SRv6 Mobile User Plane(MUP) Architecture for DMM

draft-mhkk-dmm-srv6mup-architecture-03

IETF113, DMM Working Group

Satoru Matsushima (SoftBank) on behalf of co-authors:

Katsuhiro Horiba, Ashiq Khan, Yuya Kawakami (SoftBank)
Tetsuya Murakami, Keyur Patel (Arrcus)
Miya Kohno, Teppei Kamata, Pablo Camarillo, Jakub Horn (Cisco)
Daniel Voyer (Bell Canada)
Shay Zadok, Israel Meilik (Broadcom)
Ashutosh Agrawal, Kumaresh Perumal (Intel)

01 -> 03 Updates

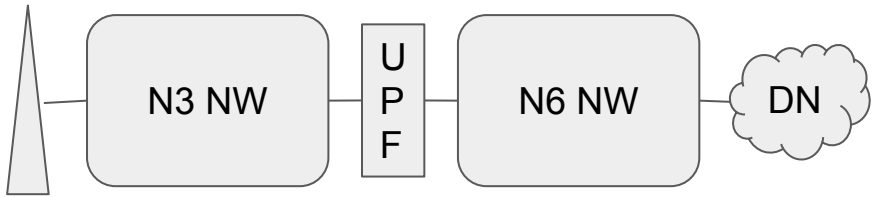
- Simplified
  - Drop SR-Policy requirement
    - No need to advertise SR-Policy from PE
    - No need to point BSID as the nexthop for Type2 Session Transformed route.
  - Architecture description
    - Focused on MUP Segment instead of the role of nodes.
- Clarification
  - Interwork and Direct Segment as MUP Segment
    - Any PE can accommodate Interwork Segment or Direct Segment or both
  - Routing Information
    - Discovery Route for Interwork and Direct Segment
    - Type1 and Type2 Session Transformed Route
    - Direct Segment identification (Extended Community)
    - Protocol specs are defined in another document (I-D.mpmz-bess-bgp-mup-safi)

Next Step

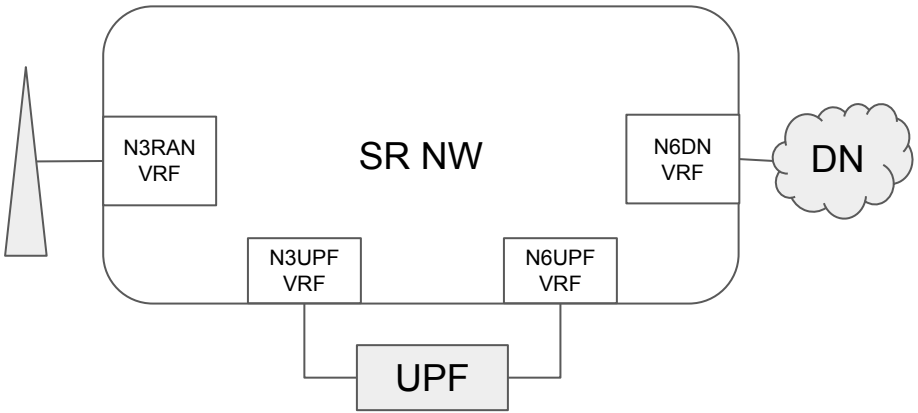
- Further clarifications on architecture
- More cases will be illustrated for better understanding if needed
- WG adoption?

