MPCP+ messages

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Motivation

- GATE2 and REPORT2 messages have been [mostly] agreed
  - A few tweak to GATE2 is proposed
- Need to complete the message set
  - Discovery GATE2
  - REGISTER_REQ2
  - REGISTER2
  - REGISTER_ACK2

See remein_3ca_2_0517

- Introduce one new message
  - Sleep_Req

Changed text

GATE2 changes Alt B

- In Vancouver we added the Fragmentation flag (Motion #6)
- Length field is still more than needed (23-bits or ~21.47 ms)
- Additional flag bit suggested
  - Force Report flag used in 10/1G EPON and did not yet have a home (request ONU generate a report for this P/ULID)
  - 22-bit lenght yields ~10.74 ms/Grant (75 ms/GATE) compared to 10G ~1.05 ms/Grant (4 ms/GATE)

Bit	Flag field	Values
0-21	Grant Length	The transmission opportunity duration (in EQ) for the grant
22	Force Report	0 – No action required 1 – A REPORT frame should be issued for the LLID at the corresponding transmission opportunity
23	Fragment flag	0 - Creation of a new fragment is disallowed in this grant 1 - Fragmentation is allowed in this grant

GATE	Octets
Destination Address	6
Source Address	6
Length/Type = 0x8808	2
Opcode = 0x0012	2
Timestamp	4
Channel Assignment	1
Start Time	4
Granted LLID #1	2
F / FR / Grant Length #1	3
Granted LLID #2	2
F / FR / Grant Length #2	3
Granted LLID #3	2
F / FR / Grant Length #3	3
Granted LLID #4	2
F / FR / Grant Length #4	3
Granted LLID #5	2
F / FR / Grant Length #5	3
Granted LLID #6	2
F / FR / Grant Length #6	3
Granted LLID #7	2
F / FR / Grant Length #7	3
pad	0 / 30
FCS	4

Define new message

- Sleep_Req
  - Allows the OLT to place individual ONU channels in a low power state
  - Channel Assignment field
    - Same as for GATE message (bit mapped)
  - Sleep Length (EQ)
    - ONU is allowed to place the designated channels in a low power state for some number of EQs
    - 0 (cancels any previous sleep message)
    - ~11 sec max (more than sufficient)

100G-EPON Sleep_Req	Octets
Destination Address	6
Source Address	6
Length/Type = 0x8808	2
Opcode = 0x0016	2
Timestamp	4
Channel Assignment	1
Start Time	4
PLID	2
Sleep Length (EQ)	4
Pad/Reserved	29
FCS	4

Thank You

Straw Poll

I agree with the proposed changes shown in remein_3ca_1b_0517.pdf slide 3 (GATE2)

Agree: _____

Disagree: _____

Abstain or No Opinion: _____

(Vote for one)

Straw Poll

I agree with the proposed Sleep_Req message shown in remein_3ca_1b_0517.pdf slide 9.

Agree: _____

Disagree: _____

Abstain or No Opinion: _____

(Vote for one)

GATE capacity

GATE CAPACITY (ms)									
	Grant Length (bits)	Channels							
		1 Grant				7 Grants			
		1	2	3	4	1	2	3	4
100G-EPON	16	0.17	0.34	0.50	0.67	1.17	2.35	3.52	4.70
	17	0.34	0.67	1.01	1.34	2.35	4.70	7.05	9.40
	18	0.67	1.34	2.01	2.68	4.70	9.40	14.09	18.79
	19	1.34	2.68	4.03	5.37	9.40	18.79	28.19	37.58
	20	2.68	5.37	8.05	10.74	18.79	37.58	56.37	75.16
	21	5.37	10.74	16.11	21.47	37.58	75.16	112.74	150.32
	22	10.74	21.47	32.21	42.95	75.16	150.32	225.49	300.65
	23	21.47	42.95	64.42	85.90	150.32	300.65	450.97	601.30
	24	42.95	85.90	128.85	171.80	300.65	601.30	901.94	1,202.59
			Assuming 100G grant scales by the number of channels						
10G-EPON	Grants	1	2	3	4				
	16	1.05	2.10	3.15	4.19	28% Larger than 10G-EPON			