# PURPOSE

This document defines National Transportation Communications for ITS Protocol (NTCIP) requirements for dynamic message signs (DMS). Please note that if the group is mandatory, then all objects within that group listed as mandatory shall be supported. If the DMS does not support the functionality associated with a specific object or group of objects, yet still meets Florida Department of Transportation (FDOT) specifications, then the device must respond with a noSuchName error response when requests are made for those objects.

# NTCIP REQUIREMENTS

Ensure that the device complies with NTCIP 1102v01.15, 2101v01.19, 2103v02.07, 2201v01.15, 2202v01.05, and 2301v02.19, and section 3 of NTCIP 1103v02.17.

**Table 1: Abbreviations used in this document**

|  |  |
| --- | --- |
| **Abbreviation** | **Description** |
| M | *Mandatory* |
| O | *Optional* |
| D | *Deprecated* |

**Table 2: Supplemental DMS NTCIP Requirements Table**

| **Conformance Group /**  **Object Name** | **Reference** | **FDOT**  **Requirement** | **Additional Notes and Requirements** |
| --- | --- | --- | --- |
| **dmsSignCfg** | **NTCIP 1203v02.39**  **5.2** | **M** |  |
| dmsSignAccess | 5.2.1 | M |  |
| dmsSignType | 5.2.2 | M |  |
| dmsSignHeight | 5.2.3 | M |  |
| dmsSignWidth | 5.2.4 | M |  |
| dmsHorizontalBorder | 5.2.5 | M |  |
| dmsVerticalBorder | 5.2.6 | M |  |
| dmsLegend | 5.2.7 | M |  |
| dmsBeaconType | 5.2.8 | M |  |
| dmsSignTechnology | 5.2.9 | M |  |
| **vmsCfg** | **5.3** | **M** |  |
| vmsCharacterHeightPixels | 5.3.1 | M |  |
| vmsCharacterWidthPixels | 5.3.2 | M |  |
| vmsSignHeightPixels | 5.3.3 | M |  |
| vmsSignWidthPixels | 5.3.4 | M |  |
| vmsHorizontalPitch | 5.3.5 | M |  |
| vmsVerticalPitch | 5.3.6 | M |  |
| monochromeColor | 5.3.7 | M |  |
| **fontDefinition** | **5.4** | **M** |  |
| numFonts | 5.4.1 | M | The device must support a minimum of 4 fonts. |
| fontTable | 5.4.2 | M |  |
| fontIndex | 5.4.2.1 | M |  |
| fontNumber | 5.4.2.2 | M |  |
| fontName | 5.4.2.3 | M |  |
| fontHeight | 5.4.2.4 | M |  |
| fontCharSpacing | 5.4.2.5 | M |  |
| fontLineSpacing | 5.4.2.6 | M |  |
| fontVersionID | 5.4.2.7 | M |  |
| fontStatus | 5.4.2.8 | M |  |
| maxFontCharacters | 5.4.3 | M | The device must support a minimum of 255 font characters. |
| characterTable | 5.4.4 | M |  |
| characterNumber | 5.4.4.1 | M |  |
| characterWidth | 5.4.4.2 | M |  |
| characterBitmap | 5.4.4.3 | M |  |
| fontMaxCharacterSize | 5.4.5 | M |  |
| **multiCfg** | **5.5** | **M** |  |
| defaultBackgroundColor | 5.5.1 | M |  |
| defaultForegroundColor | 5.5.2 | M |  |
| defaultFlashOn | 5.5.3 | M |  |
| defaultFlashOnActivate | 5.5.4 | M |  |
| defaultFlashOff | 5.5.5 | M |  |
| defaultFlashOffActivate | 5.5.6 | M |  |
| defaultFont | 5.5.7 | M |  |
| defaultFontActivate | 5.5.8 | M |  |
| defaultJustificationLine | 5.5.9 | M |  |
| defaultJustificationLineActivate | 5.5.10 | M |  |