Appendix

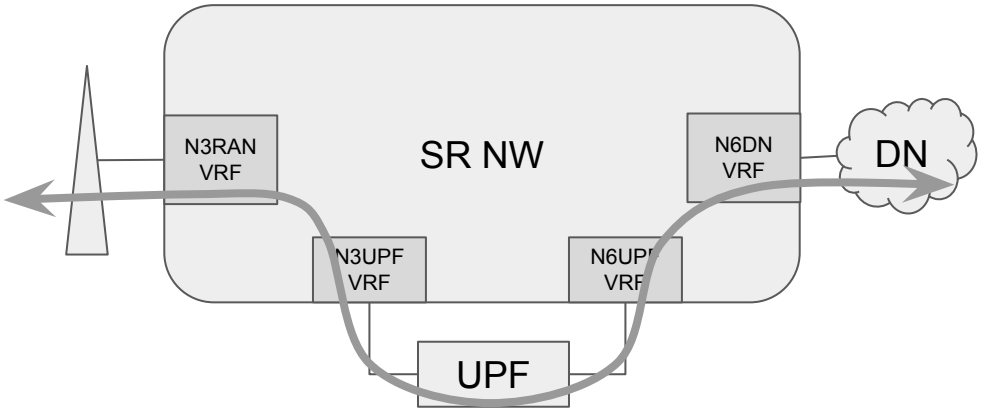
The 5G User Plane Architecture



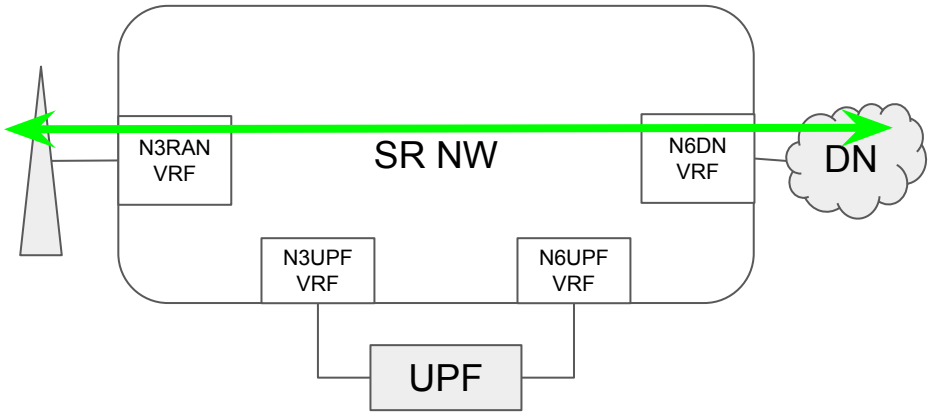
An implementation for 5G User Plane on the SR Underlay



