IEEE P802.11  
Wireless LANs

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| Use of the word "Initial" for TGai | | | | |
| Date: 2014-07-14 | | | | |
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Abstract

CID 4874 questions the lack of a definition for "Initial Link Setup" versus "Link Setup" which is provided in our draft. The resolution invites considerable discussion on just what is meant by adding the word "initial" wherever it is used in our draft (and all other instances where it may be used).

We need to determine if there is a difference between "initial link setup" versus simply saying "link setup". It is believed that this is independent of adding the word "fast" to either term. Technically, the word "initial" implies one of the following:

* first
* early
* original
* preliminary
* opening

In other words, an "initial link setup" is not final or necessarily complete. Adding the word implies that once this is done there is still something else needing to be done before the link has been fully set up. So, when we say "Fast Initial Link Setup", are we being factual in that the link has not yet been fully established (set up)? One could argue that "initial" implies that it is but the first of multiple setups, but that would apply to any and all link setups and thus would not require such a modifier. I don't think we mean to say that a FILS setup only applies when there are other setups to follow.

One suggestion heard was to add in Clause 3 another definition for "initial link setup" in addition to the current "link setup" definition. The thought provided was that we could use the definition contained in the PAR but there is no such definition in the PAR. There is nothing in the PAR that explains why the word "initial" is used.

It is believed that within TGai, there is no reason for adding the word "initial" when referring to setup. It is therefore recommended that it be removed throughout the document (and all future instances of use within 802.11). This means, for instance, that "FILS" will become "FLS". It is important to note that this is limited to "initial" as a modifier to "link", "setup", or "link setup" and not an indiscriminate cut/paste of the word.

Should the recommended deletion of "initial" be approved, following are all of the places where this would take effect:

**3.2 Definitions specific to IEEE Std 802.11  
fast link setup (FLS)**: A collection of mechanisms that enable IEEE 802.11 networks to minimize

link setup time.

**fast link setup category (FLSC)**: A binary value that indicates the priority category of the station

(STA) for fast link setup.

**fast link setup station (FLS STA)**: A station that supports fast link setup (FLS).

**3.3 Abbreviations and acronyms**FLS fast link setup

FLSC fast link setup category

Throughout:

"FILS" to "FLS"

"FILSC" to "FLSC"

"fast initial link setup" to " fast link setup "

"Differentiated Initial Link Setup" to " Differentiated Link Setup"

Potential problems that need to be individually addressed (note bold/red/underlined highlighting):

**8.4.2.183 Differentiated Initial Link Setup element**   
"The values of the bits specify the MAC addresses of the STAs that are allowed to attempt **initial** link setup."

**10.44.2 FILS Discovery Frame generation and usage**

An FD Frame may contain a 1-octet FD AP's Next TBTT Offset field that indicates the time offset, in number of TUs, between the transmission of the FD frame and the next TBTT. After receiving an FD frame with the AP's Next TBTT Offset field, if a STA needs further information from the AP for its **initial** link setup, the STA should use the information provided by the FD AP's Next TBTT Offset field to decide whether or not to wait for the next Beacon transmission to probe the AP, or to switch to other channels

**10.44.5 Differentiated initial link setup**

To limit the number of STAs that attempt link setup concurrently, the differentiated link setup procedure provides a method for an AP to moderate the rate non-AP STAs transmit **initial** link setup frames to the AP. The **initial** link setup request frame refers to the first frame initializing the link setup procedure; either association request frame or authentication request frame.

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**10.44.5.1 AP procedures for differentiated initial link setup**

An AP should always allow a STA that has frames with user priority 4-7 in their transmission queue(s) to attempt **initial** link setup before STAs that have frames with user priority 0-3 and the STAs that have no frame in their transmission queue(s).

An AP may set the Bit Pattern Length subfield in the MAC Address Filter subfield to decide the number of bits used for MAC address filtering; and specify the bit pattern in the Bit Pattern subfield to allow STAs with specific MAC addresses to transmit **initial** link setup request frames immediately. The more bits used for MAC address filtering, the fewer number of STAs are allowed to transmit an **initial** link setup request frame immediately. How an AP sets the bit pattern in the Bit Pattern subfield is beyond the scope of this specification

An AP may set one or more vendor specific criteria in Vendor Specific subfield to allow a set of STAs that satisfy the specified criteria to transmit **initial** link setup request frames to the AP without additional delays.

**10.44.5.2 Non-AP STA procedures for differentiated initial link setup**

All categories of STAs can transmit an **initial** link setup request frame to the AP after this time expires.

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There are other instances of the word "initial" in the draft that are not considered candidates for change or deletion.

Attached (click on the icon below) is a copy of what D2.1 would look like today with these proposed changes. This is a "clean" version, meaning that all other revisions except those related to the use of "initial" have been accepted and all conditional text has been removed so that the changes being considered are the only revision marks to be seen in this copy.

