Specification of probableCause strings

This document provides the standard Probable Cause strings to be used in MTOSI 3.0. Certain Probable Causes are specially highlighted:

* Probable Causes that were not present in the MTOSI 2.1 document that have been added to this MTOSI 3.0 document to align with TMF063[[1]](#footnote-1) have a blank MTOSI 2.1 probableCause cell and are highlighted with **blue text** in the MTOSI 3.0 probableCause cell.
* Each row having a Probable Cause represented with different string(s) in MTOSI 3.0 compared to what was in MTOSI 2.1 (so as to align with TMF063 V1.0) is indicated with yellow highlight with **blue text** in the MTOSI 3.0 probableCause cell.
* Probable Causes supported in MTOSI 3.0 derived from MTOSI 2.1 but missing currently from TMF 063 are highlighted with red text in the MTOSI 3.0 probableCause cell. Note that there is ONLY “UAT” that is in this category. This probableCause will be removed from the next version of this document.
* Probable Causes represented with the same string in MTOSI 2.1 and TMF 063 (and hence that are unchanged in MTOSI 3.0) are presented in black text in the MTOSI 3.0 probableCause cell (and the row is NOT highlighted in any way).

Some Probable Causes have descriptions but most do not. To determine the meaning of a specific Probable Cause please consult the referenced “Source standard”. Where the “Source standard” is MTOSI a description is normally provided.

Further information on Probable Causes is provided in TMF 063. It is proposed that a future MTOSI release this document will be replaced by TMF 063.

In some cases several Probable Causes from MTOSI 2.1 have been merged into a single Probable Cause for MTOSI 3. It is assumed that the MTOSI server will perform any merging necessary to ensure correct operation of the interface.