| defaultJustificationPage | 5.5.11 | M |  |
| defaultJustificationPageActivate | 5.5.12 | M |  |
| defaultPageOnTime | 5.5.13 | M |  |
| defaultPageOnTimeActivate | 5.5.14 | M |  |
| defaultPageOffTime | 5.5.15 | M |  |
| defaultPageOffTimeActivate | 5.5.16 | M |  |
| defaultBackgroundRGB | 5.5.17 | M |  |
| defaultBackgroundRGBActivate | 5.5.18 | M |  |
| defaultForegroundRGB | 5.5.19 | M |  |
| defaultForegroundRGBActivate | 5.5.20 | M |  |
| defaultCharacterSet | 5.5.21 | M |  |
| dmsColorScheme | 5.5.22 | M |  |
| dmsSupportedMultiTags | 5.5.23 | M |  |
| dmsMaxNumberPages | 5.5.24 | M |  |
| dmsMaxMultiStringLength | 5.5.25 | M |  |
| **dmsMessage** | **5.6** | **M** |  |
| dmsNumPermanentMsg | 5.6.1 | M |  |
| dmsNumChangeableMsg | 5.6.2 | M |  |
| dmsMaxChangeableMsg | 5.6.3 | M | The device must support a minimum of 50 changeable messages. |
| dmsFreeChangeableMemory | 5.6.4 | M |  |
| dmsNumVolatileMsg | 5.6.5 | M |  |
| dmsMaxVolatileMsg | 5.6.6 | M |  |
| dmsFreeVolatileMemory | 5.6.7 | M |  |
| dmsMessageTable | 5.6.8 | M |  |
| dmsMessageMemoryType | 5.6.8.1 | M |  |
| dmsMessageNumber | 5.6.8.2 | M |  |
| dmsMessageMultiString | 5.6.8.3 | M |  |
| dmsMessageOwner | 5.6.8.4 | M |  |
| dmsMessageCRC | 5.6.8.5 | M |  |
| dmsMessageBeacon | 5.6.8.6 | M |  |
| dmsMessagePixelService | 5.6.8.7 | O |  |
| dmsMessageRunTimePriority | 5.6.8.8 | M |  |
| dmsMessageStatus | 5.6.8.9 | M |  |
| dmsValidateMessageError | 5.6.9 | M |  |
| **signControl** | **5.7** | **M** |  |
| dmsControlMode | 5.7.1 | M |  |
| dmsSWReset | 5.7.2 | M |  |
| dmsActivateMessage | 5.7.3 | M |  |
| dmsMessageTimeRemaining | 5.7.4 | M |  |
| dmsMsgTableSource | 5.7.5 | M |  |
| dmsMsgRequesterID | 5.7.6 | M |  |
| dmsMsgSourceMode | 5.7.7 | M |  |
| dmsShortPowerRecoveryMessage | 5.7.8 | M |  |
| dmsLongPowerRecoveryMessage | 5.7.9 | M |  |
| dmsShortPowerLossTime | 5.7.10 | M |  |
| dmsResetMessage | 5.7.11 | M |  |
| dmsCommunicationsLossMessage | 5.7.12 | M |  |
| dmsTimeCommLoss | 5.7.13 | M |  |
| dmsPowerLossMessage | 5.7.14 | M |  |
| dmsEndDurationMessage | 5.7.15 | M |  |
| dmsMemoryMgmt | 5.7.16 | M |  |
| dmsActivateMsgError | 5.7.17 | M |  |
| dmsMultiSyntaxError | 5.7.18 | M |  |
| dmsMultiSyntaxErrorPosition | 5.7.19 | M |  |
| dmsMultiOtherErrorDescription | 5.7.20 | M |  |
| vmsPixelServiceDuration | 5.7.21 | O |  |
| vmsPixelServiceFrequency | 5.7.22 | O |  |
| vmsPixelServiceTime | 5.7.23 | O |  |
| dmsActivateErrorMsgCode | 5.7.24 | M |  |
| dmsActivateMessageState | 5.7.25 | M |  |
| **illum** | **5.8** | **M** |  |
| dmsIllumControl | 5.8.1 | M |  |
| dmsIllumMaxPhotocellLevel | 5.8.2 | M |  |
| dmsIllumPhotocellLevelStatus | 5.8.3 | M |  |
| dmsIllumNumBrightLevels | 5.8.4 | M | The device must support a minimum of 16 brightness levels. |
| dmsIllumBrightLevelStatus | 5.8.5 | M |  |
| dmsIllumManLevel | 5.8.6 | M |  |
