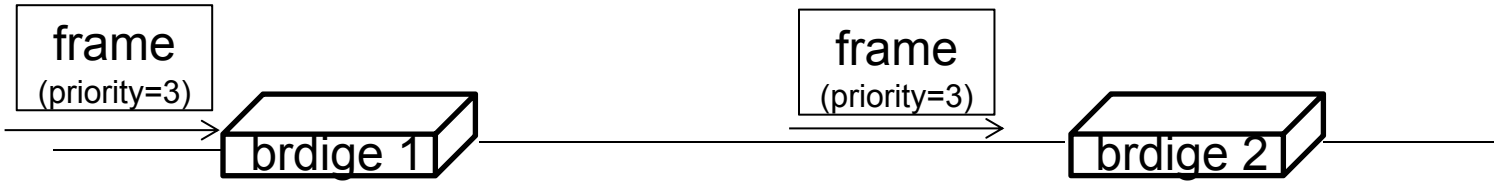
DetNet EDP Interoperation

draft-peng-detnet-edp-interop-00

Shaofu Peng ZTE

Background: TSN Solutions Interoperation

Interoperation by: 1) common frame fields (such as Priority);
2) local states (such as gate instance, flow states).



local Per-stream Filtering/Policing

For streams with:
stream_identifier *
priority 3
Apply stream gate instance:
StreamGateState = open
IPV = 7
TimeInterval = T
StreamGateState = open
IPV = 6
TimeInterval = T

Queue-7/6 enable **CQF**

local Per-stream Filtering/Policing

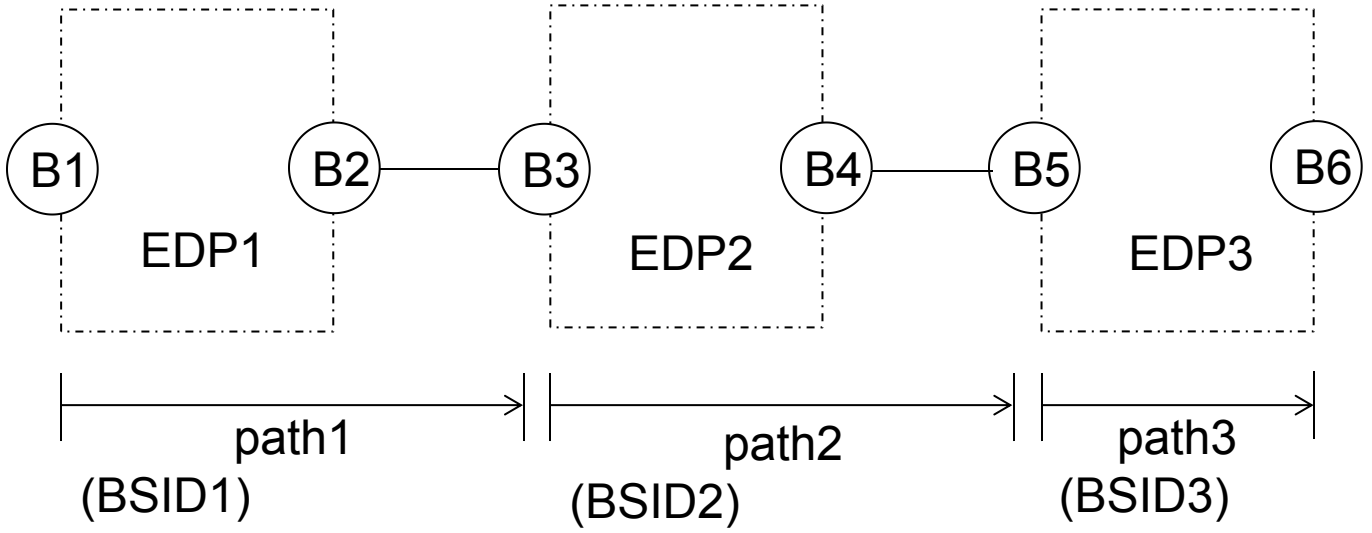
For streams with:
DMAC, SMAC, VLAN ID
priority 3
Apply stream gate instance:
StreamGateState = open
IPV = 7
TimeInterval = T

Queue-7 enable **ATS**

EDP Solutions Interoperation

Interoperation by: 1) common metadata (such as Path Latency Deviation E);
2) differentiated metadata (related with specific EDP solution).

Is DSCP as common metadata ? Seems no necessary for all EDP solutions, although EDP supplements the details of building blocks of EF PHB.

