

**KGM SİNYALİZASYON SİSTEMLERİ MIB DOKÜMANI**

Versiyon 0.4

|  |  |  |
| --- | --- | --- |
| **Versiyon Kontrol** | | |
| Versiyon | Değişiklik Yapan | Eklentiler |
| 0.1 | KGM | İlk sunum(Doküman oluşturma) |
| 0.2 | KGM | 28.12.2022 tarihli toplantı sonrası versiyon çalışmaları devam etmektedir. |
| 0.3 | KGM | 28.03.2022 tarihli toplantı sonrası versiyon çalışmaları devam etmektedir. |
| 0.3.SE | Sinyalizasyon Elektronik | KGM tarafından yayımlanan dökümanın MIB Derleyisinde derlenmesi sonucu ortaya çıkan hataların düzeltilmiş versiyonudur. |
| 0.4 | KGM | KGM tarafından yayımlanan dökümana gelen yorumlar neticesinde duzeltmelerin eklenmesi. 27.03.2024 |
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# **KGM ÖZEL NESNELER**

**Karayolları Genel Müdürlüğünce ülke sınırları içerisinde Kavşak Kontrol Cihazları üretimi ve/veya kontrol yazılımı sağlayan firmalar bir araya getirilerek yapılan çalışmalar sonucunda ortaya çıkan nesneler IANA "59873" şirket kodu altında toplanmıştır. Bu kod altında toplanan nesneler KGM bünyesinde kullanılan ya da kullanılacak tüm kavşak kontrol cihazlarında ortak olarak bulunacaktır.**

**59873 kodu IANA tarafından aşağıdaki şekilde kayıt altına alınmıştır. MIB nesne ağacında "kgm" nesnesi olarak tanımlanacaktır.**

|  |  |  |  |
| --- | --- | --- | --- |
| Decimal | Organization | Contact | Email |
| 59873 | Republic of Turkey General Directorate of Highways | Yalçın Özer | yozer2@kgm.gov.tr |

1 iso

1.3 org

1.3.6 dod

1.3.6.1 internet

1.3.6.1.4 private

1.3.6.1.4.1 enterprise

1.3.6.1.4.59873 kgm

**KGM tarafından kavşak kontrol cihazları için belirlenen ortak nesneler aşağıda belirtilen nesne ağacının altında tanımlanmıştır.**

transportation OBJECT IDENTIFIER ::= { kgm 4 }

kgmDevices OBJECT IDENTIFIER ::= { kgmTransportation 2 }

kgmAsc OBJECT IDENTIFIER ::= { kgmDevices 1 }

1.3.6.1.4.59873.4 kgmTransportation

1.3.6.1.4.59873.4.2 kgmDevices

1.3.6.1.4.59873.4.2.1 kgmAsc --[asc: actuated signal controllers]

**Özel ortak nesneler olarak 6 adet ana nesne belirlenmiştir.**

kgmModuleErrorStatus OBJECT IDENTIFIER ::= { kgmAsc 1 }

kgmChannel OBJECT IDENTIFIER ::= { kgmAsc 2 }

kgmSignalState OBJECT IDENTIFIER ::= { kgmAsc 3 }

kgmTrPattern OBJECT IDENTIFIER ::= { kgmAsc 4 }

kgmDetector OBJECT IDENTIFIER ::= { kgmAsc 5 }

kgmUser OBJECT IDENTIFIER ::= { kgmAsc 6 }

1.3.6.1.4.59873.4.2.1.1 kgmModuleErrorStatus

1.3.6.1.4.59873.4.2.1.2 kgmChannel

1.3.6.1.4.59873.4.2.1.3 kgmSignalState

1.3.6.1.4.59873.4.2.1.4 kgmTrPattern

1.3.6.1.4.59873.4.2.1.5 kgmDetector

1.3.6.1.4.59873.4.2.1.6 kgmUser

## **Modül Arıza Durum Parametreleri**

### **Maksimum Sürücü Modül Grup Durum Sayısı**

kgmMaxDriverModuleGroupStatus OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>

Maksimum surucu modul grup durum sayisi.

kgmTrafficLightFaultIndex maksimum değerini asamaz.

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.1.1"

::= { kgmModuleErrorStatus 1}

### **Sürücü modül durumu parametresi**

kgmDriverModuleGroupStatus OBJECT-TYPE

SYNTAX INTEGER (0..65535)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>

Surucu modulu durum bilgisi yer alir.

Modul grup numarasina gore 16 modul bilgisini icerir.

Bit = 0 ise modul calismiyor.

Bit = 1 ise modul calisiyor.

Bit 15: Module 16

Bit 14: Module 15

Bit 13: Module 14

Bit 12: Module 13

Bit 11: Module 12

Bit 10: Module 11

Bit 9 : Module 10

Bit 8 : Module 9

Bit 7 : Module 8

Bit 6 : Module 7

Bit 5 : Module 6

Bit 4 : Module 5

Bit 3 : Module 4

Bit 2 : Module 3

Bit 1 : Module 2

Bit 0 : Module 1

<Object Identifier>1.3.6.1.4.1.59873.4.2.1.1.2"

::= { kgmModuleErrorStatus 2 }

## **Kanal Parametreleri**

### **Maksimum Kanal Arıza Durum Sayısı**

kgmMaxTrafficLightFaultStatusGroups OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>Maksimum kanal ariza durum sayisi.

kgmTrafficLightFaultIndex maksimum degerini alamaz.

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.2.1"

::= { kgmChannel 1}

### **Kanal Arıza Durum Tablosu**

kgmTrafficLightFaultStatusTable OBJECT-TYPE

SYNTAX SEQUENCE OF kgmTrafficLightFaultStatusEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> Lamba grubunun ariza durum tablosu

<TableType> static

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.2.2"

::= { kgmChannel 2 }

#### Kanal arıza durum tablo kaydı

kgmTrafficLightFaultStatusEntry OBJECT-TYPE

SYNTAX kgmTrafficLightFaultStatusEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> Lamba grubunun ariza durum kaydı

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.2.2.1

<Unit> "

INDEX { kgmTrafficLightFaultIndex }

::= { kgmTrafficLightFaultStatusTable 1 }

kgmTrafficLightFaultStatusEntry ::= SEQUENCE {

kgmTrafficLightFaultIndex INTEGER,

kgmTrafficLightFaultChannelNumber INTEGER,

kgmTrafficLightFaultGreenStatus INTEGER,

kgmTrafficLightFaultYellowStatus INTEGER,

kgmTrafficLightFaultRedStatus INTEGER

}

##### Kanal arıza durum numara parametresi

kgmTrafficLightFaultIndex OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>ariza tablosu id bilgisi

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.2.2.1.1

<Unit> "

::= { kgmTrafficLightFaultStatusEntry 1 }

##### Kanal numarası parametresi

kgmTrafficLightFaultChannelNumber OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>Kanal tablosundaki channelNumber

(grup numarasi) bilgisini icerir.

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.2.2.1.2

<Unit>"

::= { kgmTrafficLightFaultStatusEntry 2 }

##### Trafik lambası yeşil arıza durumu parametresi

kgmTrafficLightFaultGreenStatus OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>

0: Arıza yok

Bit 1: Lamba arızası(Kritik olmayan)

Bit 2: Kritik lamba arızası

Bit 3: Tüm lamba arızası

Bit 4: Çakışma var

Bit 5: Kısa devre arızası (Sinyal çıkış anahtarı kısa devre sinyal grup çıkışı kısa devre veya haricen kablo kısa devresi)

Bit 6: Sinyal çıkış anahtarı açık devre / sinyal grup çıkışı açık devre

Bit 7: Rezerve

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.2.2.1.3

<Unit> "

::= { kgmTrafficLightFaultStatusEntry 3 }

##### Trafik lambası sarı arıza durumu parametresi

kgmTrafficLightFaultYellowStatus OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>

1 Byte

Bit 0: ariza yok

Bit 1: Lamba arizasi(Kritik olmayan) Bit 2: Kritik lamba arizasi

Bit 3: Tum lamba arizasi

Bit 4: Cakisma var

Bit 5: Kisa devre arizasi (Sinyal cikis anahtari kisa devre / sinyal grup cikisi kisa devre veya haricen kablo kisa devresi)

Bit 6: Sinyal cikis anahtari acik devre / sinyal grup cikisi acik devre

Bit 7: Rezerve

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.2.2.1.4

<Unit>"

::= { kgmTrafficLightFaultStatusEntry 4 }

##### Trafik lambası kırmızı arıza durumu parametresi

kgmTrafficLightFaultRedStatus OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>

1 Byte

Bit 0: ariza yok

Bit 1: Lamba arizasi(Kritik olmayan) Bit 2: Kritik lamba arizasi

Bit 3: Tum lamba arizasi

Bit 4: Cakisma var

Bit 5: Kisa devre arizasi (Sinyal cikis anahtari kisa devre / sinyal grup cikisi kisa devre veya haricen kablo kisa devresi)

Bit 6: Sinyal cikis anahtari acik devre / sinyal grup cikisi acik devre

Bit 7: Rezerve

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.2.2.1.5

<Unit>"

::= { kgmTrafficLightFaultStatusEntry 5 }

### **Maksimum Kanal Hata Bayrak Grup Sayısı**

kgmMaxChannelErrorFlagsGroups OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>

Maksimum kanal ariza durum sayisi. kgmTrafficLightFaultIndex maksimum degerini alamaz.

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.2.3"

::= { kgmChannel 3 }

### **Kanal Hata Bayrakları Grup Tablosu**

kgmChannelErrorFlagsTable OBJECT-TYPE

SYNTAX SEQUENCE OF kgmChannelErrorFlagsEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> Kanal hata durum bayraklari grup tablosu.

Tabloda ki her bir satir 8li gruplar halinde ifade edilebilecek sekilde organize edilmistir.

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.2.4

<Unit> group"

::= { kgmChannel 4 }

#### Kanal hata bayrakları grup tablo kaydı

kgmChannelErrorFlagsEntry OBJECT-TYPE

SYNTAX kgmChannelErrorFlagsEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition>

8li gruplar halinde kanal hata durum bayraklari.

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.2.4.1 "

INDEX { kgmErrorFlagsGroupNumber }

::= { kgmChannelErrorFlagsTable 1 }

kgmChannelErrorFlagsEntry ::= SEQUENCE {

kgmErrorFlagsGroupNumber INTEGER,

kgmRedLampAllFailure INTEGER,

kgmGreenLampAllFailure INTEGER,

kgmYellowLampAllFailure INTEGER,

kgmUndesiredRedSignal INTEGER,

kgmUndesiredGreenSignal INTEGER,

kgmUndesiredYellowSignal INTEGER

}

##### Kanal hata bayrakları grup numarası

kgmErrorFlagsGroupNumber OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>

Ilgili tablo satirinda ki Kanal hata bayraklari grup numarasi.

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.2.4.1.1

<Unit>"

::= { kgmChannelErrorFlagsEntry 1 }

##### Tüm kırmızı lamba arıza durumu

kgmRedLampAllFailure OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>

Kanal Kirmizi ariza durumlari

Bit=1 ise ilgili kanal kopuk flaman arizasi var.

Bit=0 ise ilgili kanal arizasi yok.

Bit 7: Channel# = (errorgroupNumber \* 8)

Bit 6: Channel# = (errorgroupNumber \* 8) - 1

Bit 5: Channel# = (errorgroupNumber \* 8) - 2

Bit 4: Channel# = (errorgroupNumber \* 8) - 3

Bit 3: Channel# = (errorgroupNumber \* 8) - 4

Bit 2: Channel# = (errorgroupNumber \* 8) - 5

Bit 1: Channel# = (errorgroupNumber \* 8) - 6

Bit 0: Channel# = (errorgroupNumber \* 8) - 7

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.2.4.1.2

<Unit>"

::= { kgmChannelErrorFlagsEntry 2 }

##### Tüm yeşil lamba arıza durumu

kgmGreenLampAllFailure OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>

Kanal Yesil ariza durumlari

Bit=1 ise ilgili kanal kopuk flaman arizasi var.

Bit=0 ise ilgili kanal arizasi yok.

Bit 7: Channel# = (errorgroupNumber \* 8)

Bit 6: Channel# = (errorgroupNumber \* 8) - 1

Bit 5: Channel# = (errorgroupNumber \* 8) - 2

Bit 4: Channel# = (errorgroupNumber \* 8) - 3

Bit 3: Channel# = (errorgroupNumber \* 8) - 4

Bit 2: Channel# = (errorgroupNumber \* 8) - 5

Bit 1: Channel# = (errorgroupNumber \* 8) - 6

Bit 0: Channel# = (errorgroupNumber \* 8) - 7

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.2.4.1.3

<Unit> "

::= { kgmChannelErrorFlagsEntry 3 }

##### Tüm sarı lamba arıza durumu

kgmYellowLampAllFailure OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>

Kanal Sari ariza durumlari

Bit=1 ise ilgili kanalda kopuk flaman arizasi var.

Bit=0 ise ilgili kanal arizasi yok.

Bit 7: Channel # = (errorgroupNumber \* 8)  
Bit 6: Channel # = (errorgroupNumber \* 8) - 1  
Bit 5: Channel # = (errorgroupNumber \* 8) - 2  
Bit 4: Channel # = (errorgroupNumber \* 8) - 3  
Bit 3: Channel # = (errorgroupNumber \* 8) - 4  
Bit 2: Channel # = (errorgroupNumber \* 8) - 5  
Bit 1: Channel # = (errorgroupNumber \* 8) - 6  
Bit 0: Channel # = (errorgroupNumber \* 8) – 7

<Object Identifier> 1.3.6.1.3.1.59873.4.2.1.2.4.1.4

<Unit> "

::= { kgmChannelErrorFlagsEntry 4 }

##### İstemsiz kırmızı sinyal

kgmUndesiredRedSignal OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>

Kanal Istemsiz Kirmizi sinyal durumlari

Bit=1 ise ilgili kanalda kopuk flaman arizasi var.

Bit=0 ise ilgili kanal arizasi yok.

Bit 7: Channel# = (errorgroupNumber \* 8)

Bit 6: Channel# = (errorgroupNumber \* 8) - 1

Bit 5: Channel# = (errorgroupNumber \* 8) - 2

Bit 4: Channel# = (errorgroupNumber \* 8) - 3

Bit 3: Channel# = (errorgroupNumber \* 8) - 4

Bit 2: Channel# = (errorgroupNumber \* 8) - 5

Bit 1: Channel# = (errorgroupNumber \* 8) - 6

Bit 0: Channel# = (errorgroupNumber \* 8) - 7

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.2.4.1.5

<Unit> "

::= { kgmChannelErrorFlagsEntry 5 }

##### İstemsiz yeşil sinyal

kgmUndesiredGreenSignal OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>

Kanal Istemsiz yesil sinyal durumlari

Bit=1 ise ilgili kanalda istemsiz sinyal vardir.

Bit=0 ise ilgili kanalda istemsiz sinyal yoktur.

