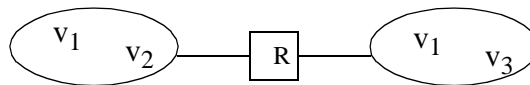


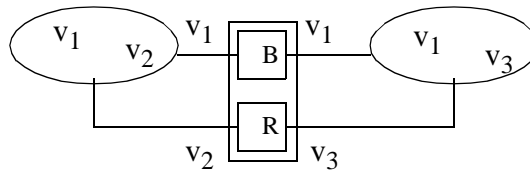
- Encompasses up to 250,000 users
- Spans “unlimited” number of devices
- Multiple DTEs on a switch port
- Multiple VLANs per DTE
- Campus and MAN coverage

## Routers and VLANs

- illegal configuration

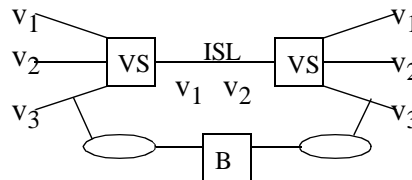


- legal configuration



## Questions/Issues

- Do we specify interoperability across ISMs?
- When ISM loop detection utilizes the 802.1D Spanning Tree algorithm, there is a potential problem with a single spanning tree for all VLANs



- An algorithm other than 802.1D STA may be considered for ISM loop detection if it presents VLAN benefits over and above the current STA

# Virtual LAN Topology

## Definitions

- Virtual LAN Switch  
virtual LAN aware layer 2 frame forwarding device
- Interswitch Medium (ISM)  
medium for muxing 1 or more VLANs between 2 or more VLAN switches
  - Types of ISMs
    - (a) point-to-point (ISMPP)
    - (b) shared (ISMS)
- Access Link  
medium for muxing 1 or more users into a VLAN switch
- Hybrid Link  
medium with 2 or more VLAN switches AND 1 or more users attached
- Private Access Link  
medium for muxing 1 user into a VLAN switch
- Network Port  
VLAN switch port with 1 or more VLAN switches attached
- Access Port  
VLAN switch port with 1 or more users attached
- Hybrid Port  
VLAN switch port with 1 or more VLAN switches and 1 or more users attached
- Private Access Port  
VLAN switch port with 1 user attached

## User/VLAN/Port Considerations

- 1 or more users may be attached to 1 or more VLAN switch ports
- each user may be a member of 1 or more VLANs

## VLAN Switch Topology Considerations

- VLANs on homogeneous LAN technology
  - ISM same limits as access link (MTU)
  - simple encapsulation has problems
- VLAN on heterogeneous LAN technologies
  - ISM more capable than access link (MTU)
  - simple encapsulation works
  - ISM less capable than access link (MTU)
  - forces fragmentation or forces end station cooperation

## Suggestions For Topology

- Supports combinations of star, ring and bus implementations
- Supports MAC and PHY support
- Campus Topology up to 20km radius