IEEE P802.21
Media Independent Handover Services

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| Proposed Remedy and Response for Comments #42-59 and #122-140 of the WG LB9 on IEEE P802.21.1/D01 draft |
| Date: 2016-02-11 |
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Abstract

This document contains proposed remedy and response for comments #42-59, and #122-140 of the WG LB9 on IEEE P802.21.1/D01 draft based on the LB9 comments file (DCN: 21-16-0008-04-SAUC).

**Proposed Remedy and Response for Comment #42-59, and #122-140 of the WG LB9 on IEEE P802.21.1/D01 draft**

**Comment #42-43** (Clause 6.1, Page 103, Line 26). There are too many redundant texts (e.g., benefit (#42), motivation (#43)) to specify the use case. Need to revise the text.

* Remedy: Introduction is revised as simple as possible.
	+ Delete the redundant sentences (Lines 11-14, 23-42, Line 4-Line 5 in Page 104).

The revised text is as follows:

“A radio access network (RAN) is part of a mobile network that is implemented with a radio access technology. Conceptually, it resides between mobile devices and core network (CN). RANs differ from CNs in that they mostly deal with L1/L2 functions, such as interference, cell ID, neighbor lists, and handover threshold. RAN can be divided into two parts: one is the fronthaul and the other is backhaul. The fronthaul is the connection between a baseband controller and remote standalone radio heads at cell sites. The backhaul is the connection between the baseband controller and the mobile network back to the wired CN.

The Software-defined radio access network (SDRAN) is the RAN including fronthaul and backhaul, where the centralized controller enables both seamless handover and dynamic resource allocation by a clear separation from data forwarding plane in heterogeneous RAN environment. This trend also introduces new challenges in seamless mobility because RANs require the shared nature of radio spectrum for mobile users.

The SDRAN enables radio resource management (RRM) in a centralized controller, in which the SDRANseparates RRM from the data forwardingfunctions to evolve independently. The SDRAN paradigm also improves adaptability to the diversity of service scenarios that will arise from the deployment of a centralized controller in small-cell or multi-radio access technologies.

MIS primitives and messages can be used to transfer radio configuration information for handover and mobility management, and they can be used to provide radio resource configuration for seamless handover. Thus, MIS framework is appropriate for handover resource allocation and mobility management in SDRANs that use various heterogeneous switching provided by a clearly separating SDN control.”

**Comment #44** (Clause 6.1, Page 103, Line 5). Need to revise the sentence for clarification.

* + Remedy: We accept this comment, and agree to revise the sentence with the suggested sentence as follows:

“Conceptually, it resides between mobile devices and core network (CN).”

**Comment #45** (Clause 6.1, Page 103, Line 31). Suggest to move the paragraph about the MIS framework function into page 105. However, these texts are described in IEEE 802.21m. We prefer to delete the sentences.

* + Remedy: Delete the paragraph (Lines 31-42 in page 103-Line 4-5 in Page 104).

**Comment #46** (Clause 6.1, Page 104, Line 4). Suggest to delete the sentence.

* + Remedy: We accept this comment, and agree to delete the sentences

**Comment #47-48, and #52-59** (Clause 6.2, Page 104, Line 6). Suggest to reorganize the section numbers.

* + Remedy: We accept this comment, and rearrange the Section numbers.

**Comment #49-51** (Clause 6.2.1, Page 105, Line 18, 19, and Line 16 in Page 106). Suggest to delete the sentence.

* + Remedy: We accept this comment, and agree to delete the sentences (Page 105, Lines 1-27).

**Comment #122, 123** (Clause 6.1, Page 103, Line 22) (Clause 6.1, Page 103, Line 4-44). There are too many redundant texts like a paper to specify the use case. Need to revise the text.

* Remedy: Introduction is revised as simple as possible.
	+ Delete the redundant sentences (Lines 22-42 in Page 103). Revise the text as follows:

“MIS primitives and messages can be used to transfer radio configuration information for handover and mobility management, and they can be used to provide radio resource configuration for seamless handover. Thus, MIS framework is appropriate for handover resource allocation and mobility management in SDRANs that use various heterogeneous switching provided by a clearly separating SDN control.”

**Comment #124** (Clause 6.2.1, Page 104, Lines 8-42). A lot of definitions are repeated here. Suggest to delete the redundant sentences.

* Remedy: Section 6.2.1 is revised as simple as possible.
	+ Delete the redundant definitions (Lines 18-42 in Page 104). Revise the text as follows:

Figure 9 presents the MIS framework architecture for SDRAN, which consists of MN, POS, POA, POA controller, SDN controller and information server. PoS is an MIS network entity that exchanges MIS messages with the mobile node. PoA is the endpoint of a L2 link as it may exchange message with the mobile node. PoA Controller is an MIS PoS that can manage both handover control and resource control of PoAs. It is responsible for decision of the data traffic flow about where traffic is sent to, from the underlying PoA that forwards traffic to the selected destination, in a way that is related to the controlling flow of new incoming MN. Software-define networking (SDN) controller is a forwarding controller for access switches. It is responsible for data forwarding decision where traffic is sent to/from the underlying PoA that forwards traffic to the selected destination, in a way that is related to the controlling flow.