| dmsIllumBrightnessValues | 5.8.7 | M |  |
| dmsIllumBrightnessValuesError | 5.8.8 | M |  |
| dmsIllumLightOutputStatus | 5.8.9 | M |  |
| **dmsSchedule** | **5.9** | **O** |  |
| numActionTableEntries | 5.9.1 | M |  |
| dmsActionTable | 5.9.2 | M |  |
| dmsActionIndex | 5.9.2.1 | M |  |
| dmsActionMsgCode | 5.9.2.2 | M |  |
| **dmsStatus** | **5.11** | **M** |  |
| ***Core Status*** | ***5.11.1*** | ***M*** |  |
| statMultiFieldRows | 5.11.1.1 | M |  |
| statMultiFieldTable | 5.11.1.2 | M |  |
| statMultiFieldIndex | 5.11.1.2.1 | M |  |
| statMultiFieldCode | 5.11.1.2.2 | M |  |
| statMultiCurrentFieldValue | 5.11.1.2.3 | M |  |
| dmsCurrentSpeed | 5.11.1.3 | O |  |
| dmsCurrentSpeedLimit | 5.11.1.4 | O |  |
| watchdogFailureCount | 5.11.1.5 | M |  |
| dmsStatDoorOpen | 5.11.1.6 | M |  |
| **statError** | **5.11.2** | **M** |  |
| ***Controller Errors*** | ***5.11.2.1*** | ***M*** |  |
| shortErrorStatus | 5.11.2.1.1 | M |  |
| controllerErrorStatus | 5.11.2.1.2 | M |  |
| ***Power Status Data*** | ***5.11.2.2*** | ***M*** |  |
| dmsPowerFailureStatusMap | 5.11.2.2.1 | M |  |
| dmsPowerNumRows | 5.11.2.2.2 | M |  |
| dmsPowerStatusTable | 5.11.2.2.3 | M |  |
| dmsPowerIndex | 5.11.2.2.3.1 | M |  |
| dmsPowerDescription | 5.11.2.2.3.2 | M |  |
| dmsPowerMfrStatus | 5.11.2.2.3.3 | M |  |
| dmsPowerStatus | 5.11.2.2.3.4 | M |  |
| dmsPowerVoltage | 5.11.2.2.3.5 | M |  |
| dmsPowerType | 5.11.2.2.3.6 | M |  |
| ***Climate Control Status Data*** | ***5.11.2.3*** | ***M*** |  |
| fanFailures | 5.11.2.3.1 | D |  |
| fanTestActivation | 5.11.2.3.2 | D |  |
| dmsClimateCtrlStatusMap | 5.11.2.3.3 | M |  |
| dmsClimateCtrlNumRows | 5.11.2.3.4 | M |  |
| dmsClimateCtrlStatusTable | 5.11.2.3.5 | M |  |
| dmsClimateCtrlIndex | 5.11.2.3.5.1 | M |  |
| dmsClimateCtrlDescription | 5.11.2.3.5.2 | M |  |
| dmsClimateCtrlMfrStatus | 5.11.2.3.5.3 | M |  |
| dmsClimateCtrlErrorStatus | 5.11.2.3.5.4 | M |  |
| dmsClimateCtrlOnStatus | 5.11.2.3.5.5 | M |  |
| dmsClimateCtrlTestActivation | 5.11.2.3.5.6 | M |  |
| dmsClimateCtrlAbortReason | 5.11.2.3.5.7 | M |  |
| dmsClimateCtrlType | 5.11.2.3.5.8 | M |  |
| ***Pixel Failure Data*** | ***5.11.2.4*** | ***M*** |  |
| pixelFailureTableNumRows | 5.11.2.4.1 | M |  |
| pixelFailureTable | 5.11.2.4.2 | M |  |
| pixelFailureDetectionType | 5.11.2.4.2.1 | M |  |
| pixelFailureIndex | 5.11.2.4.2.2 | M |  |
| pixelFailureXLocation | 5.11.2.4.2.3 | M |  |
| pixelFailureYLocation | 5.11.2.4.2.4 | M |  |
| pixelFailureStatus | 5.11.2.4.2.5 | M |  |
| pixelTestActivation | 5.11.2.4.3 | M |  |
| pixelStatusTable | 5.11.2.4.4 | M |  |
| dmsPixelStatusIndex | 5.11.2.4.4.1 | M |  |
| dmsPixelStatus | 5.11.2.4.4.2 | M |  |
| dmsPixelFailureTestRows | 5.11.2.4.5 | M |  |
| dmsPixelFailureMessageRows | 5.11.2.4.6 | M |  |
| ***Lamp Status Data*** | ***5.11.2.5*** | ***O*** | ***Note: None of the objects under 5.11.2.5 are required.*** |
