802.16k to RevCom
Conditional Approval

The 802.16 NetMan TG:
Voted 14-0-0 to accept comment database 802.16-06/069r2.

Voted 13-0-0 to authorize the editor to revise P802.16k/D3, in accordance with the comment resolutions in 802.16 06/069r2, and reissue the document as P802.16k/D4

The 802.16 WG voted 70-0-0, to develop and issue the Draft P802.16k/D4 and to request conditional approval to forward P802.16k/D4 to RevCom.

Date Closed

802.16k Sponsor Ballot
first Recirculation
Closed 11/11/2006

Vote Tally

- 802.16k/D3
  - 129 approve
  - 3 disapprove
    - Tony Jeffree
    - Mick Seaman (No ballot submitted in recirc)
    - Pieter-Paul Giesberts (No ballot submitted in recirc)
  - 10 abstain
  - Approval Ratio 95%
  - Return Ration 77 %

Schedule for recirc ballot and resolution meeting

15 day Recirculation Ballot:
Starts ~Monday 27th November.
Ends 15 days later.

802.16 NetMan TG will meet during the London Joint Interim (*15-18 January 2006)* to resolve any remaining comments

Comments that support remaining disapprove Votes

- 1 Comment by Tony Jeffree
- 1 Comment by Michael J Seaman
- 1 Comment by, Pieter-Paul Giesberts

Comments and resolutions described on the following 8 slides:

Technical Comment #1
Tony Jeffree

The text in the draft does not correspond to the text in the proposed resolution of my (and others) comments on this subclause. Notably, the new text states "Clause 5.1 (ATM CS), Clause 5.2.5 (IEEE Std 802.1Q-2003 virtual local area network (VLAN) specific part) and clause 5.2.6 (Packet CS IP specific part) directly support the ISS." whereas the comment resolution text states "Clause 5.1 (ATM CS), Clause 5.2.5 (IEEE Std 802.1Q-2003 virtual local area network (VLAN) specific part) and clause 5.2.6 (Packet CS IP specific part) directly support neither bridging nor the ISS." The missing "...neither...nor..." from the draft text completely reverses the meaning of this sentence. Consequently, the revised draft increases (rather than reduces) the lack of clarity in this piece of text. Having said that, the proposed replacement text posted as comment resolution seems to me to be sadly lacking in clarity itself.

Resolution of Technical Comment #1

Proposed Resolution

I strongly suggest that the ballot resolution committee takes the opportunity of the upcoming 802 meeting to talk with 802.1 experts to straighten out the text of this subclause. In the meantime, my "No" vote stands.

Resolution of Group

On page 3, line 46, modify text as:

Clause 5.1 (ATM CS), Clause 5.2.5 (IEEE Std 802.1Q-2003 virtual local area network (VLAN) specific part) and clause 5.2.6 (Packet CS IP specific part) shall not ~~directly~~ support the Internal Sublayer Service~~ISS~~.

On page 3, line 58, modify text as:

The 802.16 MAC CPS presents a connection oriented MAC service. The 802.3 packet CS utilizes this service to present the 802.3 service. A pair of communicating peer CS entities between an 802.16 BS and an 802.16 SS create a point to point LAN as defined in 6.4.3. ~~The 802.3 packet CS does not provide a port based transparent connection between the BS and the SS. Synchonization between the Classifier in the 802.3 convergence sublayer and the learned MAC address table in the Standard Learning Bridge is required to establish forwarding of frames over IEEE802.16 to the corresponding SS. This synchronization of the classification process in the BS and the learned MAC address table in the Standard Learning Bridge is not necessary for convergence sublayers not applying classification to the destination MAC address.~~

Technical Comment #2
Michael J Seaman

There is clearly something wrong with this amendment's definition of 2 rather than 1 way of supporting the ISS with no way indicated of making an interoperable choice of the method to be used. This indicates a further problem in the 802.16 standards itself. I would expect the 802.3 packet CS to be used exclusively. If option priority or any other capabilities are provided by the other CS they could as well be provided by the 802.3 CS and ignored on transmission or receipt by clients with no knowledge beyond basic 802.3.

