IEEE P802.11
Wireless LANs

|  |
| --- |
| Proposed Draft Text for the SBP Procedure |
| Date: 2022-02-24 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Claudio da Silva | Meta Platforms, Inc |  |  | claudiodasilva@fb.com |
| Ali Raissinia | Qualcomm  |  |  |  |
| Xiandong Dong | Xiaomi |  |  |  |
| Jinsoo Choi | LGE |  |  |  |

Abstract

This document includes proposed draft text for the SBP topic as defined in TGbf’s SFD by the following:

An optional sensing by proxy (SBP) procedure is defined in which:

* An “SBP request” consists of a non-AP STA sending an SBP Request frame to an SBP-capable AP STA.
	+ A STA that sends an SBP Request frame to invoke SBP (and, as a result, WLAN sensing) is denoted by “SBP requesting STA”.
* An AP STA that receives an SBP request shall send to the SBP requesting STA an SBP Response frame to accept or reject the request.
* An AP STA that accepts an SBP request shall initiate a WLAN sensing procedure with one or more non-AP STAs using operational parameters derived from those indicated within the SBP Request frame.
	+ Whether the SBP requesting STA participates or not in the WLAN sensing procedure as a sensing responder is TBD.
* Measurement results obtained in a WLAN sensing procedure resultant from an SBP request shall be reported to the SBP requesting STA.

How the SBP Requesting STA identifies the Measurement Setup ID is TBD.

Baseline documents: Rev. me (D1.0) and 11be (D1.4)

*Insert the following definitions into 3.2 (Definitions specific to IEEE 802.11) in alphabetical order:*

sensing by proxy (SBP) initiator: A non-AP STA that transmits an SBP frame with SBP Subtype field set to (request).

sensing by proxy (SBP) responder: An AP that receives or is the intended recipient of an SBP frame with SBP Subtype field set to (request).

*Insert the following definitions into* 3.4 (Acronyms and abbreviations) *in alphabetical order:*

SBP sensing by proxy

*Insert the following new subclause at the end of 11.21 (Wireless network management procedures):*

**11.21.19 SBP procedure**

**11.21.19.1 General**

SBP is a procedure that allows a non-AP STA to request an AP to perform WLAN sensing (see 11.21.18) on its behalf.

A non-AP STA may act as SBP initiator when dot11SBPImplemented is true.

An AP may act as SBP responder when dot11SBPImplemented is true.

**11.21.19.2 SBP procedure setup**

To establish an SBP procedure, the SBP initiator shall send an SBP frame with SBP Subtype field set to (request) to an SBP responder capable AP. Upon receipt of an SBP frame with SBP Subtype field set to (request), the SBP responder either:

1. Accepts the SBP procedure request, in which case the SBP responder shall respond with an SBP frame with SBP Subtype field set to (response) and status code SUCCESS; or
2. Rejects the SBP procedure request, in which case the SBP responder shall respond with an SBP frame with SBP Subtype field set to (response) and status code REQUEST\_REJECTED.

The SBP responder should transmit an SBP frame with SBP Subtype field set to (response) within 10 ms in response to the SBP frame with SBP Subtype field set to (request). If no SBP frame with SBP Subtype field set to (response) is received within this time period, or if an SBP frame with SBP Subtype field set to (response) is received with a status code equal to REQUEST\_REJECTED, the SBP procedure setup is terminated.

An SBP responder that sends an SBP frame with SBP Subtype field set to (response) with status code SUCCESS should initiate within (TBD) a WLAN sensing procedure with one or more non-AP STAs using operational parameters derived from those indicated within the SBP frame with SBP Subtype field set to (request) that requested the SBP procedure.

NOTE—The SBP responder is the sensing initiator of the WLAN sensing procedure.

NOTE—The SBP initiator can participate in the WLAN sensing procedure as a sensing responder.

Editor’s note: How the SBP initiator identifies the Measurement Setup ID is TBD.

**11.21.19.3 SBP procedure reporting**

TBD

Editor’s note: Measurement results obtained in a WLAN sensing procedure resultant from an SBP request shall be reported to the SBP initiator.

**11.21.19.4 SBP procedure termination**

An SBP procedure shall be terminated after the last SBP frame with SBP Subtype field set to (report) is sent by the SBP responder as indicated in the TBD field.

An SBP procedure may be terminated at any time by either the SBP initiator or the SBP responder by transmitting an SBP frame with SBP Subtype field set to (termination).

**11.21.19.5 Protected SBP procedure**

TBD

**11.21.19.6 SBP dependencies**

Implementation of SBP is optional for a WNM STA. A STA in which dot11SBPImplemented is true is defined as a STA that supports SBP.

A STA in which dot11SBPImplemented is true shall set the SBP field of the Extended Capabilities element to 1.

A STA in which dot11SBPImplemented is false shall set the SBP field of the Extended Capabilities element to 0.

*Modify the third paragraph of 4.3.21.1 (Wireless network management: Overview) as follows*

The WNM service includes the following:

— BSS max idle period management

...

— WNM sleep mode

— SBP

*Insert the following new subclause at the end of subclause 4.3.21 (Wireless network management)*

**4.3.21.25 SBP**

SBP enables a non-AP STA to obtain sensing measurements of the channel between an AP and one or more non-AP STAs or between a receive antenna and a transmit antenna of an AP. With the execution of the SBP procedure, it is possible for a non-AP STA to obtain sensing measurements necessary for detecting and tracking changes in the environment.

*Insert the following new rows into Table 9-153 (Extended Capabilities field)*

**Table 9-153—Extended Capabilities field**

|  |  |  |
| --- | --- | --- |
| Bits | Information | Notes |
| 91 | SBP | A STA sets the SBP field to 1 if dot11SBPImplemented is true, and sets it to 0 otherwise. See 11.21.19 (SBP procedure). |