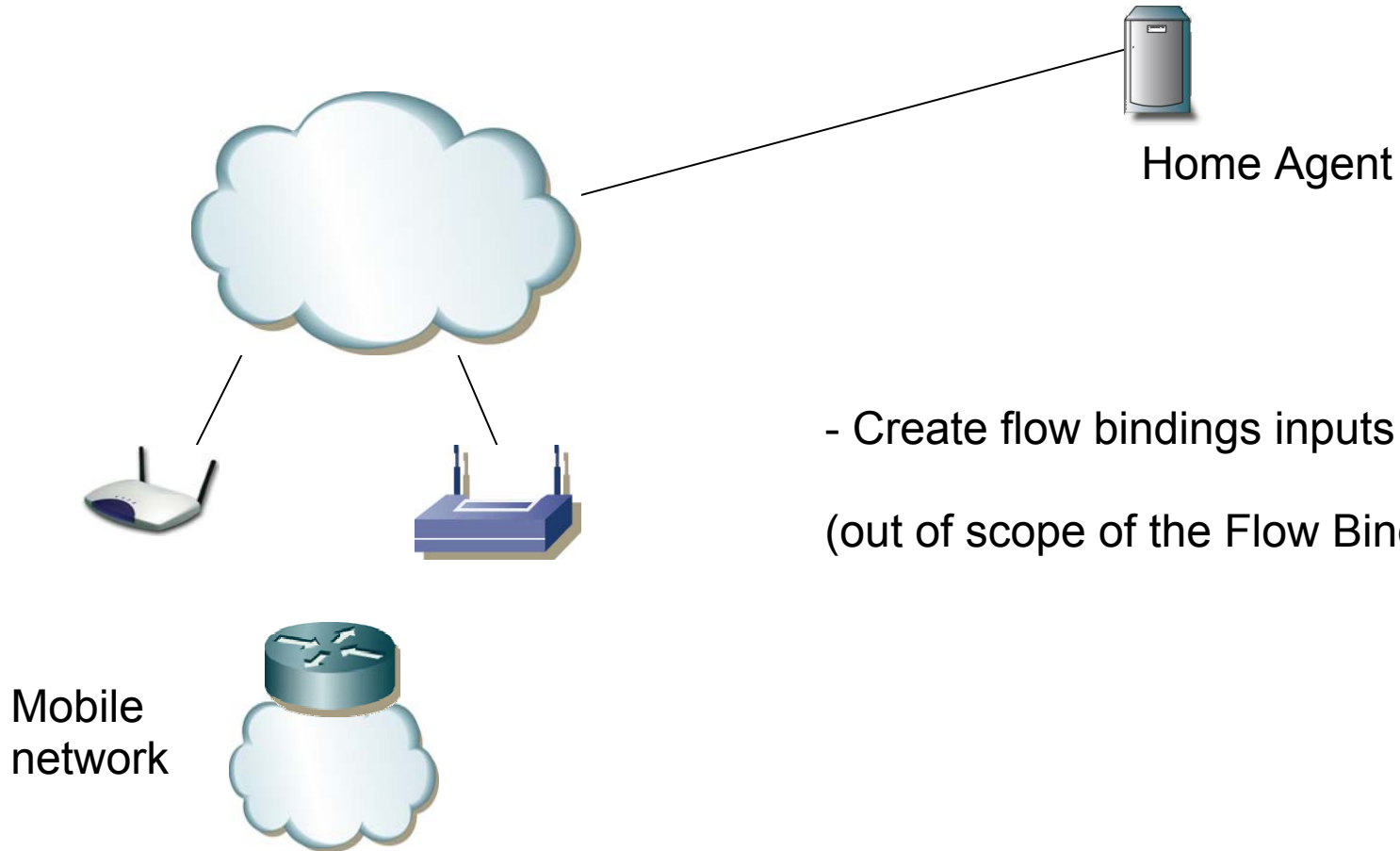# draft-soliman-monami6-flow-bind

Hesham@qualcomm.com

Objective
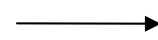
- To be able to transfer flow binding rules between MN/MR and HA/CN/MAP

- Aggregate flows in one BU (use of MCoA)

Operation

Home Agent

Mobile
network

- Create flow bindings inputs at the MN/MR

(out of scope of the Flow Binding I-D)