| **MTOSI 3.0**  **probableCause** | **MTOSI 2.1**  **probableCause** | **Description** | **Source standard** | **Technology** |
| --- | --- | --- | --- | --- |
| **“A-bis to BTS interface failure”** |  |  | 3GPP |  |
| **“A-bis to TRX interface failure”** |  |  | 3GPP |  |
| **“Adapter Error”** |  |  | X.7xx |  |
| **“airCompressorFailure”** |  |  | M.3100 |  |
| **“airConditioningFailure”** |  |  | M.3100 |  |
| **“airDryerFailure”** |  |  | M.3100 |  |
| **"AIS"[[2]](#footnote-2),[[3]](#footnote-3)** | “AIS” | Alarm indication signal | G.783  G.775  Y.1731  M.3100 | SDH  PDH  Ethernet |
| ”AU-AIS” | AU alarm indication signal | G.783 | SDH |
| "MS-AIS" | MS alarm indication signal | G.783 | SDH |
| ”TU-AIS” | TU alarm indication signal | G.783 | SDH |
| "VC-AIS" | VCL/VCC TP Alarm Indication Signal | I.751 | ATM |
| "VP-AIS" | VPL/VPC TP Alarm Indication Signal | I.751 | ATM |
| **“AIS-O”** | “OSC-AIS” | Alarm Indication Signal -Overhead.  Use for Optical Supervisory Channel AIS | MTOSI | OTN |
| "AMS" | “AMS” | Alternate modulation signal | MTOSI |  |
| **“antennaFailure “** |  |  | M.3100 | Wireless |
| **“Antenna problem“** |  |  | 3GPP | Wireless |
| **“applicationSubsystemFailure“** |  |  | X.7xx M.3100 |  |
| **“aTPCFail”** | “ATPC\_FAIL” | This indication should report the internal failures of the Automatic Transmitted Power Control function. | MTOSI |  |
| **“Authentication Failure“** |  |  | X.7xx |  |
| **“backPlaneFailure“** |  |  | M.3100 |  |
| **“bandwidthReduced“** |  |  | M.3100 |  |
| **“Bandwidth Reduction“** |  |  | X.7xx |  |
| **“Battery breakdown“** |  |  | 3GPP | Wireless |
| **“batteryChargingFailure“** |  |  | M.3100 |  |
| **“Battery charging fault“** |  |  | 3GPP | Wireless |
| **“batteryDischarging“** |  |  | M.3100 |  |
| **“batteryFailure “** |  |  | M.3100 |  |
| **“BDI“** |  | Backward defect indication | G.798 | OTN |
| **“BDI-O“** |  | Backward defect indication - Overhead | G.798 | OTN |
| "OSC\_FERF" | Optical Supervisory Channel Far End Receive Failure | MTOSI |  |
| **“BDI-P“** |  | Backward defect indication - Payload | G.798 | OTN |
| "BER\_SF" | "BER\_SF" | Signal fail (includes receiver failure and excessive BER) | MTOSI |  |
| “TSF” | Trail signal fail | MTOSI |  |
| **“BER\_SF-O”** | “OSC\_BER\_SF” | signal fail (includes receiver failure and excessive BER) - Overhead  Used for Optical Supervisory Channel BER\_SF | MTOSI | OTN |
| **"blockedFE"** | "BLOCKED\_FE" | When the FE reports that it is blocked. Note: Used in IMA Group FTP on LR\_Fragment's adaptation function. | MTOSI | ATM |
| **“Breach of Confidentiality”** |  |  | X.7xx |  |
| **“broadcastChannelFailure”** |  |  | M.3100 3GPP | Wireless |
| **“Cable Tamper”** |  |  | X.7xx |  |
| **“Call Establishment Error”** |  |  | X.7xx |  |
| **“callSetupFailure”** |  |  | M.3100 |  |
| **"cfgAbort"** | "CFG\_ABORT" | When the FE tries to use unacceptable configuration parameters. Note: Used in IMA Group FTP on LR\_Fragment's adaptation function. | MTOSI | ATM |
| **"cfgAbortFE"** | "CFG\_ABORT\_FE" | When the FE reports unacceptable configuration parameters. Note: Used in IMA Group FTP on LR\_Fragment's adaptation function. | MTOSI | ATM |
| **“Clock synchronization problem“** |  |  | 3GPP | Wireless |
| **“Combiner problem“** |  |  | 3GPP | Wireless |
| **“commercialPowerFailure“** |  |  | M.3100 |  |
| **“Communication Protocol Error “** |  |  | X.7xx |  |
| **“Communication Subsystem Failure“** |  |  | X.7xx |  |
| **“Communications Receive Failure“** |  |  | M.3100 |  |
| **“Communications Transmit Failure“** |  |  | M.3100 |  |
| **“configurationorCustomizingError“** |  |  | X.7xx M.3100 |  |
| **“congestion“** |  |  | X.7xx M.3100 |  |
| **“connectionEstablishmentError“** |  |  | M.3100 3GPP |  |
| **“coolingFanFailure“** |  |  | M.3100 |  |
| **“coolingSystemFailure“** |  |  | M.3100 3GPP | Wireless |
| **“corruptData“** |  |  | X.7xx M.3100 |  |
| **“CPU Cycles Limit Exceeded“** |  |  | X.7xx |  |
| **“CSF“** |  | Client Signal Failure | G.7041  G.798 G.8021 | PDH GFP (Generic framing procedure)  SDH GFP (Generic framing procedure)  OTN  Ethernet |
| **“Data Set or Modem Error“** |  |  | X.7xx |  |
| **“dataSetProblem“** |  |  | M.3100 |  |
| **“databaseInconsistency“** |  |  | M.3100 3GPP | Wireless |
| **"dCCFailure"** | "DCC\_FAILURE" | Data Communication Channel Failure |  |  |
| **“DEG”** | “BER\_SD” | Signal degrade (includes receiver degrade) | G.783 G.798 G.8021 G.8121.1  G.8121.2 | SDH  OTN  Ethernet  MPLS-TP PTN MPLS-TP PSN |
| “TSD” | Trail signal degrade | MTOSI |  |
| **“Delayed Information”** |  |  | X.7xx |  |
| **"demodulationFailure"** | "DEMODULATION\_FAIL" | This indication shall report the internal failures of the demodulation function affecting the demodulated signal. | M.3100 |  |
| **“Denial of Service“** |  |  | X.7xx |  |
| **“diskFailure“** |  |  | M.3100 |  |
