

CcspMtaAgent

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Introduction

MTA(Media Terminal Adapter) is a cable client device that contains a subscriber-side interface to the subscriber's CPE (e.g., telephone) and a network-side signalling interface to call control elements in the network. It can deliver Home Phone service in addition to High Speed Internet with battery back up in the event of power outage. It provides codecs and all signalling and encapsulation functions required for media transport and call signalling.

Cable MTAs are required to support the Network Call Signalling (NCS) protocol. An embedded MTA (e-MTA) is a single hardware device that incorporates a DOCSIS [cable modem](#) as well as a Cable MTA component. MTAAgent is an interface for the voice subsystem. Sub-system supports all the parameters defined in TR-181 data model. DML loads all data model access APIs through a pre-defined XML file CcspMtaAgent.XML. Voice subsystem complies with PacketCable 2.0, DECT 6.0 / CAT-iq support.

Supported features includes eDVA subsystem, HD voice, DECT module and support for legacy Home alarm Solutions

Majority of the functionality for this component is provided by OEM.

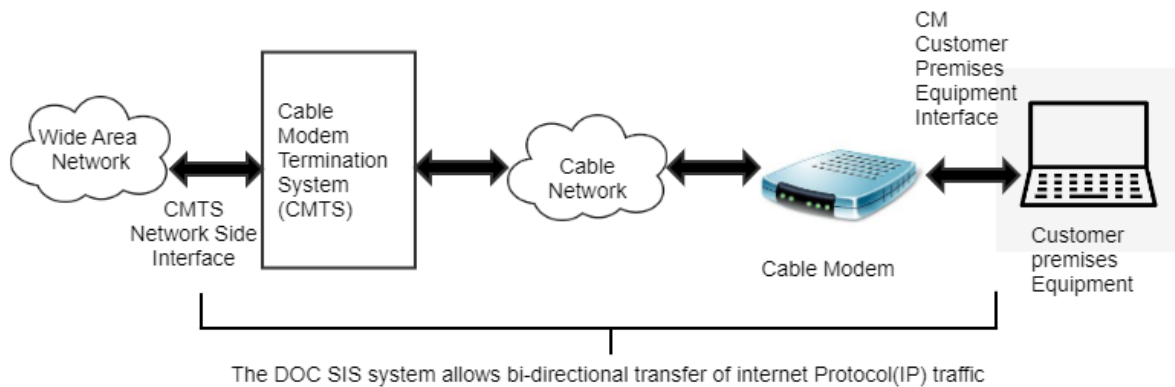


Figure-1 IP Traffic Through the Data-Over-Cable System

Objects

MTA object in its DML layer:

```
Device.X_CISCO_COM_MTA.
```

Retrieve value using dmcli command

```
$ dmcli eRT getv Device.X_CISCO_COM_MTA.
CR component name is: eRT.com.cisco.spvtg.ccsp.CR
subsystem_prefix eRT.
getv from/to component(Device.X_CISCO_COM_MTA.): Device.X_CISCO_COM_MTA.
Execution succeed.
Parameter 1 name: Device.X_CISCO_COM_MTA.PrimaryDHCPServer
           type: string, value: 6.6.6.6
Parameter 2 name: Device.X_CISCO_COM_MTA.SecondaryDHCPServer
           type: string, value: 6.6.6.6
Parameter 3 name: Device.X_CISCO_COM_MTA.pktcMtaDevEnabled
           type: bool, value: false
Parameter 4 name: Device.X_CISCO_COM_MTA.DSXLogEnable
           type: bool, value: true
Parameter 5 name: Device.X_CISCO_COM_MTA.ClearDSXLog
           type: bool, value: false
Parameter 6 name: Device.X_CISCO_COM_MTA.CallSignallingLogEnable
```

```

type:      bool,      value: true
Parameter 7 name: Device.X_CISCO_COM_MTA.ClearCallSignallingLog
type:      bool,      value: false
Parameter 8 name: Device.X_CISCO_COM_MTA.EnableDECTLog
type:      bool,      value: false
Parameter 9 name: Device.X_CISCO_COM_MTA.EnableMTALog
type:      bool,      value: false
Parameter 10 name: Device.X_CISCO_COM_MTA.pktcSigDefCallSigTos
type:      uint,      value: 0
Parameter 11 name: Device.X_CISCO_COM_MTA.pktcSigDefMediaStreamTos
type:      uint,      value: 0
Parameter 12 name: Device.X_CISCO_COM_MTA.pktcMtaDevRealmOrgName
