Constraints of OCB Transmission

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Use cases requiring OCB transmission

Outside the context of a basic service set (BSS) (OCB): A mode of operation in which a STA is not a member of a BSS and does not utilize IEEE 802.11 authentication, association, or data confidentiality services.

This communication mechanism may be used in the following use cases:

- Use Case 2: Low Power Sensor UL Broadcast
- [Maybe] Use Case 8: Lecture room slide distribution
- Use Case 10: AP tagged UL forwarding

Constraints of OCB

- **A STA for which dot11OCBActivated is true initially transmits and receives on a channel known in advance, either through regulatory designation or some other out-of-band communication.**
  - In our case we do not know the channel to be used in advance, do we transmit in all possible channels or do we wait until a beacon is received (this goes against a requirement on transmission without scanning)
- **A STA's SME determines PHY parameters, as well as any changes in the operating channel, e.g., using information obtained via out-of-band communication or over-the-air frame exchange.**
  - Do we need to define a conservative PHY mode for this kind of transmission?

Constraints of OCB

The value of all 1s is used to indicate the wildcard BSSID. The wildcard value is not used in the BSSID field except where explicitly permitted in this standard. When dot11OCBActivated is true, the wildcard value is used in the BSSID field. When dot11OCBActivated is false and the BSSID field contains the wildcard value, the Address 1 (DA) field is also set to all 1s to indicate the broadcast address.

Is this important? Do we need to differentiate a frame sent to broadcast using OCB from a frame sent to broadcast with the BSSID set to broadcast but not OCB?

Constraints of OCB

- **OCB uses the below EDCA parameters. For use cases 2 and 10, do we need to define new parameters?**
  - In the case of e.g., airports, with a lot of tags, one may thought on using parameters even below AC_BK

Table 9-138—Default EDCA parameter set for STA operation if dot11OCBActivated is true

AC	CWmin	CWmax	AIFSN	TXOP limit
AC_BK	aCWmin	aCWmax	9	0
AC_BE	aCWmin	aCWmax	6	0
AC_VI	(aCWmin+1)/2–1	aCWmin	3	0
AC_VO	(aCWmin+1)/4–1	(aCWmin+1)/2–1	2	0

Constraints of OCB

- **Only the data transfer rates of the mandatory rate set of the attached PHY are guaranteed to be supported when a STA for which dot11OCBActivated is true transmits a Management or Data frame. A higher layer protocol entity within a STA in which dot11OCBActivated is true might negotiate a rate outside the mandatory rate set.**
- **When dot11OCBActivated is true, TXOP limits shall be 0 for each AC.**
  - Is this enough for the envisioned use cases?

Summary

- This presentation has gone through the different constraints imposed in the standard for OCB transmission
- Its intended aim is to be used as a starting point of discussion on the use of OCB for the use cases 2 and 10.