Flow X, Y : 802.11 interface, 802.16 interface ⟶ Inputs for future flow bindings when
Flow W : 802.16 interface, 802.3   attaching to foreign networks
Flow Z : 802.3

Operation….cont

Home Agent

BU1   BU2
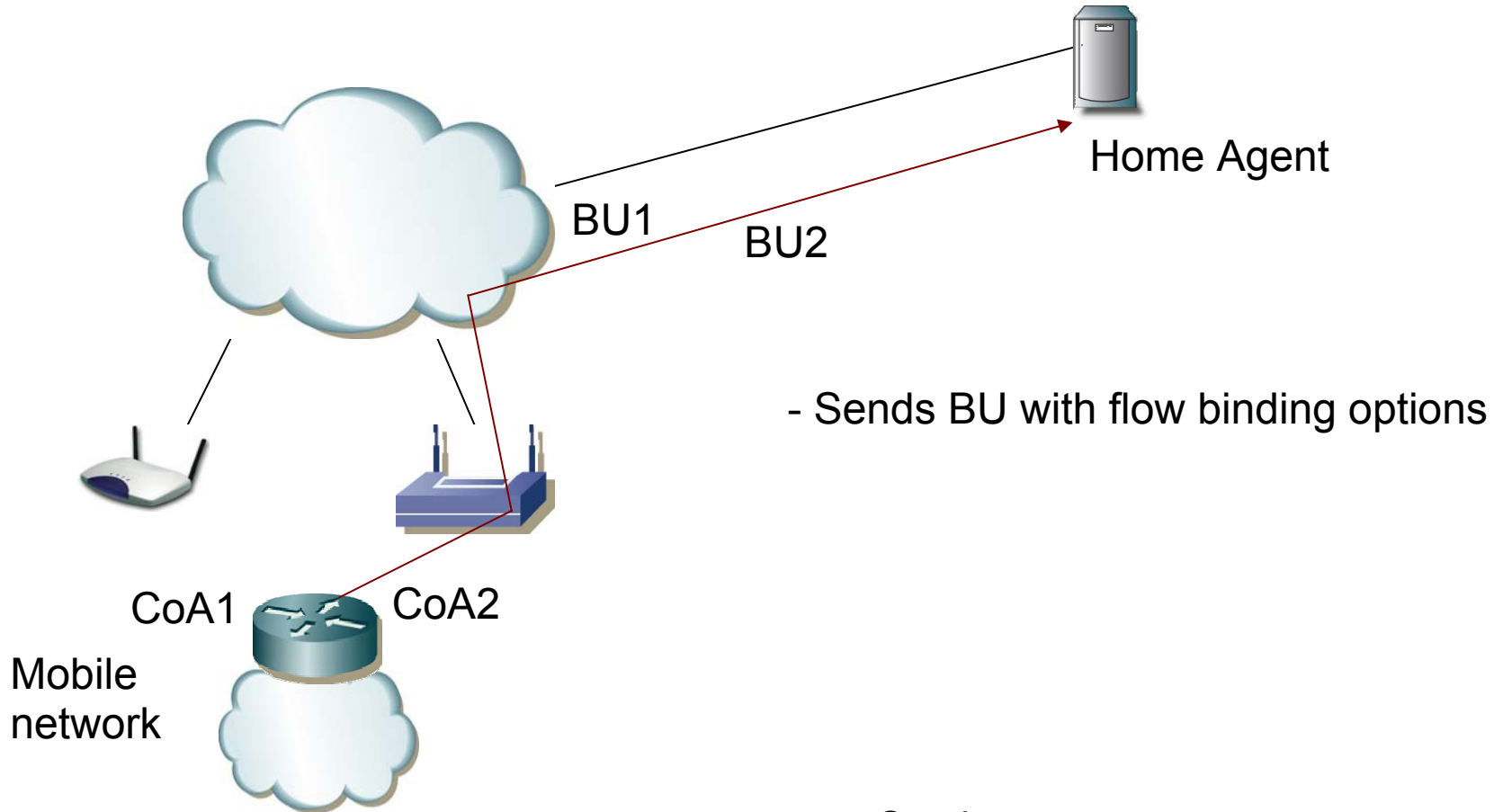
- Sends BU with flow binding options