| lampFailureStuckOn | 5.11.2.5.1 | M |  |
| lampFailureStuckOff | 5.11.2.5.2 | M |  |
| lampTestActivation | 5.11.2.5.3 | M |  |
| dmsLampNumRows | 5.11.2.5.4 | M |  |
| dmsLampStatusTable | 5.11.2.5.5 | M |  |
| dmsLampIndex | 5.11.2.5.5.1 | M |  |
| dmsLampDescription | 5.11.2.5.5.2 | M |  |
| dmsLampMfrStatus | 5.11.2.5.5.3 | M |  |
| dmsLampStatus | 5.11.2.5.5.4 | M |  |
| dmsLampPixelTop | 5.11.2.5.5.5 | M |  |
| dmsLampPixelLeft | 5.11.2.5.5.6 | M |  |
| dmsLampPixelBottom | 5.11.2.5.5.7 | M |  |
| dmsLampPixelRight | 5.11.2.5.5.8 | M |  |
| ***Drum Status Data*** | ***5.11.2.6*** | ***O*** | ***Note: None of the objects under 5.11.2.6 are required.*** |
| dmsDrumStatusMap | 5.11.2.6.1 | M |  |
| dmsDrumNumRows | 5.11.2.6.2 | M |  |
| dmsDrumStatusTable | 5.11.2.6.3 | M |  |
| dmsDrumIndex | 5.11.2.6.3.1 | M |  |
| dmsDrumDescription | 5.11.2.6.3.2 | M |  |
| dmsDrumMfrStatus | 5.11.2.6.3.3 | M |  |
| dmsDrumStatus | 5.11.2.6.3.4 | M |  |
| ***Light Sensor Status Data*** | ***5.11.2.7*** | ***M*** |  |
| dmsLightSensorStatusMap | 5.11.2.7.1 | M |  |
| dmsLightSensorNumRows | 5.11.2.7.2 | M |  |
| dmsLightSensorStatusTable | 5.11.2.7.3 | M |  |
| dmsLightSensorIndex | 5.11.2.7.3.1 | M |  |
| dmsLightSensorDescription | 5.11.2.7.3.2 | M |  |
| dmsLightSensorCurrentReading | 5.11.2.7.3.3 | M |  |
| dmsLightSensorStatus | 5.11.2.7.3.4 | M |  |
| ***Humidity Data*** | ***5.11.2.8*** | ***M*** |  |
| dmsHumiditySensorStatusMap | 5.11.2.8.1 | M |  |
| dmsHumiditySensorNumRows | 5.11.2.8.2 | M |  |
| dmsHumiditySensorStatusTable | 5.11.2.8.3 | M |  |
| dmsHumiditySensorIndex | 5.11.2.8.3.1 | M |  |
| dmsHumiditySensorDescription | 5.11.2.8.3.2 | M |  |
| dmsHumiditySensorCurrentReading | 5.11.2.8.3.3 | M |  |
| dmsHumiditySensorStatus | 5.11.2.8.3.4 | M |  |
| ***Temperature Sensor Data*** | ***5.11.2.9*** | ***M*** |  |
| dmsTempSensorStatusMap | 5.11.2.9.1 | M |  |
| dmsTempSensorNumRows | 5.11.2.9.2 | M |  |
| dmsTempSensorStatusTable | 5.11.2.9.3 | M |  |
| dmsTempSensorIndex | 5.11.2.9.3.1 | M |  |
| dmsTempSensorDescription | 5.11.2.9.3.2 | M |  |
| dmsTempSensorCurrentReading | 5.11.2.9.3.3 | M |  |
| dmsTempSensorHighWarningTemperature | 5.11.2.9.3.4 | M |  |
| dmsTempSensorLowWarningTemperature | 5.11.2.9.3.5 | M |  |
| dmsTempSensorHighCriticalTemperature | 5.11.2.9.3.6 | M |  |
| dmsTempSensorLowCriticalTemperature | 5.11.2.9.3.7 | M |  |
| dmsTempSensorStatus | 5.11.2.9.3.8 | M |  |
| dmsTempSensorHighestCriticalTempThreshold | 5.11.2.9.4 | M |  |
| dmsTempSensorLowestCriticalTempThreshold | 5.11.2.9.5 | M |  |
| ***statPower*** | ***5.11.3*** | ***M*** |  |
| signVolts | 5.11.3.1 | M |  |
| lowFuelThreshold | 5.11.3.2 | O |  |
| fuelLevel | 5.11.3.3 | O |  |
| engineRPM | 5.11.3.4 | O |  |
| lineVolts | 5.11.3.5 | M |  |
| powerSource | 5.11.3.6 | M |  |
| ***statTemp*** | ***5.11.4*** | ***M*** |  |
| tempMinCtrlCabinet | 5.11.4.1 | M |  |
