Proposed changes to Discovery messages

IEEE 802.3av Interim Meeting
September 11-13, 2007
Seoul, South Korea

Straw Poll 2 from July 2007

I prefer to:

- Maintain the EPON Discovery scheme and identify the ONU upstream and downstream rates in REGISTER_REQUEST 8
- Maintain the EPON Discovery scheme and identify the ONU in the REGISTER_REQUEST. Also modify the Discovery GATE PDU to include a bitmap indicating the OLT listening rate(s) associated with the window. 19
- Enhance Discovery so that it will use message arrival timing to identify the ONU. 0
- No Opinion 13

Proposal for REGISTER_REQ capabilities field

- Propose adding optional 4-byte bitmap into REGISTER_REQ
- To include support of speed and other features (FEC, etc)
- Legacy ONU will transmit field as zeros
- Legacy OLT will ignore field on reception

Existing REGISTER_REQ	Octets
Destination Address	6
Source Address	6
Length/Type = 88-08	2
Opcode = 00-04	2
Timestamp	4
Flags	1
Pending grants	1
Pad/Reserved	38
FCS	4

Proposed REGISTER_REQ	Octets
Destination Address	6
Source Address	6
Length/Type = 88-08	2
Opcode = 00-04	2
Timestamp	4
Flags	1
Pending grants	1
Capabilities (optional)	4
Pad/Reserved	34
FCS	4

Proposed REGISTER_REQ capabilities field

Bit	Indication
0	ONU supports capabilities field
1	ONU is capable of receiving at 1G
2	ONU is capable of transmitting at 1G
3	ONU is capable of receiving at 10G
4	ONU is capable of transmitting at 10G
5	Reserved
6	Reserved
7	Reserved

Bit	Indication
8	Reserved
9	Reserved
10	Reserved
11	Reserved
12	Reserved
13	Reserved
14	Reserved
15	Reserved

Bit	Indication
16	ONU is capable of Rx FEC at 1G
17	ONU is capable of Tx FEC at 1G
18	ONU is capable of Rx FEC at 10G
19	ONU is capable of Tx FEC at 10G
20	Reserved
21	Reserved
22	Reserved
23	Reserved

Bit	Indication
24	Vendor specific
25	Vendor specific
26	Vendor specific
27	Vendor specific
28	Vendor specific
29	Vendor specific
30	Vendor specific
31	Vendor specific

Proposal for Discovery GATE

- Propose adding 2-byte bitmap for discovery GATE messages.
- Field will indicate which speeds and other options the OLT will be "listening" for during the next discovery window.

Existing GATE	Octets
Destination Address	6
Source Address	6
Length/Type = 88-08	2
Opcode = 00-02	2
Timestamp	4
Number of grants/Flags	0/2
Grant #1 Start time	0/4
Grant #1 Length	0/2
Grant #2 Start time	0/4
Grant #2 Length	0/2
Grant #3 Start time	0/4
Grant #3 Length	0/2
Grant #4 Start time	0/4
Grant #4 Length	0/2
Sync Time	0/2
Pad/Reserved	13-39
FCS	4

Proposed GATE	Octets
Destination Address	6
Source Address	6
Length/Type = 88-08	2
Opcode = 00-02	2
Timestamp	4
Number of grants/Flags	0/2
Grant #1 Start time	0/4
Grant #1 Length	0/2
Grant #2 Start time	0/4
Grant #2 Length	0/2
Grant #3 Start time	0/4
Grant #3 Length	0/2
Grant #4 Start time	0/4
Grant #4 Length	0/2
Sync Time	0/2
Discovery information	0/2
Pad/Reserved	13-39
FCS	4

Proposed Discovery information bitmap

- A smart ONU can ignore certain discovery windows when it has no chance to be registered.
- A 10G/10G ONU will not bother to attempt registration during a 1G discovery window.

Bit	Indication
0	OLT is opening 1G discovery window
1	OLT is opening 10G discovery window
2	Reserved
3	Reserved
4	Reserved
5	Reserved
6	Reserved
7	Reserved

Bit	Indication
8	Reserved
9	Reserved
10	Reserved
11	Reserved
12	Vendor specific
13	Vendor specific
14	Vendor specific
15	Vendor specific

Motion

- Accept the modifications to the Discovery GATE and REGISTER_REQ message as outlined in 3av_lynskey_0907_1.pdf

- Moved by:
- Second by:
- Y: N: A: