memb/**CO**mmon memb }

c. [Coordination Requested by Others:](#)

[...] {added by staff }

**Additional Explanation Notes: {Item Number and Explanation}**

[...]{If necessary, these can be continued on additional pages }

The [PAR Copyright Release and Signature Page](#) must be submitted by FAX or physical delivery before this PAR will be sent on for NesCom and Standards Board approval.

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

[PAR adopted by 802.5 vote: 11/0/0 \(Pass\)](#)

----- Beginning of 5 Criteria with Responses-----

**THE 5 CRITERIA (Virtual Bridged Local Area Networks: Source Routing)**

- 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:**

Many networks today employ source routing and ~~network-managers~~[users](#) would like to add VLAN capabilities to these networks. ~~This standard~~[The proposed standard](#) specifically addresses the requirements for supporting source routing in ~~the VLANs~~[marketplace](#).

**REQUIREMENT**

- Multiple vendors, numerous users

**RESPONSE:**

The Token Ring market today exceeds \$2 billion / year. A significant proportion of Token Ring networks employ source routing. The emerging VLAN concepts address significant needs of today's source routing network users, however 802.1Q has limited support for source routing.

This proposed standard specifies extensions to 802.1Q providing the source routing installed base access to these VLAN concepts with a minimal increase in network complexity.

This proposed standard preserves the frame format and management compatibilities of existing source routing applications and will ensure that source routing networks can seamlessly migrate to the VLAN technology.

[22-11](#) participants representing at least [22-6](#) companies indicate that they plan to participate in this standardization.

**REQUIREMENT:**

- Balanced costs (LAN versus attached stations)

**RESPONSE:**

Source route transparent (SRT) bridging is an accepted technology to address the requirements of networks to handle both source routed and transparently bridged traffic.

Networking devices implemented to this proposed standard require source route forwarding to be added to an 802.1Q bridge implementation. The cost will be similar to adding source routing capabilities to a transparent bridge. Therefore the costs associated with implementing this proposed standard are in line with costs associated with SRT technology deployed today.

[Approved by 802.5 vote: 11/0/0 \(Pass\)](#)

**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 interface. 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:**

The proposed standard will be based upon the VLAN concepts from 802.1Q and the source routing concepts from ~~802.1p~~[802.1d](#). This will ensure that it will be compatible with the LLC/MAC interfaces and 802.1 interworking [requirements](#). It will be conformant to 802 Functional Requirements. The proposed standard shall include a definition of managed objects ~~which are~~ compatible with OSI systems management standards.

[Approved by 802.5 vote: 11/0/0 \(Pass\)](#)

**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:**

802.1Q offers only limited support for source routing. This proposed ~~standard~~ is an extension to 802.1Q, and overcomes those limitations. [No other project is addressing these needs.](#)

**REQUIREMENT:**

- One unique solution per problem

**RESPONSE:**

This proposed standard is unique since it is the only technology that provides [support for the](#) source routing ~~bridging method capabilities~~ within VLANs.

**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.



[Approved by 802.5 vote: 11/0/0 \(Pass\)](#)

#### 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:

Source routing and 802.1Q bridges are available today and have a proven track record.

There are no significant technical obstacles to developing a solution from these subsystems to implement this proposed standard.

##### REQUIREMENT:

- Proven technology, reasonable testing

##### RESPONSE:

Source routing and 802.1Q bridges are available today and have a proven track record.

It is expected that no implementation "breakthroughs" will be required to implement this standard.

##### REQUIREMENT:

- Confidence in reliability

##### RESPONSE:

The reliability of existing source routing products provides adequate confirmation that devices conforming to this proposed standard will be reliable.

This proposed standard will be based on technology which has evolved specifically for Local Area Networks.

[Approved by 802.5 vote: 11/0/0 \(Pass\)](#)

#### 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:

In practice the costs of adding VLAN support to present SRT bridges will be comparable to adding VLAN support to present transparent bridges.

**REQUIREMENT:**

- Reasonable cost for performance

**RESPONSE:**

This proposed standard will offer similar cost/performance to existing 802.1Q bridges.

**REQUIREMENT:**

- Consideration of installation costs

**RESPONSE:**

Provides a graceful upgrade path for existing source routing networks.

Migration changes will be targeted to the backbone. It is intended that end node implementations will not be impacted.

[Approved by 802.5 vote: 11/0/0 \(Pass\)](#)

----- End of 5 Criteria with Responses-----

[Motion 11-09: That 802.5/98/11-10, containing the PAR and 5 criteria for 802.5x \(Virtual Bridged Local Area Networks—Source Routing\) be adopted and submitted to the SEC for their approval. Vote: 11/0/0 \(Pass\).](#)