| **“Disk problem“** |  |  | 3GPP | Wireless |
| **“DTE-DCE Interface Error“** |  |  | X.7xx |  |
| **“Duplicate Information“** |  |  | X.7xx |  |
| **“Dying Gasp“** |  | An unrecoverable local failure condition has occurred. | 802.3ah | Ethernet |
| **”enclosureDoorOpen”** |  |  | X.7xx M.3100 |  |
| **”Engine Failure”** |  |  | M.3100 |  |
| "ENV" | "ENV" | Environmental/external cause  This value can be used for telemetry interfaces, in cases where an EMS controls some devices which are able to monitor raw electrical contacts, e.g. properties of door contacts, fire detectors, batteries etc. Although these devices are not transmission related they report their states via particular (so called telemetry) interfaces of MEs to the EMS.  To provide maximum information, a particular telemetry interface alarm may (optionally) be represented by an NT\_ALARM notification with objectName = (("EMS",<EMSName>),("ME",<MEName>),("AID",<TIFName>))  probableCause = "ENV" probableCauseQualifier = <DeviceAlarm> where <MEName> is the ME with the telemetry interface, <TIFName> is the telemetry interface within that ME and <DeviceAlarm> is the ID of a single alarm which that interface may report. | MTOSI |  |
| "EQPT" | "EQPT" | Equipment alarm | MTOSI |  |
| **”Equipment failure”** |  |  | 3GPP | Wireless |
| **”equipmentIdentifierDuplication”** |  |  | M.3100 |  |
| **Equipment Malfunction** |  |  | X.7xx |  |
| **”EXC”** | "BER" | Excessive Bit Error Ratio. Applicable when the BER is over a given threshold. | MTOSI (G.806) |  |
|  | Excessive BER | G.783 | SDH |
| **”excessiveErrorRate”** |  |  | M.3100  3GPP | Wireless |
| **”Excessive receiver temperature”** |  |  | 3GPP | Wireless |
| **”excessiveResponseTime”** |  |  | M.3100 |  |
| **”excessiveRetransmissionRate”** |  |  | M.3100 |  |
| **”Excessive transmitter output power”** |  |  | 3GPP | Wireless |
| **”Excessive transmitter temperature”** |  |  | 3GPP | Wireless |
| **”Excessive Vibration”** |  |  | X.7xx |  |
| **”EXM”** |  | Extension header mismatch | G.8021  G.8121 | Ethernet  MPLS-TP |
| **”explosiveGas”** |  |  | M.3100 |  |
| **”externalEquipmentFailure”** |  |  | M.3100 3GPP | Wireless |
| **”externalIFDeviceProblem”** |  |  | M.3100 |  |
| **”externalPointFailure”** |  |  | M.3100 |  |
| **”External power supply failure”** |  |  | 3GPP | Wireless |
| **”External transmission device failure”** |  |  | 3GPP | Wireless |
| **”failedAggregationPort”** |  | Reception by a MEP of a CCM containing a Port Status TLV or Interface Status TLV indicating a failed aggregated port. | IEEE 802.1Q | Ethernet |
| **”failedBridgePort”** |  | Reception by a MEP of a CCM containing a Port Status TLV or Interface Status TLV indicating a failed Bridge Port or aggregated port. | IEEE 802.1Q | Ethernet |
| **”Fan failure”** |  |  | 3GPP | Wireless |
| **”FDI”** |  | Forward Defect Indication | G.8021 | Ethernet |
| "FF" | "FF" | Fragmentation fail | MTOSI |  |
| **”fileError”** |  |  | X.7xx M.3100 |  |
| **”File system call unsuccessful”** |  |  | 3GPP | Wireless |
| **”fire”** |  |  | M.3100 |  |
| **”Fire Detected”** |  |  | X.7xx |  |
| **”fireDetectorFailure”** |  |  | M.3100 |  |
| **”flood”** |  |  | M.3100 |  |
| **”Flood Detected”** |  |  | X.7xx |  |
| **"FOP"** | "FOP\_APS"[[4]](#footnote-4) | Failure of APS protocol. The FOP defect indicates a failure in the automatic protection switching protocol. This condition is determined by the sink function at the arrival of an unexpected (i.e., out of sequence) protocol message, after which the sink function declares a failure of protocol (FOP) defect. | G.783 | SDH |
| **”FOP-NR”** |  | Failure Of Protocol No Response | G.798 | OTN |
| **”FOP-PM”** |  | Failure of Protocol Provisioning Mismatch | G.798 | OTN |
| **“framingError”** |  |  | M.3100 |  |
| **”Frequency hopping degraded”** |  |  | 3GPP | Wireless |
| **”frequencyHoppingFailure”** |  |  | M.3100 3GPP | Wireless |
| **”Frequency redefinition failed”** |  |  | 3GPP | Wireless |
| **”fuseFailure”** |  |  | M.3100 |  |
| **”generatorFailure”** |  |  | M.3100 |  |
| **”Heating or Ventilation or Cooling System Problem”** |  |  | X.7xx |  |
| **”highHumidity”** |  |  | M.3100 3GPP | Wireless |
| **”highTemperature”** |  |  | M.3100 3GPP | Wireless |
| **”highWind”** |  |  | M.3100 |  |
| **”Humidity Unacceptable** |  |  | X.7xx |  |
| **”iceBuildUp”** |  |  | M.3100 |  |
| **”IncAIS”** |  | Incoming AIS | G.783 | SDH |
| **”incorrectMAIDReceived”** |  | Reception by a MEP of a CCM with an incorrect MAID, indicating a configuration error | IEEE 802.1Q | Ethernet |
| **”incorrectMEPIDReceived”** |  | Reception by a MEP of a CCM with an incorrect MEPID indicating a configuration error or a cross connect error; | IEEE 802.1Q | Ethernet |
| **”incorrectTXIntervalDetected”** |  | Reception by a MEP of a CCM with an incorrect transmission interval, indicating a configuration error; | IEEE 802.1Q | Ethernet |
