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| Mapping Accounting and monitoring to IEEE 802 Technologies | | | |
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# Abstract

This document proposes updated texts for the mapping to IEEE 802 technologies for function of accounting and monitoring.



### Mapping to IEEE 802 Technologies

#### Overview

The following table provides an overview about the functions of accounting and monitoring supported by the various IEEE 802 technologies with some of the references to the related sections of the specifications.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | 802.3 | 802.11 | 802.16 | 802.22 |
| Monitoring | 30.1.2, 30.1.4  management models  30.2.2  Managed object  30.2.5  Capabilities  5.2.4.2  transmit variables and procedures  5.2.4.3  receive variables and procedures  5.2.4.4  common procedures | 11.11  radio measurement procedures  6.3.14  6.3.16  6.3.34  measurement primitives | 13.1.3.3.1  13.1.3.4.4  13.1.3.4.6  MIB modules | 13.1.2.3.1  13.1.2.4.4  13.1.2.4.6  MIB description |
| Collection & mediation | Annex 30B  (reference to to IEEE Std 802.3.1-2011 Clause C.1) | Annex C.3 MIB detail | 14.2.1  Accounting management | Yes (MIB) |
| Accounting & policy configuration | 802.1X | 802.1X | 14.2.1  Accounting management | Yes(MIB) |