5G User Plane Data Path on the SR Underlay

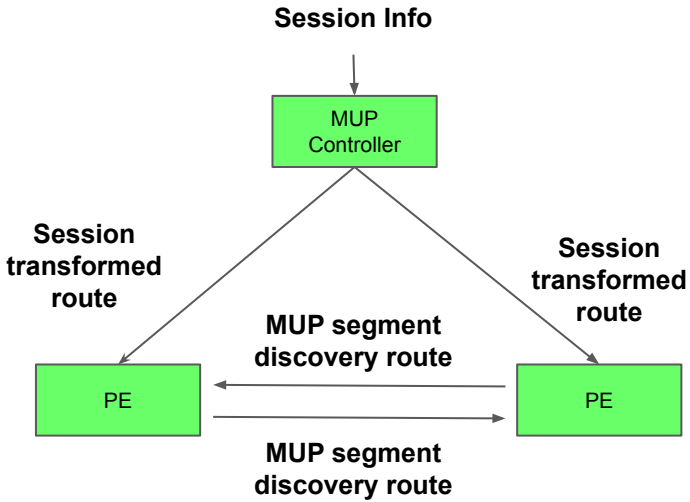


5G User Plane Data Path on the SR MUP Architecture

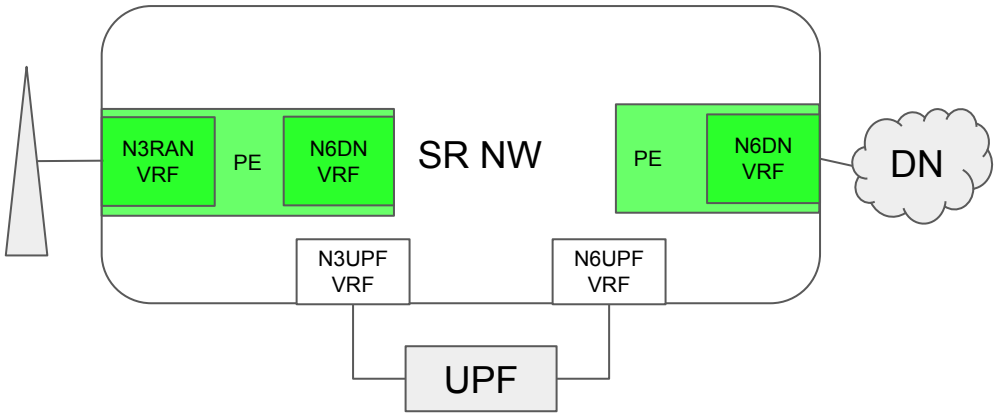


SRv6 Mobile User Plane Architecture Overview

Control Plane (BGP)

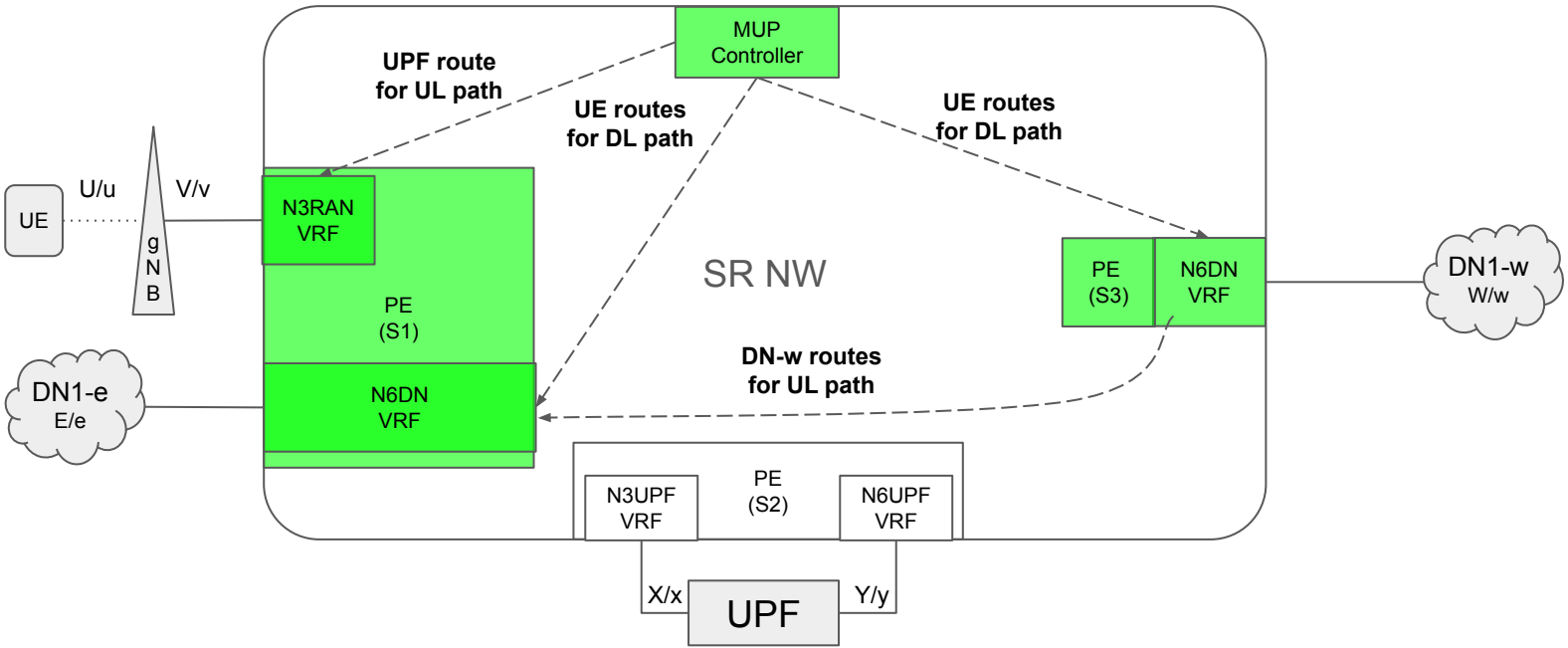


Data Plane (3GPP)