Bit 7: Channel# = (errorgroupNumber \* 8)

Bit 6: Channel# = (errorgroupNumber \* 8) - 1

Bit 5: Channel# = (errorgroupNumber \* 8) - 2

Bit 4: Channel# = (errorgroupNumber \* 8) - 3

Bit 3: Channel# = (errorgroupNumber \* 8) - 4

Bit 2: Channel# = (errorgroupNumber \* 8) - 5

Bit 1: Channel# = (errorgroupNumber \* 8) - 6

Bit 0: Channel# = (errorgroupNumber \* 8) - 7

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.2.4.1.6

<Unit> "

::= { kgmChannelErrorFlagsEntry 6 }

##### İstemsiz sarı sinyal

kgmUndesiredYellowSignal OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>

Kanal Istemsiz sari sinyal durumlari

Bit=1 ise ilgili kanalda istemsiz sinyal vardir.

Bit=0 ise ilgili kanalda istemsiz sinyal yoktur.

Bit 7: Channel# = (errorgroupNumber \* 8)

Bit 6: Channel# = (errorgroupNumber \* 8) - 1

Bit 5: Channel# = (errorgroupNumber \* 8) - 2

Bit 4: Channel# = (errorgroupNumber \* 8) - 3

Bit 3: Channel# = (errorgroupNumber \* 8) - 4

Bit 2: Channel# = (errorgroupNumber \* 8) - 5

Bit 1: Channel# = (errorgroupNumber \* 8) - 6

Bit 0: Channel# = (errorgroupNumber \* 8) - 7

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.2.4.1.7

<Unit> "

::= { kgmChannelErrorFlagsEntry 7 }

## **Sinyal Durum Parametreleri**

### **Maksimum Sinyal Durum Sayısı**

kgmMaxSignalState OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>

Maksimum sinyal durum sayisina esittir. signalStateIndex maksimum degerini asamaz

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.3.1"

::= { kgmSignalState 1 }

### **Sinyal Durum Tablosu**

kgmSignalStateTable OBJECT-TYPE

SYNTAX SEQUENCE OF kgmSignalStateEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> Sinyal durum tablosu

<TableType> static

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.3.2"

::= { kgmSignalState 2 }

#### Sinyal durum tablo kaydı

kgmSignalStateEntry OBJECT-TYPE

SYNTAX SignalStateEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> Sinyal durum tablo kaydı

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.3.2.1

<Unit> "

INDEX { kgmSignalStateIndex }

::= { kgmSignalStateTable 1 }

kgmSignalStateEntry ::= SEQUENCE {

kgmSignalStateIndex INTEGER,

kgmSignalStatePatternNo INTEGER,

kgmSignalStateExecMode INTEGER,

kgmSignalStatePlanMode INTEGER,

kgmSignalStateStructure INTEGER,

kgmSignalStatePlan INTEGER,

kgmSignalStatePhase OCTET STRING,

kgmSignalStateNextPhase OCTET STRING,

kgmSignalStateStep INTEGER,

kgmSignalStateTransitionFlag INTEGER,

kgmSignalStateTransitionStep INTEGER,

kgmSignalStateElapsedTime OCTET STRING,

kgmSignalStateRemainingTime OCTET STRING,

kgmSignalStateStepTime INTEGER,

kgmSignalStateCycleTime INTEGER,

kgmPatternTimeToNextCycle INTEGER,

kgmSignalPlanLastChangeTime Counter

}

##### Sinyal durum tablosu indeks parametresi

kgmSignalStateIndex OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> Sinyal durum tablosu id bilgisi

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.3.2.1.1

<Unit> "

::= { kgmSignalStateEntry 1 }

##### Patern numara parametresi

kgmSignalStatePatternNo OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>

Sinyal durum tablosu patern numara bilgisi.

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.3.2.1.2

<Unit> "

::= { kgmSignalStateEntry 2 }

##### Yürütülen mod parametresi

kgmSignalStateExecMode OBJECT-TYPE

SYNTAX INTEGER {

none (0),

init(1),

initialFlash(2),

program(3),

flash(4),

failFlash(5),

allYellow(6),

allRed(7),

allDark(8),

testOutputs(9),

programError(10),

testSignalPlan(11)

}

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> Hangi modda oldugu bilgisini icerir.

Cihaz program modunda ise detayda hangi modda calistigi bilgisi kgmSignalStatePlanMode nesnesinden okunur.

None (0)

Init(1): Cihaz yeni acildi henuz cikislari surmeye baslamadi

InitialFlash(2): Cihaz yeni acilmis veya yapi degisikligi olmus ve baslangic flasi yapiyor.

Program(3): Cihaz haftalik plandaki duzene gore calisiyor.

Flash(4): Cihaz flas moduna zorlanmis

FailFlash(5): Cihaz arizi bir durumdan dolayi flas moduna gecmis

AllYellow(6): Tum cikislar sari

AllRed(7): Tum cikislar kirmizi

AllDark(8): Tum cikislar sonuk

TestOutputs(9): cikislarin lambalara dogru bir sekilde baglanip baglanmadigini kontrol etmek icin sira ile her bir cikisa yesil, sari, kirmizi, kirmizi sari renklerinin verilmesidir.

ProgramError(10): Sinyal programcisi tarafindan yuklenen sinyal planinda bir hata olmasi durumunda gecilen mod.

TestSignalPlan(11): Bu modda sinyal cikislari kapalidir. Diger her sey program modunda calismaktadir.

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.3.2.1.3

<Unit> "

::= { kgmSignalStateEntry 3 }

##### Planlanan mod parametresi

kgmSignalStatePlanMode OBJECT-TYPE

SYNTAX INTEGER {

fixedPlan(0),

halfActuated(1),

fullyActuated(2),

centralAdaptive(3),

flashing(4),

dark(5),

localAdaptive(6),

}

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>

FixedPlan(0): Multi Plan(sabit sureli), sensorler devre disidir.

Faz sureleri haftalik planda belirlenen surelere gore degismektedir.

HalfActuated(1): Kavsagin bazi kollarinda sensor bulunmakta(loop dedektor,

yaya butonu vb.) bazi kollarinda ise sensor bulunmayabilmektedir. Sinyal planindaki bazi

fazlar istenirse pas gecilebilmektedir.

FullyActuated(2): Kavsagin butun kollarinda sensor bulunmaktadir. Sinyal planindaki butun fazlar acilmakta ve talep olmasi durumunda max sureye kadar calistirilmaktadir.

CentralAdaptive(3): Bu modda plan sureleri merkezi bir program tarafindan uretilmekte ve cihaz tarafindan uygulanmaktadir.

Flashing(4): Flasli calisma(Gece flasi gibi)

Dark(5): Cikislarin kapali oldugu mod(Sadece belli saatlerde isletilen kavsaklarin olmasi durumu)

LocalAdaptive(6): Bu modda plan sureleri lokalde cihaz tarafindan uretilmekte ve uygulanmaktadir.

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.3.2.1.4

<Unit> "

::= { kgmSignalStateEntry 4 }

##### Yapı parametresi

kgmSignalStateStructure OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>Calismakta olan yapi numarasi.

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.3.2.1.5

<Unit> "

::= { kgmSignalStateEntry 5 }

##### Plan parametresi

kgmSignalStatePlan OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>Calismakta olan plan numarasi.

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.3.2.1.6

<Unit> "

::= { kgmSignalStateEntry 6 }

##### Faz parametresi

kgmSignalStatePhase OBJECT-TYPE

SYNTAX OCTET STRING

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>

Turkiyedeki faza karsiliktir.

Calismakta olan faz veya fazlar.

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.3.2.1.7

<Unit> phase"

::= { kgmSignalStateEntry 7 }

##### Sonraki faz parametresi

kgmSignalStateNextPhase OBJECT-TYPE

SYNTAX OCTET STRING

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>

Bir sonraki fazi veya fazlari ifade eder.

<Object Identifier>

1.3.6.1.4.1.59873.4.2.1.3.2.1.8

<Unit> phase"

::= { kgmSignalStateEntry 8 }

##### Adım parametresi

kgmSignalStateStep OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>Calismakta olan adim

0 yada 255 = Uygulanamaz

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.3.2.1.9

<Unit> step "

::= { kgmSignalStateEntry 9 }

##### Geçiş adımı bayrak parametresi

kgmSignalStateTransitionFlag OBJECT-TYPE

SYNTAX INTEGER (0..1)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>

Calismakta olan adimin gecis adimi olup olmadigi bilgisini icerir.

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.3.2.1.10

<Unit> flag"

::= { kgmSignalStateEntry 10 }

##### Geçiş adımı parametresi

kgmSignalStateTransitionStep OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>Gecis adimi numarasi

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.3.2.1.11

<Unit> step"

::= { kgmSignalStateEntry 11 }

##### Mevcut adım geçen süre parametresi

kgmSignalStateElapsedTime OBJECT-TYPE

SYNTAX OCTET STRING

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>

Mevcut adim veya adimlarin basladigi andan itibaren gecen sure

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.3.2.1.12

<Unit> second"

::= { kgmSignalStateEntry 12 }

##### Mevcut adım kalan süre parametresi

kgmSignalStateRemainingTime OBJECT-TYPE

SYNTAX OCTET STRING

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> Mevcut adim veya adimlarin kalan suresi

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.3.2.1.13

<Unit> second"

::= { kgmSignalStateEntry 13 }

##### Toplam adım süresi parametresi

kgmSignalStateStepTime OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> Adimin toplam suresi

0 yada 255 = Uygulanamaz

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.3.2.1.14

<Unit> second"

::= { kgmSignalStateEntry 14 }

##### Devre süresi parametresi

kgmSignalStateCycleTime OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>

Devre suresi

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.3.2.1.15

<Unit> second"

::= { kgmSignalStateEntry 15 }

##### Yeşil dalga kalan süre parametresi

kgmPatternTimeToNextCycle OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>

Yesil dalga durumunda sonraki peryodun baslangicina kalan sure(sn).

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.3.2.1.16

<Unit> second"

::= { kgmSignalStateEntry 16 }

### **Sinyal Planı Son Değişim Zaman Bilgisi**

kgmSignalPlanLastChangeTime OBJECT-TYPE

SYNTAX Counter

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>

Sinyal planinin son degistirildigi zaman bilgisi

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.3.3

<Unit> second"

::= { kgmSignalState 3 }

## **Pattern Parametreleri**

### **Maksimum Pattern Sayısı**

kgmMaxTrPattern OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>

Maksimum pattern sayisina esittir.

patternIndex maksimum degerini asamaz

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.4.1"

::= { kgmTrPattern 1 }

### **Pattern Tablosu**

kgmTrPatternTable OBJECT-TYPE

SYNTAX SEQUENCE OF kgmTrPatternEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition>

Pattern parametrelerini iceren tablodur. Tablo satir sayisi maxPatterns degerini gecemez.

<TableType> static

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.4.2"

::= { kgmTrPattern 2 }

kgmTrPatternEntry OBJECT-TYPE

SYNTAX kgmTrPatternEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION

"<Definition>

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.4.2.1"

<Unit> "

INDEX { kgmSubJunctionNumber, kgmPatternIndex }

::= { kgmTrPatternTable 1 }

kgmTrPatternEntry::= SEQUENCE {

kgmSubJunctionNumber INTEGER,

kgmPatternPriority INTEGER,

kgmPatternNo INTEGER,

kgmPatternPlanMode INTEGER,

kgmPatternExtendedMode INTEGER,

kgmPatternSequenceNumber INTEGER,

kgmPatternSplitNumber INTEGER,

kgmPatternCoordStatus INTEGER,

kgmPatternOutputSupervision INTEGER,

kgmPatternSpecialParameterTableIndex INTEGER,

}

##### Alt kavşak numarası

kgmSubJunctionNumber OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> Sinyal programlama tablosu alt kavsak id bilgisi

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.4.2.1.1

<Unit> "

::= { kgmTrPatternEntry 1 }

##### Pattern Priority Parameter

kgmPatternPriority OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>

Patternin öncelik seviyesini belirtir. Planlardan tetiklenebilecek farklı aksiyonların çakismasi durumunda karar öncelik parametresine dayalı olarak verilecektir. Dusuk deger yuksek onceligi temsil eder. “0” degeri onceliklendirilmedigini belirtir.

0: Öncelik atanmamış

1 - 254: Öncelik seviyesi

255: Devre dışı

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.4.2.1.2

<Unit> "

::= { kgmTrPatternEntry 2 }

##### Pattern Number Parameter

kgmPatternNo OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>

Pattern Tablo ID numarası.

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.4.2.1.3

<Unit> "

::= { kgmTrPatternEntry 3 }

##### Pattern plan mod parametresi

kgmPatternPlanMode OBJECT-TYPE

SYNTAX INTEGER {

fixedPlan(0),

halfActuated(1),

fullyActuated(2),

centralAdaptive(3),

flashing(4),

dark(5),

localAdaptive(6),

extendedMod(7)

}

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>

FixedPlan(0): Multi Plan(sabit sureli), sensorler devre disidir.

Faz sureleri haftalik planda belirlenen surelere gore degismektedir.

**HalfActuated(1):** Kavsagin bazi kollarinda sensor bulunmakta(loop dedektor, yaya butonu vb.) bazi kollarinda ise sensor bulunmayabilmektedir. Sinyal planindaki bazi fazlar istenirse pas gecilebilmektedir.

**FullyActuated(2):** Kavsagin butun kollarinda sensor bulunmaktadir. Sinyal planindaki butun fazlar acilmakta ve talep olmasi durumunda max sureye kadar calistirilmaktadir.

**CentralAdaptive(3):** Bu modda plan sureleri merkezi bir program tarafindan uretilmekte ve cihaz tarafindan uygulanmaktadir.

**Flashing(4):** Flasli calisma(Gece flasi gibi)

**Dark(5):** Cikislarin kapali oldugu mod(Sadece belli saatlerde isletilen kavsaklarin olmasi durumu)

**LocalAdaptive(6):** Bu modda plan süreleri lokalde cihaz tarafından üretilmekte ve uygulanmaktadır.

**Extended Mod(7):** Bu modda cihaz manuelinde referans verilen ve aciklannan modlar icin ExtendedMod parametresinde ki referans devrededir.

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.4.2.1.4

<Unit> "

::= { kgmTrPatternEntry 4 }

##### Pattern genişletilmiş mod parametresi

kgmPatternExtendedMode OBJECT-TYPE

SYNTAX INTEGER (1…255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>

Hangi ek çalışma modlarının desteklendiği ayrıntısı için, üretici cihaz manueline basvurulur.

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.4.2.1.5

<Unit> "

::= { kgTrPatternEntry 5 }

##### Pattern Sequence Number Parameter

kgmPatternSequenceNumber OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> This object is used to locate information in the sequenceTable to use with this pattern. This value shall not exceed the maxSequences object value.

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.4.2.1.6

<Unit> "

::= { kgmTrPatternEntry 6 }

##### Pattern Split Number Parameter

kgmPatternOutputSupervision OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition>

This object is used to locate information in the splitTable to use for this pattern. This value shall not exceed the maxSplits object value.