type:      uint,      value: 0
Parameter 13 name: Device.X_CISCO_COM_MTA.pktcMtaDevCmsKerbRealmName
type:      uint,      value: 0
Parameter 14 name: Device.X_CISCO_COM_MTA.pktcMtaDevCmsIpsecCtrl
type:      uint,      value: 0
Parameter 15 name: Device.X_CISCO_COM_MTA.pktcMtaDevCmsSolicitedKeyTimeout
type:      uint,      value: 0
Parameter 16 name: Device.X_CISCO_COM_MTA.pktcMtaDevRealmPkinitGracePeriod
type:      uint,      value: 0
Parameter 17 name: Device.X_CISCO_COM_MTA.IPAddress
type:      string,    value: 0.0.0.0
Parameter 18 name: Device.X_CISCO_COM_MTA.BootFileName
type:      string,    value:
Parameter 19 name: Device.X_CISCO_COM_MTA.FQDN
type:      string,    value:
Parameter 20 name: Device.X_CISCO_COM_MTA.SubnetMask
type:      string,    value: 0.0.0.0
Parameter 21 name: Device.X_CISCO_COM_MTA.Gateway
type:      string,    value: 0.0.0.0
Parameter 22 name: Device.X_CISCO_COM_MTA.LeaseTimeRemaining
type:      uint,      value: 0
Parameter 23 name: Device.X_CISCO_COM_MTA.RebindTimeRemaining
type:      string,    value: 0
Parameter 24 name: Device.X_CISCO_COM_MTA.RenewTimeRemaining
type:      string,    value: 0
Parameter 25 name: Device.X_CISCO_COM_MTA.PrimaryDNS
type:      string,    value: 0.0.0.0
Parameter 26 name: Device.X_CISCO_COM_MTA.SecondaryDNS
type:      string,    value: 0.0.0.0
Parameter 27 name: Device.X_CISCO_COM_MTA.DHCPOption3
type:      string,    value: 0.0.0.0
Parameter 28 name: Device.X_CISCO_COM_MTA.DHCPOption6
type:      string,    value: BASIC.1
Parameter 29 name: Device.X_CISCO_COM_MTA.DHCPOption7
type:      string,    value: False
Parameter 30 name: Device.X_CISCO_COM_MTA.DHCPOption8
type:      string,    value: 10
Parameter 31 name: Device.X_CISCO_COM_MTA.PCVersion
type:      string,    value: 2.0
Parameter 32 name: Device.X_CISCO_COM_MTA.MACAddress
type:      string,    value: 5C:E3:0E:5E:46:98
Parameter 33 name: Device.X_CISCO_COM_MTA.LineTableNumberOfEntries
type:      uint,      value: 2
Parameter 34 name: Device.X_CISCO_COM_MTA.ServiceFlowNumberOfEntries
type:      uint,      value: 10
Parameter 35 name: Device.X_CISCO_COM_MTA.DSXLogNumberOfEntries
type:      uint,      value: 15
Parameter 36 name: Device.X_CISCO_COM_MTA.MTAResetCount
type:      uint,      value: 2
Parameter 37 name: Device.X_CISCO_COM_MTA.LineResetCount
type:      uint,      value: 2
Parameter 38 name: Device.X_CISCO_COM_MTA.ClearLineStats
type:      uint,      value: 0
Parameter 39 name: Device.X_CISCO_COM_MTA.ServiceClassNumberOfEntries
type:      uint,      value: 0
Parameter 40 name: Device.X_CISCO_COM_MTA.MTALogNumberOfEntries
type:      uint,      value: 0
Parameter 41 name: Device.X_CISCO_COM_MTA.DECTLogNumberOfEntries
type:      uint,      value: 0

