

## Separation of Access and Core Partitioning in the Local Space

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Re: Proposed P802c PAR

Venue:

*IEEE 802 EC Privacy Recommendation Study Group, San Antonio, TX, USA*

Purpose:

To summarize privacy issues related to contribution IEEE 802-ec-14-0071, which addresses the proposed P802c PAR and the partitioning of the local address space.

Notice:

This document represents the views of the author and is offered as a basis for discussion.

# Separation of Access and Core Partitioning in the Local Space

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# Reference

- This contribution is extracted from:
  - *Zonal Address Partitioning in the Local Space*
    - [IEEE 802-ec-14-0071](#)

# Scenario

- Half of IEEE 802 address space (with the 7th bit set on) is locally administered and not presumed globally unique.
- The IEEE-SA Registration Authority (RA) is assigning 24-bit CIDs with the 7th bit set on, suggesting their use in 802 addresses.
- Proposed P802c project would provide recommendations and rules for the 802 local address space, allocating a portion for protocols using the CID and another portion for local administration.
- Local space is being considered for temporary address assignments to alleviate privacy concerns related to static global addresses based on EUI.

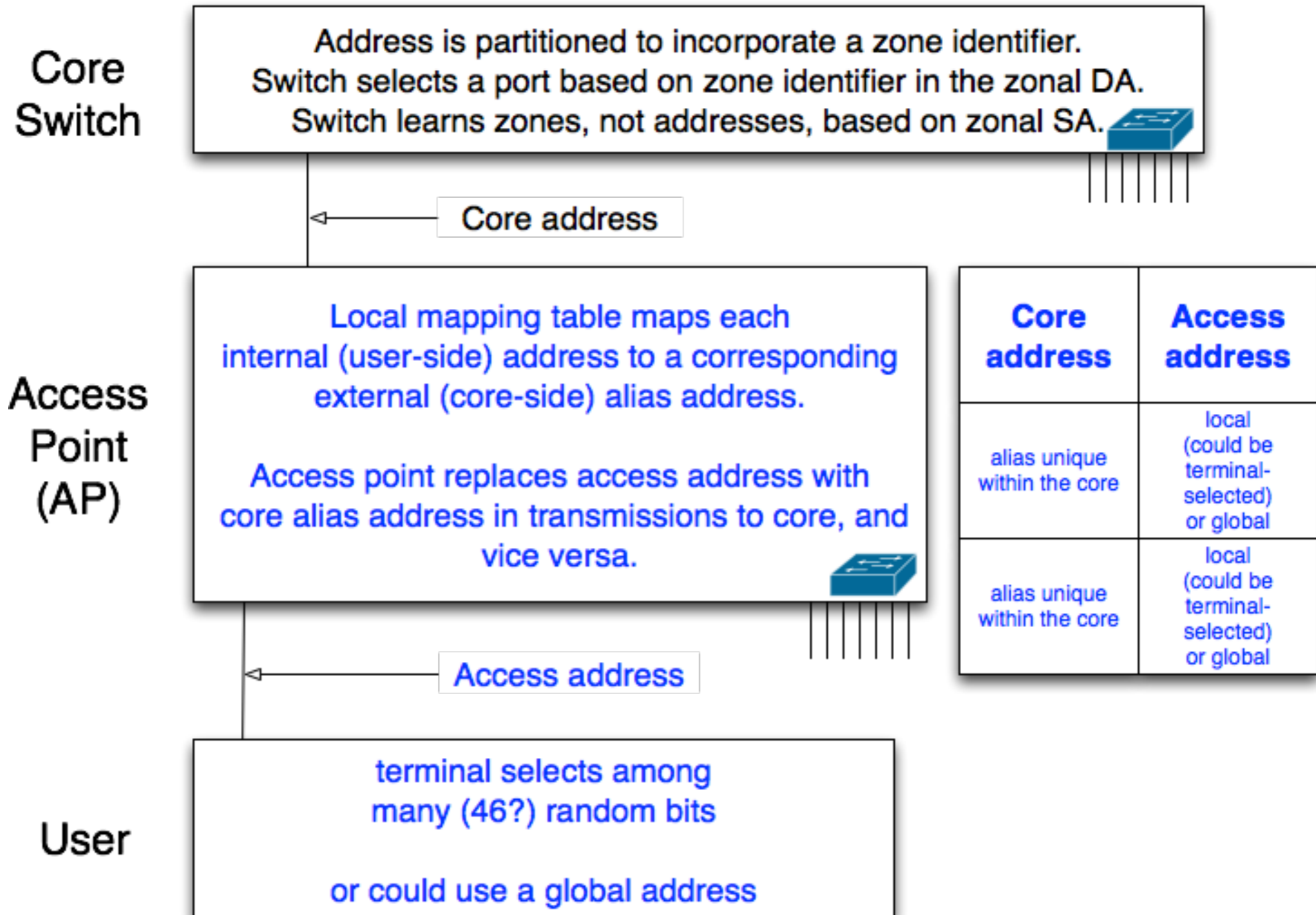
# Divergence of Views

- Some P802c proponents suggest dividing the local space using the CID, perhaps as an identifier of an address assignment or resolution protocol.
- Some, considering privacy, wireless, and access issues, prefer a wide-open, unstructured space to maximize entropy and privacy while minimizing collision probability.
- Should be possible to reach a common understanding, considering:
  - people are addressing different problems
  - the local space is *local* and does not require a universal solution
- Can a resolution of the conflict offer lead to better use of the local space?

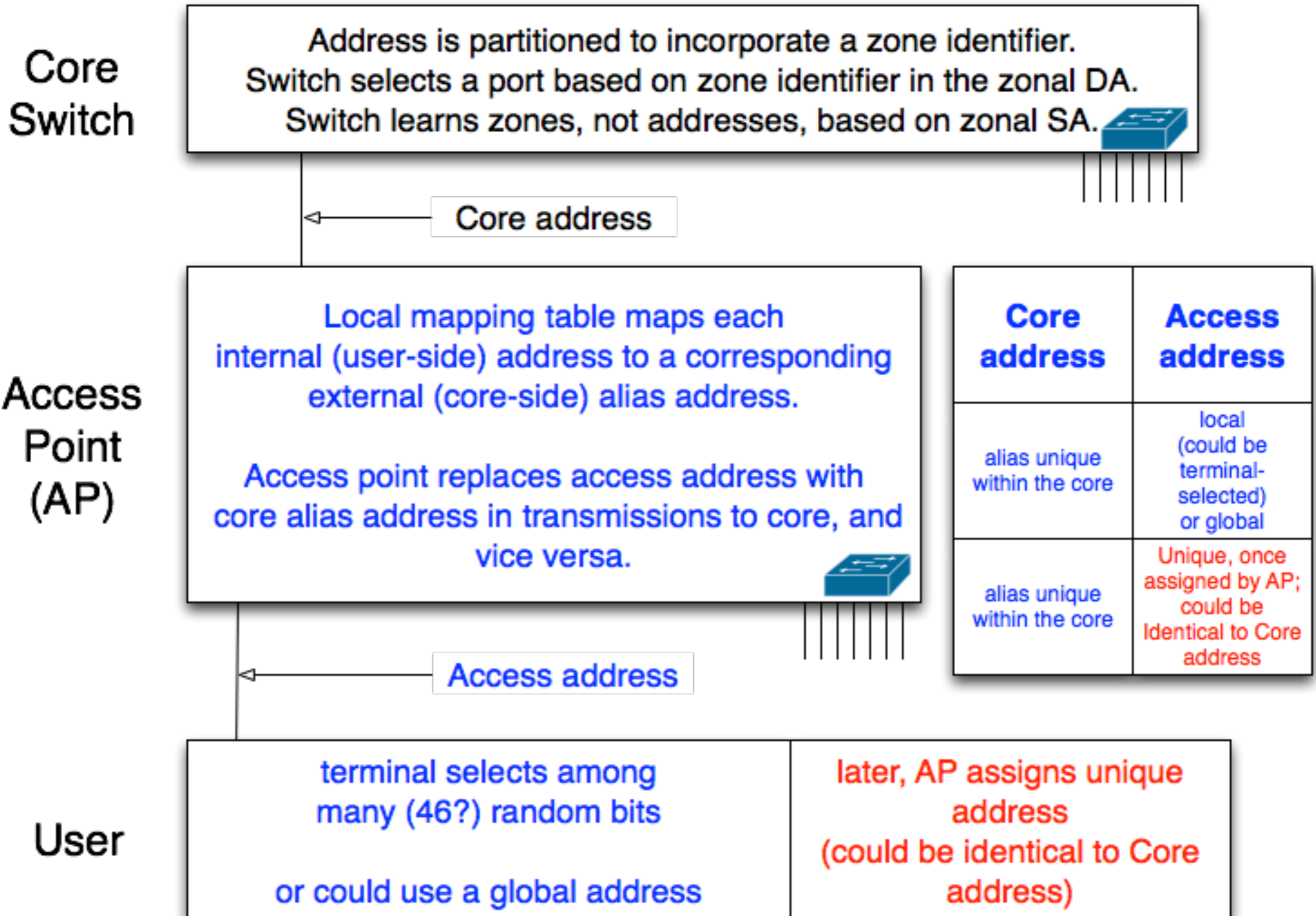
# Key Privacy Points of IEEE 802-ec-14-0071