| tempMaxCtrlCabinet | 5.11.4.2 | M |  |
| tempMinAmbient | 5.11.4.3 | M |  |
| tempMaxAmbient | 5.11.4.4 | M |  |
| tempMinSignHousing | 5.11.4.5 | M |  |
| tempMaxSignHousing | 5.11.4.6 | M |  |
| tempSensorWarningMap | 5.11.4.7 | M |  |
| tempSensorCriticalTempMap | 5.11.4.8 | M |  |
| **graphicDefinition** | **5.12** | **M** |  |
| dmsGraphicMaxEntries | 5.12.1 | M |  |
| dmsGraphicNumEntries | 5.12.2 | M |  |
| dmsGraphicMaxSize | 5.12.3 | M | FDOT permits values larger than 65535 in order for this object to accurately reflect the true capabilities of the sign. |
| availableGraphicMemory | 5.12.4 | M |  |
| dmsGraphicBlockSize | 5.12.5 | M |  |
| dmsGraphicTable | 5.12.6 | M |  |
| dmsGraphicIndex | 5.12.6.1 | M |  |
| dmsGraphicNumber | 5.12.6.2 | M |  |
| dmsGraphicName | 5.12.6.3 | M |  |
| dmsGraphicHeight | 5.12.6.4 | M |  |
| dmsGraphicWidth | 5.12.6.5 | M |  |
| dmsGraphicType | 5.12.6.6 | M |  |
| dmsGraphicID | 5.12.6.7 | M |  |
| dmsGraphicTransparentEnabled | 5.12.6.8 | M |  |
| dmsGraphicTransparentColor | 5.12.6.9 | M |  |
| dmsGraphicStatus | 5.12.6.10 | M |  |
| dmsGraphicBitmapTable | 5.12.7 | M |  |
| dmsGraphicBitmapIndex | 5.12.7.1 | M |  |
| dmsGraphicBlockNumber | 5.12.7.2 | M |  |
| dmsGraphicBlockBitmap | 5.12.7.3 | M |  |
| **FDOT Specific Objects** | **FDOT-Specific DMS MIB v02** | **M** |  |
| fdotPowerSupplyFailures |  | O |  |
| fdotPowerSupplyTableRows |  | O |  |
| fdotPowerSupplyTable |  | O |  |
| fdotPowerSupplyNumber |  | O |  |
| fdotPowerSupplyType |  | O |  |
| fdotPowerSupplyDescription |  | O |  |
| fdotPowerSupplyVoltage |  | O |  |
| fdotPowerSupplyStatus |  | O |  |
| fdotCriticalMaxTemperature |  | O |  |
| fdotDmsMaxPollTime |  | M |  |
| fdotDmsErrorGenerationToggle |  | M |  |
| fdotMaxNumPixelFailure |  | M |  |
| fdotLongPowerLossTime |  | O |  |
| dmsLongPowerLossMessage |  | O |  |
| fdotLog90Full |  | M |  |
| dmsNoActivityTime |  | O |  |
| fdotMsgSourceModeExtension |  | M |  |
| **globalConfiguration** | **NTCIP 1201v0315r**  **2.2** | **M** |  |
| globalSetIDParameter | 2.2.1 | M |  |
| globalMaxModules | 2.2.2 | M | The device must support at least two modules. At least one must be software version information. At least one must be hardware version information. |
| globalModuleTable | 2.2.3 | M |  |
| moduleNumber | 2.2.3.1 | M |  |
| moduleDeviceNode | 2.2.3.2 | M |  |
| moduleMake | 2.2.3.3 | M |  |
| moduleModel | 2.2.3.4 | M |  |
| moduleVersion | 2.2.3.5 | M |  |
| moduleType | 2.2.3.6 | M |  |
| controllerBaseStandards | 2.2.4 | M |  |
| **globalDBManagement** | **2.3** | **O** | **Note: None of the objects under 2.3 are required.** |
| dbCreateTransaction | 2.3.1 | M |  |
| dbErrorType | 2.3.2 | D |  |
| dbErrorID | 2.3.3 | D |  |
| dbTransactionID | 2.3.4 | D |  |
| dbMakeID | 2.3.5 | D |  |
| dbVerifyStatus | 2.3.6 | M |  |
| dbVerifyError | 2.3.7 | M |  |
| **globalTimeManagement** | **2.4** | **M** |  |
