|  |
| --- |
| Comment Resolution for CID #15Revision of Chapter 7.7.1 and 7.8.1 |
| Date: 2017-07-12 |
| **Authors:**  |
| Name  | Affiliation  | Phone  | Email  |
| Hao Wang | Fujitsu R&D Center | +86-10-59691000 | wangh@cn.fujitsu.com |
| Su Yi | Fujitsu R&D Center | +86-10-59691000 | yisu@cn.fujitsu.com |
| Xiaojing Fan | Fujitsu R&D Center | +86-10-59691000 | fanxiaojing@cn.fujitsu.com |
| Ryuichi Matsukura | Fujitsu/Fujitsu Laboratory | +81-44-754-2667 | r.matsukura@jp.fujitsu.com |
| **Notice:**This document does not represent the agreed view of the OmniRAN TG It represents only the views of the participants listed in the ‘Authors:’ field above. It is offered as a basis for discussion. It is not binding on the contributor, who reserve the right to add, amend or withdraw material contained herein.  |
| **Copyright policy:**The contributor is familiar with the IEEE-SA Copyright Policy <<http://standards.ieee.org/IPR/copyrightpolicy.html>>.  |
| **Patent policy:** The contributor is familiar with the IEEE-SA Patent Policy and Procedures:<[http://standards.ieee.org/guides/bylaws/sect6-7.html#6](http://standards.ieee.org/guides/bylaws/sect6-7.html)> and <[http://standards.ieee.org/guides/opman/sect6.html#6.3](http://standards.ieee.org/guides/opman/sect6.html)>. |

Abstract

This document provides the comment resolution for revision of the introduction clause for 7.7 Accounting and monitoring and 7.8 FDM.

**Comments on D0.5:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **CID** | **Category** | **Page** | **Sub-clause** | **Line #** | **Comment** | **Proposed Change** |
| 15 | Technical | 103 | 7.7.1 | 2779 | The scope of the function 'monitoring' hasn't been fully described. | Replace the sentence of 'Therefore, …applications.' with a dedicated paragraph 'Monitoring is the process of measuring the amount and type of the traffic, that is esstential to the network management as well as various upper-layer applications. It could be implemented using ether active or passive techniques whch are both supported by IEEE 802 technologies. ' |

**Discussion:**

1. Regarding comment #15

Technical terms such as ‘active’ and ‘passive’ show up in the resolution without any explanation. Additional texts are provided for clarification.

1. Regarding the sub-section of 7.x.2 roles and identifiers

As part of the re-structuring, the group agrees to move the definition of ‘element manager’ to the introduction clause. And use the term ‘ANC’ instead as the entity to perform the functions of FDM.

**Proposed Text Changes:**

Instruction to Editor:

Please replace the following text to the sub-section of 7.7.1 of P802.1CF D0.5 specification.

------------- Begin Text Changes ---------------

7.7 Accounting and monitoring

7.7.1 Introduction

The control of network resource utilization is essential for the support of applications with special demands and for the prevention of malicious or accidental waste of bandwidth. Accounting intends to provide utilization information, based on which sharing of network resources becomes possible. Besides billing applications, the data about resource usage can also be used as inputs for other applications such as network monitoring and planning, or security analysis.

Monitoring is the process of measuring the amount and type of the traffic that is essential to the network management as well as various upper-layer applications. It could be implemented using ether active or passive techniques, both are supported by IEEE 802 technologies. Active techniques are more intrusive but are arguably more accurate. 802.3ah specifies the loopback control OAMPDU for the sender to validate the state of link. Passive techniques have less network overhead and hence can run in the background. 802.11k defines such protocols for radio resource monitoring. For example, 802.11k allows AP to listen or schedule an associated STA to listen to the beacons sent from other APs located on the same area in order to provide better access.

Accounting describes the process of gathering usage data records at network devices and exporting those records to an accounting server for processing. Then the records are presented to the user or provided to another application, such as performance management, security management, or billing.

Figure 54 shows the building blocks and their interactions for the purpose of accounting and monitoring. The four blocks are layered according to the processing of the data from the bottom level monitoring via collection and mediation up to the final applications. The building blocks on different layers in the red block are configured through the policies from the application/management layer. The configuration parameters are extracted from the policy and passed to the corresponding building block.

-------------- End Text Changes ----------------

**Proposed Text Changes:**

Instruction to Editor:

Please replace the following text to the sub-section of 7.8.1 of P802.1CF D0.5 specification.

------------- Begin Text Changes ---------------

7.7.8.2 7.8 Fault Diagnostics and Maintenance (FDM)

7.8.1 Introduction

Fault denotes a deviation of a system from normal operation, which may result in the loss of operational capabilities or the loss of redundancy in case of a redundant configuration. A fault may occur on a network element (NE), cause the malfunction of the logical and physical resources, and will, in severe cases, lead to the complete unavailability of the faulty NE. A fault may also occur on a link and cause communication performance deterioration, connectivity loss, etc., thus affecting quality of service.

For example, fault instance in a wireless local area network scenario typically appears as the problem of a hardware or software failure of AP and STA that established communication, the problem of a setup mistake, the problem of the overloaded channel, and the problem caused by radio propagation.

As a consequence of faults, the appropriate alarms related to the physical or logical resources affected by the faults shall be generated by the capable NE. Such alarms shall contain all the information provided by the fault detection process.

Fault diagnostics and maintenance (FDM) provide the capabilities for detecting, isolating, reporting, and mitigating the failures during the life cycle of network session. These capabilities allow the access network operator to monitor the health of the network, quickly determine failing link location and/or fault condition, and take necessary measures to recover the faults.

FDM includes protocols defined by IEEE 802 provided as FDM tools across network interfaces, and relative management agents that reside in each NE. Examples of such FDM tools include IEEE 802.3ah, IEEE 802.1ag for Ethernet links, and IEEE 802.11k and IEEE 802.11v for wireless links.

The NMS performs management functions for the access network and denotes the human interface to the access network operator. element manager ()

….

7.8.2.2 ANC

As a central controller in the access network, the ANC containing multiple EMs provides the foundation for network operators to manage access networks in an efficient manner. It allows the NMS to operate the FDM information within the subordinate elements and achieve management interoperability among multi-vendors. It contains functions to manage NEs directly and provides support to the applications in the OSS through NMS.

Control interfaces—i.e., R5, R7, R8, R9—are used to exchange necessary information between ANC and subordinate elements for basic FDM functions:

—configuration of the parameters, thresholds and FDM process

—notification of the alarms of fault and result of recovery

—various fault management information for aggregation

—testing request for specific NE and testing results

In order to detect faults, network element such as TE, NA, BH, and AR may use autonomous self-check to monitor internal status and measurement procedures to observe the performance of physical ports. The FDM agents within each NE which carry out basic FDM operations and provide functional support to the EM in ANC are usually vendor specific.

Data interfaces—i.e., R1, R6, and R3—are used to carry test requests and results in order to provide additional information.

-------------- End Text Changes ----------------