MMP and burst mode of EPoC

February 7, 2013

Intro

- This presentation looks at the problem of how to enable MMP in EPoC from a different angle
  - So far, focus was on DS
- We look at US (burst mode) and attempt to identify what would be required for specification work
  - The presentation does not go over the justification of whether or not US MMP is beneficial
- The presentation is result of offline discussions among Andrea G, Ed B and Juan M
  - Due to lack of time Ed B has not been able to review the slides before this call although it attempts to capture the discussions we had

EPON transmission modes

- Continuous
  - Applicable to DS of EPON
    - Also applicable to DS of EPoC FDD
- Burst
  - Applicable to US of EPON
    - Also applicable to
      - US of EPoC FDD
      - US/DS of EPoC TDD

Burst mode has inherent “switches”

Burst mode and MMP

- Consider associating a transmission burst with one of several profiles

US Procedure

- Upstream PHY Link to set up US PHY of CNU_x
  - Upstream quality measure of CNU_x at CLT receiver
  - CNU_x associated with an US profile P_a
  - CNU_x informed about associated profile P_a
- CNU_x US data transmissions in accordance to profile P_a
  - Gate processing at CLT aware of the CNUx<->P_a association
    - From PHY Link procedure
  - Modulation and coding at CNU_x in accordance to P_a
    - A given profile P_a defines the modulation/coding rules of data transmission e.g. MCS
  - Profile information accompanying actual data transmission on US to enable proper decoding at CLT PHY (rx)
    - Call this (PHY-to-PHY) information “marker”, “PHY preamble to data”, “PHY control information”…

TDD?

- TDD operation has burst mode for US and DS
- Analogous mechanism discussed for US burst mode can be used for TDD DS

DS burst mode Procedure

- Downstream PHY Link to set up DS PHY of CNU_x
  - Downstream quality measure at CNU_x receiver reported to CLT
  - CNU_x associated with a DS profile P_a at CLT
  - CNU_x informed about associated profile P_a
- CLT DS data transmissions for CNU_x in accordance to profile P_a
  - (Internal) "Gate processing" at CLT aware of the CNU_x<->P_a association for the DS
    - From PHY Link procedure
    - "Internal" because "Gates" may not need to leave the CLT
  - Modulation and coding at CLT for CNU_x in accordance to P_a
    - A given profile P_a defines the modulation/coding rules of data transmission e.g. MCS
  - Profile information accompanying actual data transmission on DS to enable proper decoding at CNU_x PHY (rx)
    - Call this (PHY-to-PHY) information "marker", "PHY preamble to data", "PHY control information"…

Proposal

- Elaborate the contents of these slides going forward
- To Do list:
  - Protocol aspects related to discussed mechanism
  - Details about “marker/PHY control channel” for US and DS TDD
  - PHY/MAC efficiency and on the need for code shortening (general topic for US transmissions)