IEEE P802.11
Wireless LANs

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| Figure 9-102 proposal for TGah |
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Abstract

This submission contains a proposed comment resolution for TGah LB 207 CID 6159:

R0 – Initial proposal.

# CID 6159

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| 6159 | 325.07 | 9.51.1 | While Figure 9-102 illustrates a relay at a very high level, it is the only architectural figure we have and it isn't very specific or detailed in architecture, or complete, since it doesn't show a two-hop (or more) path. | See 11-15/258 for a proposal. |

**Discussion:**

The S1G relay concept has been designed to support “multiple hops”, such that an S1G relay could associate to another S1G relay in order to get connectivity to the root AP. This is understandable and derivable only from carefully reading the details of the text. It seems it would be easier for the reader to understand if this was made clear in the introduction and overview text and figures.

Thus, a proposal is made to add a two hop path to Figure 9-102, and to adjust the introduction text to match.

Secondly, the construction of an S1G relay is more than just an AP and a STA, as there is additional, new activity going on inside a relay to decide how and when to forward frames. It seems that this is known as the “relay function” in places in the text, so that term is suggested to be used a bit more formally to represent this behavior. Finally, then, an S1G relay comprises the AP the STA and the relay function, to complete the architectural view. The details of this are probably best done in clause 5, where the architectural elements affecting the data plane are covered, and another comment on LB 207 covers this (see proposed changes in 11-15/0257. However, it would be good to carry the concept into Figure 9-102 here for both consistency and information for the reader who doesn’t look at clause 5 details.

Both these changes are represented in the Proposed changes, below.

**Proposed changes:**

9.51 S1G Relay operation

**9.51.1 General**

A relay consists of a relay AP, a relay STA and a relay function.

A relay STA is a non-AP STA with dot11RelaySTAOperation equal to true. A relay AP is an AP with dot11RelayAPOperation equal to true.

An example of a relay function is illustrated in Figure 9-102 (S1G Relay Architecture), where Relay 1, Relay 2 and Relay 3 are relays, both of which consisting of a relay STA, a relay AP and a relay function. The relay STAs of Relay 1 and Relay 2 are associated with an AP that is a root AP. The relay STA of Relay 3 is associated with the relay AP of Relay 1. STA 1 is a non-AP STAs associated with the relay AP of relay 1. STA 2 and STA 3 are non-AP STAs associated with the relay AP of relay 3. STA 4 and STA 5 are non-AP STAs associated with the relay AP of relay 2. Frames from STA 1 are forwarded via the relay function of relay 1 from the relay AP to the relay STA and then to the root AP. Similarly, frames from the root AP are forwarded to STA 1 via the relay STA, the relay function and the relay AP of relay 1. Similar forwarding is done by relay 3 and relay 1 in sequence to handle frames for STA 2 and STA 3 relaying multiple times to or from the root AP.





**Figure 9-102—S1G Relay Architecture**

**Proposed resolution: Revised**

Make the changes as shown in 11-15/0258r0.