**Comment #125-127** (Clause 6.2.1, Page 105, Figure 9). It is not clear where is the fronthaul in Figure 9 (#125): Too many PoSes in the figure (#126) and the role of MISF in the switches (#127). Suggest to revise the Figure 9.

* Remedy: Accept the comment. Figure 9 is revised.
	+ Redraw the Figure that clearly divides the Fornthaul and Backhaul. Delete the MISF in the switches in the Figure. Revise the Figure 9 as follows:



**Comment #128** (Clause 6.2.2, Page 106, Line 36). Suggest to remove controller.

* Remedy: We prefer to delete the sentences.
	+ We prefer to delete the sentences (Lines 29-38). Revise the text as follows:

Figure 10 illustrates the MIS communication model for SDRAN. This model includes five reference points (RPs) defined in IEEE 802.21m. The MN can use L2 transport for exchange MIS information with an MIS PoS that resides in its PoA through RP1. When an MISF in a PoA does not have a direct connection to the MN, it does not act as an MIS PoA for that particular MN. Then, the MN exchanges MIS information with the PoA Controller through the RP3.

**Comment #129** (Clause 6.2.2, Page 107, Lines 14-29). Description of Reference points such as what RP1… RP4 does is already described in IEEE 802.21m. Suggest to remove the paragraph.

* Remedy: Accept the comment. We prefer to delete the paragraph.
	+ We prefer to delete the paragraph (Lines 14-29).

**Comment #130-131** (Clause 6.2.2, Page 107, Figure 10). Figure 9 and 10 are exactly the same.Too many PoSes in the figure (#131) and the role of MISF in the switches (#131). Suggest to revise the Figure 10.

* Remedy: Accept the comment. Figure 10 is revised.
	+ Redraw the Figure that clearly shows the communication model of MIS framework for SDRAN. Delete the MISF in the switches in this Figure. Revise the Figure 10 as follows:



Fig. 10 MIS communication model for SDRAN

* + Revise the Figure 11 as follows:



Fig. 11 Relationship between different MIS SAPs

**Comment #132** (Clause 6.2.3, Page 108, Lines 6-38). Again this section is describing the SAPs that were already discussed in details in IEEE 802.21m. Suggest to remove the paragraph.

* Remedy: We reject this comment, and prefer to keep the paragraph.
	+ This is because this paragraph shows the use case of the same MIS framework in SDRAN.

**Comment #133** (Clause 6.2.4, Page 109, Lines 7). Suggest to delete Wi-Fi direct and bluetooth.

* Remedy: We accept the comment.
	+ Delete the Wi-Fi direct and Bluetooth in Line 7 as follows:

(e.g., WLAN, and LTE)

**Comment #134** (Clause 6.2.5, Page 110). This part is missing the part of configuring the path or the RAN. These figures are only about the handover, then I do not see where is the novelty of the use case in the current text. Suggest to remove the paragraph.

* Remedy: These figures only describe IEE 802.21 related signaling, not the SDN switched-path or the RAN configuration.
	+ We propose to add the following sentence after Line 24, Page 110.

Note that the SDRAN must handle the part of configuring the path or the radio resource management to support handover in SDRAN. However, Figures 13 to 16 only describe IEEE 802.21 related signaling flows on the handover in SDRAN.

**Comment #135-138** (Clause 6.2.5.2, Page 112-, Figures 13-16). Change "MIS Server" to "PoS MISF" and "MIS user", and add "MIS\_Get\_Infomation.indication" and "MIS\_Get\_Information.response" between the PoS MISF and MIS user. Or change "MIS Server" to "MIIS Server"

* Remedy: Accept the comment. Figures 13-16 is revised.
	+ Redraw the Figure that replaces the MIS server with MIIS server.



Fig. 13 Singaling flows for handover initiation procedure



Fig. 14 Signaling flows for handover preparation procedure



Fig. 15 Signaling flows for handover decision procedure



Fig. 16 Signaling flows for handover execution procedure

**Comment #139-140** (Clause 6.3, Page 114, Lines 5). Some explanation on the table must be added like "Following link primitives are required to realize this use case".

* Remedy: Accept the comment.
	+ Add the following sentence in Line 5 in Pgae 114 and Line 3 in Page 115, respectively, as follows:

This use case requires the following primitives defined in Clause 5 of this standard and Clause 7 of IEEE 802.21-XXXX.

And

This use case requires the following messages defined in Clause 5 of this standard and Clause 8 of IEEE 802.21-XXXX.