ANCP Scenarios and Use Case for PON

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Agenda

- Motivation

- Scenarios of ANCP Application over PON

- Two Use Cases of ANCP over PON

- Discussion

Motivation

Problem Statement / Status IETF ANCP WG:

- Current draft pon-ancp considers only multicast use case, which is more focused on bandwidth delegation then on PON

- Current draft pon-ancp is based on FTTP scenario only, but requires ONU supporting ANCP, which is not applicable

- Scenario regarding optical access using ONT at customer premises is not in scope yet

- Existing use cases for FTTB/C are not reflected but under consideration of operators

- BPON is fading out, we should support XGPON, probably EPON and 10G-EPON

- For PON running Topology Discovery and Line Configuration, no TLVs defined yet
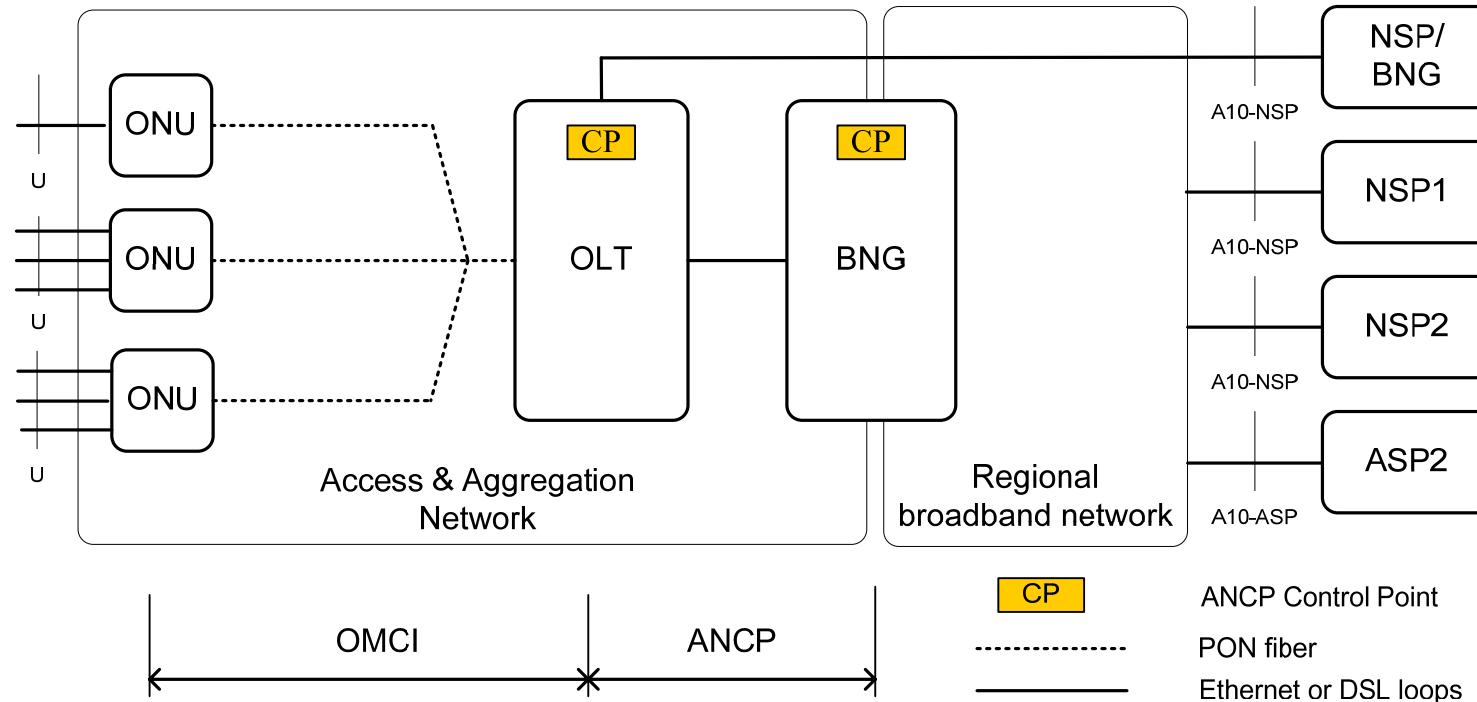
Scenario1: FITH with SFU