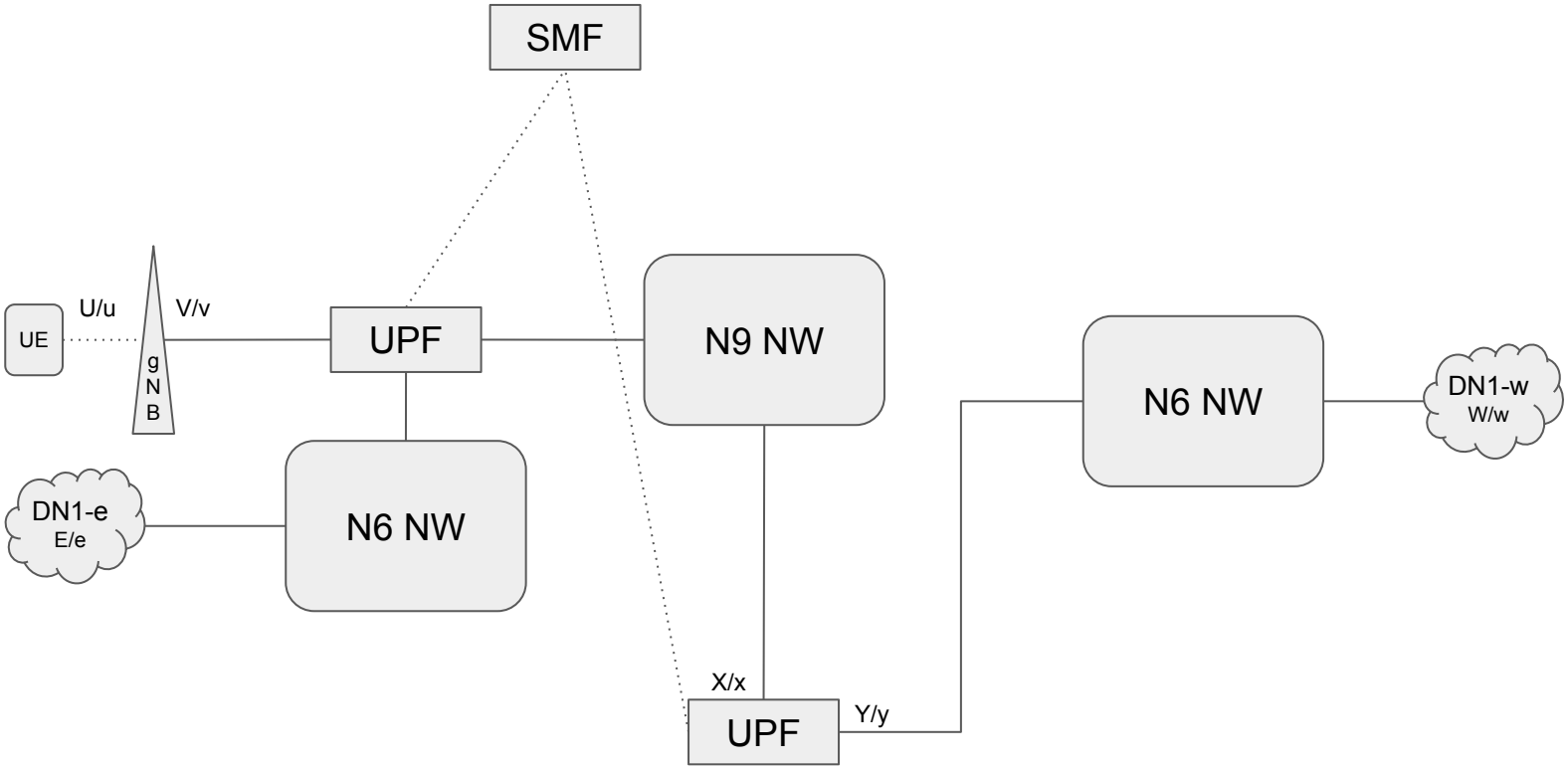


Use Case: Multiple DN sites in the single DNN w/o UPF incremantion (1)