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.4.2.1.7

<Unit> "

::= { kgmTrPatternEntry 7 }

##### Pattern Coord Status Parameter

kgmPatternCoordStatus OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition>

0: Yeşil dalga uygulanmayacaktır.

1 - 254: Uygulanacak Koordinasyon Parametre Numarası

255: Yeşil dalga ile ilgili bir değişiklik olmayacak.

Mevcut duruma devam edilecektir.

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.4.2.1.8

<Unit> "

::= { kgmTrPatternEntry 8 }

##### Pattern sinyal çıkış arıza durum parametresi

kgmPatternOutputSupervision OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition>

Sinyal cikislari ariza kontrolunu devreye almak veya devre disi birakmak icin kullanilir.

0: Devre disi

1: Devrede

2: Degisiklik yok.

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.4.2.1.9

<Unit> "

::= { kgmTrPatternEntry 9 }

##### Pattern Özel Parametre Indexi

kgmPatternSpecialParameterTableIndex OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition>

Sinyal çıkışları arıza kontrolünü devreye almak veya devre dışı bırakmak için kullanılır.

0: Özel Parametre Yok

1 - 254: Özel Parametre Tablo indeksi

255: Özel Parametre Yok

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.4.2.1.10

<Unit> "

::= { kgmTrPatternEntry 10 }

### **Max Coord Sayısı**

kgmMaxCoord OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>

Maksimum kgm koordinasyon parametre sayisi.

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.4.3"

::= { kgmTrPattern 3 }

### **1.4.4 Coord Tablosu**

kgmTrCoordTable OBJECT-TYPE

SYNTAX SEQUENCE OF kgmTrCoordEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition>

<TableType> static

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.4.4

::= { kgmTrPattern 4 }

kgmTrCoordEntry OBJECT-TYPE

SYNTAX kgmTrCoordEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition>

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.4.4.1

<Unit> " INDEX {kgmCoordNumber}

::= { kgmTrCoordTable 1 }

kgmTrCoordEntry::= SEQUENCE {

kgmCoordNumber INTEGER,

kgmCoordCycleTime INTEGER,

kgmCoordGeneralOffsetTime INTEGER,

kgmCoordPhaseId01 INTEGER,

kgmCoordPhase01minDuration INTEGER,

kgmCoordOffset01 INTEGER,

kgmCoordReturnPhaseId01 INTEGER,

kgmCoordPhaseId02 INTEGER,

kgmCoordPhase02minDuration INTEGER,

kgmCoordOffset02 INTEGER,

kgmCoordReturnPhaseId02 INTEGER,

}

##### Coord Indeks Numarası

kgmCoordNumber OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition>

Koordinasyon tablo indeks numarası

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.4.4.1.1

<Unit> coord"

::= { kgmTrCoordEntry 1 }

##### Devre Süresi Parametresi

kgmCoordCycleTime OBJECT-TYPE

SYNTAX INTEGER (0..65535)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition>

Yeşil dalga devre süresinin saniye cinsinden degeridir.

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.4.4.1.2

<Unit> second"

::= { kgmTrCoordEntry 2 }

##### Genel Ofset Parametresi

kgmCoordGeneralOffsetTime OBJECT-TYPE

SYNTAX INTEGER (0.. 65535)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition>

Yeşil dalga uygulamasi icin Referans devre baslangic ofseti degeri. Ofset degeri gece 00:00:00 ani itibari ile saniye cinsinden ifade edilir.

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.4.4.1.3

<Unit> second "

::= { kgmTrCoordEntry 3 }

##### Faz Parametresi 01

kgmCoordPhaseId01 OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition>

Yesil dalga faz numarası. Yesil dalga uygulaması belirtilen faz referans alınarak yapılır.

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.4.4.1. 4

<Unit> phase"

::= { kgmTrCoordEntry 4 }

##### Minimum Faz Süresi Parametresi 01

kgmCoordPhase01minDuration OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition>

Yesil dalga uygulamasi icin fazin minimum isletilecek yesil suresinin saniye cinsinden degeridir.

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.4.4.1. 5

<Unit> second "

::= { kgmTrCoordEntry 5 }

##### Ofset 01 Parametresi

kgmCoordOffset01 OBJECT-TYPE

SYNTAX INTEGER (0.. 255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition>

Yesil dalga ofset parametresi. Devre baslangicina referansla uygulanacak ofset degerinin saniye cinsinden ifadesidir.

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.4.4.1.6

<Unit> second "

::= { kgmTrCoordEntry 6 }

##### Dönüş Faz Numarası Parametresi 01

kgmCoordReturnPhaseId01 OBJECT-TYPE

SYNTAX INTEGER (0.. 255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition>

Yesil dalga donus fazi numarası. Uygulanan 1. yesil dalga Fazi sonrasi varsa donulecek fazin numarasini belirtir. “0” degeri donus fazinin uygulanmayacagi anlamina gelir.

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.4.4.1.7

<Unit> phase"

::= { kgmTrCoordEntry 7 }

##### Faz Numara Parametresi 02

kgmCoordPhaseId02 OBJECT-TYPE

SYNTAX INTEGER (0.. 255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition>

Yesil dalga ikinci yon faz numarası. Yesil dalga uygulaması belirtilen faz referans alınarak yapılır.

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.4.4.1.8

<Unit> phase"

::= { kgmTrCoordEntry 8 }

##### Minimum Faz Süresi Parametresi 02

kgmCoordPhase02minDuration OBJECT-TYPE

SYNTAX INTEGER (0.. 255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition>

Yesil dalga uygulamasi icin fazin minimum isletilecek yesil suresinin saniye cinsinden degeridir.

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.4.4.1. 9

<Unit> second"

::= { kgmTrCoordEntry 9 }

##### Ofset 02 Parametresi

kgmCoordOffset02 OBJECT-TYPE

SYNTAX INTEGER (0.. 255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition>

Yesil dalga ofset parametresi. Devre baslangicina referansla uygulanacak ofset degerinin saniye cinsinden ifadesidir.

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.4.4.1.10

<Unit> second"

::= { kgmTrCoordEntry 10 }

##### Donus Faz Numarasi Parametresi 02

kgmCoordReturnPhaseId02 OBJECT-TYPE

SYNTAX INTEGER (0.. 255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition>

Yesil dalga donus fazi numarası. Uygulanan 2. yesil dalga Fazi sonrasi varsa donulecek fazin numarasini belirtir. “0” degeri donus fazinin uygulanmayacagi anlamina gelir.

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.4.4.1.11

<Unit> phase"

::= { kgmTrCoordEntry 11 }

### **Sinyal Planını Devreye Alma**

kgmSignalPlanUpgrade OBJECT-TYPE

SYNTAX INTEGER (0..1)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>

Sinyal planini devreye alir.

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.4.5"

::= { kgmTrPattern 5 }

## **Dedektör Parametreleri**

#### Dedektör modülleri durumu parametresi

kgmDedectorModuleStatus OBJECT-TYPE

SYNTAX INTEGER (0..65535)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>

Dedektor modulu durum bilgisi yer alir.

Dedektor modulu grup numarasina gore 16 modul bilgisini icerir.

Bit = 0 ise modul calismiyor.

Bit = 1 ise modul calisiyor.

Bit 15: Module 16

Bit 14: Module 15

Bit 13: Module 14

Bit 12: Module 13

Bit 11: Module 12

Bit 10: Module 11

Bit 9 : Module 10

Bit 8 : Module 9

Bit 7 : Module 8

Bit 6 : Module 7

Bit 5 : Module 6

Bit 4 : Module 5

Bit 3 : Module 4

Bit 2 : Module 3

Bit 1 : Module 2

Bit 0 : Module 1

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.5.1

<Unit> "

::= { kgmDetector 1 }

## **Kullanıcı Parametreleri**

### **Maksimum Kullanıcı İşlem Sayısı**

kgmMaxUserOperations OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>

Maksimum kullanici islem sayisina esittir. userOperationsIndex maksimum degerini asamaz

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.6.1"

::= { kgmUser 1 }

### **Kullanıcı İşlem Tablosu**

kgmUserOperationsTable OBJECT-TYPE

SYNTAX SEQUENCE OF kgmUserOperationsEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition>

Kullanici islemleri bilgilendirme tablosudur

<TableType> static

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.6.2"

::= { kgmUser 2 }

### **Kullanıcı İşlem Tablosu Kaydı**

kgmUserOperationsEntry OBJECT-TYPE

SYNTAX kgmUserOperationsEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition>

Kullanici islemleri Kaydı

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.6.2.1

<Unit> "

INDEX { kgmUserOperationsIndex }

::= { kgmUserOperationsTable 1 }

kgmUserOperationsEntry ::= SEQUENCE {

kgmUserOperationsIndex INTEGER,

kgmUserOperationsType INTEGER,

kgmUserOperationsTime Counter,

kgmUserOperationsULoginName OCTET STRING

}

##### Kullanıcı işlemleri tablo indeks parametresi

kgmUserOperationsIndex OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>

Kullanici islem tablo id bilgisi

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.6.2.1.1

<Unit> "

::= { kgmUserOperationsEntry 1 }

##### Kullanıcı işlem tipi

kgmUserOperationsType OBJECT-TYPE

SYNTAX INTEGER {

none(0),

userAdded(1),

timeChanged(2),

outputRelaysEnabled(3),

outputRelaysDisabled(4),

userLogin(5),

userLogout(6),

modeChanged(7),

deviceParamatersChanged(8)

}

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>

userAdded: Kullanici eklendi

timeChanged: Kullanici tarih saat degistirdi

outputRelaysEnabled: Cikis rolesi devrede

outputRelaysDisabled: Cikis rolesi devre disi

userLogin: Kullanici sisteme giris yapti

userLogout: Kullanici sistemden cikis yapti

modeChanged: kullanici tarafindan mod degistirildi.

deviceParamatersChanged: cihaz paramatreleri degistirildi.

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.6.2.1.2

<Unit> "

::= { kgmUserOperationsEntry 2}

##### İşlem zaman bilgisi

kgmUserOperationsTime OBJECT-TYPE

SYNTAX Counter

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>

Kullanicinin islem yaptigi zamanin bilgisi.

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.6.2.1.3

<Unit> "

::= { kgmUserOperationsEntry 3}

##### İşlem yapan kullanıcı bilgisi

kgmUserOperationsULoginName OBJECT-TYPE

SYNTAX OCTET STRING

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>

Islem yapan kullanicinin kullanici adi bilgisi.

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.6.2.1.4

<Unit> "

::= { kgmUserOperationsEntry 4}

### **Kullanıcı Listesi**

kgmUserListFileUpdate OBJECT-TYPE

SYNTAX INTEGER (0..1)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>

0 ise kullanici listesi guncellenemedi

1 ise kullanici listesi guncellendi

<Object Identifier> 1.3.6.1.4.1.59873.4.2.1.6.3

<Unit> "

::= { kgmUser 3}

# **NTCIP 1201 NESNELER**

## **2.2 GLOBAL CONFIGURATION NODE**

globalConfiguration OBJECT IDENTIFIER ::= { global 1 }

-- This node is an identifier used to group all objects for support of

-- configuration functions that are common to most device types.

-- <Object Identifier> 1.3.6.1.4.1.1206.4.2.6.1

### **2.2.1 Global Set ID Parameter**

globalSetIDParameter OBJECT-TYPE

SYNTAX INTEGER (0..65535)

ACCESS read-only

STATUS mandatory

DESCRIPTION

"<Definition> Specifies a relatively unique ID (e.g., this could be a counter, a check-sum, etc.) for all user-changeable parameters of the particular device-type currently implemented in the device. Often this ID is calculated using a CRC algorithm.

This value shall be calculated when a change of any static database object has occurred. The value reported by this object shall not change unless there has been a change in the static data since the last request. If the actual objects, which are to be included to create this object value, are not defined in the actual device-level standard such as 1202 or 1203, then the general guidance is to include all configuration objects that are stored in a type of memory that survives power outages.

A management station can use this object to detect any change in the static database objects by monitoring this value after it has established a baseline.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.1.1"

::= { globalConfiguration 1}

### **2.2.2 Maximum Modules Parameter**

globalMaxModules OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION

"<Definition>The number of rows that are listed in the

globalModuleTable.

<Unit>module

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.1.2"

::= { globalConfiguration 2}

### **2.2.3 Module Table**

globalModuleTable OBJECT-TYPE

SYNTAX SEQUENCE OF ModuleTableEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION

"<Definition>A table containing information regarding manufacturer of software and hardware and the associated module models and version numbers as well as an indicator if the module is hardware or software related. The number of rows in this table shall equal the value of the globalMaxModules object.

<TableType> static

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.1.3"

::= { globalConfiguration 3 }

moduleTableEntry OBJECT-TYPE

SYNTAX ModuleTableEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION

"<Definition>This object defines an entry in the module table.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.1.3.1"

INDEX { moduleNumber }

::= { globalModuleTable 1 }

ModuleTableEntry ::= SEQUENCE {

moduleNumber INTEGER,

moduleDeviceNode OBJECT IDENTIFIER,

moduleMake OCTET STRING,

moduleModel OCTET STRING,

moduleVersion OCTET STRING,

moduleType INTEGER }

#### 2.2.3.1 Module Number Parameter

moduleNumber OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION

"<Definition>This object contains the row number (1..255) within

this table for the associated module.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.1.3.1.1"

::= { moduleTableEntry 1 }

#### 2.2.3.2 Module Device Node Parameter

moduleDeviceNode OBJECT-TYPE

SYNTAX OBJECT IDENTIFIER

ACCESS read-only

STATUS mandatory

DESCRIPTION

"<Definition>This object contains the device node number of the

device-type, e.g., an ASC signal controller would have an OID of 1.3.6.1.4.1.1206.4.2.1.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.1.3.1.2"

::= { moduleTableEntry 2 }

#### 2.2.3.3 Module Make Parameter

moduleMake OBJECT-TYPE

SYNTAX OCTET STRING

ACCESS read-only

STATUS mandatory

DESCRIPTION

"<Definition>This object specifies the manufacturer of the

associated module. A null-string shall be transmitted if this

object has no entry.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.1.3.1.3"

::= { moduleTableEntry 3 }

#### 2.2.3.4 Module Model Parameter

moduleModel OBJECT-TYPE

SYNTAX OCTET STRING

ACCESS read-only

STATUS mandatory

DESCRIPTION

"<Definition>This object specifies the model number (hardware) or firmware reference (software) of the associated module. A nullstring

shall be transmitted if this object has no entry.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.1.3.1.4"

::= { moduleTableEntry 4 }

#### 2.2.3.5 Module Version Parameter

moduleVersion OBJECT-TYPE

SYNTAX OCTET STRING

ACCESS read-only

STATUS mandatory

DESCRIPTION

"<Definition>This object specifies the version of the associated

module. If the moduleType has a value of software, the value of

this object shall include the date on which the software was

released as a string in the form of YYYYMMDD, it shall be followed

by a space, a hyphen, another space, the lower-case letter ‘v’,

followed by a version or configuration number. Preceding zeros

shall be required for the date. For example, version 7.03.02 of

the software released on July 5, 2002 would be presented as

20020705 – v7.03.02

A null-string shall be transmitted if this object has no entry.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.1.3.1.5"

::= { moduleTableEntry 5 }

#### 2.2.3.6 Module Type Parameter

moduleType OBJECT-TYPE

SYNTAX INTEGER {

other (1),

hardware (2),

software (3) }

ACCESS read-only

STATUS mandatory

DESCRIPTION

"<Definition>This object specifies whether the associated module

is a hardware or software module.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.1.3.1.6"

::= { moduleTableEntry 6 }

### **2.2.4 Base Standards Parameter**

controllerBaseStandards OBJECT-TYPE

SYNTAX OCTET STRING (SIZE (0..256))

ACCESS read-only

STATUS mandatory

DESCRIPTION

"<Definition>For use in this object, an ASCII string that shall

identify all of the standard document numbers that define or

reference MIBs upon which the device is based. Where applicable, profiles shall be referenced rather than the base standards. The version string shall be constructed as follows: The acronym of the standards development organization (or other body) that developed and approved the standard; a space; the standards document number; a colon; and the documents version number as designated by the standards development organization (or other body). Separate entries in the list of standards shall be separated by a carriage return (0x0d) and line feed (0x0a).