-- Fiber into the home with single fiber unit
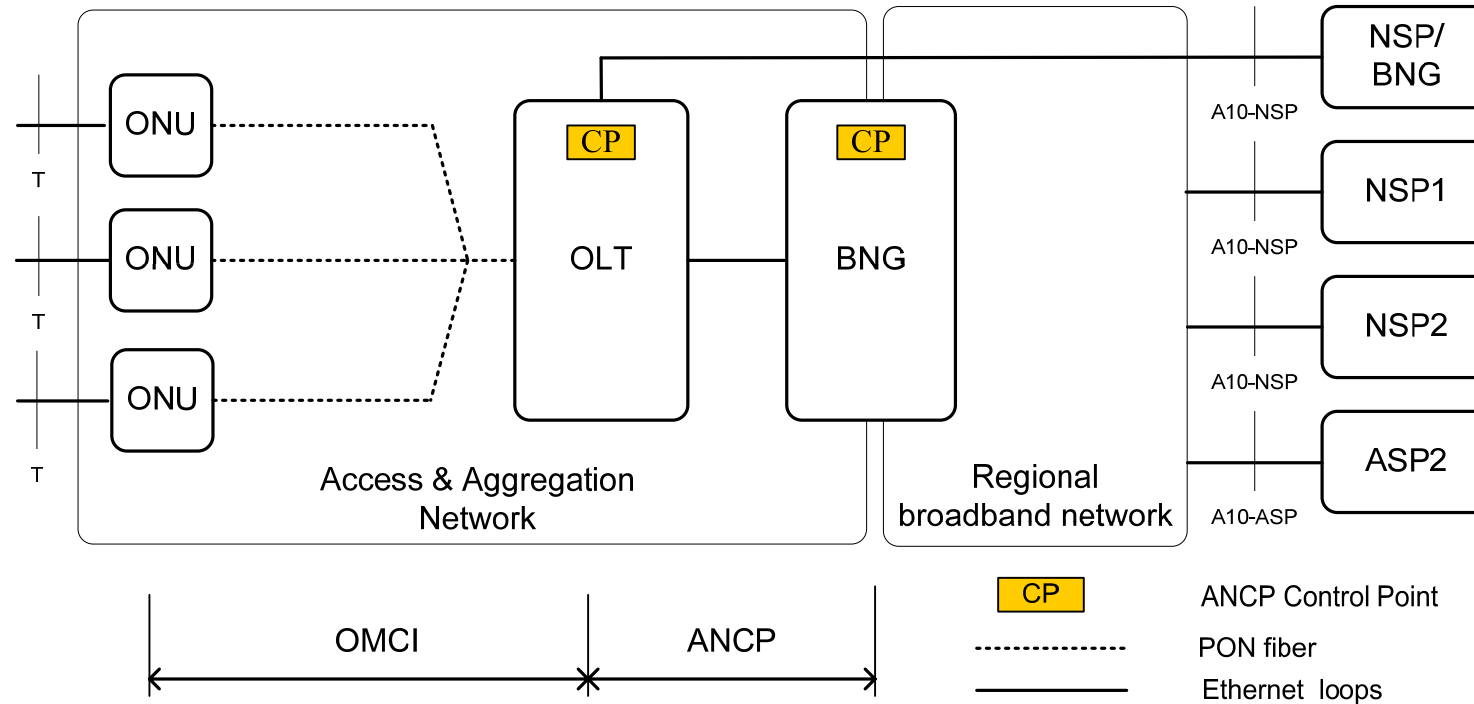
- RG and ONU are in a same box
- One box for one home
