Fixing Priority Encoding in 802.16k

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Purpose:

Correct the encoding of user_priority and access_priority in the M_UNITDATA.req primitive onto 802.16 frames

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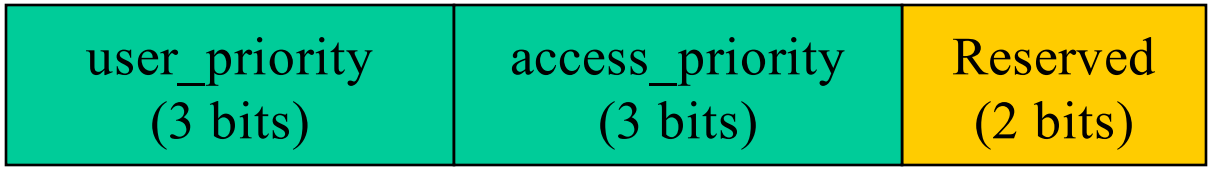
Priority Encoding Now

- user_priority and access_priority are passed to us on a M_UNITDATA.req from bridge or L3 stack (802.1D 6.4.1).
- They are encoded into the ISSP as follows:

ISSP:

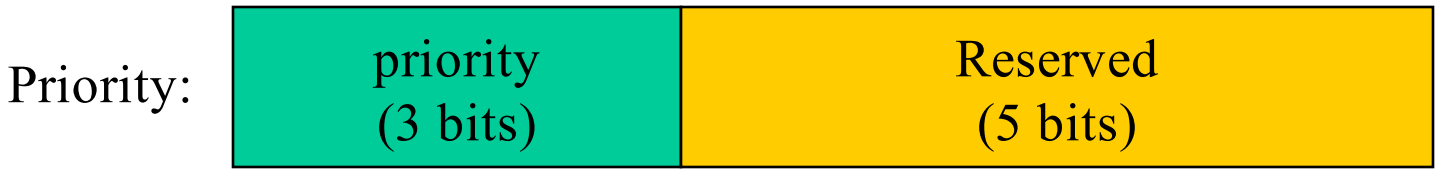


What's wrong..

- access_priority on the M_UNITDATA.req is computed by a bridge as a function of the user_priority.
- In 802.16 this is a 1:1 mapping, so access_priority == user_priority;
- So encoding both priorities is redudant

Solution

- Replace ISSP with Priority byte
- Encode priority as a 3 bit value
- Encode in 3 MSBs to allow lower significance bits to have effect in the future