Provide optimized path for each distributed Cloud and MEC site

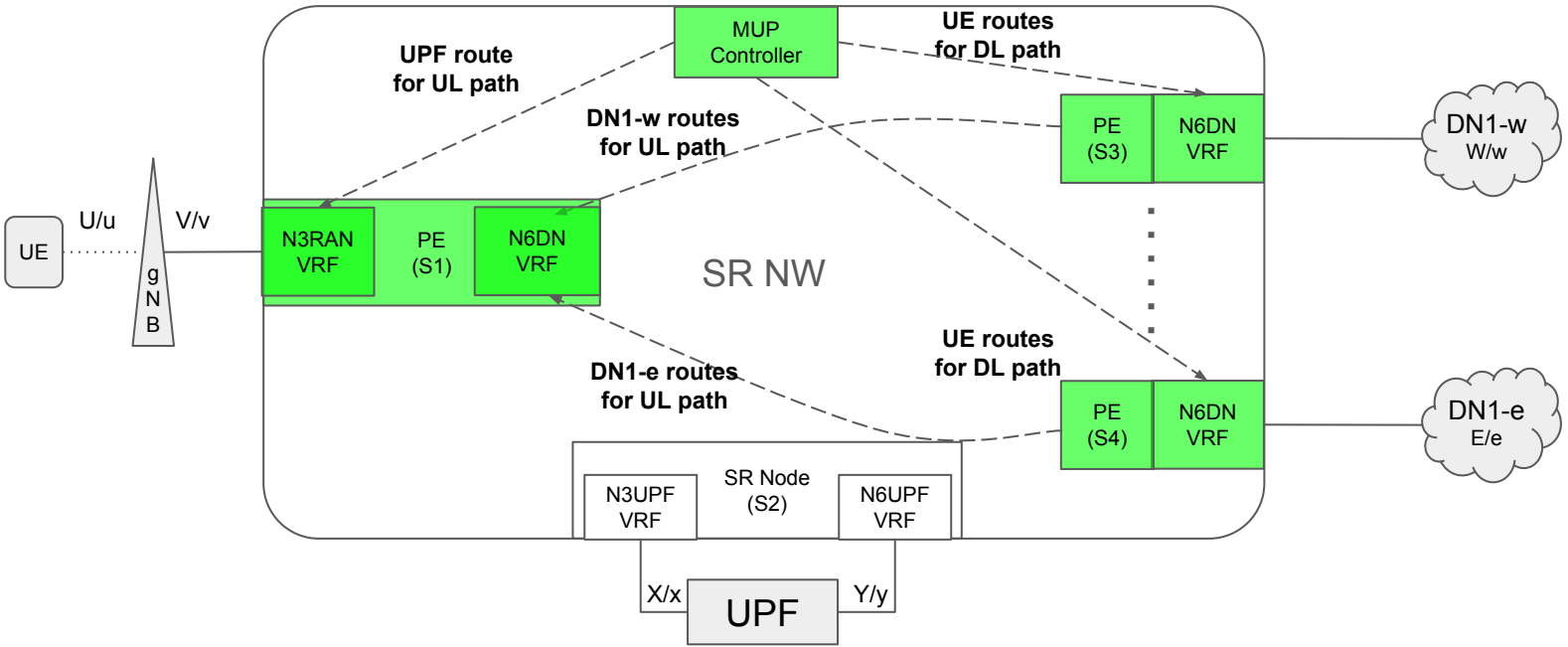


Equivalent Network Model



Use Case: Multiple DN sites in the single DNN w/o UPF incremantion (2)

Provide optimized path for each distributed Cloud and MEC site



Equivalent Network Model