There have been other comments about the interoperability confusion caused by 802.16s redefinition of the lower sublayers of protocol identification, instead of using Ethertypes - many of which are already assigned - and the already standard methods of carrying protocols over Ethertype, so this issue is clearly bigger than just this amendment. See for example draft-iab-link-encaps.txt.

Resolution of Technical Comment #2

Proposed Resolution

Remove the support of the ISS by the 802.1 CS from this document entirely, and add a note deprecating the use of that CS.
802.16 should further reduce the number of different 'services' supported.
Attempts to be all things to all men are not useful.

Resolution of Group (in initial Sponsor Ballot)

Accepted-Modified

Delete 6.5.5.2
Delete 7.7.5

Modify the text in 6.5.5 as:

The WMAN MAC access method is specified in IEEE Std 802.16. Clause 5 of that standard specifies the Service Specific Convergence Sublayers (CS) that implement the 802.16 MAC service. Clauses 5.2.4 (802.3 Packet CS) ~~and 5.2.5 (802.1 Packet CS)~~ describe~~s~~ the mode~~s~~ of the Packet CS that support~~s~~ ~~bridging~~the ISS. Clause 5.1 (ATM CS), Clause 5.2.5 (IEEE Std 802.1Q-2003 virtual local area network (VLAN) specific part) and clause 5.2.6 (Packet CS IP specific part) directly support ~~neither bridging nor~~ the ISS. Multiple encapsulation methods are provided in Clause 5, however bridging function is based on the underlying transport method only, and is indifferent to link layer control encapsulation. Clause 6

specifies the MAC Common Part Sublayer (MAC CPS) transmission and reception procedures and Annex C describes the MAC CPS service definition.

In IEEE Std 802.16 there is no explicit definition of the MAC service definition for the ~~802.1 Packet CS nor the~~ 802.3 Packet CS. The 802.3 Packet CS MAC service is defined in IEEE ~~s~~Std 802.3 clause 2 ~~and the 802.1 Packet CS MAC service is defined to be the ISS (6.4)~~.

The 802.16 MAC CPS presents a connection-oriented MAC service. ~~Both t~~The 802.3 ~~and 802.1~~ packet CS utilizes this service to present ~~either~~ the 802.3 ~~or ISS MAC~~ service ~~respectively~~. A pair of communicating peer CS entities between an 802.16 BS and and 802.16 SS create a point-to-point LAN as defined in 6.4.3. The 802.3 packet CS does not provide a port based transparent connection between the BS and the SS. Synchonization between the Classifier in the 802.3 convergence sublayer and the learned MAC address table in the Standard Learning Bridge is required to establish forwarding of frames over IEEE802.16 to the corresponding SS. This synchronization of the classification process in the BS and the learned MAC address table in the Standard Learning Bridge is not necessary for convergence sublayers not applying classification to the destination MAC address.

Since ~~neither~~ the 802.3 specific part of the packet CS ~~nor the 802.1 specific part of the packet CS~~ forwards the frame_check_sequence parameter of the M_UNITDATA.indication, then

1)Any service flow using this MAC CS shall enable the 802.16 MAC CRC
2)PHS validation shall not be turned off for this service flow (since 802.16 MAC CRC ~~can not~~cannot protect suppressed MAC header fields).

Additional Relevant Changes by Group (For recirc)

On page 3, line 46, modify text as:

Clause 5.1 (ATM CS), Clause 5.2.5 (IEEE Std 802.1Q-2003 virtual local area network (VLAN) specific part) and clause 5.2.6 (Packet CS IP specific part) shall not ~~directly~~ support the Internal Sublayer Service~~ISS~~.

Technical Comment #3
Pieter-Paul Giesberts

Changes are required to make this draft amendment to IEEE Std 802.1D compatible with 802.16. Currently, this version is NOT compatible in the following areas: It refers to a "802.1 Packet CS", but the .16 std calls this the "IEEE Std 802.1Q-2003 VLAN CS" (in 5.2.5) or the "Packet, IEEE 802.1Q VLAN" CS (in 11.13 CS specification). The statement "The user_priority parameter of the M_UNITDATA primitive is not encoded in the MAC CPS MSDU." (6.5.5.2) is incorrect, as the user priority is carried in the VLAN tag. It refers to a Priority byte in the MAC CPS MSDU (6.5.5.2), but there is no such byte defined in 802.16. It states incorrectly that access_priority may be used in classification. There is no classifier rule parameter defined for this. It states that "IEEE std 802.16 imposes no limit on the length of a MAC CPS MSDU" (6.5.5.2). However, 802.16 section 5.2.5.2 specifies the Ethertype as one of the classification parameters, implying that there is a Length/Ethertype in the SDU; This limits the length to 1500.