| globalTime | 2.4.1 | M |  |
| globalDaylightSaving | 2.4.2 | M |  |
| **timeBase** | **2.4.3** | **O** | **Note: None of the objects under 2.4.3 are required.** |
| maxTimeBaseScheduleEntries | 2.4.3.1 | M |  |
| timeBaseScheduleTable | 2.4.3.2 | M |  |
| timeBaseScheduleNumber | 2.4.3.2.1 | M |  |
| timeBaseScheduleMonth | 2.4.3.2.2 | M |  |
| timeBaseScheduleDay | 2.4.3.2.3 | M |  |
| timeBaseScheduleDate | 2.4.3.2.4 | M |  |
| timeBaseScheduleDayPlan | 2.4.3.2.5 | M |  |
| ***Day Plan Parameters*** | ***2.4.4*** | ***O*** | ***Note: 2.4.4 through 2.4.4.5 are not required.*** |
| maxDayPlans | 2.4.4.1 | M |  |
| maxDayPlanEvents | 2.4.4.2 | M |  |
| timeBaseDayPlanTable | 2.4.4.3 | M |  |
| dayPlanNumber | 2.4.4.3.1 | M |  |
| dayPlanEventNumber | 2.4.4.3.2 | M |  |
| dayPlanHour | 2.4.4.3.3 | M |  |
| dayPlanMinute | 2.4.4.3.4 | M |  |
| dayPlanActionNumberOID | 2.4.4.3.5 | M |  |
| dayPlanStatus | 2.4.4.4 | M |  |
| timeBaseScheduleTableStatus | 2.4.4.5 | M |  |
| globalLocalTimeDifferential | 2.4.5 | D |  |
| controllerStandardTimeZone | 2.4.6 | M |  |
| controllerLocalTime | 2.4.7 | M |  |
| ***daylightSavingNode*** | ***2.4.8*** | ***M*** |  |
| maxDaylightSavingEntries | 2.4.8.1 | M |  |
| dstTable | 2.4.8.2 | M |  |
| dstEntryNumber | 2.4.8.2.1 | M |  |
| dstBeginMonth | 2.4.8.2.2 | M |  |
| dstBeginOccurrences | 2.4.8.2.3 | M |  |
| dstBeginDayOfWeek | 2.4.8.2.4 | M |  |
| dstBeginDayOfMonth | 2.4.8.2.5 | M |  |
| dstBeginSecondsToTransition | 2.4.8.2.6 | M |  |
| dstEndMonth | 2.4.8.2.7 | M |  |
| dstEndOccurrences | 2.4.8.2.8 | M |  |
| dstEndDayOfWeek | 2.4.8.2.9 | M |  |
| dstEndDayOfMonth | 2.4.8.2.10 | M |  |
| dstEndSecondsToTransition | 2.4.8.2.11 | M |  |
| dstSecondsToAdjust | 2.4.8.2.12 | M |  |
| **profilesPMPP** | **2.7** | **O** | **Note: None of the objects under 2.7 are required.** |
| maxGroupAddresses | 2.7.1 | M |  |
| hdlcGroupAddressTable | 2.7.2 | M |  |
| hdlcGroupAddressIndex | 2.7.2.1 | M |  |
| hdlcGroupAddress | 2.7.2.2 | D |  |
| hdlcGroupAddressNumber | 2.7.2.3 | M |  |
| **auxIOv2** | **2.9** | **O** | **Note: None of the objects under 2.9 are required.** |
| maxAuxIOv2TableNumDigitalPorts | 2.9.1 | M |  |
| maxAuxIOv2TableNumAnalogPorts | 2.9.2 | M |  |
| auxIOv2Table | 2.9.3 | M |  |
| auxIOv2PortType | 2.9.3.1 | M |  |
| auxIOv2PortNumber | 2.9.3.2 | M |  |
| auxIOv2PortDescription | 2.9.3.3 | M |  |
| auxIOv2PortResolution | 2.9.3.4 | M |  |
| auxIOv2PortValue | 2.9.3.5 | M |  |
| auxIOv2PortDirection | 2.9.3.6 | M |  |
| auxIOv2PortLastCommandedState | 2.9.3.7 | M |  |
| **globalReport** | **NTCIP 1103v0217**  **A.7.1** | **M** |  |
| maxEventClasses | A.7.2 | M | The device shall support a minimum of 8 event classes. |
| eventClassTable | A.7.3 | M |  |
| eventClassNumber | A.7.3.1 | M |  |
| eventClassLimit | A.7.3.2 | M |  |
| eventClassClearTime | A.7.3.3 | M |  |
