Cl **03** *SC* **3.z1** *P* **2** *L* **26** # 20

Darwin Engwer Self

Comment Type **E** *Comment Status* **X**

802.11z relies heavily on the term "tunneled direct link setup", with emphasis on the term "tunneled" as the distinguishing feature vs. other types of direct link setup and direct links. However, the term "tunneled" is not really necessary or applicable. The set up packets are not really "tunneled", they are just regular data packets.

By way of explanation, applications communicate by exchanging data structures that are constructed according to the rules of a given protocol. The data structures are combined with a header (that includes addressing information) to form a packet. To transfer a given packet to another device a successive series of lower level packet encapsulations may be required. For example, an L3 packet in encapsulated into an L2 packet as the data payload of the L2 packet. L2 addressing is added that is transparent to the L3 packet. The L2 and L3 address fields are consistent with the devices and forwaridng needed to deliver the packet to its intended destination.

In contrast, a tunneled packet is one in which an additional level of addressing is added within the packet payload that does not adhere to the normal encapsulation rules present with the traditional protocol stack. In particular a tunneling protocol "encapsulates a packet of the same or lower layer"

see http://www.answers.com/topic/tunneling-protocol

Since this is NOT the case for the 802.11z direct link set up packets, which are just regular L2 data packets there is no unusual encapsulation, hence no tunneling.

SuggestedRemedy

Remove the term "tunneled" from the definition. Define a completely new term that clearly establishes the link set up as an 802.11z specific entity without any connotations or relationships to legacy entities and mechanisms, e.g. see tinyurl.com/d11-DLS-terms2 for suggested alternatives.

Proposed Response *Response Status* **O**

Reject - the term "tunneled" refers to the fact that management frames are embedded into Data frames so that the management frame information can be tunneled through an AP that would otherwise not know what to do with these management frames. Hence the name tunneled, which is appropriate in this case.

Cl **03** *SC* **3.z11** *P* **2** *L* **52** # 18

Darwin Engwer Self

Comment Type **E** *Comment Status* **X**

The uniqueness of the links created by 802.11z devices is not well captured by the term "TDLS links". The links created by 802.11z devices should have unique names, not "DL" (802.11-2007 DL confusion) and not "TDLS direct link" (802.11-2007 DL confusion, 802.11-2007 DLS confusion, 802.11z TDLS establishment confusion).

SuggestedRemedy

Define a completely new term that clearly establishes the link as an 802.11z specific entity without any connotations or relationships to legacy entities and mechanisms, e.g. see tinyurl.com/d11-DLS-terms2 for suggested alternatives.

Proposed Response *Response Status* **O**

Accept in Prinicple - replace all occurrences of "TDLS link" with "TDLS direct link".

There are no occurrences of "TDLS links" or "DL" in draft 5.0.

For a discussion about the terminology, see CID 10 and 11.

Cl **03** *SC* **3.z3** *P* **2** *L* **32** # 17

Darwin Engwer Self

Comment Type **E** *Comment Status* **X**

The uniqueness of 802.11z STAs is not well captured by the term "TDLS peer STA".

A STA is any 802.11 device. A peer STA is any 802.11 device to which a given STA can send/ receive frames. "TDLS" combines the "tunneled" modifier with the existing term "DLS" to establish a particular, new (802.11z) type of link which has been set up via the TDLS process. That obscures the real meaning desired, i.e. another non-AP STA associated with the same AP to which the current STA has established an 802.11z link.

SuggestedRemedy

Define a completely new term that clearly establishes the STA instance as an 802.11z specific entity. E.g. see tinyurl.com/d11-DLS-terms2 for suggested alternatives.

Proposed Response *Response Status* **O**

Reject - the prefix "TDLS" before "peer STA" indicates that the TDLS peer STA has (or will have) a TDLS direct link. A TDLS peer STA is also a regular STA, but it has this prefix to clarify that any actions described are part of the TDLS protocol. A TDLS direct link has properties that are different from a direct link that was set up using DLS, so there needs to be a different reference, and prefixing with "TDLS" achieves this.

The prefix really functions as a word in this case, not so much as an acronym that should be expanded. TGz favors TDLS as a prefix rather than Compeer.

Cl **11** *SC* **11.2.1.14** *P* **36** *L* **8** # 374

Solomon Trainin Intel Corp.

Comment Type **T** *Comment Status* **X**

The statement "A PU sleep STA may be a PU buffer STA at the same time" is not clear. Imagine that both TDLS STA are the PU Sleep STA, how does it work in this case?

SuggestedRemedy

Make it clear or remove the 11.2.1.14 Peer U-APSD section

Proposed Response *Response Status* **O**

Accept - a sentence has been added that specifies that the buffer STA shall remain awake after transmitting an indication frame until a service period has started.