```

Parameter	42	name: Device.X_CISCO_COM_MTA.DSXLog.1.ID		
		type: uint, value: 0		
Parameter	43	name: Device.X_CISCO_COM_MTA.DSXLog.1.Time		
		type: string, value:		
Parameter	44	name: Device.X_CISCO_COM_MTA.DSXLog.1.Description		
		type: string, value: Downstream Upstream		
Parameter	45	name: Device.X_CISCO_COM_MTA.DSXLog.1.Level		
		type: uint, value: 0		
Parameter	46	name: Device.X_CISCO_COM_MTA.DSXLog.2.ID		
		type: uint, value: 0		
Parameter	47	name: Device.X_CISCO_COM_MTA.DSXLog.2.Time		
		type: string, value:		
Parameter	48	name: Device.X_CISCO_COM_MTA.DSXLog.2.Description		
		type: string, value: DSA Reqs: 0 0		
Parameter	49	name: Device.X_CISCO_COM_MTA.DSXLog.2.Level		
		type: uint, value: 0		
Parameter	50	name: Device.X_CISCO_COM_MTA.DSXLog.3.ID		
		type: uint, value: 0		
Parameter	51	name: Device.X_CISCO_COM_MTA.DSXLog.3.Time		
		type: string, value:		
Parameter	52	name: Device.X_CISCO_COM_MTA.DSXLog.3.Description		
		type: string, value: DSA Rsp: 0 0		
Parameter	53	name: Device.X_CISCO_COM_MTA.DSXLog.3.Level		
		type: uint, value: 0		
Parameter	54	name: Device.X_CISCO_COM_MTA.DSXLog.4.ID		
		type: uint, value: 0		
Parameter	55	name: Device.X_CISCO_COM_MTA.DSXLog.4.Time		
		type: string, value:		
Parameter	56	name: Device.X_CISCO_COM_MTA.DSXLog.4.Description		
		type: string, value: DSA Acks: 0 0		
Parameter	57	name: Device.X_CISCO_COM_MTA.DSXLog.4.Level		
		type: uint, value: 0		
Parameter	58	name: Device.X_CISCO_COM_MTA.DSXLog.5.ID		
		type: uint, value: 0		
Parameter	59	name: Device.X_CISCO_COM_MTA.DSXLog.5.Time		
		type: string, value:		
Parameter	60	name: Device.X_CISCO_COM_MTA.DSXLog.5.Description		
		type: string, value: DSA success: 0 0		
Parameter	61	name: Device.X_CISCO_COM_MTA.DSXLog.5.Level		
		type: uint, value: 0		
Parameter	62	name: Device.X_CISCO_COM_MTA.DSXLog.6.ID		
		type: uint, value: 0		
Parameter	63	name: Device.X_CISCO_COM_MTA.DSXLog.6.Time		
		type: string, value:		
Parameter	64	name: Device.X_CISCO_COM_MTA.DSXLog.6.Description		
		type: string, value: DSA failure: 0 0		
Parameter	65	name: Device.X_CISCO_COM_MTA.DSXLog.6.Level		
		type: uint, value: 0		
Parameter	66	name: Device.X_CISCO_COM_MTA.DSXLog.7.ID		
		type: uint, value: 0		
Parameter	67	name: Device.X_CISCO_COM_MTA.DSXLog.7.Time		
		type: string, value:		
Parameter	68	name: Device.X_CISCO_COM_MTA.DSXLog.7.Description		
		type: string, value: DSC Reqs: 0 0		
Parameter	69	name: Device.X_CISCO_COM_MTA.DSXLog.7.Level		
		type: uint, value: 0		
Parameter	70	name: Device.X_CISCO_COM_MTA.DSXLog.8.ID		
		type: uint, value: 0		
Parameter	71	name: Device.X_CISCO_COM_MTA.DSXLog.8.Time		
		type: string, value:		
Parameter	72	name: Device.X_CISCO_COM_MTA.DSXLog.8.Description		
		type: string, value: DSC Rsp: 0 0		
Parameter	73	name: Device.X_CISCO_COM_MTA.DSXLog.8.Level		
		type: uint, value: 0		
Parameter	74	name: Device.X_CISCO_COM_MTA.DSXLog.9.ID		
		type: uint, value: 0		
Parameter	75	name: Device.X_CISCO_COM_MTA.DSXLog.9.Time		
		type: string, value:		
Parameter	76	name: Device.X_CISCO_COM_MTA.DSXLog.9.Description		
		type: string, value: DSC Acks: 0 0		
Parameter	77	name: Device.X_CISCO_COM_MTA.DSXLog.9.Level		

