IEEE P802.11
Wireless LANs

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| PDT Components of architecture |
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Abstract

This document contains Proposed Draft Text (PDT) for Components of architecture of the proposed TGbp (AMP, Ambient Power) amendment to the 802.11 standard.

Rev 0: Initial version

Rev 1: Revised based on feedback:

1. Added UHR in the relevant definitions.

2. Generalized the definition of AMP AP and AMP Energizer as an STA, instead of an AP or a non-AP STA.

Rev 2: Added sentence regarding AMP AP providing access to the Distribution System (DS).

Rev 3: changes in CYAN.

1. Added generic definition of non-AP AMP STA.

2. Added a new subclause 4.5.X (AMP services) to describe services provided by AMP AP, similar to 4.5.11 Wake-up radio (WUR) services.

3. Added 2 acronyms

Rev 4: Editorial corrections.

Rev 5: Modifications based on further feedback:

1. Deleted exciation waveform related text.

# Introduction

Interpretation of a Motion to Adopt

A motion to approve this submission means that the editing instructions and any changed or added material are actioned in the TGbp Draft. The abstract, revision information, introduction, explanation of the proposed changes and references sections are not part of the adopted material.

***Editing instructions formatted like this are intended to be copied into the TGbp Draft (i.e. they are instructions to the 802.11 editor on how to merge the text with the baseline documents).***

## Explanation of the proposed changes:

The proposed changes to the 802.11 TGbp draft within this document are based on the following motions adopted by the TGbp task group:

### Relevant motions [1]:

[Motion #22]

* **AM-1**: 11bp defines an “AMP AP STA”
	+ AMP non AP STAs may or may not communicate with AMP AP STA without association
	+ The AMP AP STA may or may not provide access to the DS for the AMP non AP STA
	+ Note: the AMP AP STA may be part of an access point.

[Motion #29]

* **AM-2**:
	+ Backscatter non-AP AMP STA: A non-AP AMP STA that is capable of receiving only AMP Downlink PPDUs and supports uplink backscatter transmission.
	+ Active Tx non-AP AMP STA: A non-AP AMP STA that is capable of receiving only AMP Downlink PPDUs and supports active transmission of AMP Uplink PPDUs.
	+ AMP Enabled non-AP STA: A non-AP STA (e.g. non-HT, HT or HE STA) that is also capable of receiving AMP Downlink PPDUs.

[Motion #34]

* **AM-3**:
	+ IEEE 802.11bp defines an AMP Energizer that contains an Energizing Function, which is capable of transmitting WPT waveform and/or excitation waveform for backscattering operation. Additionally, the AMP Energizer may contain or be co-located (which one is TBD) with an IEEE 802.11 non-AMP non-AP STA.
	+ Note: WPT waveform is transmitted over sub1-GHz. Depending on whether the backscattering operation happens in sub1-GHz or 2.4GHz, accordingly the excitation waveform will be transmitted in the same band.

**Text to be adopted begins here:**

**3.4 Acronyms and abbreviations**

***TGbp editor: Please add the following acronyms at appropriate location***

AMP Ambient Power

WPT Wireless Power Transfer

***TGbp editor: Please add the following text in subclause 4.3.35 Ambient Power (AMP) AP and non-AP AMP STA of the 802.11bp draft D0.1:***

4. General description

4.3 Components of the IEEE 802.11 architecture

4.3.35 Ambient Power (AMP) AP and non-AP AMP STA

An AMP AP is a non-HT, HT, VHT, HE, EHT or UHR STA that is capable of transmitting AMP downlink (DL) PPDUs and receiving AMP uplink (UL) PPDUs.

A non-AP AMP STA is a non-AP STA that is capable of receiving only AMP DL PPDUs and supports either backscatter or active transmission of AMP UL PPDUs.

A Backscatter non-AP AMP STA is a non-AP AMP STA that supports backscatter transmission of AMP UL PPDUs.

An Active Tx non-AP AMP STA is a non-AP AMP STA that supports active transmission of AMP UL PPDUs.

An AMP Enabled non-AP STA is a non-HT, HT, VHT, HE, EHT or UHR non-AP STA that is also capable of receiving AMP DL PPDUs.

An AMP Energizer is a non-HT, HT, VHT, HE, EHT or UHR STA that is capable of transmitting WPT waveform.. The WPT waveform is transmitted in the sub-1 GHz band.

**4.5 Overview of the services**

***TGbp editor: Please add the following new sub-clause at the end of subclause 4.5***

**4.5.X AMP services**

AMP services allow non-AP AMP STAs to have access to basic services provided by an AMP AP while operating at ambient power. The AMP services provided by an AMP AP might include access to the Distribution System (DS) and energizing functions (e.g., transmission of Wireless Power Transfer (WPT) waveform). The AMP services that AMP AP might provide to non-AP AMP STAs do not require establishing association between the AMP AP and non-AP AMP STAs.

**Text to be adopted ends here.**

**References:**

1. [11-24/1613r10](https://mentor.ieee.org/802.11/dcn/24/11-24-1613-10-00bp-specification-framework-for-tgbp.docx): 11-24-1613-10-00bp-specification-framework-for-tgbp, Yinan Qi (OPPO)