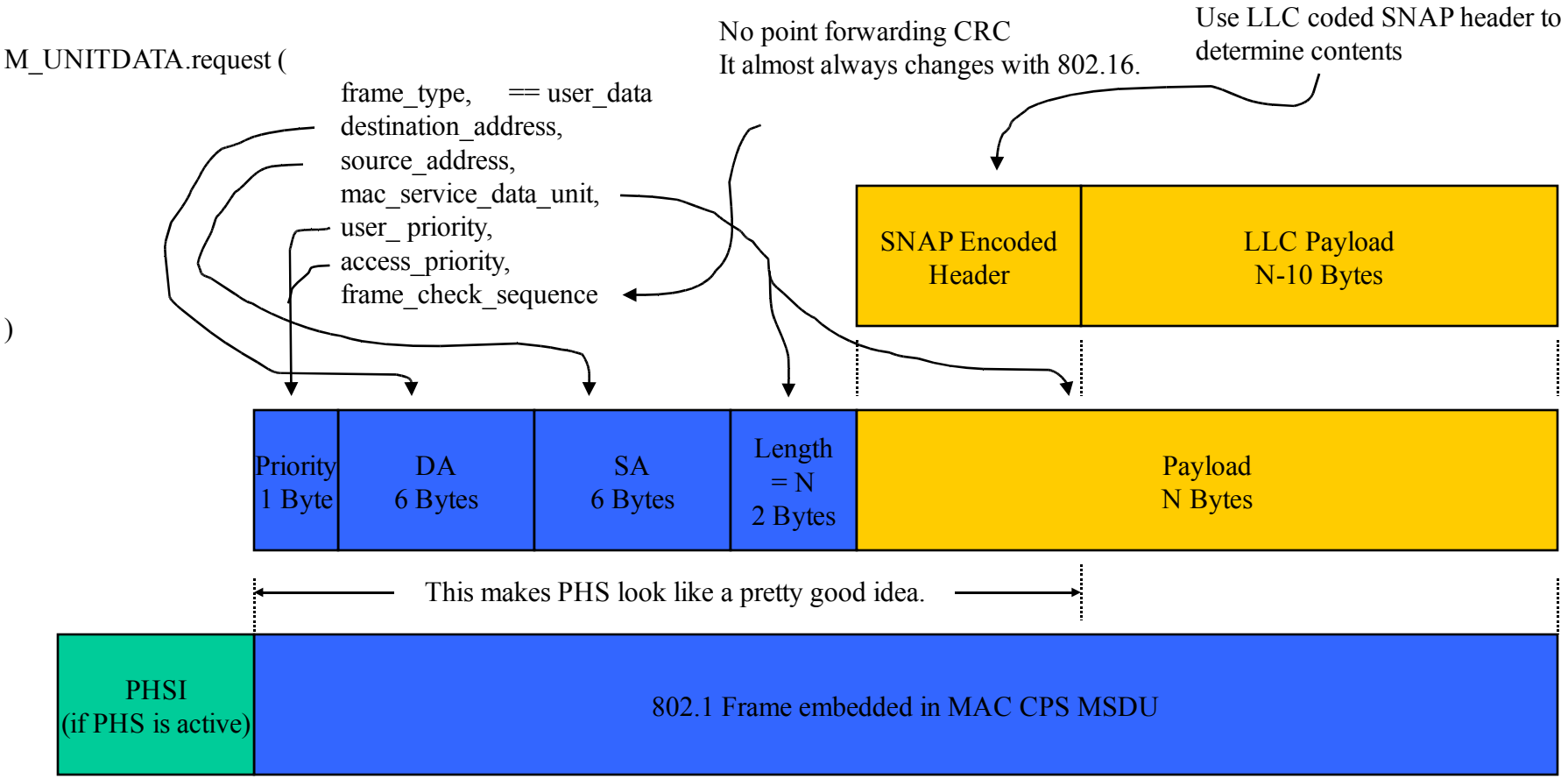


Behaviour

- On M_UNITDATA.req, access_priority is encoded in priority field of the priority byte of the 802.1 CS payload header
- On M_UNITDATA.ind, user_priority takes its value from the 3 bit priority field on the priority byte of the 802.1 CS payload header.

I.E.

- Primitive Parameter Mappings – 802.1 CS



Specific Text: Changes 6.5.5.2

- Change
  - The **user_priority** parameter of the M_UNITDATA primitive is not encoded in the MAC CPS MSDU as described in 6.5.5.2.1.1. encoded directly in the ISSP byte of the the MAC CPS MSDU as described in 6.5.5.2.1.1.

Specific Text: Changes 6.5.5.2

- Change
  - The **access_priority** parameter found in the M_UNITDATA.request primitive is encoded directly in the PriorityISSP byte of the MAC CPS MSDU as described in 6.5.5.2.1.1.

Specific Text Changes: Figure 6-2

- Change
  - ISSP to Priority

Specific Text Changes 6.5.5.2.1.1

- Change
  - The ISS Priority byte (ISSP) shown in Figure 6-2 is a 1 byte encoding of the user_priority and access_priority parameters from the M_UNITDATA.request primitive.
  - The value of the user_priority**access_priority** parameter is encoded as a three bit number in bits 6, 7 and 8 of the priorityISSP byte, where bit 8 of the priority is the most significant bit of the **access_priority** parameter and bit 6 of the priority the least significant bit of the **access_priority** parameter .
- Strike
  - The value of the **access_priority** parameter is encoded as a three bit number in bits 3, 4 and 5 of the ISSP byte, where bit 5 is the most significant bit and bit 3 is the least significant bit.
- Change
    - Bits 1 and 2 1 through 5 of the priorityISSP byte are reserved and shall each be 0.