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| Mapping FDM to IEEE 802 Technologies | | | |
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# Abstract

This document proposes updated text for the mapping to IEEE 802 technologies for function of fault diagnosis and maintenance.



### Mapping to IEEE 802 Technologies

#### Overview

The following table provides an overview about the FDM functions and procedures of fault diagnostics and maintenance (FDM) supported by the various IEEE 802 technologies with some of the references to the related sections of the specifications.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 802.3-2015 | 802.1ag-2007 | 802.11-2012 | 802.16-2012 | 802.22-2011 |
| Capability discovery | 57.3.2.1 OAM discovery | - | 4.5.3.3, 4.5.3.4  General description  8.3.3.2, 8.3.3.5-8.3.3.10  Frame & IE & field  10.23.3.2  Procedures | 6.3.9.7  procedures  14.2.7  primitives | 7.7.11  7.14.2  Descriptions and messages |
| FDM registration and configuration | 30.3.6.2 OAM actions | Yes (MIB) | Annex C.3 (RM and WNM MIB) | 13.1.2  13.1.3  13.1.6  MIB modules\* | 13.1.1  13.1.2.1  13.1.4  MIB description |
| Fault isolation | - | Yes (maintenance domain, Loopback, Linktrace Continuity check) | - | - | - |
| Fault recovery | - | Yes (spanning tree) | - | Yes\* | - |
| Remote failure indication | 57.2.10 OAM events  57.2.12 Unidirectional OAM operation | Yes (Continuity check) | 4.3.13.8  General description  8.4.1.7  Frame & IE & field | 13.1.2  13.1.3.1  13.1.6  MIB modules | 13.1.1  13.1.2.1  13.1.4  MIB description |
| Link monitoring | 57.2.10 OAM events  57.5.3 Link event TLVs | - | 4.3.8, 4.3.13  General description  10.11, 10.23  Primitives | 6.3.2.3.33  6.3.16  management messages  8.4.12  descriptions  13.1.3.4  MIB modules | 7.7.18  7.19  Descriptions and messages  13.1.2.4  MIB description |
| Testing | 57.2.11 OAM remote loopback  5.2.2.2.4  19.2.3.2.2 Self-test | 20.1-20.3  Connectivity Fault Management protocols | - | Yes\* | 7.14.2.1  Descriptions and messages |
| Management information aggregation | - | Yes | - | Yes\* | - |

\* Process also defined in WiMAX Forum specification [B10].

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 802.3-2015 | 802.1ag-2007 | 802.11-2012 | 802.16-2012 | 802.22-2011 |
| Configurations | 30.3.6  aOAMLocalConfiguration, aOAMRemoteConfiguration, aOAMMode, aOAMLocalPDUConfiguration, aOAMRemotePDUConfiguration | 17.5  Dot1agCfmCcmInterval, dot1agCfmDefaultMdTable, dot1agCfmMdTable | Annex C.3  dot11StationConfigTable, dot11RMBSSAvailableAdmissionCapacityActivated, dot11MACStateParameterTable, dot11OperationTable | 13.1.2，13.1.6  wmanIf2SsConfigurationTable, wmanIf2mSsConfigurationTable, wmanDevSsConfigFileEncodingTable, wmanDevCmnDeviceConfig | 13.1.1, 13,1,4  wranIfCpeConfigurationTable, wranDevCpeConfigFileEncodingTable, wranDevCmnDeviceConfig |
| Device and communication status | 30.3.6  aOAMDiscoveryState, aOAMLoopbackControlTx, aOAMLoopbackControlRx, aOAMAdminState | 17.5  Dot1agCfmInterfaceStatus, Dot1agCfmFngState, Dot1agCfmRemoteMepState, dot1agCfmConfigErrorListTable, dot1agCfmDefaultMdStatus, dot1agCfmMepTransmitLbmStatus, dot1agCfmMepDbPortStatusTlv, dot1agCfmMepDbInterfaceStatusTlv | Annex C.3  dot11CountersTable, dot11DisassociateReason, dot11DeauthenticateReason | 13.1.2  wmanDevBsSoftwareUpgradeTable | 13.1.1.1.1  wranDevBsSoftwareUpgradeTable |
| Link monitoring parameters | 30.3.6  aOAMLocalErrSymPeriodEvent, aOAMLocalErrFrameEvent, aOAMLocalErrFramePeriodEvent, aOAMLocalErrFrameSecsSummaryEvent, aOAMRemoteErrSymPeriodEvent, aOAMRemoteErrFrameEvent, aOAMRemoteErrFramePeriodEvent, aOAMRemoteErrFrameSecsSummaryEvent, aFramesLostDueToOAMError | – | Annex C.3  dot11RMRequest, dot11RMReport, dot11ChannelLoadReportTable, dot11NoiseHistogramReportTable, dot11BeaconReportTable, dot11STAStatisticsReport, dot11APChannelReportTable, dot11RMNeighborReportTable | 13.1.3.4  wmanIf2BsPm | 13.1.2.4  wranIfBsPm |
| Events | 30.3.6  aOAMLocalFlagsField, aOAMRemoteFlagsField, aOAMUniqueEventNotificationTx, aOAMUniqueEventNotificationRx | 17.5  Dot1agCfmMepDefects, dot1agCfmMepErrorCcmLastFailure, dot1agCfmMepXconCcmLastFailure, dot1agCfmMepDbRdi | Annex C.3  dot11WNMRequest, dot11WNMReport, dot11WNMEventTransitReportTable, dot11WNMEventRsnaReportTable, dot11WNMEventPeerReportTable, dot11WNMEventWNMLogReportTable, dot11WNMBssTransitReportTable | – | – |
| Communication alarms | – | 17.5  dot1agCfmFaultAlarm, Dot1agCfmHighestDefectPri, Dot1agCfmLowestAlarmPri, Dot1agCfmConfigErrors | – | 13.1.2, 13.1.3.1, 13.1.6  wmanDevBsNotification, wmanDevSsNotification, wmanDevCmnEventLog, wmanDevCmnSnmpAgent, wmanIf2BsFm, wmanIf2SsTrapControl, wmanIf2SsTrapDefinitions | 13.1.1, 13.1.2.1, 13.1.4  wranDevBsNotification, wranDevCpeNotification, wranDevCmnEventLog, wranDevCmnSnmpAgent, wranIfBsFm, wranIfCpeTrapControl, wranIfCpeTrapDefinitions |

#### IEEE 802.3 specifics

#### IEEE 802.11 specifics

#### IEEE 802.16 specifics

#### IEEE 802.22 specifics