| **”Indeterminate”** |  |  | M.3100 |  |
| **”Information Missing”** |  |  | X.7xx |  |
| **”Information Modification detected”** |  |  | X.7xx |  |
| **”Information out of Sequence”** |  |  | X.7xx |  |
| **”Input Device Error”** |  |  | X.7xx |  |
| **”Input parameter out of range”** |  |  | 3GPP | Wireless |
| **”Input/Output Device Error”** |  |  | X.7xx |  |
| **"insuffLinks"** | "INSUFF\_LINKS" | When less than PTx transmit or PRx receive links are Active (see "MinNumTxLinks" and "MinNumRxLinks"). Note: Used in IMA Group FTP on LR\_Fragment's adaptation function. | MTOSI |  |
| **"insuffLinksFE"** | "INSUFF\_LINKS\_FE" | When the FE reports that less than PTx transmit or less than PRx receive links are Active. Note: Used in IMA Group FTP on LR\_Fragment's adaptation function. | MTOSI |  |
| **”Intrusion detected”** |  |  | 3GPP | Wireless |
| **”intrusionDetection”** |  |  | X.7xx M.3100 |  |
| **”invalidMessageReceived”** |  |  | M.3100 3GPP | Wireless |
| **”Invalid MSU received”** |  |  | 3GPP | Wireless |
| **”Invalid parameter”** |  |  | 3GPP | Wireless |
| **”Invalid pointer”** |  |  | 3GPP | Wireless |
| **”iODeviceError”** |  |  | M.3100 |  |
| **”Key Expired”** |  |  | X.7xx |  |
| **”LAN Error”** |  |  | X.7xx |  |
| **”LAPD link protocol failure”** |  |  | 3GPP | Wireless |
| "LCD" | "LCD" | Loss of cell delineation (from TC Adapter part of ATM NI) | I.751 I.761  G.798 | ATM |
| **”LCK”** |  | Locked | G.798 G.8021 G.8121 | OTN  Ethernet  MPLS-TP |
| **”Leak Detection”** |  |  | X.7xx |  |
| **“LFD”** |  | Loss of Frame Delineation | G.8021 G.8121 | Ethernet  MPLS-TP |
| "LIF" | "LIF" | Persistence of a LIF (Loss of IMA Frame) defect at the NE. Note: Used in IMA Link CTP on physical layer (e.g., E1, DS1, VC-12, SHDSL). | I.761 G.8021 | ATM |
| **”lineCardProblem”** |  |  | M.3100 |  |
| **”Line interface failure”** |  |  | 3GPP | Wireless |
| **”Link failure”** |  |  | 3GPP | Wireless |
| **”Link Fault”** |  | The PHY has determined a fault has occurred in the receive direction of the local DTE. | 802.3ah | Ethernet |
| **"linkDown"** | "LINK\_DOWN" | LAG Link Down | MTOSI | Ethernet |
| "LOA" | "LOA" | loss of alignment | G.806 G.783  G.798 | SDH  OTN |
| "LOC" | "LOC" | Loss of Continuity | G.8021 G.8121 | Ethernet  MPLS-TP |
| **”Local Alarm Indication”** |  |  | 3GPP | Wireless |
| **”localNodeTransmissionError”** |  |  | X.7xx M.3100 |  |
| "LODS" | "LODS" | Persistence of a LODS (Link Out of Delay Synchronization) defect at the NE. Note: Used in IMA Link CTP on physical layer (e.g., E1, DS1, VC-12, SHDSL). | I.761  MTOSI | ATM |
| "LOF" | "LOF" | Loss of frame (when distinguished from LOS) | G.783 G.798 | SDH  OTN |
| **”LOF-O”** | OSC\_LOF | Loss of Frame - Overhead.  Used for Optical Supervisory Channel LOS | MTOSI | OTN |
| **”LOFLOM”** |  | Loss Of Frame and Loss Of Multiframe | G.798 | OTN |
| **”LOL”** |  | Loss of Lane Alignment | G.783 Amd 2 G.798 | SDH  OTN |
| "LOM" | "LOM" | Loss of multiframe (SDH only, since not an alarm in GR-253) | G.783 G.798 G.705  G.781 | SDH  OTN  PDH  Sync |
| **”LOOMFI”** |  | Loss Of OPU Multiframe Indicator | G.798 | OTN |
| **”loopBackNotReceived”** |  |  | IEEE 802.1Q | Ethernet |
| **”loopBackReceivedInError”** |  |  | IEEE 802.1Q | Ethernet |
| "LOP" | "LOP" | Loss of pointer | G.783 | SDH |
| "LOPC" | "LOPC" | Loss of partial capacity | MTOSI |  |
| "LOS" | "LOS" | Loss of signal | G.783 G.798 G.8021 G.775 | SDH  OTN  Ethernet  PDH |
| **”LOS-O”** | OSC\_LOS | Loss Of Signal – Overhead | G.798  MTOSI | OTN |
| **”LOS-P”** |  | Loss Of Signal – Payload | G.798 | OTN |
| **”lossOfRealTime”** |  |  | M.3100 |  |
| **”lossOfRedundancy”** |  |  | M.3100 3GPP |  |
| **”lossOfSynchronization”** |  |  | M.3100 3GPP | Wireless |
| "LOTC" | "LOTC" | Loss of total capacity | MTOSI |  |
| **”lowBatteryThreshold”** |  |  | M.3100 |  |
| **”lowCablePressure”** |  |  | M.3100 |  |
| **”lowFuel”** |  |  | M.3100 |  |
| **”lowHumidity”** |  |  | M.3100 3GPP | Wireless |
| **”lowTemperature”** |  |  | M.3100 3GPP | Wireless |
| **”lowWater”** |  |  | M.3100 |  |
| **”lowerMDLevelReceived”** |  | Reception by a MEP of a CCM with an MD Level lower than that of the MEP, indicating a configuration error or a cross connect error; | IEEE 802.1Q | Ethernet |
| **”LSS”** |  | Loss of Pseudo-Random Bit Sequence lock | G.798 | OTN |
| **”LTC”** |  | Loss of Tandem Connection | G.783 G.798 | SDH  OTN |
| **”LTI”** |  | Loss of Timing | G.781 | Sync |
| **”lTRNotReceived”** |  |  | IEEE 802.1Q | Ethernet |
| **”mACStatusDefect”** |  | Remote MEP is reporting a failure in the MAC Port Status or Interface Status | IEEE 802.1Q | Ethernet |
| **”Mains breakdown with battery back-up”** |  |  | 3GPP | Wireless |
| **”Mains breakdown without battery back-up”** |  |  | 3GPP | Wireless |
| **”Material Supply Exhausted”** |  |  | X.7xx |  |