- No ANCP on ONU, OLT is a translator between ANCP and OMCI
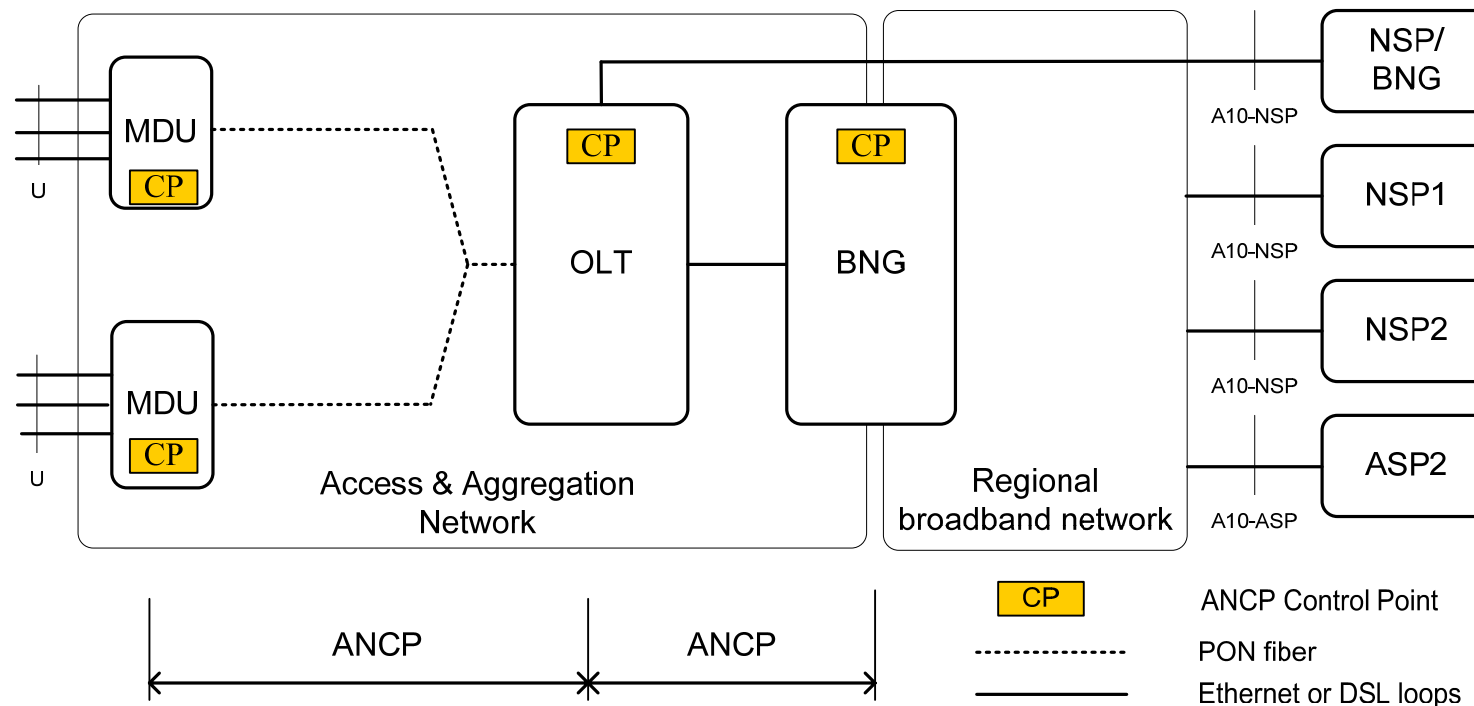
Scenario 2: FTTH/FTTP