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type:      uint,      value: 0
Parameter 78 name: Device.X_CISCO_COM_MTA.DSXLog.10.ID
type:      uint,      value: 0
Parameter 79 name: Device.X_CISCO_COM_MTA.DSXLog.10.Time
type:      string,    value:
Parameter 80 name: Device.X_CISCO_COM_MTA.DSXLog.10.Description
type:      string,    value: DSC success:      0      0
Parameter 81 name: Device.X_CISCO_COM_MTA.DSXLog.10.Level
type:      uint,      value: 0
Parameter 82 name: Device.X_CISCO_COM_MTA.DSXLog.11.ID
type:      uint,      value: 0
Parameter 83 name: Device.X_CISCO_COM_MTA.DSXLog.11.Time
type:      string,    value:
Parameter 84 name: Device.X_CISCO_COM_MTA.DSXLog.11.Description
type:      string,    value: DSC failure:      0      0
Parameter 85 name: Device.X_CISCO_COM_MTA.DSXLog.11.Level
type:      uint,      value: 0
Parameter 86 name: Device.X_CISCO_COM_MTA.DSXLog.12.ID
type:      uint,      value: 0
Parameter 87 name: Device.X_CISCO_COM_MTA.DSXLog.12.Time
type:      string,    value:
Parameter 88 name: Device.X_CISCO_COM_MTA.DSXLog.12.Description
type:      string,    value: DSD Reqs:      0      0
Parameter 89 name: Device.X_CISCO_COM_MTA.DSXLog.12.Level
type:      uint,      value: 0
Parameter 90 name: Device.X_CISCO_COM_MTA.DSXLog.13.ID
type:      uint,      value: 0
Parameter 91 name: Device.X_CISCO_COM_MTA.DSXLog.13.Time
type:      string,    value:
Parameter 92 name: Device.X_CISCO_COM_MTA.DSXLog.13.Description
type:      string,    value: DSD Rsps:      0      0
Parameter 93 name: Device.X_CISCO_COM_MTA.DSXLog.13.Level
type:      uint,      value: 0
Parameter 94 name: Device.X_CISCO_COM_MTA.DSXLog.14.ID
type:      uint,      value: 0
Parameter 95 name: Device.X_CISCO_COM_MTA.DSXLog.14.Time
type:      string,    value:
Parameter 96 name: Device.X_CISCO_COM_MTA.DSXLog.14.Description
type:      string,    value: DSD success:      0      0
Parameter 97 name: Device.X_CISCO_COM_MTA.DSXLog.14.Level
type:      uint,      value: 0
Parameter 98 name: Device.X_CISCO_COM_MTA.DSXLog.15.ID
type:      uint,      value: 0
Parameter 99 name: Device.X_CISCO_COM_MTA.DSXLog.15.Time
type:      string,    value:
Parameter 100 name: Device.X_CISCO_COM_MTA.DSXLog.15.Description
type:      string,    value: DSD failure:      0      0
Parameter 101 name: Device.X_CISCO_COM_MTA.DSXLog.15.Level
type:      uint,      value: 0
Parameter 102 name: Device.X_CISCO_COM_MTA.LineTable.1.LineNumber
type:      uint,      value: 0
Parameter 103 name: Device.X_CISCO_COM_MTA.LineTable.1.Status
type:      string,    value: On-Hook
Parameter 104 name: Device.X_CISCO_COM_MTA.LineTable.1.HazardousPotential
type:      string,    value: Not Started
Parameter 105 name: Device.X_CISCO_COM_MTA.LineTable.1.ForeignEMF
type:      string,    value: Not Started
Parameter 106 name: Device.X_CISCO_COM_MTA.LineTable.1.ResistiveFaults
type:      string,    value: Not Started
Parameter 107 name: Device.X_CISCO_COM_MTA.LineTable.1.ReceiverOffHook
type:      string,    value: Not Started
Parameter 108 name: Device.X_CISCO_COM_MTA.LineTable.1.RingerEquivalency
type:      string,    value: Not Started
Parameter 109 name: Device.X_CISCO_COM_MTA.LineTable.1.TriggerDiagnostics
type:      bool,      value: false
Parameter 110 name: Device.X_CISCO_COM_MTA.LineTable.1.CAName
type:      string,    value:
Parameter 111 name: Device.X_CISCO_COM_MTA.LineTable.1.CAPort
type:      uint,      value: 0
Parameter 112 name: Device.X_CISCO_COM_MTA.LineTable.1.MWD
type:      uint,      value: 0

```