| **”memoryMismatch”** |  |  | M.3100 |  |
| **”mEPConnectivityDown”** |  | Inability of a MEP to receive three consecutive CCMs from any one of the other MEPs in its MA, indicating either a MEP failure or a network failure; | IEEE 802.1Q | Ethernet |
| **”Message not expected”** |  |  | 3GPP | Wireless |
| **”Message not initialized”** |  |  | 3GPP | Wireless |
| **”Message out of sequence”** |  |  | 3GPP | Wireless |
| **”MMG”** |  | Mismerge | G.8021 G.8121 | Ethernet  MPLS-TP |
| **”MND”** |  | Member Not Deskewable. | G.783 G.798 | SDH  OTN |
| **"modulationFailure "** | "MODULATION\_FAIL" | This indication shall report the internal failures of the modulation function affecting the modulated signal, and the loss of incoming data to the modulation function. | M.3100 |  |
| **”MSIM”** |  | Multiplex Structure Identifier Mismatch | G.798 | OTN |
| **”multiplexerProblem”** |  |  | X.7xx M.3100 |  |
| **”nEIdentifierDuplication”** |  |  | M.3100 |  |
| **”Non-Repudiation Failure”** |  |  | X.7xx |  |
| **”OCI”** |  | Open Connection Indication | G.798 | OTN |
| **”ODI”** |  | Outgoing Defect Indication | G.783  G.806 | SDH |
| **"OS"** | "EMS[[5]](#footnote-5)" | EMS system alarm | MTOSI |  |
| "OS" | OS system alarm | MTOSI |  |
| **"oSAlmAndLifecycleLoss"** | "EMS\_ALM\_AND\_ LIFECYCLE\_LOSS[[6]](#footnote-6)" | The 1st notification that an EMS may supply after 1 or more notifications for protection switch, TCA, alarm, or file transfer status, and 1 or more events of type OC/OD/AVC/SC/RC have been discarded by the EMS. | MTOSI |  |
| "OS\_ALM\_AND\_ LIFECYCLE\_LOSS" | The 1st notification that an OS may supply after 1 or more notifications for protection switch, TCA, alarm, or file transfer status, and 1 or more events of type OC/OD/AVC/SC/RC have been discarded by the OS. | MTOSI |  |
| **"oSAlmLoss"** | "EMS\_ALM\_LOSS[[7]](#footnote-7)" | The 1st notification that the EMS may supply after 1 or more notifications for protection switch, TCA, alarm, or file transfer status have been discarded by the EMS while other events have not been discarded. | MTOSI |  |
| "OS\_ALM\_LOSS" | The 1st notification that the OS may supply after 1 or more notifications for protection switch, TCA, alarm, or file transfer status have been discarded by the OS while other events have not been discarded. | MTOSI |  |
| **"oSLifecycleLoss"** | "EMS\_LIFECYCLE\_LOSS[[8]](#footnote-8)" | The 1st notification that an EMS may supply after 1 or more events of type OC/OD/AVC/SC/RC have been discarded by the EMS. | MTOSI |  |
| "OS\_LIFECYCLE\_LOSS" | The 1st notification that an OS may supply after 1 or more events of type OC/OD/AVC/SC/RC have been discarded by the OS. | MTOSI |  |
| **”outOfCPUCycles”** |  |  | M.3100 |  |
| **”Out of Hours Activity”** |  |  | X.7xx |  |
| **”outOfMemory”** |  |  | X.7xx M.3100 |  |
| **”Out of Service** |  |  | X.7xx |  |
| **”Output Device Error”** |  |  | X.7xx |  |
| **"partialLinkDown"** | "PARTIAL\_LINK\_DOWN" | LAG Partial Link Down | MTOSI |  |
| **”PLCR”** |  | The Partial Loss of Capacity Receive in an LCAS-enabled VCG sink. Applies to LCAS-enabled virtual concatenated path . In case of OTN technology this fault condition applies to LCAS-capable virtual concatenated ODUk Path layer functions ODUkP-Xv-L (k = 1, 2, 3; X >=1) | G.806 G.798 | OTN |
| **”PLCT”** |  | Partial Loss (PLCT) of Capacity Transmit in an LCAS-enabled VCG source | G.806 |  |
| **”PLL”** |  | Partial Link Loss | G.8021 | Ethernet |
| "PLM" | "PLM" | Payload label mismatch (when reported as an alarm) | G.806 G.798 | SDH  OTN  Ethernet  MPLS-TP |
| **”powerProblem”** |  |  | X.7xx M.3100 |  |
| **”powerSupplyFailure”** |  |  | M.3100 3GPP |  |
| **”Pressure Unacceptable”** |  |  | X.7xx |  |
| **”Procedural Error”** |  |  | X.7xx |  |
| **”processorProblem”** |  |  | X.7xx M.3100 |  |
| **”protectingResourceFailure”** |  |  | M.3100 |  |
| **”protectionMechanismFailure”** |  |  | M.3100 |  |
| **”protectionPathFailure”** |  |  | M.3100 |  |
| **”pumpFailure”** |  |  | X.7xx M.3100 |  |
| **”Queue Size Exceeded”** |  |  | X.7xx |  |
| **”RCOHM”** |  | Resize Control Overhead Mismatch | G.798 Amd 2 | OTN |
| **”RDI”[[9]](#footnote-9),[[10]](#footnote-10)** | “RAI” | Remote alarm indication (also used to report RDI or RFI) RDI (Remote Defect Indication) used in IMA Link CTP on physical layer (e.g., E1, DS1, VC-12, SHDSL). RFI-IMA (Remote Failure Indication via IMA reported inside ICP cells) used in IMA Link CTP on LR\_Fragment's termination function. | G.806 G.8021 G.8121 G.775 | SDH  Ethernet  MPLS-TP  PDH |
| "VC-RDI" | VCL/VCC TP Remote Defect Indication | G.806  G.8021  G.8121  G.775 | SDH  Ethernet  MPLS-TP  PDH |
| "VP-RDI" | VPL/VPC TP Remote Defect Indication | G.806  G.8021  G.8121  G.775 | SDH  Ethernet  MPLS-TP  PDH |
| **”rDIMEPDefect”** |  | At least one Remote MEP is receiving a CCM with RDI bit set | IEEE 802.1Q | Ethernet |