The following table provides the mapping of accounting and monitoring specific attributes, in form of examples of MIB objects, in the various IEEE 802 technologies.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | 802.3 | 802.11 | 802.16 | 802.22 |
| Transmit volume | 5.2.2.1  aFramesTransmittedOK  aOctetsTransmittedOK  aMulticastFramesXmittedOK  aBroadcastFramesXmittedOK  802.1X  12.5.1  sessionOctetsTx  sessionFramesTx | 9.4.2.22.9 dot11TransmittedFragmentCount  dot11GroupTransmittedFrameCount  dot11TransmittedFrameCount  dot11TransmittedAMSDUCount (Counter32),  dot11TransmittedOctetsInAMSDUCount (Counter64),  dot11TransmittedAMPDUCount (Counter32),  dot11TransmittedMPDUsInAMPDUCount (Counter32),  dot11Transmitte dOctetsInAMPDUCount (Counter64),  802.1X  12.5.1  sessionOctetsTx  sessionFramesTx | 13.1.3.3.1  wman If2BsOtaUsageDataRecordTable  (wmanIf2BsMacSduCount,  wmanIf2BsOctetCount) | 13.1.2.3.1  wranIfBsOtaUsageDataRecordTable |
| Receive volume | 5.2.2.1  aFramesReceivedOK  aOctetsReceivedOK  aMulticastFramesReceivedOK  aBroadcastFramesReceivedOK  802.1X  12.5.1  sessionOctetsRx  sessionFramesRx | 9.4.2.22.9 dot11ReceivedFragmentCount  dot11GroupReceivedFrameCount  dot11ReceivedAMSDUCount (Counter32),  dot11ReceivedOctetsInAMSDUCount (Counter64)  dot11AMPDUReceivedCount (Counter32),  dot11MPDUInReceivedAMPDUCount (Counter32),  dot11ReceivedOctetsInAMPDUCount (Counter64),  802.1X  12.5.1  sessionOctetsRx  sessionFramesRx | 13.1.3.3.1  wman If2BsOtaUsageDataRecordTable  (wmanIf2BsMacSduCount,  wmanIf2BsOctetCount) | 13.1.2.3.1  wranIfBsOtaUsageDataRecordTable |
| Throughput |  |  | 13.1.3.4.4  wmanIf2BsThroughputMetricsTable:  (wmanIf2BsAvgDlUserThroughput,  wmanIf2BsAvgUlUserThroughput,  wmanIf2BsAvgDlMacThroughput,  wmanIf2BsAvgUlMacThroughput,  wmanIf2BsAvgDlPhyThroughput,  wmanIf2BsAvgUlPhyThroughput,  wmanIf2BsPeakDlUserThroughput,  wmanIf2BsPeakUlUserThroughput,  wmanIf2BsPeakDlMacThroughput,  wmanIf2BsPeakUlMacThroughput,  wmanIf2BsPeakDlPhyThroughput,  wmanIf2BsPeakUlPhyThroughput,  wmanIf2BsAvgDlCellEdgeThroughput,  wmanIf2BsAvgUlCellEdgeThroughput,  wmanIf2BsThroughputMeasurements) | 13.1.2.4.4  wranIfBsThroughputMetricsTable:  (wranIfBsAvgDsUserThroughput,  wranIfBsAvgUsUserThroughput,  wranIfBsAvgDsMacThroughput,  wranIfBsAvgUsMacThroughput,  wranIfBsAvgDsPhyThroughput,  wranIfBsAvgUsPhyThroughput,  wranIfBsPeakDsUserThroughput,  wranIfBsPeakUsUserThroughput,  wranIfBsPeakDsMacThroughput,  wranIfBsPeakUsMacThroughput,  wranIfBsPeakDsPhyThroughput,  wranIfBsAvgUsPhyThroughput,  wranIfBsAvgDsCellEdgeThroughput,  wranIfBsAvgUsCellEdgeThroughput,  wranIfBsNumThroughputMeasurements) |
| QoS monitoring | IEEE 802.1Q Clause 6.5 | 9.4.2.22.9  dot11QosCounters Group for UP0 for the Interface on which th e STA Statistics request was received (same counters for UP 1-7):  dot11QosTransmittedFragmentCount (Counter32),  dot11QosFailedCount (Counter32),  dot11QosRetryCount (Counter32),  dot11QosMultipleRetryCount (Counter32),  dot11QosFrameDuplicateCount (Counter32),  dot11QosRTSSuccessCount (Counter32),  dot11QosRTSFailureCount (Counter32),  dot11QosAckFailureCount (Counter32),  dot11QosReceivedFragmentCount (Counter32),  dot11QosTransmittedFrameCount (Counter32),  dot11QosDiscardedFrameCount (Counter32),  dot11QosMPDUsReceivedCount (Counter32),  dot11QosRetriesReceivedCount (Counter32)  dot11BSSAverageAccessDelay Group (only available at an AP):  dot11STAStatisticsAPAverageAccessDelay (INTEGER),  dot11STAStatisticsAverageAccessDelayBestEffort (INTEGER),  dot11STAStatisticsAverageAccessDelayBackGround (INTEGER),  dot11STAStatisticsAverageAccessDelayVideo (INTEGER),  dot11STAStatisticsAverageAccessDelayVoice (INTEGER),  dot11STAStatisticsStationCount (INTEGER),  dot11STAStatisticsChannelUtilization (INTEGER) |  |  |
| Performance statistics | 5.2.2.1  aSingleCollisionFrames  aMultipleCollisionFrames  aFrameCheckSequenceErrors  aAlignmentErrors  aFramesWithDeferredXmissions  aLateCollisions  aFramesAbortedDueToXSColls  aFramesLostDueToIntMACXmitError  aFramesLostDueToIntMACRcvError  aFramesWithExcessiveDeferral  aInRangeLengthErrors  aOutOfRangeLengthField  aFrameTooLongErrors | 9.4.2.22.9  dot11Counters Group for the Interface on which the STA Statistics request was received:  dot11FailedCount (Counter32),  dot11FCSErrorCount (Counter32),  dot11MACStatistics Group for the Interface on which the STA Statistics request was received:  dot11RetryCount (Counter32),  dot11MultipleRetryCount (Counter32),  dot11FrameDuplicateCount (Counter32),  dot11RTSSuccessCount (Counter32),  dot11RTSFailureCount (Counter32),  dot11AckFailureCount (Counter32)  STA Counters from dot11 CountersGroup3 (A-MSDU):  dot11FailedAMSDUCount (Counter32),  dot11RetryAMSDUCount (Counter32),  dot11MultipleRetryAMSDUCount (Counter32),  dot11AMSDUAckFailureCount (Counter32),  STA Counters from dot11 CountersGroup3 (A-MPDU):  dot11AMPDUDelimiterCRCErrorCount (Counter32) | 13.1.3.4.6  wmanIf2BsPacketErrorRateTable:  (wmanIf2BsDlPacketsSent,  wmanIf2BsDlPacketsErrored,  wmanIf2BsDlPacketErrorRate,  wmanIf2BsUlPacketsReceived,  wmanIf2BsUlPacketsErrored,  wmanIf2BsUlPacketErrorRate) | 13.1.2.4.6  wranIfBsPacketErrorRateTable:  (wranIfBsDsPacketsErrored,  wranIfBsDsPacketErrorRate,  wranIfBsUsPacketsReceived,  wranIfBsUsPacketsErrored,  wranIfBsUsPacketErrorRate) |
| Accounting status | 802.1X-2010 13.3.3  ieee8021XPaePortLogonConnectStatus  ieee8021XPaePortPortValid | 802.1X-2010 13.3.3  ieee8021XPaePortLogonConnectStatus  ieee8021XPaePortPortValid | 13.2.4  wmanIf2mBsServiceFlowState  13.2.5  wmanIf2fBsSfState | 13.1.3.3.1.4  wranIfBsSfState |

#### IEEE 802.3 specifics

#### IEEE 802.11 specifics

#### IEEE 802.16 specifics

#### IEEE 802.22 specifics