In the case of NTCIP documents prior to formal approval, the

version number shall be the version number in the form of lower

case ‘v’ followed by the major version followed by a period

followed by the minor revision. In the case of approved NTCIP

standards, the publication year shall precede the version number.

In the case of amended NTCIP standards, the version number shall be replaced by the four digit year of publication of the published standard followed by the upper case letter ‘A’, followed by the amendment number.

For example, a message sign may have the following value for this object:

NTCIP 1201:v02.19

NTCIP 1203:1997A1

NTCIP 2101:2001 v01.19

NTCIP 2103:v01.13

NTCIP 2201:v01.14

NTCIP 2301:2001 v01.08

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.1.4"

::= { globalConfiguration 4 }

## **2.4 GLOBAL TIME MANAGEMENT NODE**

globalTimeManagement OBJECT IDENTIFIER

::= { global 3 }

--<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.3

-- This node is an identifier used to organize all objects for support of

-- time-related functions that are common to most device types.

### **2.4.1 Global Time Parameter**

globalTime OBJECT-TYPE

SYNTAX Counter

ACCESS read-write

STATUS mandatory

DESCRIPTION

"<Definition>The number of seconds since the epoch of 00:00:00

(midnight) January 1, 1970 UTC (a.k.a. Zulu or GMT).

<Unit>second

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.3.1"

DEFVAL { 0 }

::= { globalTimeManagement 1}

### **2.4.2 Global Daylight Saving Parameter**

-- This object has been modified with additional information on the operation

-- of 'enableUSDST' and the inclusion of one new value:

-- “enableDaylightSavingNode”.

-- See dstBeginMonth object for additional information.

globalDaylightSaving OBJECT-TYPE

SYNTAX INTEGER { other (1),

disableDST (2),

enableUSDST (3),

enableEuropeDST (4),

enableAustraliaDST (5),

enableTasmaniaDST (6),

enableEgyptDST (7),

enableNamibiaDST (8),

enableIraqDST (9),

enableMangoliaDST (10),

enableIranDST (11),

enableFijiDST (12),

enableNewZealandDST (13),

enableTongaDST (14),

enableCubaDST (15),

enableBrazilDST (16),

enableChileDST (17),

enableFalklandsDST (18),

enableParaguayDST (19),

enableDaylightSavingNode (20) }

ACCESS read-write

STATUS mandatory

DESCRIPTION

"<Definition>This object specifies whether the daylight saving time (DST)

is enabled, disabled or some other form of DST is active.

other - DST adjustments by a mechanism not defined within this standard.

disableDST - DST clock adjustments shall NOT occur.

enableUSDST - DST shall begin the first Sunday in April and shall end the

last Sunday of October. All changes of time occur at 2:00 AM. (This

is the pre-2007 DST settings for the USA.)

enableEuropeDST - DST shall start the last Sunday of March at 2:00 AM

and ends the last Sunday of October at 3:00 AM.

enableAustraliaDST - DST shall start the last Sunday in October at 2:00

AM and ends the last Sunday in March at 2:00 AM.

enableTasmaniaDST - DST shall start the first Sunday in October at 2 a.m.

and ends the last Sunday in March at 3 a.m.

enableEgyptDST – DST shall start the last Friday in April and end the

last Thursday in September.

enableNamibiaDST – DST shall start the first Sunday in September and end

the first Sunday in April.

enableIraqDST – DST shall start on April 1 and end on October 1.

enableMongoliaDST – DST shall start the last Sunday in March and end the

last Sunday in September.

enableIranDST – DST shall start the first day of Farvardin and end the

first day of Mehr

enableFijiDST – DST shall start the first Sunday in November and end

the last Sunday in February.

enableNewZealandDST – DST shall start the first Sunday in October and end

the first Sunday on or after March 5th.

enableTongaDST – DST shall start the first Saturday in October and end

the first Saturday on or after April 15th.

enableCubaDST – DST shall start April 1st and end last Sunday in October.

enableBrazilDST – DST shall start the first Sunday in October and end the

last Sunday in February.

enableChileDST – DST shall start the first Sunday on or after October 9th

and end the first Sunday on or after March 9th.

enableFalklandsDST – DST shall start the first Sunday on or after

September 8th and end the first Sunday on or after April 8th.

enableParaguayDST – DST shall start the first Sunday in October and end

the last Saturday in February.

enableDaylightSavingNode – DST operation is controlled by objects located

under the daylightSavingNode.

<Informative> This object is maintained for backward compatibility and it is

envisioned that only the following values are supported with all other values

being ‘retired’:

- other (1),

- disableDST (2),

- enableDaylightSavingNode (20)

NOTE: Users should ensure that the values of *globalDaylightSaving* and the

entries in the new DST Table are coordinated. The *globalDaylightSaving* object

is intended to be used to enable and disable DST and should not be set to the

value ‘20’, *enableDaylightSavingNode* until after the dstTable entries have

been fully configured. Further, the *globalDaylightSaving* object

supersedes the settings in the DST Table.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.3.2"

REFERENCE

"NEMA TS 2 Clause 3.8.2;

http://fatty.law.cornell.edu/uscode/15/260a.html;

http://webexhibits.org/daylightsaving/g.html "

DEFVAL { enableDaylightSavingNode }

::= { globalTimeManagement 2 }

### **2.4.3 TimeBase Event Scheduler Node**

timebase OBJECT IDENTIFIER ::= { globalTimeManagement 3 }

-- <Object Identifier> 1.3.6.1.4.1.1206.4.2.6.3.3

-- This node is an identifier used to organize the main objects for event

-- scheduling. Device type-specific objects (tables) pointed to are defined

-- within the appropriate MIB.

#### 2.4.3.1 Maximum Number of Time Base Schedule Entries Parameter

maxTimeBaseScheduleEntries OBJECT-TYPE

SYNTAX INTEGER (1..65535)

ACCESS read-only

STATUS mandatory

DESCRIPTION

"<Definition>The value of this object specifies the maximum number

of different entries supported by the device as shown by the

number of rows in the timeBaseScheduleTable.

<Unit>TimeBaseScheduleEntry

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.3.3.1"

::= { timebase 1 }

#### 2.4.3.2 Time Base Schedule Table

timeBaseScheduleTable OBJECT-TYPE

SYNTAX SEQUENCE OF TimeBaseScheduleEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION

"<Definition>A table containing the time base schedule parameters

for the device. The number of rows in this table shall be equal

to the maxTimeBaseScheduleEntries object. The table references

the appropriate day plan for the device. The plan is determined

by comparing the current month (MONTH), day of week (DOW) and date of month (DOM) to the appropriate fields. The settings for MONTH,DOW and DOM are connected with a logical AND. To determine which timebased event to select, determine the event which has the mostspecific date specified. Select the more specific event based on their MONTH settings; if the same, select the most specific DOM;

if that is still the same, select the most specific DOW; if still the same, the first occurrence within the time base event table shall be selected. ’More specific’ means the least number of bits set within an object. All entries in Time Base Schedule Table are expressed in local time and date. A row in the table may be deactivated by setting the Month, Day, Date, or DayPlan parameters to zero (0)

<TableType> static

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.3.3.2"

::= { timebase 2 }

timeBaseScheduleEntry OBJECT-TYPE

SYNTAX TimeBaseScheduleEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION

"<Definition>Event Parameters for the time based schedule

programming of the device.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.3.3.2.1"

INDEX { timeBaseScheduleNumber }

::= { timeBaseScheduleTable 1 }

TimeBaseScheduleEntry ::= SEQUENCE {

timeBaseScheduleNumber INTEGER,

timeBaseScheduleMonth INTEGER,

timeBaseScheduleDay INTEGER,

timeBaseScheduleDate INTEGER,

timeBaseScheduleDayPlan INTEGER }

**2.4.3.2.1 Time Base Schedule Number Parameter**

timeBaseScheduleNumber OBJECT-TYPE

SYNTAX INTEGER (1..65535 )

ACCESS read-only

STATUS mandatory

DESCRIPTION

"<Definition>The time base schedule number for objects in this

row. The value of this object shall not exceed the value of the

maxTimeBaseScheduleEntries object. The activation of a scheduled entry shall occur whenever allowed by all other objects within this table.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.3.3.2.1.1"

::= { timeBaseScheduleEntry 1 }

**2.4.3.2.2 Time Base Schedule Month of Year Parameter**

timeBaseScheduleMonth OBJECT-TYPE

SYNTAX INTEGER (0..65535)

ACCESS read-write

STATUS mandatory

DESCRIPTION

"<Definition>The Month(s) Of the Year that the schedule entry

shall be allowed. Each bit represents a specific month. If the

bit is set to one (1), then the scheduled entry shall be allowed during the associated month. If the bit is set to zero (0), then the scheduled entry shall not be allowed during the associated month. The bits are defined as:

Bit Month of Year

0 Reserved

1 January

2 February

3 March

4 April

5 May

6 June

7 July

8 August

9 September

10 October

11 November

12 December

13 - 15 Reserved

Thus, a value of six (6) would indicate that the entry would only be allowed during the months of January and February. A value of zero (0) shall indicate that this row has been disabled.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.3.3.2.1.2"

::= { timeBaseScheduleEntry 2 }

**2.4.3.2.3 Time Base Schedule Day of Week Parameter**

timeBaseScheduleDay OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION

"<Definition>The Day(s) Of Week that the schedule entry shall be allowed. Each bit represents a specific day of the week. If the bit is set to one (1), then the scheduled entry shall be allowed during the associated DOW. If the bit is set to zero (0), then the scheduled entry shall not be allowed during the associated DOW. The bits are defined as:

Bit Day of Week

0 Reserved ('Holiday', not defined by this standard)

1 Sunday

2 Monday

3 Tuesday

4 Wednesday

5 Thursday

6 Friday

7 Saturday

Thus, a value of six (6) would indicate that the entry would only be allowed on Sundays and Mondays. A value of zero (0) shall indicate that this row has been disabled.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.3.3.2.1.3"

::= { timeBaseScheduleEntry 3 }

**2.4.3.2.4 Time Base Schedule Date Parameter**

timeBaseScheduleDate OBJECT-TYPE

SYNTAX INTEGER (0..4294967295)

ACCESS read-write

STATUS mandatory

DESCRIPTION

"<Definition>The Day(s) Of a Month that the schedule entry shall be allowed. Each bit represents a specific date of the month. If the bit is set to one (1), then the scheduled entry shall be allowed during the associated date. If the bit is set to zero (0), then the scheduled entry shall not be allowed during the associated date. The bits are defined as:

Bit Day Number

0 Reserved

1 Day 1

2 Day 2

||

31 Day 31

Thus, a value of six (6) would indicate that the entry would only be allowed on the first and second of the allowed months. A value of zero (0) shall indicate that this row has been disabled.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.3.3.2.1.4"

::= { timeBaseScheduleEntry 4 }

**2.4.3.2.5 Time Base Schedule Day Plan Parameter**

timeBaseScheduleDayPlan OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION

"<Definition>This object specifies what Plan number shall be

associated with this timeBaseScheduleDayPlan object. The value of this object cannot exceed the value of the maxDayPlans object. A value of zero (0) shall indicate that this row has been disabled.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.3.3.2.1.5"

::= { timeBaseScheduleEntry 5 }

### **2.4.4 Day Plan Parameters**

#### 2.4.4.1 Maximum Number of Day Plans—Parameter

maxDayPlans OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION

"<Definition>The value of this object specifies the maximum, fixed number of different timebased Day Plans supported by the device.

The value of this object represents the number of day plans

(primary key into the table) available in the timeBaseDayPlanTable.

<Unit>DayPlan

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.3.3.3"

::= { timebase 3 }

#### 2.4.4.2 Maximum Number of Day Plan Events—Parameter

maxDayPlanEvents OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION

"<Definition>The value of this object specifies the fixed number of different timebased Day Plan Events within each Day Plan supported by the device. The value of this object represents the number of rows (secondary key into the table) available within each of the day plans that are available in the timeBaseDayPlanTable. All day plans shall have the same number of day plan events available for use.

<Unit>DayPlanEvent

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.3.3.4"

::= { timebase 4 }

#### 2.4.4.3 Day Plan Table

timeBaseDayPlanTable OBJECT-TYPE

SYNTAX SEQUENCE OF TimeBaseDayPlanEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION

"<Definition>A table containing day plan numbers, the times when to implement them and the associated actions. The number of rows in this table shall be equal to the product of the maxDayPlans object and the maxDayPlanEvents object. The dayPlanNumbers within this table shall begin with day plan number 1 and increment by one to the maxDayPlans. The dayPlanEventNumbers within this table shall begin with day plan event number 1 and increment by one to the maxDayPlanEvents.

This table is always used in association with device-type specific objects specifying device-type specific actions such as activating a message on a VMS sign or initiating a pattern for a signal define the relative priority of the action table as compared to the priority of system and other commands. The device-type specific action is only initiated when (1) the specific DayPlan has been activated, (2) the scheduler has sufficient priority to override the current operation of the device, and (3) at the indicated time.

After a power recovery, or after a change to any object that

affects controlerLocalTime, the operational mode called for by the scheduler shall be per the last event that would have been called for by the currently defined schedule; the logic searches for all events that may have occurred for at least the previous 24 hours.