Resolution of Technical Comment #3

Proposed Resolution

All references to the 802.16 "802.1 Packet CS" should be replaced by "802.1Q VLAN Packet CS". The majority of section 6.5.5.2 (page 4 line 38 through page 5 line 5) should be replaced by: "The IEEE 802.1Q VLAN Packet CS provides the Enhanced ISS as described in IEEE Std 802.1Q-2003 clause 6.4." The paragraph starting with "IEEE std 802.16 imposes no limit on the length of a MAC CPS MSDU...." (page 5 lines 24..28) should be deleted. Sections 6.5.5.2.1 and 6.5.5.2.2 should be deleted. Section 7.7.5, Table 7-4, should specify value '0' for Access Priority for all values of user_priority (similar to IEEE 802.3).

Resolution of Group (in initial Sponsor Ballot)

Accepted-Modified

Delete 6.5.5.2
Delete 7.7.5

Modify the text in 6.5.5 as:

The WMAN MAC access method is specified in IEEE Std 802.16. Clause 5 of that standard specifies the Service Specific Convergence Sublayers (CS) that implement the 802.16 MAC service. Clauses 5.2.4 (802.3 Packet CS) ~~and 5.2.5 (802.1 Packet CS)~~ describe~~s~~ the mode~~s~~ of the Packet CS that support~~s~~ ~~bridging~~the ISS. Clause 5.1 (ATM CS), Clause 5.2.5 (IEEE Std 802.1Q-2003 virtual local area network (VLAN) specific part) and clause 5.2.6 (Packet CS IP specific part) directly support ~~neither bridging nor~~ the ISS. Multiple encapsulation methods are provided in Clause 5, however bridging function is based on the underlying transport method only, and is indifferent to link layer control encapsulation. Clause 6

specifies the MAC Common Part Sublayer (MAC CPS) transmission and reception procedures and Annex C describes the MAC CPS service definition.

In IEEE Std 802.16 there is no explicit definition of the MAC service definition for the ~~802.1 Packet CS nor the~~ 802.3 Packet CS. The 802.3 Packet CS MAC service is defined in IEEE ~~s~~Std 802.3 clause 2 ~~and the 802.1 Packet CS MAC service is defined to be the ISS (6.4)~~.

The 802.16 MAC CPS presents a connection-oriented MAC service. ~~Both t~~The 802.3 ~~and 802.1~~ packet CS utilizes this service to present ~~either~~ the 802.3 ~~or ISS MAC~~ service ~~respectively~~. A pair of communicating peer CS entities between an 802.16 BS and and 802.16 SS create a point-to-point LAN as defined in 6.4.3. The 802.3 packet CS does not provide a port based transparent connection between the BS and the SS. Synchonization between the Classifier in the 802.3 convergence sublayer and the learned MAC address table in the Standard Learning Bridge is required to establish forwarding of frames over IEEE802.16 to the corresponding SS. This synchronization of the classification process in the BS and the learned MAC address table in the Standard Learning Bridge is not necessary for convergence sublayers not applying classification to the destination MAC address.

Since ~~neither~~ the 802.3 specific part of the packet CS ~~nor the 802.1 specific part of the packet CS~~ forwards the frame_check_sequence parameter of the M_UNITDATA.indication, then

1)Any service flow using this MAC CS shall enable the 802.16 MAC CRC
2)PHS validation shall not be turned off for this service flow (since 802.16 MAC CRC ~~can not~~cannot protect suppressed MAC header fields).

Additional Relevant Changes by Group (For recirc)

On page 3, line 46, modify text as:

Clause 5.1 (ATM CS), Clause 5.2.5 (IEEE Std 802.1Q-2003 virtual local area network (VLAN) specific part) and clause 5.2.6 (Packet CS IP specific part) shall not ~~directly~~ support the Internal Sublayer Service~~ISS~~.