Cl **11** *SC* **11.20** *P* **37** *L* **41** # 140

Richard Roy Connexis

Comment Type **T** *Comment Status* **X**

In LB 139, I submitted the following: "Text states that the ToDS and FromDS bits for unicast DL Data frames must be 0. Why? Doesn't seem to be required, and I can easily imagine a case where setting ToDS and From DS differently could be useful. Clearly these do not access an "external" DS, but there may be local networks with other devices on them." and requested the restriction be removed. The response was that the draft specified "SA was set to A1". Yes, this is what the draft stated, but the comment was directed to the point that it should not be so restrictive. Furthermore, the current drat has removed the statement concerning Address field 1, so now the question becomes how does the MAC set address field 1. Setting ToDS and FromDS to zero is not possible as the setting of these fields is currently a conseuqence of the relationship between SA, RA, TA, and DA. Forcing these bits causes changes in the MAC functionality that are not consistent with other modes of operation, such as communication inside a BSS whcih the darft claims to still be compatible with. Finally, no reason was given for removing the restriction, so I assume the comment still stands.

SuggestedRemedy

Remove the restriction unless there is a compelling reason to have it.

Proposed Response *Response Status* **O**

Reject - the setting of the to-DS and from-DS bits is restricted in the base standard, as is the corresponding setting of the address fields (7.1.3.1.3 and 7.2.2, respectively). Setting the to-DS and from-DS bits differently or using different addresses in the address fields might theoretically be possible, but is considered outside the scope of this amendment.

Cl **Annex** *SC* **Annex U** *P* **47** *L* **44** # 504

Matthew Fischer Broadcom

Comment Type **T** *Comment Status* **X**

How can this annex be normative, when the information contained in the annex is specific to fields of the frame that are above the MAC?

SuggestedRemedy

Clarify.

Proposed Response *Response Status* **O**

Reject - The frame is generated inside the MAC.

Cl **General** *SC* **General** *P* **0** *L* **0** # 1

Bill Marshall AT&T Labs Research

Comment Type **T** *Comment Status* **X**

Document was created using MSWord, while the 802.11 WG Editor (and IEEE publications) absolutely require that the final draft be produced by FrameMaker. Conversion from MSWord to FrameMaker is non-trivial. While it is possible to use the clipboard to copy/paste blocks of text (using paste-special, and text-only mode), tables, formulas, and figures are especially troublesome. A table with 20 rows and 5 columns requires 100 copy/paste operations to transfer. In practice, much is re-typed.
In developing amendments to the 802.11 standard, the policies and procedures require a changebar (aka redline) version of each draft for each ballot after the first, so the voters can determine the changes made since the last ballotted version. Both FrameMaker and MSWord can produce changebar versions. However, there is no tool that will produce a changebar between an MSWord source and a FrameMaker source. As with the conversion, it would be nice if such a tool existed.
Without a mechanism to compare documents, we've lost the very important properties of "document integrity". In particular, there may be unintended technical changes. The IEEE publications department is not qualified to detect such unintended technical changes. Nor do I believe that the Sponsor Pool is qualified (or should accept the burden) of detecting such unintended technical changes.

SuggestedRemedy

Convert document to FrameMaker

Proposed Response *Response Status* **O**

Reject - there is agreement amongst the 802.11 editors (including the IEEE staff editor) that keeping the TGz draft in Word is fine. This sentiment was expressed most recently at the 802.11 editors meeting on July 14.

Cl **general** *SC* **general** *P* **1** *L* **1** # 16

Darwin Engwer Self

Comment Type **E** *Comment Status* **X**

802.11z needs a unique and clear set of terms and a terms hierarchy that distinctly describe the new mechanisms and links defined by 802.11z. This 802.11z terminology can then be used to concisely and clearly define the various mechanisms and features without possibility of confusion with existing terms and mechanisms.

The title of the 802.11z amendment is "Extensions to Direct Link Setup (DLS)". Further, 802.11z D5.0 clause 3.z1 explains that 802.11z defines new mechanisms (TDLS) and new links which bear no relationship to the Direct Link Setup mechanisms and links already established as part of 802.11-2007 (nee 802.11e). This can lead to substantial confusion if the distinction between 802.11z mechanisms and features is not clearly delineated wrt legacy mechanisms and features. The best way to ensure that this distinction is reflected in the amendment is to use distinct terms with distinct relationships that have little or no reliance on existing terms.

Examples of 802.11z D5.0 terms that do not capture their intended meaning well: TDLS peer STA, TDLS link, Tunneled Direct Link Setup Setup (aka TDLS Setup).

SuggestedRemedy

Construct a precise and clear definition of relevant terms and hierarchy of terms. Then use those terms consistently throughout the draft. This will imbue the draft with precise verbiage that conveys the intent and technical specifications with clarity. e.g. see tinyurl.com/d11-DLS-terms2

Proposed Response *Response Status* **O**

Reject - the comment states that the terminology as used in 802.11z draft 5.0 is not adequate in discerning TDLS direct link from the existing direct link (DLS). However, the newly defined entities, frame formats, and protocols have been prefixed with "TDLS", which clearly discerns them as being part of TDLS and not DLS. Examples are:

- TDLS peer STA
- TDLS direct link
- TDLS Peer Power Save Mode
- TDLS Setup Request frame

The meaning of the TDLS prefixed entities is extra clear because DLS uses no prefixes at all. Also, TDLS as a prefix is deemed much more clear than the prefix "Compeer" that is suggested by the commenter.