<TableType> static

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.3.3.5"

::= { timebase 5 }

timeBaseDayPlanEntry OBJECT-TYPE

SYNTAX TimeBaseDayPlanEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION

"<Definition>Day plan parameters for the time based schedule

programming of a device.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.3.3.5.1"

INDEX { dayPlanNumber, dayPlanEventNumber}

::= { timeBaseDayPlanTable 1 }

TimeBaseDayPlanEntry ::= SEQUENCE {

dayPlanNumber INTEGER,

dayPlanEventNumber INTEGER,

dayPlanHour INTEGER,

dayPlanMinute INTEGER,

dayPlanActionNumberOID OBJECT IDENTIFIER }

##### 2.4.4.3.1 Day Plan Number

dayPlanNumber OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION

"<Definition>This object specifies the day plan number for objects in this row. The value shall not exceed the value of the maxDayPlans object. Day plan numbers are used in the TimeBase

Event Table to specify day plan numbers to be implemented on

specific days of the year or as part of the week plans.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.3.3.5.1.1"

::= { timeBaseDayPlanEntry 1 }

##### 2.4.4.3.2 Day Plan Event Number

dayPlanEventNumber OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION

"<Definition>This object identifies day plan event number(s) to be scheduled on a specific day plan number. Several different events can be scheduled to take place during a day, and each of these events is one entry or row within a specified day plan number.

The total number of events for one day plan shall not exceed the value of the maxDayPlanEvents object. If multiple non-conflicting events are scheduled to occur at the same time, they shall be logically executed in order of their dayPlanEventNumber with the lowest number occurring first. An implementation shall omit lower number actions that are in conflict with higher number actions at the same time.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.3.3.5.1.2"

::= { timeBaseDayPlanEntry 2 }

##### 2.4.4.3.3 Day Plan Hour Parameter

dayPlanHour OBJECT-TYPE

SYNTAX INTEGER (0..23)

ACCESS read-write

STATUS mandatory

DESCRIPTION

"<Definition>The Hour of day, as measured by the

controllerLocalTime object, that the associated event shall become

active.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.3.3.5.1.3"

DEFVAL {0}

::= { timeBaseDayPlanEntry 3 }

##### 2.4.4.3.4 Day Plan Minute Parameter

dayPlanMinute OBJECT-TYPE

SYNTAX INTEGER (0..59)

ACCESS read-write

STATUS mandatory

DESCRIPTION

"<Definition>The Minute of the hour (defined in the dayPlanHour),

as measured by the controllerLocalTime object, that the associated

event shall become active.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.3.3.5.1.4"

DEFVAL {0}

::= { timeBaseDayPlanEntry 4 }

##### 2.4.4.3.5 Day Plan Action Number OID Parameter

dayPlanActionNumberOID OBJECT-TYPE

SYNTAX OBJECT IDENTIFIER

ACCESS read-write

STATUS mandatory

DESCRIPTION

"<Definition>This object provides a reference to the device-type specific action that shall be executed. The object shall

reference the action by its associated object identifier,

including its instance (i.e., the full OID of the scalar or

columnar object). Only objects whose description field explicitly states that they may be called by the action table may be referenced. If a management system attempts to set this value to any other object identifier, the device shall respond with a genErr.

Any object allowing the action table to reference it shall define precisely what action takes place when it is activated, and whether the action is transitionary or continuous until

deactivated. The object shall also define what, if any,

restrictions may be placed on other operations the device may be able to perform.

If the action to be performed is defined by a row of a table, one of the index columns should be identified as the explicit object that is referenced.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.3.3.5.1.5"

DEFVAL {null}

::= { timeBaseDayPlanEntry 5 }

#### 2.4.4.4 Day Plan Status Parameter

dayPlanStatus OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION

"<Definition>This object indicates the current value of the active dayPlanNumber-object. A value of zero (0) indicates that there is no dayPlanNumber that is currently active.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.3.3.6"

::= { timebase 6 }

#### 2.4.4.5 Schedule Status Parameter

timeBaseScheduleTableStatus OBJECT-TYPE

SYNTAX INTEGER (0..65535)

ACCESS read-only

STATUS mandatory

DESCRIPTION

"<Definition>This object indicates the number of the TimeBaseSchedule which

is currently selected by the scheduling logic; the device may or may not be using the selected schedule. The value of zero (0) indicates that there is no timeBaseScheduleNumber that is currently selected.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.3.3.7"

::={timebase 7}

### **2.4.5 Global Local Time Differential Parameter**

**-- This object has been deprecated. See Annexes D.2.1 and D.2.2 for more**

**information.**

globalLocalTimeDifferential OBJECT-TYPE

SYNTAX INTEGER (-43200..43200)

ACCESS read-write

STATUS deprecated

DESCRIPTION

"Indicates the number of seconds offset between local time and

GMT. Positive values indicate local times in the Eastern

Hemisphere up to the International Date Line and negative values indicate local times in the Western Hemisphere back to the International Date Line. If one of the daylight saving times is activated, this value will change automatically at the referenced time. For example, Central Standard Time (CST) is -21600 and Central Daylight Time (CDT) is -18000.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.3.4"

::= { globalTimeManagement 4 }

### **2.4.6 Standard Time Zone Parameter**

controllerStandardTimeZone OBJECT-TYPE

SYNTAX INTEGER (-43200..43200)

ACCESS read-write

STATUS mandatory

DESCRIPTION

"<Definition> Indicates the number of seconds offset between local

Standard Time and GMT. Positive values indicate local times in

the Eastern Hemisphere up to the International Date Line and

negative values indicate local times in the Western Hemisphere

back to the International Date Line. This value does not change

in response to a DST event.

<Unit>second

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.3.5"

DEFVAL {0}

::= { globalTimeManagement 5 }

### **2.4.7 Local Time Parameter**

controllerLocalTime OBJECT-TYPE

SYNTAX Counter

ACCESS read-only

STATUS mandatory

DESCRIPTION

"<Definition> The current local time expressed in seconds since

00:00:00 (midnight) January 1, 1970 of the same time offset. This

value changes by 3600 seconds in response to a DST event.

<Unit>second

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.3.6"

::= { globalTimeManagement 6 }

### **2.4.8 Daylight Saving Time (DST) Node**

daylightSavingNode OBJECT IDENTIFIER

::= { globalTimeManagement 7 }

--<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.3.7

-- This node is an identifier used to organize all objects for support of

-- defining DST. This function is common to most device

-- types. The objects under this node only affect device operation when

-- globalDaylightSaving = enableDaylightSavingNode (20). See Annex A.2.2 for

-- examples.

#### 2.4.8.1 Maximum Daylight Saving Time (DST) Table Entries Parameter

maxDaylightSavingEntries OBJECT-TYPE

SYNTAX INTEGER (1..100)

ACCESS read-only

STATUS mandatory

DESCRIPTION

"<Definition> The maximum number of entries (begin and end date pairs) that the DST Table can contain within the device.

As of July 2007, devices used within the United States only require 1 entry when using the generic begin and end date method.

<informative>It is expected that, for devices using the absolute date method, the device would need to support at least 1 entry per year programmed.

For multi-step DST transitions, a minimum of 2 rows are required (see Annex A.2.1 Figure 6).

More than one row may be required if absolute date method (see Section

2.4.8.2.2) is used for more than one year, or if more than one time change is implemented in a given year.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.3.7.1"

::= { daylightSavingNode 1 }

#### 2.4.8.2 Daylight Saving Time (DST) Table Parameter

dstTable OBJECT-TYPE

SYNTAX SEQUENCE OF DstEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION

"<Definition> A table containing DST Begin and End

dates. The table is useful for agencies with multiple daylight saving time incremental steps per year. The number of rows in this table is equal to the maxDaylightSavingEntries object.

<TableType> static

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.3.7.2"

::= { daylightSavingNode 2 }

dstEntry OBJECT-TYPE

SYNTAX DstEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION

"<Definition> The DST Begin and End dates parameters.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.3.7.2.1"

INDEX { dstEntryNumber }

::= { dstTable 1 }

DstEntry ::= SEQUENCE {

dstEntryNumber INTEGER,

dstBeginMonth INTEGER,

dstBeginOccurrences INTEGER,

dstBeginDayOfWeek INTEGER,

dstBeginDayOfMonth INTEGER,

dstBeginSecondsToTransition INTEGER,

dstEndMonth INTEGER,

dstEndOccurrences INTEGER,

dstEndDayOfWeek INTEGER,

dstEndDayOfMonth INTEGER,

dstEndSecondsToTransition INTEGER,

dstSecondsToAdjust INTEGER }

**2.4.8.2.1 Daylight Saving Time (DST) Entry Number Parameter**

dstEntryNumber OBJECT-TYPE

SYNTAX INTEGER (1..100)

ACCESS read-only

STATUS mandatory

DESCRIPTION

"<Definition> The entry number for the DST objects

in this row. This value shall not exceed the

maxDaylightSavingEntries object value.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.3.7.2.1.1

<Unit> dstEntry"

::= { dstEntry 1 }

**2.4.8.2.2 Daylight Saving Time (DST) Beginning Month Parameter**

dstBeginMonth OBJECT-TYPE

SYNTAX INTEGER { january (1),

february (2),

march (3),

april (4),

may (5),

june (6),

july (7),

august (8),

september (9),

october (10),

november (11),

december (12),

absolute (13),

disabled (14)}

ACCESS read-write

STATUS mandatory

DESCRIPTION

"<Definition> The month during which daylight saving time (DST) begins.

An entry of 'absolute' means that dstBeginSecondsToTransition defines an absolute time to begin DST relative to midnight January 1, 1970. In this case, any value indicated in the dstEndMonth, dstBeginOccurences, dstBeginDayOfWeek, dstBeginDayOfMonth, dstEndOccurances, dstEndDayOfWeek, and

dstEndDayOfMonth objects are irrelevant, and the stEndSecondsToTransition object defines an absolute time to end DST relative to midnight January 1, 1970.

If the daylightSavingNode is enabled (i.e. globalDaylightSaving = enableDaylightSavingNode), and the value of this object is disabled(14), then the values in the remaining objects in this row of the dstTable are irrelevant and therefore ignored by the device.

<Unit>

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.3.7.2.1.2"

DEFVAL { March }

::= { dstEntry 2 }

**2.4.8.2.3 Daylight Saving Time (DST) Beginning Occurrence Parameter**

dstBeginOccurrences OBJECT-TYPE

SYNTAX INTEGER { first (1),

second (2),

third (3),

fourth (4),

last (5),

secondLast (6),

thirdLast (7),

fourthLast (8),

specificDayOfMonth (9) }

ACCESS read-write

STATUS mandatory

DESCRIPTION

"<Definition>For values of 1-4, the number of occurrences of the specific day of week that shall occur on or after

dstBeginDayOfMonth until the daylight saving transition shall take place.

For values of 5-8, the number of occurrences of the specific day of week that shall occur on or before dstBeginDayOfMonth until the daylight saving transition shall take place.

For value = 9, dstBeginDayOfMonth defines the specific day of the month that the DST transition occurs regardless of value in

dstBeginDayOfWeek object.

NOTE: To specify the last occurrence of a specified day of the

month, simply specify the last occurrence of the specified day of the week on or before the last day of the month (e.g., 31).

<Unit>

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.3.7.2.1.3"

DEFVAL { second }

::= { dstEntry 3 }

**2.4.8.2.4 Daylight Saving Time (DST) Beginning Day of Week Parameter**

dstBeginDayOfWeek OBJECT-TYPE

SYNTAX INTEGER { sunday (1),

monday (2),

tuesday (3),

wednesday (4),

thursday (5),

friday (6),

saturday (7) }

ACCESS read-write

STATUS mandatory

DESCRIPTION

"<Definition> The Day of the week on which daylight saving time

(DST)

begins. This object shall only apply if dstBeginOccurrences = 1- 8.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.3.7.2.1.4"

DEFVAL { sunday }

::= { dstEntry 4 }

**2.4.8.2.5 Daylight Saving Time (DST) Beginning Day of Month Parameter**

dstBeginDayOfMonth OBJECT-TYPE

SYNTAX INTEGER (1..31)

ACCESS read-write

STATUS mandatory

DESCRIPTION

"<Definition> If dstBeginOccurrences = 1-8: The day of

the month from which to begin counting occurrences of a specific day of the week (forward for values 1-4, and backwards for values 5-8).

If dstBeginOccurrences = 9: The specific day of the month

on which the transition occurs.

<Unit> day of month

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.3.7.2.1.5"

DEFVAL { 1 }

::= { dstEntry 5 }

**2.4.8.2.6 Daylight Saving Time (DST) Beginning Seconds to Transition Parameter**

dstBeginSecondsToTransition OBJECT-TYPE

SYNTAX INTEGER (0..4294967295)

ACCESS read-write

STATUS mandatory

DESCRIPTION

"<Definition> If dstBeginMonth = absolute, then this object

defines when DST begins based on the seconds from midnight

January 1, 1970 (UTC/GMT).

If dstBeginMonth = 1-12 (January to December), then this object defines the time when DST begins in seconds past midnight relative to local time

(see the controllerLocalTime object).

NOTE: a set of parameters that causes a day

transition that crosses the midnight boundary may result in

unexpected behavior.

<Unit>seconds

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.3.7.2.1.6"

DEFVAL { 7200 }

::= { dstEntry 6 }

**2.4.8.2.7 Daylight Saving Time (DST) Ending Month Parameter**

dstEndMonth OBJECT-TYPE

SYNTAX INTEGER { january (1),

february (2),

march (3),

april (4),

may (5),

june (6),

july (7),

august (8),

september (9),

october (10),

november (11),

december (12) }

ACCESS read-write

STATUS mandatory

DESCRIPTION

"<Definition> The month during which daylight saving time (DST) ends.

If the value of dstBeginMonth object = 'absolute' or 'disabled',

then the agent shall ignore the value of this object.

Otherwise, the value of this object is valid.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.3.7.2.1.7"

DEFVAL { november }

::= { dstEntry 7 }

**2.4.8.2.8 Daylight Saving Time (DST) Ending Occurrences Parameter**

dstEndOccurrences OBJECT-TYPE

SYNTAX INTEGER { first (1),

second (2),

third (3),

fourth (4),

last (5),

secondLast (6),

thirdLast (7),

fourthLast (8),

specificDayOfMonth (9) }

ACCESS read-write

STATUS mandatory

DESCRIPTION

"<Definition>For values of 1-4, the number of occurrences of the specific day of week that shall occur on or after

dstEndDayOfMonth until the daylight saving transition shall take place.

For values of 5-8, the number of occurrences of the specific day of week that shall occur on or before dstEndDayOfMonth until the daylight saving transition shall take place.

For value = 9, dstEndDayOfMonth defines the specific day of the month that the DST transition occurs regardless of value in dstEndDayOfWeek object.

NOTE: To specify the last occurrence of a specified day of

the month, simply specify the last occurrence of the specified day of the week on or before the last day of the month (e.g. 31).