- Partitioning the local space can add value in the core of the network.
  - zonal addressing is proposed as an example
- However, partitioning the local space in the core need not force a partitioning scheme in the access.
  - address aliasing can be used at the edge
- to reduce collisions, random addressing can be limited to temporary use
- privacy implications should be considered

# Address Aliasing



# Address Updating





# Notes

- randomized address would be temporary, so chance of collision might be negligible
- AP-assigned address need not be random; could be selected by AP with assurance of uniqueness within the system
- uniqueness could be achieved by, e.g., the proposal for zonal partitioning, in which case the AP owns a unique zone ID and manages the uniqueness of addresses incorporating that zone ID

# Privacy Questions

- Would such separation of the access and core address spaces resolve the conflict with P802c?
- Would a method like this allow privacy issues to be addressed?
- Are changes to the draft P802c PAR and CSD required to provide such flexibility?

# What *might* an 802c standard say

(1) reserve a quadrant for assigned CID:

If a device is used in a domain in which multiple local address assignment or usage protocols are active, then the first byte of the device address should end in 1010 only if the first three bytes of the address are a CID allocated by the IEEE RA and the address is assigned in accordance with the protocol specified by the owner of that CID.

# What more *might* an 802c standard say

(2) less than three quadrants for unassigned CID:

If a device is used in a domain in which multiple local address assignment or usage protocols are active and is assigned a local address of which the first three bytes are *not* a CID allocated by the IEEE RA, then the first byte of the address should end in [for example] {0010} or {0010 or 0110}.

# What I'd like an 802c standard to say

(3) giving IEEE 802 a swath of space instead of a CID (e.g. 42 to 44 bits, instead of 24), since IEEE 802 is much more than a “company”:

If the first byte of an address ends in [for example] {1110 or 11110 or 111110}, then the address should be interpreted per protocols specified by IEEE 802.

# Proposals of 802.16 WG

# Proposed PAR Change: Scope

- 5.2.b: This will allocate a portion of the address space for protocols using an IEEE Registration Authority assigned Company ID. Another portion of the local address space will be allocated for assignment by local administrators. **A portion will be allocated for use by IEEE 802 protocols using a partitioned local address.**

# Proposed PAR Change: Registration

- 6.1.b. Is the Sponsor aware of possible registration activity related to this project?: Yes
- If yes please explain: This will allocate a portion of the address space for protocols using an IEEE Registration Authority assigned Company ID **and one or more blocks of CID space to be agreed with the Registration Authority.**



## PAR Change: Need

- 5.5: This project will enable protocols that automatically configure and use addresses from a portion of the local address space.