| **”realTimeClockFailure”** |  |  | M.3100 |  |
| **”receiveFailure”** |  |  | X.7xx  M.3100 |  |
| **”Receiver antenna fault”** |  |  | 3GPP | Wireless |
| **”receiverFailure”** |  | This indication should report the internal failures of the RX-function affecting the received signal. | X.7xx M.3100 3GPP | Wireless |
| **”Receiver multicoupler failure”** |  |  | 3GPP | Wireless |
| **”rectifierFailure”** |  |  | M.3100 |  |
| **”rectifierHighVoltage”** |  |  | M.3100 |  |
| **”rectifierLowVoltage”** |  |  | M.3100 |  |
| **”Reduced alarm reporting”** |  |  | 3GPP | Wireless |
| **”Reduced event reporting”** |  |  | 3GPP | Wireless |
| **”reducedLoggingCapability”** |  |  | M.3100 3GPP | Wireless |
| **”Reduced transmitter output power”** |  |  | 3GPP | Wireless |
| **”reinitialized”** |  |  | M.3100 |  |
| **”remoteAlarmInterface”** |  |  | 3GPP | Wireless |
| **”remoteCCMDefect”** |  | At least one Remote MEP is not receiving valid CCM Messages from its remote MEP. | IEEE 802.1Q | Ethernet |
| **“remoteNodeTransmissionError”** |  |  | M.3100 |  |
| **”replaceableUnitMissing”** |  |  | M.3100 |  |
| **”replaceableUnitProblem”** |  |  | M.3100 |  |
| **“Replaceable Unit Type Mismatch”** |  |  | M.3100 |  |
| **”Resource at or Nearing Capacity”** |  |  | X.7xx |  |
| **”Response Time Excessive”** |  |  | X.7xx |  |
| **”Re-transmission Rate Excessive”** |  |  | X.7xx |  |
| **“Routing Failure”** |  |  | 3GPP | Wireless |
| **"rXFail "** | "RX\_FAIL" | This indication should report the internal failures of the RX-function affecting the received signal.  Input Fail Detect | IEEE 802.3 | Ethernet |
| **"rXMisconnect"** | "RX\_MIS\_CONNECT" | When the Rx link is detected as mis-connected. This is reported when the IMA unit has determined that the Rx link is not connected to the same FE IMA unit as the other Rx links in the group. The detection is implementation-specific. Note: Used in IMA Link CTP on LR\_Fragment's termination function. | MTOSI | ATM |
| **"rXunusableFE "** | "RX\_UNUSABLE\_FE" | When the FE reports Rx-Unusable. Note: Used in IMA Link CTP on LR\_Fragment's termination function. | MTOSI | ATM |
| **“SD-O”** | "OSC\_SD" | Optical Supervisiory Channel signal degrade | MTOSI | OTN |
| **"securityViolation"** | "SECURITY\_VIOLATION" | Security violation | MTOSI |  |
| **”signalQualityEvaluationFailure”** |  |  | M.3100 3GPP | Wireless |
| **”smoke”** |  |  | M.3100 |  |
| **”Smoke detected”** |  |  | 3GPP | Wireless |
| **”sfwrDownloadFailure”** |  |  | M.3100 |  |
| **”sfwrEnvironmentProblem”** |  |  | M.3100 |  |
| **”softwareError”** |  |  | X.7xx M.3100 |  |
| **”Software Program Abnormally Terminated”** |  |  | X.7xx |  |
| **”Software Program Error”** |  |  | X.7xx |  |
| "SQL" | "SQL" | Loss of sequence | MTOSI |  |
| **”SQM”** |  | Sequence indicator Mismatch | G.783 G.806 | SDH |
| **”SS7 protocol failure”** |  |  | 3GPP | Wireless |
| "SSF" | "SSF" | Server signal fail | G.806  G.806 G.8021 G.8121 | SDH  OTN  Ethernet  MPLS-TP |
| **”SSF-O”** |  | Server Signal Fail - Overhead | G.798 | OTN |
| **”SSF-P”** |  | Server Signal Fail - Payload | G.798 | OTN |
| **"startupFE"** | "STARTUP\_FE" | When the FE is starting-up (the declaration of this failure alarm may be delayed to ensure the FE remains in Start-up). Note: Used in IMA Group FTP on LR\_Fragment's adaptation function. | MTOSI | ATM |
| **”storageCapacityProblem”** |  |  | X.7xx M.3100 |  |
| **”synchronizationSourceMismatch”** |  |  | M.3100 |  |
| **”System call unsuccessful”** |  |  | 3GPP | Wireless |
| **”systemResourcesOverload”** |  |  | M.3100 3GPP | Wireless |
| "TCF" | "TCF" | Transport connection (e.g. subnetworkConnection or topologicalLink) failure of unknown origin | MTOSI |  |
| "TCFE" | "TCFE" | External transport connection (e.g. subnetworkConnection or topologicalLink) failure | MTOSI |  |
| "TCFI" | "TCFI" | Internal transport connection (e.g. subnetworkConnection or topologicalLink) failure | MTOSI |  |
| "TCM-AIS" | "TCM-AIS" | Tandem Connection Sink - Incoming Alarm Indication Signal | MTOSI |  |
| "TCM-LOS" | "TCM-LOS" | Tandem Connection Sink - Loss of Tandem Connection Signal | MTOSI |  |
| "TCM-OAI" | "TCM-OAI" | Tandem Connection Sink - Outgoing Defect Indication ( same / similar to Alarm Indication) | MTOSI |  |
| "TCM-RAI" | "TCM-RAI" | Tandem Connection Sink - Remote Defect Indication ( same / similar to Alarm Indication) | MTOSI |  |
| "TCM-SD" | "TCM-SD" | Tandem Connection Sink - Signal Degrade | MTOSI |  |
| "TCM-SSF" | "TCM-SSF" | Tandem Connection Sink - Server Signal Fail | MTOSI |  |
| "TCM-TIM" | "TCM-TIM" | Tandem Connection Sink - Trace Identifier Mismatch | MTOSI |  |
| "TCM-UNEQ" | "TCM-UNEQ" | Tandem Connection Sink - Unequipped | MTOSI |  |
| "TCM\_LEVEL<n>\_LCK" | "TCM\_LEVEL<n>\_LCK" | Tandem Connection Level <n> - Locked | MTOSI |  |
