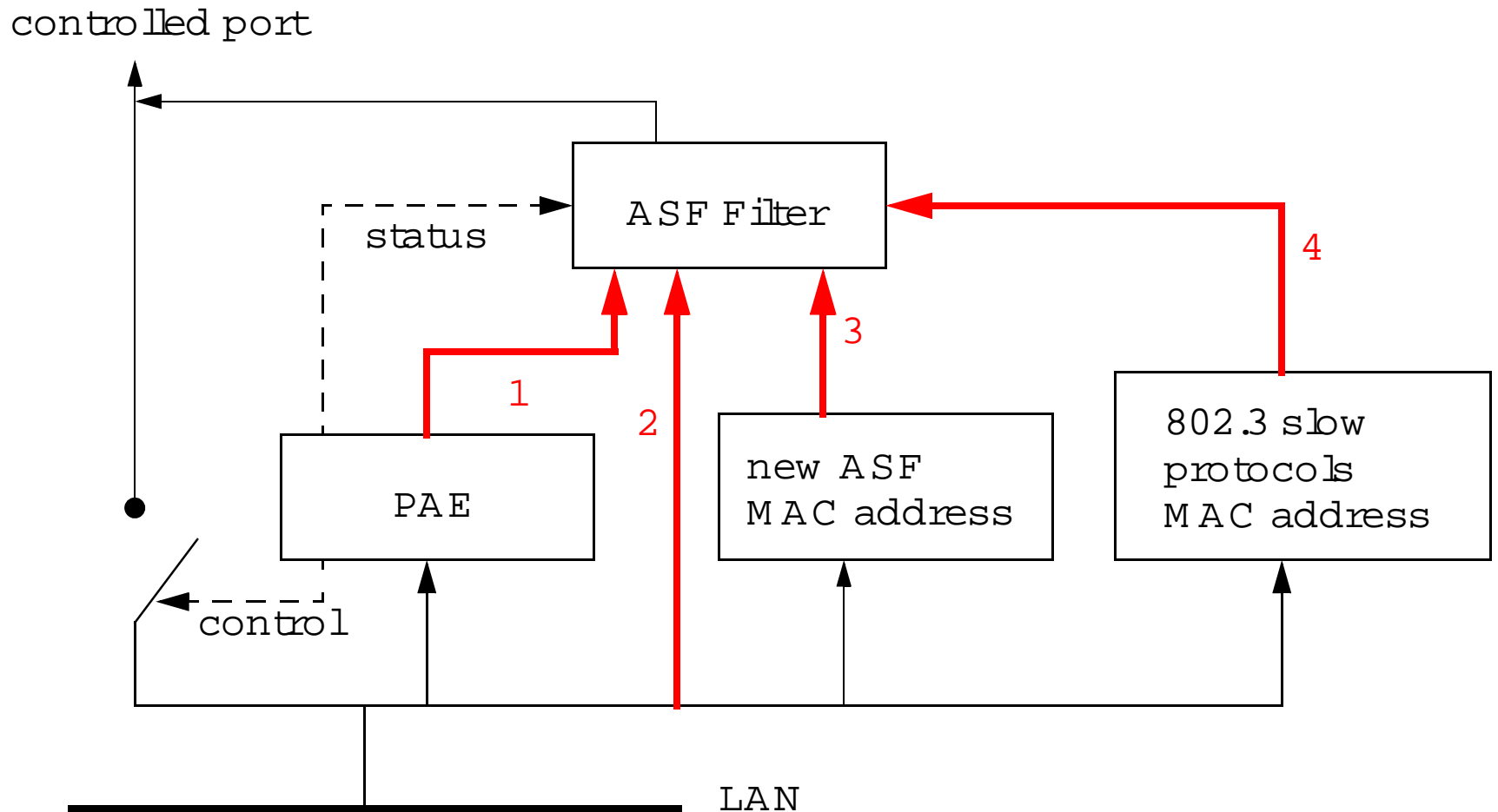


ASF Tunnelling options for 802.1x

Several options have been identified for passing ASF alerts through an 802.1x port:



Options:

PAE tells ASF filter whether controlled port is authorized or not. All incoming packets are presented to all entities attached to the LAN, which presumably can filter on destination MAC address to decide what to look at. Options 1, 3, and 4 encapsulate the packet to be tunnelled. Option 2 does not.

- 1. Encapsulate packet in an EAPoE packet. PAE removes encapsulation and passes packet to ASF Filter.**
- 2. No encapsulation. If blocked, ASF Filter examines all packets and passes those which are permitted.**
- 3. Encapsulate packet with ASF-defined MAC address.**
- 4. Encapsulate packet with 802.3 Slow Protocols MAC address.**

Orthogonal issue (does not apply to option 2):

- a. End station sends only one packet, encapsulated or not as required by presence or absence of 802.1x.**
- b. End station sends two packets, one encapsulated, one not.**

Combining Options

1.a	Endstation must know whether to encapsulate or not. 802.1x takes responsibility for adding code points for new tunnel filters beyond ASF.
1.b	802.1x takes responsibility for adding code points for new tunnel filters beyond ASF. Encapsulated packets would not pass through any bridge whatsoever.
2.	When port is unauthorized, ASF Filter, in theory, must examine every packet. This may have implementation difficulties.
3.a	Endstation must know whether to encapsulate or not. Some bridges' hardware may find it difficult to add yet another MAC address (or MAC address block) that penetrates a closed port.
3.b	Some bridges' hardware may find it difficult to add yet another MAC address (or MAC address block) that penetrates a closed port.
4.a	Endstation must know whether to encapsulate or not. The 802.3 Slow Protocols address is not defined for media other than 802.3.
4.b	The 802.3 Slow Protocols address is not defined for media other than 802.3. Encapsulated packets will pass through a bridge that does not know about 802.3 Slow Protocols, but does not pass through a bridge with LACP, but not 802.1x.

Tell end-station 802.1x is present: How?

- **End station sends EAPOL Start, sees EAPOL Request or times out, but does not try to authorize.**
- **End station tries unencapsulated packet. PAE responds, occasionally, to unencapsulated packets sent to Partial Control, Unauthorized port with EAPOL Start packet. End station sends encapsulated packet only if 802.1x EAPOL Start is seen.**