<Unit>

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.3.7.2.1.8"

DEFVAL { first }

::= { dstEntry 8 }

**2.4.8.2.9 Daylight Saving Time (DST) Ending Day of Week Parameter**

dstEndDayOfWeek OBJECT-TYPE

SYNTAX INTEGER { sunday (1),

monday (2),

tuesday (3),

wednesday (4),

thursday (5),

friday (6),

saturday (7) }

ACCESS read-write

STATUS mandatory

DESCRIPTION

"<Definition> The Day of the week on which daylight saving time

(DST) ends. This object shall only apply if dstEndOccurrences

= 1-8.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.3.7.2.1.9"

DEFVAL { sunday }

::= { dstEntry 9 }

**2.4.8.2.10 Daylight Saving Time (DST) Ending Day of Month Parameter**

dstEndDayOfMonth OBJECT-TYPE

SYNTAX INTEGER (1..31)

ACCESS read-write

STATUS mandatory

DESCRIPTION

"<Definition> If dstEndOccurrences = 1-8: The day of the month from which to begin counting occurrences of a specific day of the week (forward for values 1-4, and backwards for values 5-8).

If dstEndOccurrences = 9: The specific day of the month on which the transition occurs.

<Unit> day of month

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.3.7.2.1.10"

DEFVAL { 1 }

::= { dstEntry 10 }

**2.4.8.2.11 Daylight Saving Time (DST) Ending Seconds to Transition Parameter**

dstEndSecondsToTransition OBJECT-TYPE

SYNTAX INTEGER (0..4294967295)

ACCESS read-write

STATUS mandatory

DESCRIPTION

"<Definition> If dstBeginMonth = absolute, then this object defines when DST ends based on the seconds from midnight January 1, 1970 (UTC/GMT).

If dstBeginMonth = 1-12 (January to December), then this

object defines the time when DST ends in seconds past midnight relative to local time (see the controllerLocalTime object).

NOTE: a set of parameters that causes a day

transition that crosses the midnight boundary may result in

unexpected behavior.

<Unit> seconds

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.3.7.2.1.11"

DEFVAL { 7200 }

::= { dstEntry 11 }

--NOTE: This object allows what may be considered an exception, in that it

--is possible and allowed to configure an adjustment backward past midnight.

**2.4.8.2.12 Daylight Saving Time (DST) Seconds to Adjust Parameter**

dstSecondsToAdjust OBJECT-TYPE

SYNTAX INTEGER (0..21600)

ACCESS read-write

STATUS mandatory

DESCRIPTION

"<Definition> This is the absolute offset in seconds that will be added to the local time reference point to determine the local time when DST is in effect as specified by this row entry. Values of this object in adjacent rows, even if they overlap, are not cumulative. That is, the row with the latest *dstBegin* time, which has not terminated due to passing the *dstEnd* time, shall determine the setting of the local TOD

clock; the *dstSecondsToAdjust* for the latest *dstBegin* governs the Local TOD clock settings.

The maximum offset to adjust is 21600 seconds, an equivalent of

6 hours.

<Unit> seconds

<Object Identifier> 1.3.6.1.4.1.1206.4.2.6.3.7.2.1.12"

DEFVAL { 3600 }

::= { dstEntry 12 }

# **NTCIP 1202 NESNELER**

## **Phase Parameters**

phase OBJECT IDENTIFIER

::= { asc 1 }

-- This node shall contain objects that configure, monitor or

-- control phase functions for this device.

### **5.2.1. Maximum Phases**

maxPhases OBJECT-TYPE

SYNTAX INTEGER (2..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The Maximum Number of Phases

this Controller Unit supports. This object indicates the maximum rows which shall

appear in the phaseTable object.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.1

<Unit> phase"

::= { phase 1 }

### **5.2.2. Phase Table**

phaseTable OBJECT-TYPE

SYNTAX SEQUENCE OF PhaseEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> A table containing Controller

Unit phase parameters. The number of rows in this table is equal to the maxPhases object.

<TableType> static

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.2"

::= { phase 2 }

phaseEntry OBJECT-TYPE

SYNTAX PhaseEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> Parameters for a specific

Controller Unit phase.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.2.1

<Unit> "

INDEX { phaseNumber }

::= { phaseTable 1 }

PhaseEntry ::= SEQUENCE {

phaseNumber INTEGER,

phaseWalk INTEGER,

phasePedestrianClear INTEGER,

phaseMinimumGreen INTEGER,

phasePassage INTEGER,

phaseMaximum1 INTEGER,

phaseMaximum2 INTEGER,

phaseYellowChange INTEGER,

phaseRedClear INTEGER,

phaseRedRevert INTEGER,

phaseAddedInitial INTEGER,

phaseMaximumInitial INTEGER,

phaseTimeBeforeReduction INTEGER,

phaseCarsBeforeReduction INTEGER,

phaseTimeToReduce INTEGER,

phaseReduceBy INTEGER,

phaseMinimumGap INTEGER,

phaseDynamicMaxLimit INTEGER,

phaseDynamicMaxStep INTEGER,

phaseStartup INTEGER,

phaseOptions INTEGER,

phaseRing INTEGER,

phaseConcurrency OCTET STRING,

phaseMaximum3 INTEGER,

phaseYellowandRedChangeTimeBeforeEndPedClear INTEGER,

phasePedWalkService INTEGER,

phaseDontWalkRevert INTEGER,

phasePedAlternateClearance INTEGER,

phasePedAlternateWalk INTEGER,

phasePedAdvanceWalkTime INTEGER,

phasePedDelayTime INTEGER,

phaseAdvWarnGrnStartTime INTEGER,

phaseAdvWarnRedStartTime INTEGER,

phaseAltMinTimeTransition INTEGER }

#### Phase Number

phaseNumber OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The phase number for objects in

this row. This value shall not exceed the maxPhases object value.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.2.1.1

<Unit> phase"

::= { phaseEntry 1 }

#### Phase Walk Parameter

phaseWalk OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Phase Walk Parameter in seconds.

This shall control the amount of time the Walk indication shall be displayed. This parameter shall be used regardless whether the pedestrian indication associated with this phase is for a pedonly phase or for a pedestrian indication that runs parallel to a vehicle phase.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.2.1.2

<Unit> second"

REFERENCE "NEMA TS 2 Clause 3.5.3.1 and 3.5.3.2.2.a"

::= { phaseEntry 2 }

#### Phase Pedestrian Clear Parameter

phasePedestrianClear OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Phase Pedestrian Clear Parameter

in seconds. This shall control the duration of the Pedestrian Clearance output (if present) and the flashing period of the Don’t Walk output.

This parameter shall be used regardless whether the pedestrian indication associated with this phase is for a ped-only phase or for a pedestrian indication that runs parallel to a vehicle

phase.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.2.1.3

<Unit> second"

REFERENCE "NEMA TS 2 Clause 3.5.3.1 and 3.5.3.2.2.b"

::= { phaseEntry 3 }

#### Phase Minimum Green Parameter

phaseMinimumGreen OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Phase Minimum Green Parameter in

seconds (NEMA TS 2 range: 1-255 sec). The first timed portion of the Green interval which may be set in consideration of the storage of vehicles between the zone of detection for the approach vehicle detector(s) and the stop line.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.2.1.4

<Unit> second"

REFERENCE "NEMA TS 2 Clause 3.5.3.1 and 3.5.3.2.1.a.(1)"

::= { phaseEntry 4 }

#### Phase Passage Parameter

phasePassage OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Phase Passage Parameter in tenth

seconds (0-25.5 sec). Passage Time, Vehicle Interval, Preset Gap, Vehicle Extension: the extensible portion of the Green shall be a function of vehicle actuations that occur during the Green interval. The phase shall remain in the extensible portion of the Green interval as long as the passage timer is not timed out. The timing of this portion of the green interval shall be reset with each subsequent vehicle actuation and shall not commence to time again until the vehicle actuation is removed or the maximum green

timer has expired.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.2.1.5

<Unit> tenth second"

REFERENCE "NEMA TS 2 Clause 3.5.3.1 and 3.5.3.2.1.a.(2)"

::= { phaseEntry 5 }

#### Phase Maximum Green 1 Parameter

phaseMaximum1 OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Phase Maximum 1 Parameter in

seconds (NEMA TS 2 range: 1-255 sec). This time setting shall determine the maximum length of time this phase may be held in Green in the presence of a serviceable conflicting call. In the absence of a serviceable conflicting call the Maximum Green timer shall be held reset unless Max Vehicle Recall is enabled for this phase. This is the default maximum value to use. It may be overridden via an external input, coordMaximumMode or other method.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.2.1.6

<Unit> second"

REFERENCE "NEMA TS 2 Clause 3.5.3.1, 3.5.3.2.1.a.(3) and 3.5.3.5"

::= { phaseEntry 6 }

#### Phase Maximum Green 2 Parameter

phaseMaximum2 OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Phase Maximum 2 Parameter in

seconds (NEMA TS 2 range: 1-255 sec). This time setting shall determine the maximum length of time this phase may be held in Green in the presence of a serviceable conflicting call. In the absence of a serviceable conflicting call the Maximum Green timer shall be held reset unless Max Vehicle Recall is enabled for this phase. This may be implemented as the max green timer via an external

input, coordMaximumMode or other method.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.2.1.7

<Unit> second"

REFERENCE "NEMA TS 2 Clause 3.5.3.1, 3.5.3.2.1.a.(3), 3.5.3.5 and 3.5.4.1 (7)"

::= { phaseEntry 7 }

#### Phase Yellow Change Parameter

phaseYellowChange OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Phase Yellow Change Parameter in

tenth seconds (NEMA TS 2 range: 3-25.5 sec). Following the Green interval of each phase the CU shall provide a Yellow Change interval which is timed according to the Yellow Change parameter

for that phase.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.2.1.8

<Unit> tenth second"

REFERENCE "NEMA TS 2 Clause 3.5.3.1 and 3.5.3.2.5.a"

::= { phaseEntry 8 }

#### 5.2.2.9 Phase Red Clear Parameter

phaseRedClear OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Phase Red Clearance Parameter in

tenth seconds (0-25.5 sec).Following the Yellow Change interval for each phase, the CU shall provide a Red Clearance interval which is timed according to the Red Clearance parameter for that phase.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.2.1.9

<Unit> tenth second"

REFERENCE "NEMA TS 2 Clause 3.5.3.1 and 3.5.3.2.5.b"

::= { phaseEntry 9 }

#### Phase Red Revert

phaseRedRevert OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Red revert time parameter in

tenth seconds. A minimum Red indication to be timed following the Yellow Change interval and prior to the next display of Green on the same signal output driver group. The unitRedRevert parameter shall act as a minimum red revert time for all signal displays. The phaseRedRevert parameter may increase the red revert time for a specific phase. If the

phaseRedRevert parameter is less than the unitRedRevert the unitRedRevert time shall be used.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.2.1.10

<Unit> tenth second"

::= { phaseEntry 10 }

#### Phase Added Initial Parameter

phaseAddedInitial OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Phase Added Initial Parameter in

tenths of seconds (0-25.5 sec). Added Initial parameter (Seconds / Actuation) shall determine the time by which the variable initial time period will be increased from zero with each vehicle actuation received during the associated phase Yellow and Red

intervals.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.2.1.11

<Unit> tenth second"

REFERENCE "NEMA TS 2 Clause 3.5.3.1 and 3.5.3.2.1.b.(1).(b)"

::= { phaseEntry 11 }

#### Phase Maximum Initial Parameter

phaseMaximumInitial OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Phase Maximum Initial Parameter

in seconds (0-255 sec). The maximum value of the variable initial timing period. Variable Initial timing shall equal the lesser of [added initial (seconds / actuation) \* number of actuations] or [ Max Initial ]. The variable initial time shall not be less than Minimum Green.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.2.1.12

<Unit> second"

REFERENCE "NEMA TS 2 Clause 3.5.3.2.1.b.(1).(c)"

::= { phaseEntry 12 }

#### Phase Time Before Reduction Parameter

phaseTimeBeforeReduction OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Phase Time Before Reduction

(TBR) Parameter in seconds (0-255 sec). The Time Before Reduction period shall begin when the phase is Green and there is a serviceable conflicting call. If the serviceable conflicting call is removed before completion of this time (or time to reduce), the timer shall reset. Upon completion of the TBR period or the CarsBeforeReduction (CBR) parameter is satisfied, whichever occurs first, the linear reduction of the allowable gap from the Passage Time shall begin.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.2.1.13

<Unit> second"

REFERENCE "NEMA TS 2 Clause 3.5.3.1 and 3.5.3.2.1.b.(2)"

::= { phaseEntry 13 }

#### Phase Cars Before Reduction Parameter

phaseCarsBeforeReduction OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Phase Cars Before Reduction

(CBR) Parameter (0-255 vehicles). When the phase is Green and the sum of the cars waiting (vehicle actuations during Yellow & Red intervals) on

serviceable conflicting phases equals or exceeds the CBR parameter or the Time Before Reduction (TBR) parameter is satisfied, whichever occurs first, the linear reduction of the allowable gap from the Passage Time shall begin.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.2.1.14

<Unit> vehicle"

::= { phaseEntry 14 }

#### Phase Time To Reduce Parameter

phaseTimeToReduce OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Phase Time To Reduce Parameter

in seconds (0-255 sec). This parameter shall control the rate of reduction ofthe allowable gap between the Passage Time and Minimum Gap setting.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.2.1.15

<Unit> second"

REFERENCE "NEMA TS 2 Clause 3.5.3.1 and 3.5.3.2.1.b.(2)"

::= { phaseEntry 15 }

#### Phase Reduce By

phaseReduceBy OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object may be used for

volume density gap reduction as an alternate to the linear reduction defined by NEMA TS 1 and TS 2. It contains the tenths of seconds to reduce the gap by (0.0 - 25.5 seconds). The frequency of reduction shall produce the Minimum Gap after a time equal to the ‘phaseTimeToReduce’ object.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.2.1.16

<Unit> tenth second"

::= { phaseEntry 16 }

#### Phase Minimum Gap Parameter

phaseMinimumGap OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Phase Minimum Gap Parameter in

tenth seconds (0-25.5 sec). The reduction of the allowable gap shall continue until the gap reaches a value equal to or less than the minimum gap as set on the Minimum Gap control after which the allowable

gap shall remain fixed at the values set on the Minimum Gap control.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.2.1.17

<Unit> tenth second"

REFERENCE "NEMA TS 2 Clause 3.5.3.1 and 3.5.3.2.1.b.(2)"

::= { phaseEntry 17 }

#### Phase Dynamic Max Limit

phaseDynamicMaxLimit OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object shall determine

either the upper or lower limit of the running max in seconds (0-255 sec) during dynamic max operation. The normal maximum (i.e. Max1, Max2, etc.) shall determine the other limit as follows:

When dynamicMaxLimit is larger than the normal maximum, it shall become the upper limit.When dynamicMaxLimit is smaller than the normal maximum, it shall become the lower limit.

Setting dynamicMaxLimit greater than zero enables dynamic max operation with the normal maximum used as the initial maximum setting. See dynamicMaxStep for details on dynamic max operation.

