NSH context header allocation for Mobility

draft-napper-mobility-allocation-02

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Background

- Network Service Header (NSH) allows for carrying metadata in both fixed and variable formats

- However there is no allocation defined for Broadband – both Mobile and Fixed

- This draft defines a reference model for allocating meta-data for use in broadband use cases

Fixed meta-data header allocation for the broadband use case

```
 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
| R | Sub | Tag |                 Context ID                    | CH1
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|                        Sub/Endpoint ID                        ~ CH2
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
~                    Sub/Endpoint ID (cont.)                    | CH3
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|                          ServiceTag                           | CH4
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
```

- Context Header 1 (CH1)
  - R, reserved
  - Sub, Sub/End Point ID type field. These bits determine the type of 64 btit Sub/Endpoint ID field that spans CH2 and CH3 Ethernet
  - Tag, type of the serviceTag field in CH4
  - Context ID, Subscriber/Endpoint ID field scope. Eg. Incoming VRF/ VXLAN VNID, VLAN or policy idnetifier
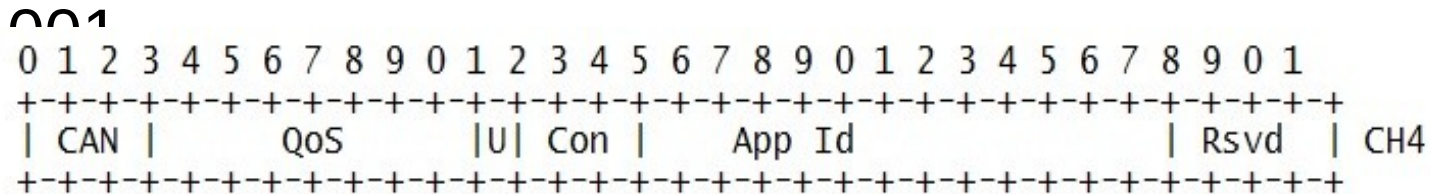
Sub/Endpoint identifier – CH2 And CH3

- Sub/EndPoint : Subscriber identifier (IMSI/MSISDN/ Endpoint ID) of corresponding subscriber, machine or application of the flow. Interpretation of this field is based on 'Sub' values.

Value	Description
000	Opaque value. Can be used or ignored by the SF determined by the control plane
001	64 bit IMSI value
010	8-15 bits, MSISDN value
011	64 bit identifier to identify a fixed subscriber or Id to group flows (eg. M2M)
100-111	are reserved

Service Tag – CH4

- ServiceTag: Contains information related to access network (RAN/DSL/Cable) when 'Tag' value is set to 001

```
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
| CAN |      QoS      |U| Con |     App Id              | Rsvd  | CH4
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
```

CAN   - IP-CAN-Type (Diameter AVP code 1027)

QoS   - Qos Class identifier (Diameter AVP code 1028)

U   - QoS Upgrade (Diameter AVP code 1030)

Con   - Congestion level

App ID - Application ID describing the flow type.

          Control plane assigns this and is outside the scope of this draft.

Tag values

000   - opaque value used by SF as programmed by control plane

010-111   - reserved

Control plane considerations

- Suggested allocation of context headers SHOULD be considered as guideline and MAY vary based on use case.
- Control plane aspects of specifying and distributing the allocation scheme among the SFs and guarantying semantics of meta-data is outside the scope of this document.

Next Steps

- Change the draft title to reflect fixed as well as mobile
- Specify allocation for NSH MD-Type 2
- Authors would like to request the newly published draft be adopted as the working group document

Questions ?