-- Fiber to the home/premise

- ONU is outside of a home
- One ONU for one or more home
- Status of UNI of ONU must be reported
- No ANCP on ONU, OLT is a translator between ANCP and OMCI

Scenario 3: FTTB with MDU

-- Fiber to the building with Multi-dwelling unit

- ONU (MDU) is a DSLAM or Ethernet switch with PON backhaul
- Similar to the case defined in draft-ietf-ancp-pon-00

Use Case -- Access Topology Discovery

- Identify user port by ONU ID other than PON port
- UNI of ONU needs to be cared in FTTH and FTTB scenarios
- Reports ONU status when service parameters are updated
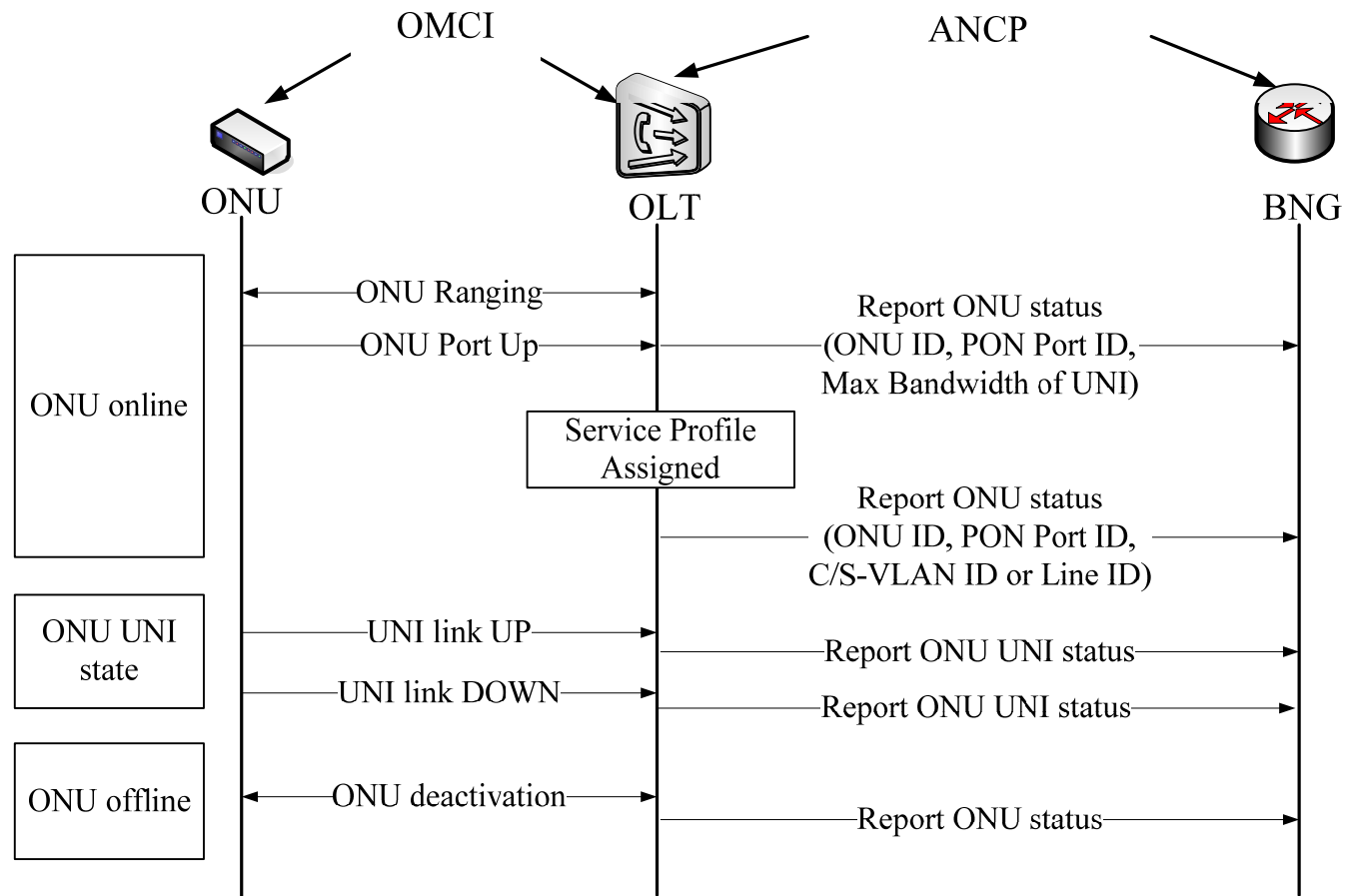
Parameters to Report

-- an overview of difference between DSL and PON

- Device topology and Status:
  - ONU ID
  - ONU Status
  - PON port ID
  - PON port bandwidth
  - Physical interface type of UNI of ONU (Cardholder)
  - Data rate of UNI of ONU
-
- Service related parameters:
  - C-VLAN ID
  - S-VLAN ID
  - Line ID of ONU
  - Service bandwidth