Maximum recall or a failed detector that is assigned to the associated phase shall disable dynamic max operation for the phase.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.2.1.18

<Unit> second"

::= { phaseEntry 18 }

#### Phase Dynamic Max Step

phaseDynamicMaxStep OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object shall determine the

automatic adjustment to the running max in tenth seconds (0-25.5)

When a phase maxes out twice in a row, and on each successive max out thereafter, one dynamic max step value shall be added to the running max until such addition would mean the running max was greater than the larger of normal max or dynamic max limit.

When a phase gaps out twice in a row, and on each successive gap out thereafter, one dynamic max step value shall be subtracted from the running max until such subtraction would mean the running max was less than the smaller of the normal max or the dynamic max limit.

If a phase gaps out in one cycle and maxes out in the next cycle, or vice versa, the running max will not change.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.2.1.19

<Unit> tenth second"

::= { phaseEntry 19 }

#### Phase Startup

phaseStartup OBJECT-TYPE

SYNTAX INTEGER { other (1),

phaseNotOn (2),

greenWalk (3),

greenNoWalk (4),

yellowChange (5),

redClear (6)}

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> The Phase Startup parameter is

an enumerated integer which selects the startup state for each phase after restoration of a defined power interruption or activation of the external start input. The following entries are defined:

**other:** this phase is not enabled (phaseOptions bit

0=0 or phaseRing=0) or initializes in a state not defined by this standard.

**phaseNotOn:** this phase initializes in a Red state

(the phase is not active and no intervals are timing).

**greenWalk:** this phase initializes at the beginning of

the minimum green and walk timing intervals.

greenNoWalk: this phase initializes at the beginning of the minimum green timing interval.

**yellowChange:** this phase initializes at the beginning

of the Yellow Change interval.

**redClear:** this phase initializes at the beginning of

the Red Clearance interval.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.2.1.20"

REFERENCE "NEMA TS 2 Clause 3.5.5.1 and 3.5.5.12"

::= { phaseEntry 20 }

#### Phase Options

phaseOptions OBJECT-TYPE

SYNTAX INTEGER (0..65535)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition>Optional phase functions ( 0 =

False/Disabled, 1 = True/Enabled)

Bit 15: AddedInitialCalculation - If set (1) the CU

shall compare counts from all associated AddedInitial detectors and use the largest count value for the calculations. If clear (0)

the CU shall sum all associated AddedInitial detector counts and use this sum for the calculations. The ability to modify the setting of this bit is optional.

Bit 14: Conditional Service Enable - in multi-ring

configurations when set to 1 causes a gapped/maxed phase to conditionally service a preceding actuated vehicle phase when sufficient time remains before max time out of the phase(s) not prepared to terminate. Support is optional.

REFERENCE NEMA TS 2 Clause 3.5.3.9

Bit 13: Actuated Rest In Walk - when set to 1 causes

an actuated phase to rest in Walk when there is no serviceable conflicting call at the end of Walk Timing.

Bit 12: Guaranteed Passage - when set to 1 enables an

actuated phase operating in volume density mode (using gap reduction) to retain the right of way for the unexpired portion of the Passage time following the decision to terminate the green due to a reduced gap. Support is optional

Bit 11: Simultaneous Gap Disable - in multi-ring

configurations when set to 1 disables a gapped out phase from reverting to the extensible portion. Support is optional REFERENCE NEMA TS 2 Clause 3.5.5.3

Bit 10: Dual Entry Phase - in multi-ring

configurations when set to 1 causes the phase to become active upon entry into a concurrency group (crossing a barrier) when no calls exist

in its ring within its concurrency group.

REFERENCE NEMA TS 2 Clause 3.5.5.3

Bit 9: Soft Vehicle Recall - when set to 1 causes a

call on a phase when all conflicting phases are in green dwell or red dwell and there are no serviceable conflicting calls. Support is optional.

Bit 8: Ped. Recall - when set to 1 causes a recurring

pedestrian demand which shall function in the same manner as an external pedestrian call except that it shall not recycle the pedestrian service until a conflicting phase is serviced.

REFERENCE NEMA TS 2 Clause 3.5.3.7

Bit 7: Max Vehicle Recall - when set to 1 causes a

call on a phase such that the timing of the Green interval for that phase shall be extended to Maximum Green time.REFERENCE NEMA TS 2 Clause 3.5.3.5

Bit 6: Min. Vehicle Recall - when set to 1 causes

recurring demand for vehicle service on the phase when that phase is not in its Green interval.REFERENCE NEMA TS 2 Clause 3.5.3.6

Bit 5: Non Lock Detector Memory - when set to 0 will

cause the call to be locked at the beginning of the yellow interval. When set to 1 call locking will depend on the detectorOptions object. REFERENCE NEMA TS 2 Clause 3.5.3.4

Bit 4: Non-Actuated 2 - when set to 1 causes a phase

to respond to the Call To Non-Actuated 2 input (if present) or other method. Support is optional REFERENCE NEMA TS 2 Clause 3.5.5.5.8

Bit 3: Non-Actuated 1 - when set to 1 causes a phase

to respond to the Call To Non-Actuated 1 input (if present) or other method. Support is optional REFERENCE NEMA TS 2 Clause 3.5.5.5.8

Bit 2: Automatic Flash Exit Phase - The CU shall move

immediately to the beginning of the phase(s) programmed as Exit Phase(s) when Automatic Flash terminates. Support is optional REFERENCE NEMA TS 2 Clause 3.9.1.2.1

Bit 1: Automatic Flash Entry Phase - When Automatic

Flash is called, the CU shall service the Entry Phase(s), clear to an All Red, then initiate flashing operation. Support is optional.

REFERENCE NEMA TS 2 Clause 3.9.1.2.1

Bit 0: Enabled Phase - provide a means to define

whether this phase is used in the current configuration. A disabled phase shall not provide any outputs nor respond to any phase inputs. The object phaseRing = 0 has the same effect.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.2.1.21"

::= { phaseEntry 21 }

#### Phase Ring Parameter

phaseRing OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Phase ring number (1..maxRings)

that identified the ring which contains the associated phase. This value must not exceed the maxRings object value. If the ring number is zero, the phase is disabled (phaseOptions Bit 0 = 0 has

the same effect).

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.2.1.22

<Unit> ring"

::= { phaseEntry 22 }

#### Phase Concurrency

phaseConcurrency OBJECT-TYPE

SYNTAX OCTET STRING

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition>Each octet contains a phase

number (binary value) that may run concurrently with the associated phase. Phases that are contained in the same ring may NOT run concurrently.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.2.1.23"

::= { phaseEntry 23 }

#### Phase Maximum Green 3 Parameter

phaseMaximum3 OBJECT-TYPE

SYNTAX INTEGER (0..6000)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Phase Maximum 3 Parameter in

seconds. This time setting shall determine the maximum length of time this phase may be held in Green in the presence of a serviceable conflicting call. In the absence of a serviceable conflicting

call the Maximum Green timer shall be held reset unless Max Vehicle Recall is enabled for this phase. This may be implemented as the max green timer via an external input, coordMaximumMode or other method.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.2.1.24

<Unit> second"

::= { phaseEntry 24 }

#### Phase Yellow and Red Change Time Before End of Ped Clearance Parameter

phaseYellowandRedChangeTimeBeforeEndPedClear OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> The amount of time that the

pedestrian clearance may extend into the vehicle clearance time (yellow and red) for a phase. This parameter is expressed in 0.1 second increments ranging from 0.0 to 25.5 seconds.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.2.1.25

<Unit> tenth second"

::= { phaseEntry 25 }

#### Pedestrian Phase Walk Recycle Parameter

phasePedWalkService OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This parameter indicates whether

and how many times this phase is allowed to recycle the pedestrian movement during a cycle. This parameter is used for ped-only, signalized

intersections (mostly mid-block) that are within a coordinated roadway. If set to '1', no recycle is allowed and the pedestrian movement can be shown only up to once. If set to '2', the pedestrian movement can be shown up to twice during a cycle, etc.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.2.1.26"

::= { phaseEntry 26 }

#### Pedestrian Phase Dont Walk Revert Parameter

phaseDontWalkRevert OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Dont Walk revert time parameter

in tenth seconds. A minimum Dont Walk indication to be timed following the pedestrian clearance interval prior to the next Walk indication on the same signal output driver group.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.2.1.27

<Unit> tenth second"

::= { phaseEntry 27 }

#### Phase Alternate Pedestrian Clearance Time Parameter

phasePedAlternateClearance OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> An alternate (replacement) time,

in seconds, for the duration of the pedestrian clearance output (if present) and the flashing period of the dont walk output. This parameter may be used for a parallel pedestrian indication in conjunction with a vehicle phase or with a ped-only phase.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.2.1.28

<Unit> second"

::= { phaseEntry 28 }

#### Phase Alternate Pedestrian Walk Time Parameter

phasePedAlternateWalk OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> An alternate (replacement) time,

in seconds, for a pedestrian walk. This shall control the amount of time the Walk indication shall be displayed. This parameter may be used for a parallel pedestrian indication in conjunction with a vehicle phase or with a ped-only phase.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.2.1.29

<Unit> second"

::= { phaseEntry 29 }

#### Phase Pedestrian Advance Walk Time Parameter

phasePedAdvanceWalkTime OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> The amount of time, in tenths of

a second from 0 to 25.5 seconds, that the vehicle phase’s parallel pedestrian Walk indication starts before the start of the green indication of the vehicle phase. A value of 12.7 seconds indicates the pedestrian WALK indication starts 12.7 seconds before the GREEN indication of the vehicle phase. The actual

offset used between the start of the pedestrian Walk indication and the start of the green indication of the vehicle phase is the sum of this object value plus the value in the phasePedDelayTime.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.2.1.30

<Unit> tenth second"

DEFVAL { 0 }

::= { phaseEntry 30 }

#### Phase Pedestrian Delay Walk Time Parameter

phasePedDelayTime OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> The amount of time, in tenths of

a second from 0 to 25.5 seconds, that the vehicle phase’s parallel pedestrian Walk indication starts after the start of the green indication of the vehicle phase. A value of 12.7 indicates the pedestrian WALK indication starts 12.7 seconds after the GREEN indication of the vehicle phase. The actual offset used between the start of the pedestrian Walk indication and the start of the green indication of the vehicle phase is the sum of this object value plus the value in the phasePedAdvanceWalkTime.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.2.1.31

<Unit> tenth second"

DEFVAL { 0 }

::= { phaseEntry 31 }

#### Phase Advanced Green Indication Start Time Parameter

phaseAdvWarnGrnStartTime OBJECT-TYPE

SYNTAX INTEGER (0..128)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> The amount of time, in tenths of

a second for a period of 0.0 to 12.8 seconds, that an advanced warning signal indication is displayed before the start of phase Green. The warning signal is placed upstream of the phase's approach and

indicates that the phase’s Green indication is about to start or has started.

The value of this object should not exceed the total amount of clearance time of the phase(s) that is being terminated prior to the start of this phase.

Note: The Advanced Warning Green terminates at the end of the

green.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.2.1.32

<Unit> tenth second"

::= { phaseEntry 32 }

#### Phase Advanced Red Indication Start Time Parameter

phaseAdvWarnRedStartTime OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> The amount of time, in tenths of

a second for a range of 0.0 to 25.5 seconds, prior to the start of the phase’s RED indication that an advanced warning signal, placed upstream of the phase's approach, turns on.

Note: The Advanced Warning Red terminates at the end of Red.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.2.1.33

<Unit> tenth second"

::= { phaseEntry 33 }

#### Phase Alternate Minimum Green Time During Transitions

phaseAltMinTimeTransition OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object indicates the

alternate minimum green time that is used during transitions, in seconds from 1 to 255 seconds. This object can be applied during transitions or signal priority. A value of 0 indicates that this object is not used during transitions. The alternate minimum green cannot be less than phaseMinimumGreen for this phase.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.2.1.34

<Unit> second"

DEFVAL { 0 }

::= { phaseEntry 34 }

### **Maximum Phase Groups**

maxPhaseGroups OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION " The Maximum Number of Phase Groups (8 Phases

per group) this Controller Unit supports. This value is equal to TRUNCATE [(maxPhases + 7) / 8]. This object indicates the maximum rows which shall appear in the phaseStatusGroupTable and phaseControlGroupTable.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.3

<Unit> group"

::= { phase 3 }

### **Phase Status Group Table**

phaseStatusGroupTable OBJECT-TYPE

SYNTAX SEQUENCE OF PhaseStatusGroupEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> A table containing

Controller Unit Phase Output (Red, Yellow, & Green) and Call (vehicle & pedestrian)status in groups of eight Phases. The number of rows in this table is equal to the maxPhaseGroups object.

<TableType> static

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.4"

::= { phase 4 }

phaseStatusGroupEntry OBJECT-TYPE

SYNTAX PhaseStatusGroupEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> Red, Yellow, & Green Output

Status and Vehicle and Pedestrian Call for eight Controller Unit Phases.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.4.1"

INDEX { phaseStatusGroupNumber }

::= { phaseStatusGroupTable 1 }

PhaseStatusGroupEntry ::= SEQUENCE {

phaseStatusGroupNumber INTEGER,

phaseStatusGroupReds INTEGER,

phaseStatusGroupYellows INTEGER,

phaseStatusGroupGreens INTEGER,

phaseStatusGroupDontWalks INTEGER,

phaseStatusGroupPedClears INTEGER,

phaseStatusGroupWalks INTEGER,

phaseStatusGroupVehCalls INTEGER,

phaseStatusGroupPedCalls INTEGER,

phaseStatusGroupPhaseOns INTEGER,

phaseStatusGroupPhaseNexts INTEGER }

#### Phase Status Group Number

phaseStatusGroupNumber OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The Phase Status Group number

for objects in this row. This value shall not exceed the maxPhaseGroups object value.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.4.1.1

<Unit> group"

::= { phaseStatusGroupEntry 1 }

#### Phase Status Group Reds

phaseStatusGroupReds OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> Phase Red Output Status Mask,

when a bit = 1, the Phase Red is currently active. When a bit = 0, the Phase Red is NOT currently active.

Bit 7: Phase # = (phaseStatusGroupNumber \* 8)

Bit 6: Phase # = (phaseStatusGroupNumber \* 8) - 1

Bit 5: Phase # = (phaseStatusGroupNumber \* 8) - 2

Bit 4: Phase # = (phaseStatusGroupNumber \* 8) - 3

Bit 3: Phase # = (phaseStatusGroupNumber \* 8) - 4

Bit 2: Phase # = (phaseStatusGroupNumber \* 8) - 5

Bit 1: Phase # = (phaseStatusGroupNumber \* 8) - 6

Bit 0: Phase # = (phaseStatusGroupNumber \* 8) – 7

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.4.1.2"

::= { phaseStatusGroupEntry 2 }

#### Phase Status Group Yellows

phaseStatusGroupYellows OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> Phase Yellow Output Status Mask,

when a bit = 1, the Phase Yellow is currently active. When a bit = 0, the Phase Yellow is NOT currently active.