| "TCM\_LEVEL<n>\_LOS" | "TCM\_LEVEL<n>\_LOS" | Tandem Connection Level <n> - Loss of Tandem Connection | MTOSI |  |
| "TCM\_LEVEL<n>\_OCI" | "TCM\_LEVEL<n>\_OCI" | Tandem Connection Level <n> - Open Connection Indication | MTOSI |  |
| "TCM\_LEVEL<n>\_RAI" | "TCM\_LEVEL<n>\_RAI" | Tandem Connection Level <n> - Backward Defect Indication (Remote Alarm Indication) | MTOSI | SDH  OTN |
| "TCM\_LEVEL<n>\_SD" | "TCM\_LEVEL<n>\_SD" | Tandem Connection Level <n> - Signal Degrade | MTOSI |  |
| "TCM\_LEVEL<n>\_SSF" | "TCM\_LEVEL<n>\_SSF" | Tandem Connection Level <n> - Server Signal Fail | MTOSI |  |
| "TCM\_LEVEL<n>\_TIM" | "TCM\_LEVEL<n>\_TIM" | Tandem Connection Level <n> - Trace Identifier Mismatch | MTOSI |  |
| **”Temperature Unacceptable”** |  |  | X.7xx |  |
| **”terminalProblem”** |  |  | M.3100 |  |
| **”Threshold Crossed”** |  |  | X.7xx |  |
| "TIM" | "TIM" | Trace identifier mismatch (when reported as an alarm) | G.806 G.798 | SDH  OTN |
| **”timeoutExpired”** |  |  | M.3100 3GPP | Wireless |
| **”Timeslot hardware failure”** |  |  | 3GPP | Wireless |
| **”timingProblem”** |  | When the FE transmit clock mode is different than the NE transmit clock mode. Note: Used in IMA Group FTP on LR\_Fragment's adaptation function. | X.7xx M.3100 | ATM |
| **"timingSynch"** | "TIMING\_SYNCH" | When the FE transmit clock mode is different than the NE transmit clock mode. Note: Used in IMA Group FTP on LR\_Fragment's adaptation function. | MTOSI | ATM |
| **”TLCR”** |  | Total Loss of Capacity Receive in LCAS-enabled virtual concatenated path . With OTN technology this fault condition applies to LCAS-capable virtual concatenated ODUk Path layer functions ODUkP-Xv-L (k = 1, 2, 3; X >=1) | G.806 G.798 | OTN |
| **”TLCT”** |  | Total Loss of Capacity Transmit in an LCAS-enabled VCG source | G.806 |  |
| **”TLL”** |  | Total Link Loss | G.8021 | Ethernet |
| **”toxicGas”** |  |  | M.3100 |  |
| **”Toxic Leak Detected”** |  |  | X.7xx |  |
| **”transceiverFailure”** |  |  | M.3100 |  |
| **”Transceiver problem”** |  |  | 3GPP | Wireless |
| **”Transcoder or rate adapter problem”** |  |  | 3GPP | Wireless |
| **”Transcoder problem”** |  |  | 3GPP | Wireless |
| **”transmissionError”** |  |  | M.3100 3GPP | Wireless |
| **”transmitFailure”** |  |  | X.7xx  M.3100 |  |
| **”Transmitter antenna failure”** |  |  | 3GPP | Wireless |
| **”Transmitter antenna not adjusted”** |  |  | 3GPP | Wireless |
| **”transmitterFailure”** |  |  | X.7xx M.3100 3GPP | Wireless |
| **”Transmitter low voltage or current”** |  |  | 3GPP | Wireless |
| **”Transmitter off frequency”** |  |  | 3GPP | Wireless |
| **”trunkCardProblem”** |  |  | M.3100 |  |
| **"tXDegrade"** | "TX\_DEGRADE" | transmitter degrade, including laser degrade | MTOSI |  |
| **"TxFail"** | "TX\_FAIL" | transmitter failure, including laser failure | MTOSI |  |
| **"tXMisConnect"** | "TX\_MIS\_CONNECT" | When the Tx link is detected as mis-connected. This is reported when the IMA unit has determined that the Tx link is not connected to the same FE IMA unit as the other Tx links in the group. The detection is implementation-specific. Note: Used in IMA Link CTP on LR\_Fragment's termination function. | MTOSI | ATM |
| **"tXUnusableFE"** | "TX\_UNUSABLE\_FE" | When the FE reports Tx-Unusable. Note: Used in IMA Link CTP on LR\_Fragment's termination function. | MTOSI | ATM |
| **”Unauthorised Access Attempt”** |  |  | X.7xx |  |
| **”unavailable”** |  |  | M.3100 |  |
| **”UNC”** |  | Unexpected Class of Service | G.8021 | Ethernet |
| **”underlyingResourceUnavailable”** |  |  | X.7xx M.3100 |  |
| "UAT" | "UAT" | Unavailable Time | MTOSI |  |
| "UNEQ" | "UNEQ" | Unequipped defect | G.806 | SDH |
| **”Unexpected Information”** |  |  | X.7xx |  |
| **”unexpectedLTRReceived”** |  |  | IEEE 802.1Q | Ethernet |
| **"unidentified"** | “UNIDENTIFIED” | For alarms that do not match any other string below. EMS shall in this case fill out the additional text field as much as possible. | MTOSI |  |
| **”UNL”** |  | Unexpected Maintenance Entity Group Level | G.8021 | Ethernet |
| **”UNM”** |  | Unexpected Maintenance Entity Group End Point | G.8021 G.8121 | Ethernet  MPLS-TP |
| **”UNP”** |  | Unexpected Period | G.8021 G.8121 | Ethernet  MPLS-TP |
| **”UNPr”** |  | Unexpected Priority | G.8021 | Ethernet |
| **”Unspecified Reason”** |  |  | X.7xx |  |
| **”UPM”** |  | User Payload Mismatch | G.8021  G.8121 | Ethernet  MPLS-TP |
| **”Variable out of range”** |  |  | 3GPP | Wireless |
| **”VcPLM”** |  | Virtual concatenation Payload Mismatch | G.798 G.798 G.798 | OTN  Ethernet  MPLS-TP |
| **”ventilationSystemFailure”** |  |  | M.3100 |  |
| **”versionMismatch”** |  |  | X.7xx M.3100 |  |
| **”Watch dog timer expired”** |  |  | 3GPP | Wireless |
| **"xPICFail"** | "XPIC\_FAIL" | This indication should report the internal failures of the Cross Polar Interference Canceller function. |  |  |