Use Case – Access Loop Configuration

- Configure parameters for each ONU other than a PON port only
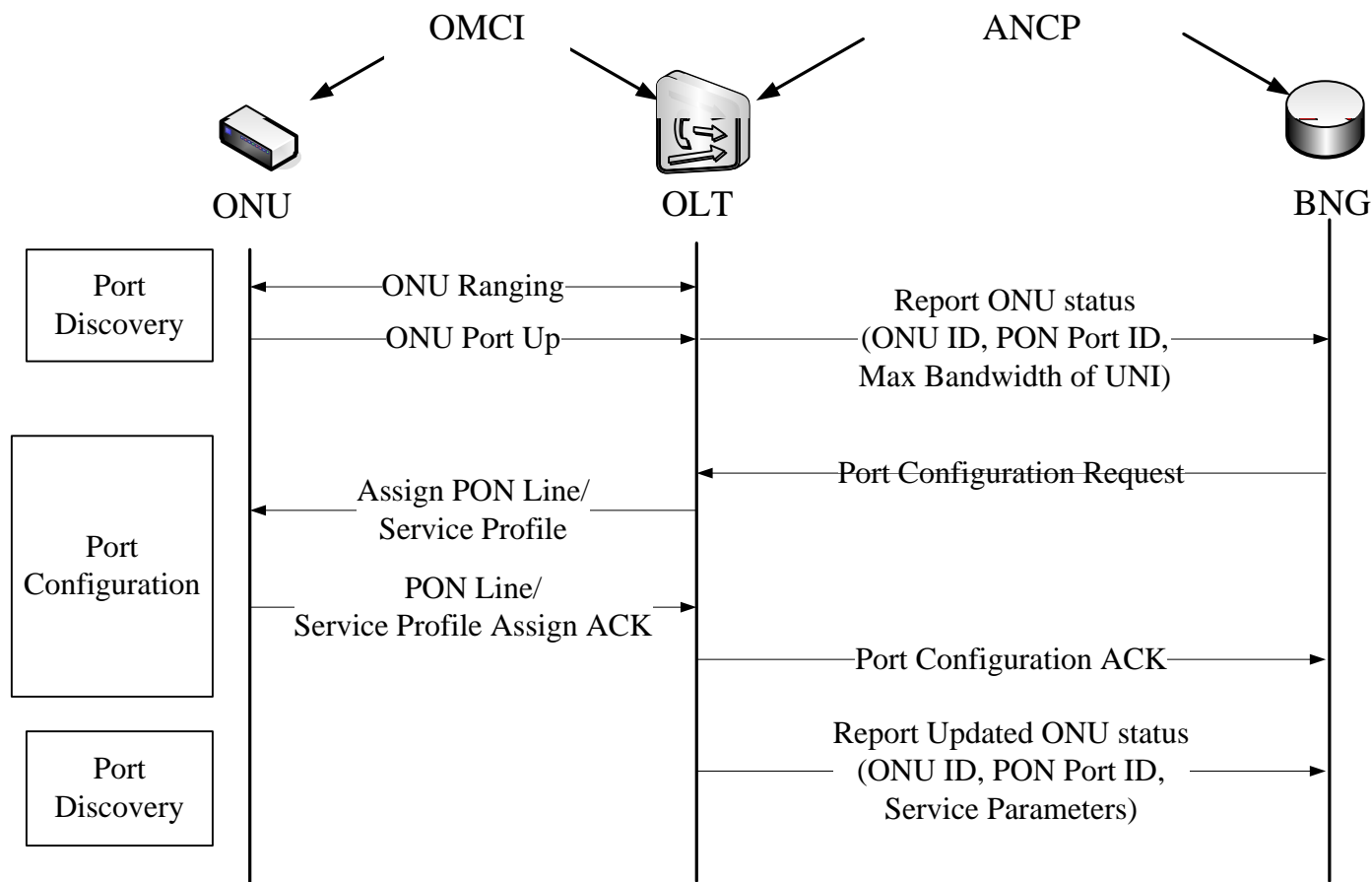
Discussion

- Goal proposed
  - Have a draft based on scenarios for PON in this slides, and also covers all use cases in RFC5851 in PON flavor
  - Keep protocol draft untouched as scheduled
  - Define TLVs which support PON specific parameters non overlapping to existing DSL based TLVs
  - Put multicast with BoD in another non-PON-specific draft

- Benefits
  - IETF completes set of fixed network architectures for using ANCP
  - IETF provides non overlapping TLVs in order to archive full ANCP flexibility
  - ANCP Framework becomes valid for PON as well
  - Keep existing protocol draft on track without delay
  - Identify protocol elements to be reused in PON environment
  - If new protocol elements are needed, complementary extension for PON with compatibility to existing protocol work should be defined.

Which way to go?

A: Start a new draft of PON and leave existing draft a BoD one

B: Carry out a big operation on existing PON-draft to take scenarios in this slides as base line, and move BoD to another place