Information Model of Control-Plane and User-Plane separation BNG

draft-wcg-i2rs-cu-separation-infor-model-02

Author: Rong Gu
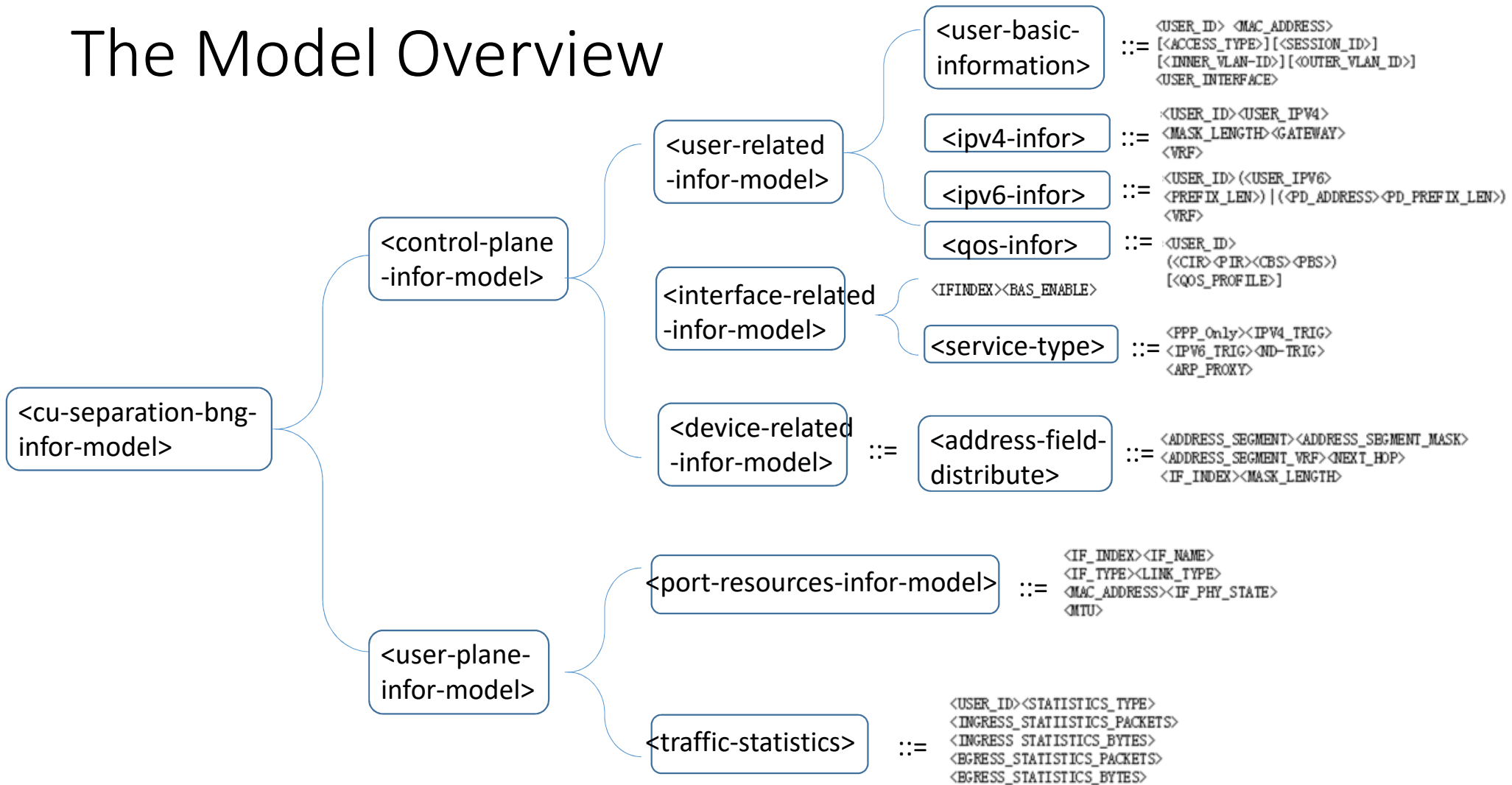
Victor Lopez

Michael Wang

Shujun Hu

Design Concept

- Motivation
  - Virtualize and centralize the BNG's Control Plane.
  - Provides significant benefits such as
    - centralized session management, flexible address allocation, high scalability for subscriber management capacity, and cost-efficient redundancy, etc.

- Objective
  - Defines a set of information models to present the interaction interface between CP & UPs.
  - To improve the interworking of different devices.

Updates since last IETF meeting

- Specifies the information model in Routing Backus-Naur Form.
- Add section to introduce the usage of CU separation.
- Rewritten some text to improve the draft's readability.
- New authors join us – Weclome Victor Lopez and Shujun Hu

The Model Overview

```
<cu-separation-bng-
infor-model>
    <control-plane
    -infor-model>
        <user-related
        -infor-model>
            <user-basic-
            information>        ::= <USER_ID> <MAC_ADDRESS>
                                    [<ACCESS_TYPE>][<SESSION_ID>]
                                    [<INNER_VLAN-ID>][<OUTER_VLAN_ID>]
                                    <USER_INTERFACE>
            <ipv4-infor>        ::= <USER_ID><USER_IPV4>
                                    <MASK_LENGTH><GATEWAY>
                                    <VRF>
            <ipv6-infor>        ::= <USER_ID>(<USER_IPV6>
                                    <PREFIX_LEN>)|(<PD_ADDRESS><PD_PREFIX_LEN>)
                                    <VRF>
            <qos-infor>         ::= <USER_ID>
                                    (<CIR><PIR><CBS><PBS>)
                                    [<QOS_PROFILE>]
        <interface-related
        -infor-model>               <IFINDEX><BAS_ENABLE>
            <service-type>      ::= <PPP_Only><IPV4_TRIG>
                                    <IPV6_TRIG><ND-TRIG>
                                    <ARP_PROXY>
        <device-related
        -infor-model>  ::= <address-field-
                           distribute>   ::= <ADDRESS_SEGMENT><ADDRESS_SEGMENT_MASK>
                                             <ADDRESS_SEGMENT_VRF><NEXT_HOP>
                                             <IF_INDEX><MASK_LENGTH>
    <user-plane-
    infor-model>
        <port-resources-infor-model>  ::= <IF_INDEX><IF_NAME>
                                          <IF_TYPE><LINK_TYPE>
                                          <MAC_ADDRESS><IF_PHY_STATE>
                                          <MTU>
        <traffic-statistics>  ::= <USER_ID><STATISTICS_TYPE>
                                  <INGRESS_STATIISTICS_PACKETS>
                                  <INGRESS_STATISTICS_BYTES>
                                  <EGRESS_STATISTICS_PACKETS>
                                  <EGRESS_STATISTICS_BYTES>
```

Next Steps

- Solicit more comments.

- Ready for WG adoption.
  - What do the chairs recommend?