```

Parameter 113 name: Device.X_CISCO_COM_MTA.LineTable.1.OverCurrentFault
               type:  string,    value: Normal
Parameter 114 name: Device.X_CISCO_COM_MTA.LineTable.1.CALLP.LCState
               type:  string,    value: Out of Service
Parameter 115 name: Device.X_CISCO_COM_MTA.LineTable.1.CALLP.CallPState
               type:  string,    value: Out of Service
Parameter 116 name: Device.X_CISCO_COM_MTA.LineTable.1.CALLP.LoopCurrent
               type:  string,    value: Boosted
Parameter 117 name: Device.X_CISCO_COM_MTA.LineTable.1.VQM.ResetStats
               type:  bool,     value: false
Parameter 118 name: Device.X_CISCO_COM_MTA.LineTable.1.VQM.CallsNumberOfEntries
               type:  uint,     value: 0
Parameter 119 name: Device.X_CISCO_COM_MTA.LineTable.2.LineNumber
               type:  uint,     value: 1
Parameter 120 name: Device.X_CISCO_COM_MTA.LineTable.2.Status
               type:  string,    value: On-Hook
Parameter 121 name: Device.X_CISCO_COM_MTA.LineTable.2.HazardousPotential
               type:  string,    value: Not Started
Parameter 122 name: Device.X_CISCO_COM_MTA.LineTable.2.ForeignEMF
               type:  string,    value: Not Started
Parameter 123 name: Device.X_CISCO_COM_MTA.LineTable.2.ResistiveFaults
               type:  string,    value: Not Started
Parameter 124 name: Device.X_CISCO_COM_MTA.LineTable.2.ReceiverOffHook
               type:  string,    value: Not Started
Parameter 125 name: Device.X_CISCO_COM_MTA.LineTable.2.RingerEquivalency
               type:  string,    value: Not Started
Parameter 126 name: Device.X_CISCO_COM_MTA.LineTable.2.TriggerDiagnostics
               type:  bool,     value: false
Parameter 127 name: Device.X_CISCO_COM_MTA.LineTable.2.CAName
               type:  string,    value:
Parameter 128 name: Device.X_CISCO_COM_MTA.LineTable.2.CAPort
               type:  uint,     value: 0
Parameter 129 name: Device.X_CISCO_COM_MTA.LineTable.2.MWD
               type:  uint,     value: 0
Parameter 130 name: Device.X_CISCO_COM_MTA.LineTable.2.OverCurrentFault
               type:  string,    value: Normal
Parameter 131 name: Device.X_CISCO_COM_MTA.LineTable.2.CALLP.LCState
               type:  string,    value: Out of Service
Parameter 132 name: Device.X_CISCO_COM_MTA.LineTable.2.CALLP.CallPState
               type:  string,    value: Out of Service
Parameter 133 name: Device.X_CISCO_COM_MTA.LineTable.2.CALLP.LoopCurrent