CoA1   CoA2

Mobile
network
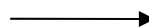
Send
One BU with CoA1 as source address and three
flow binding options (Flow X, Flow Y and Flow
W)

Inputs
Flow X, Y : 802.11 interface, 802.16 interface
Flow W : 802.16 interface, 802.3
Flow Z : 802.3

Operations…cont

HoA1 – CoA1 – flow X
HoA1 – CoA1 – flow Y
HoA1 – CoA2 – flow W

Home Agent

- Create flow bindings on HA/MAP and MN/MR

CoA1   CoA2

Mobile
network
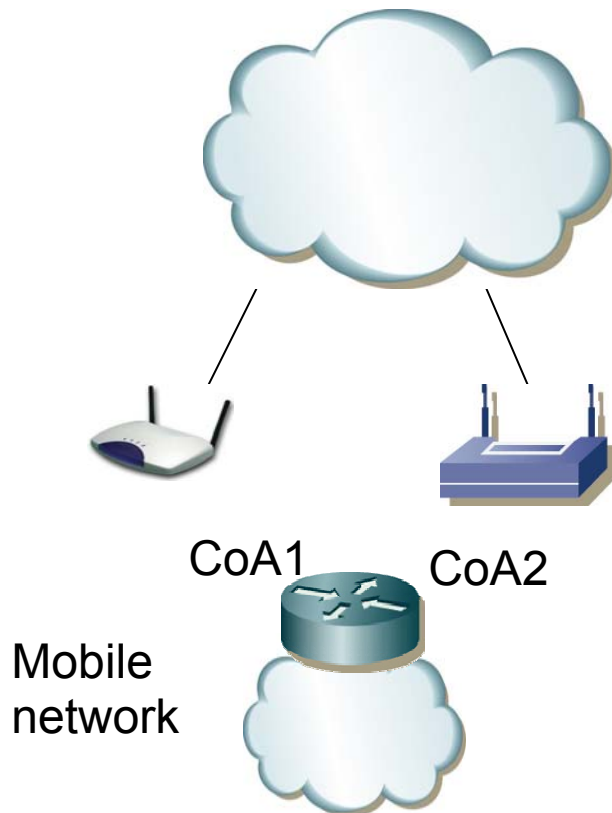
Inputs
Flow X, Y : 802.11 interface, 802.16 interface
Flow W : 802.16 interface, 802.3
Flow Z : 802.3
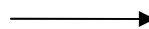
HoA1 – CoA1 – flow X
HoA1 – CoA1 – flow Y
HoA1 – CoA2 – flow W

Recent Updates

- Version 2 and 3 have been published since IETF66

- Address the following major updates

  - Section organization

  - Include MCoA support

  - Terminology section

  - CLS field

  - BID usage (via the Binding Reference)