| eventClassDescription | A.7.3.4 | M |  |
| eventClassNumRowsInLog | A.7.3.5 | M |  |
| eventClassNumEvents | A.7.3.6 | M |  |
| maxEventLogConfigs | A.7.4 | M | The device shall support a minimum of 50 event log configurations. |
| eventLogConfigTable | A.7.5 | M |  |
| eventConfigID | A.7.5.1 | M |  |
| eventConfigClass | A.7.5.2 | M |  |
| eventConfigMode | A.7.5.3 | M | The device shall support at least onChange(2), greaterThanValue(3), smallerThanValue(4), and hysteresisBound(5). |
| eventConfigCompareValue | A.7.5.4 | M |  |
| eventConfigCompareValue2 | A.7.5.5 | M |  |
| eventConfigCompareOID | A.7.5.6 | M |  |
| eventConfigLogOID | A.7.5.7 | M |  |
| eventConfigAction | A.7.5.8 | M |  |
| eventConfigStatus | A.7.5.9 | M |  |
| maxEventLogSize | A.7.6 | M |  |
| eventLogTable | A.7.7 | M |  |
| eventLogClass | A.7.7.1 | M |  |
| eventLogNumber | A.7.7.2 | M |  |
| eventLogID | A.7.7.3 | M |  |
| eventLogTime | A.7.7.4 | M |  |
| eventLogValue | A.7.7.5 | M |  |
| numEvents | A.7.8 | M |  |
| **Security** | **A.8** | **M** |  |
| communityNameAdmin | A.8.1 | M |  |
| communityNamesMax | A.8.2 | M | The device shall support a minimum of 2 community names. |
| communityNameTable | A.8.3 | M |  |
| communityNameIndex | A.8.3.1 | M |  |
| communityNameUser | A.8.3.2 | M |  |
| communityNameAccessMask | A.8.3.3 | M |  |

**Table 3: Required MULTI Tags**

|  |  |
| --- | --- |
| **NTCIP 1203v02.39 Required MULTI Tag** | **Required Values** |
| [np] |  |
| [jpx] | 2, 3, 4 |
| [nlx] |  |
| [jlx] | 2, 3, 4, 5 |
| [cfx] or [cfr,g,b] |  |
| [pbz] or [pbr,g,b] |  |
| [crx,y,w,h,r,g,b] or [crx,y,w,h,z] |  |
| [fox] |  |
| [scx] |  |
| [ptxoy] |  |
| [fltxoy] |  |
| [fx,y] | X = 2, 3, 4, 7, 8, 9, 10, 11, 12, 13 |
| [gn] or [gn,x,y] or [gn,x,y,cccc] |  |
| [trx,y,w,h] |  |

**Document History**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Rev** | **Description** | **Authored and Checked** | **Reviewed** | **Approved** | **Approval Date** | **Rev More Stringent?** |
| 1.0 | Supplemental Requirements for Dynamic Message Signs | D. Vollmer | R. Meyer | J. Morgan | 10/20/2011 | N/A |
| 2.0 | Added content to NTCIP Requirements section. Edited document header. Changed 1203.02.39 to 1203v02.39 in Table 2. | D. Vollmer | R. Meyer | J. Morgan | 12/08/2011 | No |
| 3.0 | Added effective date of specification. | A. Burleson | J. Morgan | J. Morgan | 07/03/2012 | No |
| 4.0 | Adding a comment to allow signs to respond with an integer value larger than the standard allows. This is done because the standard is not keeping up with changes in technology. | D. Vollmer | J. Morgan | J. Morgan | 08/21/2014 | No |
| 5.0 | Changed document title to match new specification number. Revised document approver title. | A. Burleson  K. Moser | J. Morgan | J. Morgan | 11/04/2014 | No |
| 6.0 | Corrected error in “signControl” group. | D. Bremer | R. Brooks | D. Vollmer | 02/09/2022 | No |