               type:  string,    value: Boosted
Parameter 134 name: Device.X_CISCO_COM_MTA.LineTable.2.VQM.ResetStats
               type:  bool,     value: false
Parameter 135 name: Device.X_CISCO_COM_MTA.LineTable.2.VQM.CallsNumberOfEntries
               type:  uint,     value: 0
Parameter 136 name: Device.X_CISCO_COM_MTA.ServiceFlow.1.SFID
               type:  uint,     value: 1123372
Parameter 137 name: Device.X_CISCO_COM_MTA.ServiceFlow.1.ServiceClassName
               type:  string,    value: extrm2_up
Parameter 138 name: Device.X_CISCO_COM_MTA.ServiceFlow.1.Direction
               type:  string,    value: upstream
Parameter 139 name: Device.X_CISCO_COM_MTA.ServiceFlow.1.ScheduleType
               type:  uint,     value: 6
Parameter 140 name: Device.X_CISCO_COM_MTA.ServiceFlow.1.DefaultFlow
               type:  bool,     value: true

```

HAL APIs

The MTA HAL is an abstraction layer, implemented to interact with MTA device

mta_hal.h file provides the function call prototypes and structure definitions used for the RDK-Broadband MTA hardware abstraction layer

Git repo : https://code.rdkcentral.com/r/plugins/gitiles/rdkb/components/opensource/ccsp/halinterface/+rdk-next/mta_hal.h

Some of the important MTA HAL APIs are listed below:

APIs
mta_hal_InitDB
mta_hal_GetDHCPInfo
mta_hal_LineTableGetNumberOfEntries
mta_hal_LineTableGetEntry
mta_hal_TriggerDiagnostics
mta_hal_GetServiceFlow
mta_hal_DectGetEnable
mta_hal_DectSetEnable
mta_hal_DectGetRegistrationMode
mta_hal_DectSetRegistrationMode
mta_hal_DectDeregisterDectHandset
mta_hal_GetDect
mta_hal_GetDectPIN
mta_hal_SetDectPIN
mta_hal_GetHandsets
mta_hal_GetCalls
mta_hal_GetCALLP
mta_hal_GetDSXLogs
mta_hal_GetDSXLogEnable
mta_hal_SetDSXLogEnable
mta_hal_ClearDSXLog
mta_hal_GetCallSignallingLogEnable
mta_hal_SetCallSignallingLogEnable
mta_hal_ClearCallSignallingLog
mta_hal_GetMtaLog
mta_hal_BatteryGetInstalled
mta_hal_BatteryGetTotalCapacity
mta_hal_BatteryGetActualCapacity
mta_hal_BatteryGetRemainingCharge
mta_hal_BatteryGetRemainingTime
mta_hal_BatteryGetNumberOfCycles
mta_hal_BatteryGetPowerStatus
mta_hal_BatteryGetCondition
mta_hal_BatteryGetStatus
mta_hal_BatteryGetLife
mta_hal_BatteryGetInfo
mta_hal_BatteryGetPowerSavingModeStatus
mta_hal_Get_MTAResetCount
mta_hal_Get_LineResetCount

mta_hal_ClearCalls
mta_hal_getDhcpStatus
mta_hal_getConfigFileStatus
mta_hal_getLineRegisterStatus
mta_hal_devResetNow
mta_hal_getMtaOperationalStatus
mta_hal_start_provisioning