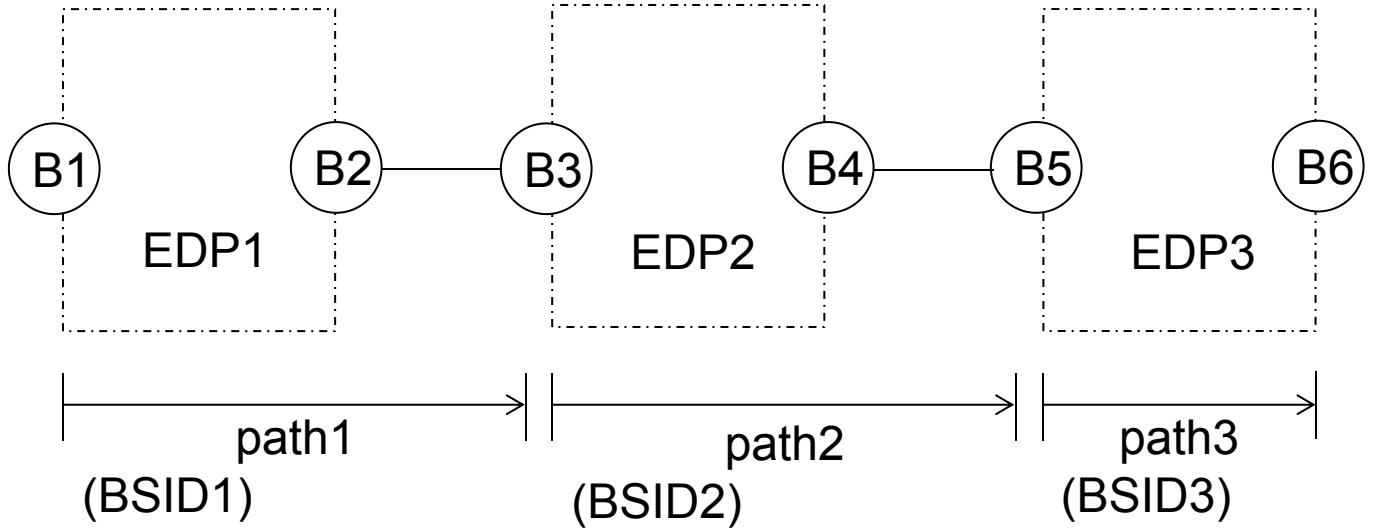


End-to-end Path Across EDP Domains

- Binding SID (or Label) is used to represent sub-path of each EDP domain.
- The E2E path is represented by multiple BSIDs, i.e., <BSID1, BSID2, BSID3, ...>.
- The headend of E2E path only encode the metadata (com-meta & diff-meta) for EDP1 domain with the help of the FIB entry of BSID1.
- When packet arrived at the entance node of EDP2 domain, all encodings added by BSID1 are removed, firstly dampen by the received com-meta, then encode the new metadata (com-meta & diff-meta) for EDP2 domain with the help of the FIB entry of BSID2. And so on.
- Common metadata should be recognized by all EDP solutions.

Instead, using a plain SID list to represent E2E path and encode metadatas for all EDP domains simultaneously in the packet is too long, complex, and unnecessary.

IPv6 EDP Interoperation

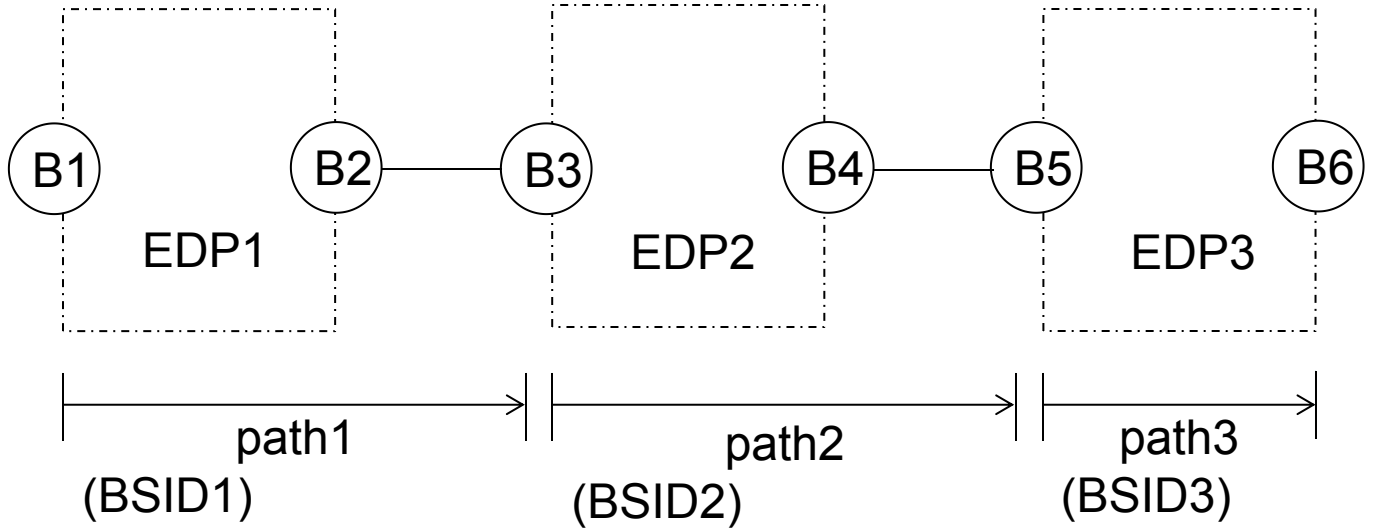


B1 sent:
IPv6 header <B1, B2>
[HBH: diff-meta]
RH: sid list of path 1
[diff-meta]
DOH: com-meta
IPv6 header <B1, BSID2>
RH: BSID1, BSID2, BSID3;
SL = 1
Upper-layer header

B3:
Dampen with the received com-meta of outer IPv6 header.
then sent:
IPv6 header <B3, B5>
[HBH: diff-meta]
RH: sid list of path 1
[diff-meta]
DOH: com-meta
IPv6 header <B1, BSID3>
RH: BSID1, BSID2, BSID3;
SL = 0
Upper-layer header

B5:
... ...

MPLS EDP Interoperation



B1 sent:
[top labels]
node-sid-B3
<NAS: diff-meta, scope=HBH>
<NAS: com-meta, scope=SEL>
BSID2
BSID3
Upper-layer header

B3:
Dampen with the received com-meta.
then sent:
[top labels]
node-sid-B5
<NAS: diff-meta, scope=HBH>
<NAS: com-meta, scope=SEL>
BSID3
Upper-layer header

B5:
... ...

Next step

- Any questions/comments ?

Thank you!