<n> = 1 | 2 | 3 | 4 | 5 | 6

Any extension to the list defined here will be agreed upon through a formal process.

Note:  
All probable causes defined in the table above identify alarms detected on the signal which is related to the **sink** atomic function. For alarms detected on the signal which is related to the **source** atomic function, the prefix "Contra\_" has to be used in the Name of the probable cause.

e.g. SSF 🡪 **Contra\_**SSF or TCM\_AIS 🡪 **Contra\_**TCM\_AIS

See following diagram depicting a 2 Mbit/s port as an example:



In addition it is also possible, that **one** Termination Point is physically located in **two** distinct located network elements (refer to DSL modelling as an example). This TP may detect the same probable cause in the local and in the remote network element.

In order to differentiate these two probable causes, an additional prefix "RU\_" (RU for Remote Unit) has to be used in the Name of the probable cause.

e.g. SSF 🡪 **RU\_**SSF or Contra\_TCM\_AIS 🡪 **RU\_**Contra\_TCM\_AIS

# Administrative Appendix

## Document History

|  |  |  |
| --- | --- | --- |
| **Version** | **Date** | **Description of Change** |
| 4.0 | April 2005 | OS related Probable Causes added. |
| 4.1 | October 2006 | * Columns "source standard" and "object" added. * Ethernet and LAG related Probable Causes added. |
| 4.2 | September 2012 | Aligned with current version of TMF 063. |
| 4.3 | March 2013 | Re-aligned with current version of TMF 063 |

## Acknowledgments

|  |  |  |
| --- | --- | --- |
| FirstName | LastName | Company |

## How to comment on this document

Comments and requests for information must be in written form and addressed to the contact identified below:

|  |  |  |
| --- | --- | --- |
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Please be specific, since your comments will be dealt with by the team evaluating numerous inputs and trying to produce a single text. Thus we appreciate significant specific input. We are looking for more input than wordsmith” items, however editing and structural help are greatly appreciated where better clarity is the result.

1. TMF 063 currently provides only limited description of the probableCauses. The descriptions from TMF 063 current at the time of publication of this document have been included here. [↑](#footnote-ref-1)
2. Generic AIS ProbableCause as defined in TMF063 used for mapping [↑](#footnote-ref-2)
3. The layerRate in the alarm report will provide the necessary distinguishing quality to separate AU, TU, MS etc. [↑](#footnote-ref-3)
4. Mapped to generic ProbableCause FOP defined in TMF063 as it applies to other technologies/protocols [↑](#footnote-ref-4)
5. All MTOSI EMS Probable causes shall be mapped consistently to TMF063 OS probable causes [↑](#footnote-ref-5)
6. All MTOSI EMS Probable causes shall be mapped consistently to TMF063 OS probable causes [↑](#footnote-ref-6)
7. All MTOSI EMS Probable causes shall be mapped consistently to TMF063 OS probable causes [↑](#footnote-ref-7)
8. All MTOSI EMS Probable causes shall be mapped consistently to TMF063 OS probable causes [↑](#footnote-ref-8)
9. All RAI/RDI MTOSI related ProbableCauses mapped to generic RDI in TMF063 [↑](#footnote-ref-9)
10. The layerRate in the alarm report will provide the necessary distinguishing quality to separate VC, VP etc. [↑](#footnote-ref-10)