  - n-casting

  - Update references

Flow identifer option

```
 0                   1                   2                   3
 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
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|Option Type    |  Option Len   |S|E|F|L|O|W|T|I|R|H|    PRI    |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|      FID      |    Action     |    Status     |  PRO  |  CLS  |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|                                                               |
+                                                               +
|                                                               |
+                    Source Address                             +
|                                                               |
+                                                               +
|                                                               |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|  Prefix       |                Res1                           |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|                                                               |
+                                                               +
|                                                               |
+                 Destination Address                           +
|                                                               |
+                                                               +
|                                                               |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|  Prefix       |                Res2                           |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|     Source port - Min         |     Source port - Max         |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|     Dst port - Min            |      Dst port - Max           |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|                           SPI                                 |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|                 Flow Label                      |    Res3     |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|    Protocol   |   C. S.       |            Res4               |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
```
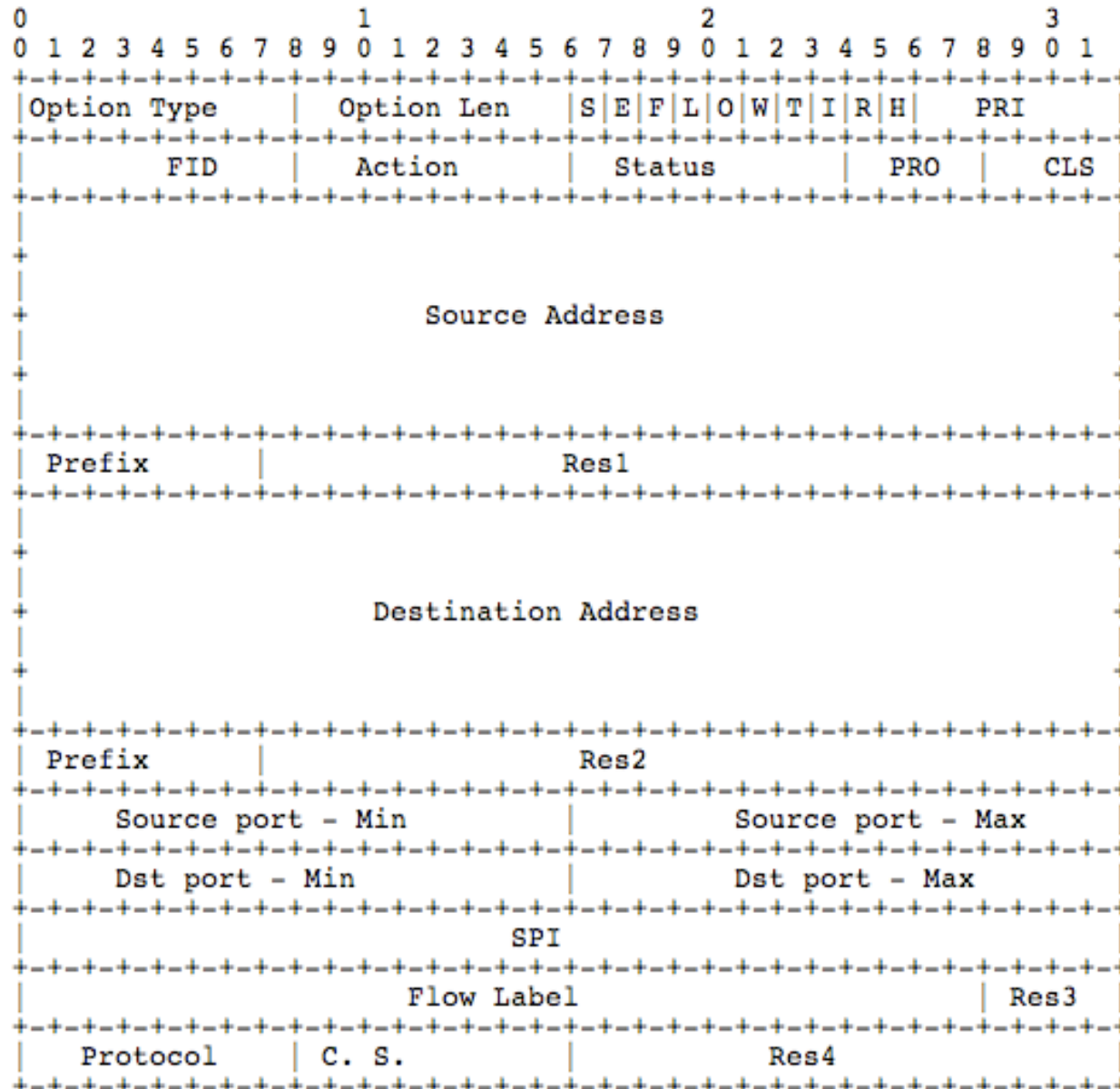
BID sub-option

```
 0                   1                   2                   3
 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
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|Sub-opt Type   |   Sub-Opt Len  |       BID     |     ......
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|    ........
+-+-+-+-
```

BID usage

- Allow for bulk flow bindings registration
- Use the preferred field of BID option

n-casting

Duplicating the same traffic to several locations

- Only possible with the Binding Reference Sub-option

- CoAs must be firstly registered

- Flow Identifier option transports all BIDs

Remaining issues

- Preferred binding if MCoA is not used ?

- Several editorial clarifications

- Identification of a binding

    - Current: HoA, FID

    - Need further clarification:

        - If MCoA is used, and n-casting is in place, we can have

            HoA1, BID1, FID1

            HoA1, BID2, FID1

        ⇒ Use the triplet (HoA, BID, FID) where BID and FID can be null

Accept as WG item?