IEEE P802.11
Wireless LANs

|  |
| --- |
| Restriction of unnecessary packet exchanges |
| Date: 2012-03-08 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Katsuo Yunoki | KDDI R&D Laboratories | 3-10-10 Iidabashi, Chiyoda-ku, Tokyo, 103-8460 Japan |  | yunoki@kddilabs.jp |
|  |  |  |  |  |

Abstract

This document proposes text for the following area of SFD.

* **5. Fast Network Discovery**

Proposed test describes restriction of unnecessary packet exchanges.

**Motivation**

Heavy usage of Probes may break FILS requirement because of packet flooding by unnecessary packet exchanges.

**Reference**

Doc. IEEE 802.11-12/0206r0: Necessity of Probe reduction

**[Motion]**

Do you agree to include conceptual text for SFD as follows?

(Editorial revisions should be made later.)

Y/N/A =

**<Proposed text>**

1. **Fast Network Discovery**
	1. **Negative effect of heavy packet exchanges**
		1. General

Fast AP/NW discovery is an important factor in order to achieve FILS requirements sufficiently. However, heavy packet exchanges for that may bring severe packet congestions. Instead, it may be difficult to achieve FILS.

* + 1. Current active scanning

Almost current STAs search a desired AP by sending Probe Requests. Wildcard SSID is generally used for receiving responses from multiple APs by single Probe Request.

However, a hundred STAs try to associate with an AP in a second in FILS use cases. If Probe Requests with wildcard SSID are sent for AP discovery, meaningless packets exchanges will happen because of non-related APs around the place. It causes high air-time occupancy rate.

In order to realize aggressive WLAN utilization by FILS, it is required to reduce unnecessary packet exchanges less as FILS compliant STAs and APs get more deployed in the future. It will make WLAN bandwidths usage more efficient for associations, authentications and data communications other than AP/NW discovery.

* 1. **Fast AP Discovery**
		1. Probe reduction scheme

The following restriction scheme should be considered for reducing unnecessary probe exchanges:

* Usage reduction of Probe Request itself (Details should be considered.)
* Usage restriction of wildcard SSID in Probe Request (Details should be considered.)
* (To be added)
	1. **Fast Network Discovery**

**References:**

* Doc. 11-12/0206r0 : Necessity of probe reduction (Katsuo Yunoki/KDDI R&D Laboratories)