Bit 7: Phase # = (phaseStatusGroupNumber \* 8)

Bit 6: Phase # = (phaseStatusGroupNumber \* 8) - 1

Bit 5: Phase # = (phaseStatusGroupNumber \* 8) - 2

Bit 4: Phase # = (phaseStatusGroupNumber \* 8) - 3

Bit 3: Phase # = (phaseStatusGroupNumber \* 8) - 4

Bit 2: Phase # = (phaseStatusGroupNumber \* 8) - 5

Bit 1: Phase # = (phaseStatusGroupNumber \* 8) - 6

Bit 0: Phase # = (phaseStatusGroupNumber \* 8) - 7

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.4.1.3"

::= { phaseStatusGroupEntry 3 }

#### Phase Status Group Greens

phaseStatusGroupGreens OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> Phase Green Output Status Mask,

when a bit = 1, the Phase Green is currently active. When a bit = 0, the Phase Green is NOT currently active.

Bit 7: Phase # = (phaseStatusGroupNumber \* 8)

Bit 6: Phase # = (phaseStatusGroupNumber \* 8) - 1

Bit 5: Phase # = (phaseStatusGroupNumber \* 8) - 2

Bit 4: Phase # = (phaseStatusGroupNumber \* 8) - 3

Bit 3: Phase # = (phaseStatusGroupNumber \* 8) - 4

Bit 2: Phase # = (phaseStatusGroupNumber \* 8) - 5

Bit 1: Phase # = (phaseStatusGroupNumber \* 8) - 6

Bit 0: Phase # = (phaseStatusGroupNumber \* 8) - 7

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.4.1.4"

::= { phaseStatusGroupEntry 4 }

#### Phase Status Group Dont Walks

phaseStatusGroupDontWalks OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> Phase Dont Walk Output Status

Mask, when a bit = 1, the Phase Dont Walk is currently active. When a bit = 0, the Phase Dont Walk is NOT currently active.

Bit 7: Phase # = (phaseStatusGroupNumber \* 8)

Bit 6: Phase # = (phaseStatusGroupNumber \* 8) - 1

Bit 5: Phase # = (phaseStatusGroupNumber \* 8) - 2

Bit 4: Phase # = (phaseStatusGroupNumber \* 8) - 3

Bit 3: Phase # = (phaseStatusGroupNumber \* 8) - 4

Bit 2: Phase # = (phaseStatusGroupNumber \* 8) - 5

Bit 1: Phase # = (phaseStatusGroupNumber \* 8) - 6

Bit 0: Phase # = (phaseStatusGroupNumber \* 8) - 7

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.4.1.5"

::= { phaseStatusGroupEntry 5 }

#### Phase Status Group Pedestrian Clears

phaseStatusGroupPedClears OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> Phase Ped Clear Output Status

Mask, when a bit = 1, the Phase Ped Clear is currently active. When a bit = 0,the Phase Ped Clear is NOT currently active.

Bit 7: Phase # = (phaseStatusGroupNumber \* 8)

Bit 6: Phase # = (phaseStatusGroupNumber \* 8) - 1

Bit 5: Phase # = (phaseStatusGroupNumber \* 8) - 2

Bit 4: Phase # = (phaseStatusGroupNumber \* 8) - 3

Bit 3: Phase # = (phaseStatusGroupNumber \* 8) - 4

Bit 2: Phase # = (phaseStatusGroupNumber \* 8) - 5

Bit 1: Phase # = (phaseStatusGroupNumber \* 8) - 6

Bit 0: Phase # = (phaseStatusGroupNumber \* 8) - 7

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.4.1.6"

::= { phaseStatusGroupEntry 6 }

#### Phase Status Group Walks

phaseStatusGroupWalks OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> Phase Walk Output Status Mask,

when a bit = 1, the Phase Walk is currently active. When a bit = 0, the Phase Walk is NOT currently active.

Bit 7: Phase # = (phaseStatusGroupNumber \* 8)

Bit 6: Phase # = (phaseStatusGroupNumber \* 8) - 1

Bit 5: Phase # = (phaseStatusGroupNumber \* 8) - 2

Bit 4: Phase # = (phaseStatusGroupNumber \* 8) - 3

Bit 3: Phase # = (phaseStatusGroupNumber \* 8) - 4

Bit 2: Phase # = (phaseStatusGroupNumber \* 8) - 5

Bit 1: Phase # = (phaseStatusGroupNumber \* 8) - 6

Bit 0: Phase # = (phaseStatusGroupNumber \* 8) - 7

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.4.1.7"

::= { phaseStatusGroupEntry 7 }

#### Phase Status Group Vehicle Calls

phaseStatusGroupVehCalls OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> Phase Vehicle Call Status Mask,

when a bit = 1, the Phase vehicle currently has a call for service. When a bit = 0, the Phase vehicle currently does NOT have a call for service.

Bit 7: Phase # = (phaseStatusGroupNumber \* 8)

Bit 6: Phase # = (phaseStatusGroupNumber \* 8) - 1

Bit 5: Phase # = (phaseStatusGroupNumber \* 8) - 2

Bit 4: Phase # = (phaseStatusGroupNumber \* 8) - 3

Bit 3: Phase # = (phaseStatusGroupNumber \* 8) - 4

Bit 2: Phase # = (phaseStatusGroupNumber \* 8) - 5

Bit 1: Phase # = (phaseStatusGroupNumber \* 8) - 6

Bit 0: Phase # = (phaseStatusGroupNumber \* 8) - 7

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.4.1.8"

::= { phaseStatusGroupEntry 8 }

#### Phase Status Group Pedestrian Calls

phaseStatusGroupPedCalls OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> Phase Pedestrian Call Status

Mask, when a bit = 1, the Phase pedestrian currently has a call for service. When a bit = 0, the Phase pedestrian currently does NOT have a call for service.

Bit 7: Phase # = (phaseStatusGroupNumber \* 8)

Bit 6: Phase # = (phaseStatusGroupNumber \* 8) - 1

Bit 5: Phase # = (phaseStatusGroupNumber \* 8) - 2

Bit 4: Phase # = (phaseStatusGroupNumber \* 8) - 3

Bit 3: Phase # = (phaseStatusGroupNumber \* 8) - 4

Bit 2: Phase # = (phaseStatusGroupNumber \* 8) - 5

Bit 1: Phase # = (phaseStatusGroupNumber \* 8) - 6

Bit 0: Phase # = (phaseStatusGroupNumber \* 8) - 7

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.4.1.9"

::= { phaseStatusGroupEntry 9 }

#### Phase Status Group Phase Ons

phaseStatusGroupPhaseOns OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> Phase On Status Mask, when a bit

= 1, the Phase is currently active. When a bit = 0, the Phase currently is NOT active. The phase is ON during the Green, Yellow, & Red Clearance intervals of that phase. It shall be permissible for this STATUS to be True (bit=1) during the Red Dwell state.

Bit 7: Phase # = (phaseStatusGroupNumber \* 8)

Bit 6: Phase # = (phaseStatusGroupNumber \* 8) - 1

Bit 5: Phase # = (phaseStatusGroupNumber \* 8) - 2

Bit 4: Phase # = (phaseStatusGroupNumber \* 8) - 3

Bit 3: Phase # = (phaseStatusGroupNumber \* 8) - 4

Bit 2: Phase # = (phaseStatusGroupNumber \* 8) - 5

Bit 1: Phase # = (phaseStatusGroupNumber \* 8) - 6

Bit 0: Phase # = (phaseStatusGroupNumber \* 8) - 7

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.4.1.10"

::= { phaseStatusGroupEntry 10 }

#### Phase Status Group Phase Nexts

phaseStatusGroupPhaseNexts OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> Phase Next Status Mask, when a

bit = 1, the Phase currently is committed to be NEXT in sequence & remains present until the phase becomes active (On/Timing). When a bit = 0, the Phase currently is NOT committed to be NEXT in sequence. The phase next to be serviced shall be determined at the end of the green interval of the terminating phase; except that if the decision cannot be made at the end of the Green interval, it shall not be made until after the end of all Vehicle Change & Clearance intervals.

Bit 7: Phase # = (phaseStatusGroupNumber \* 8)

Bit 6: Phase # = (phaseStatusGroupNumber \* 8) - 1

Bit 5: Phase # = (phaseStatusGroupNumber \* 8) - 2

Bit 4: Phase # = (phaseStatusGroupNumber \* 8) - 3

Bit 3: Phase # = (phaseStatusGroupNumber \* 8) - 4

Bit 2: Phase # = (phaseStatusGroupNumber \* 8) - 5

Bit 1: Phase # = (phaseStatusGroupNumber \* 8) - 6

Bit 0: Phase # = (phaseStatusGroupNumber \* 8) - 7

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.4.1.11"

::= { phaseStatusGroupEntry 11 }

### **Phase Control Table**

phaseControlGroupTable OBJECT-TYPE

SYNTAX SEQUENCE OF PhaseControlGroupEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> A table containing Controller

Unit Phase Control in groups of eight phases. The number of rows in this table is equal to the maxPhaseGroups object.

<TableType> static

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.5

<Unit> group"

::= { phase 5 }

phaseControlGroupEntry OBJECT-TYPE

SYNTAX PhaseControlGroupEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> Phase Control for eight

Controller Unit phases.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.5.1"

INDEX { phaseControlGroupNumber }

::= { phaseControlGroupTable 1 }

PhaseControlGroupEntry ::= SEQUENCE {

phaseControlGroupNumber INTEGER,

phaseControlGroupPhaseOmit INTEGER,

phaseControlGroupPedOmit INTEGER,

phaseControlGroupHold INTEGER,

phaseControlGroupForceOff INTEGER,

phaseControlGroupVehCall INTEGER,

phaseControlGroupPedCall INTEGER }

#### Phase Control Group Number

phaseControlGroupNumber OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The Phase Control Group number

for objects in this row. This value shall not exceed the maxPhaseGroups object value.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.5.1.1

<Unit> group"

::= { phaseControlGroupEntry 1 }

#### Phase Omit Control

phaseControlGroupPhaseOmit OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object is used to allow a

remote entity to omit phases from being serviced in the device. When a bit = 1, the device shall activate the System Phase Omit control for that phase. When a bit = 0, the device shall not activate the System Phase Omit control for that phase.

Bit 7: Phase # = (phaseControlGroupNumber \* 8)

Bit 6: Phase # = (phaseControlGroupNumber \* 8) - 1

Bit 5: Phase # = (phaseControlGroupNumber \* 8) - 2

Bit 4: Phase # = (phaseControlGroupNumber \* 8) - 3

Bit 3: Phase # = (phaseControlGroupNumber \* 8) - 4

Bit 2: Phase # = (phaseControlGroupNumber \* 8) - 5

Bit 1: Phase # = (phaseControlGroupNumber \* 8) - 6

Bit 0: Phase # = (phaseControlGroupNumber \* 8) - 7

The device shall reset this object to ZERO when in BACKUP Mode. A write to this object shall reset the Backup timer to ZERO (see unitBackupTime).

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.5.1.2"

REFERENCE "NEMA TS 2 Clause 3.5.3.11.2"

::= { phaseControlGroupEntry 2 }

#### Pedestrian Omit Control

phaseControlGroupPedOmit OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object is used to allow a

remote entity to omit peds from being serviced in the device. When a bit = 1, the device shall activate the System Ped Omit control for that phase. When a bit = 0, the device shall not activate the System Ped Omit control for that phase.

Bit 7: Phase # = (phaseControlGroupNumber \* 8)

Bit 6: Phase # = (phaseControlGroupNumber \* 8) - 1

Bit 5: Phase # = (phaseControlGroupNumber \* 8) – 2

Bit 4: Phase # = (phaseControlGroupNumber \* 8) - 3

Bit 3: Phase # = (phaseControlGroupNumber \* 8) - 4

Bit 2: Phase # = (phaseControlGroupNumber \* 8) - 5

Bit 1: Phase # = (phaseControlGroupNumber \* 8) - 6

Bit 0: Phase # = (phaseControlGroupNumber \* 8) - 7

The device shall reset this object to ZERO when in BACKUP Mode. A write to this object shall reset the Backup timer to ZERO (see unitBackupTime).

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.5.1.3"

REFERENCE "NEMA TS 2 Clause 3.5.3.11.3"

::= { phaseControlGroupEntry 3 }

#### Phase Hold Control

phaseControlGroupHold OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object is used to allow a

remote entity to hold phases in the device. When a bit = 1, the device shall activate the System Phase Hold control for that phase. When a bit = 0, the device shall not activate the System Phase Hold control for that phase.

Bit 7: Phase # = (phaseControlGroupNumber \* 8)

Bit 6: Phase # = (phaseControlGroupNumber \* 8) - 1

Bit 5: Phase # = (phaseControlGroupNumber \* 8) - 2

Bit 4: Phase # = (phaseControlGroupNumber \* 8) - 3

Bit 3: Phase # = (phaseControlGroupNumber \* 8) - 4

Bit 2: Phase # = (phaseControlGroupNumber \* 8) - 5

Bit 1: Phase # = (phaseControlGroupNumber \* 8) - 6

Bit 0: Phase # = (phaseControlGroupNumber \* 8) - 7

The device shall reset this object to ZERO when in BACKUP Mode. A write to this object shall reset the Backup timer to ZERO (see unitBackupTime).

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.5.1.4"

REFERENCE "NEMA TS 2 Clause 3.5.3.11.1"

::= { phaseControlGroupEntry 4 }

#### Phase Force Off Control

phaseControlGroupForceOff OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object is used to apply

force offs on a per phase basis. When a bit = 1, the device shall activate the System Phase Force Off control for that phase. When a bit = 0,the device shall not activate the System Phase Force Off control for that phase. When the phase green terminates, the associated bit shall be reset to 0.

Bit 7: Phase # = (phaseControlGroupNumber \* 8)

Bit 6: Phase # = (phaseControlGroupNumber \* 8) - 1

Bit 5: Phase # = (phaseControlGroupNumber \* 8) - 2

Bit 4: Phase # = (phaseControlGroupNumber \* 8) - 3

Bit 3: Phase # = (phaseControlGroupNumber \* 8) - 4

Bit 2: Phase # = (phaseControlGroupNumber \* 8) - 5

Bit 1: Phase # = (phaseControlGroupNumber \* 8) – 6

Bit 0: Phase # = (phaseControlGroupNumber \* 8) - 7

The device shall reset this object to ZERO when in BACKUP Mode. A write to this object shall reset the Backup timer to ZERO (see unitBackupTime).

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.5.1.5"

::= { phaseControlGroupEntry 5 }

#### Vehicle Call Control

phaseControlGroupVehCall OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object is used to allow a

remote entity to place calls for vehicle service in the device. When a bit = 1, the device shall place a call for vehicle service on that phase. When a bit = 0, the device shall not place a call for vehicle service on that phase.

Bit 7: Phase # = (phaseControlGroupNumber \* 8)

Bit 6: Phase # = (phaseControlGroupNumber \* 8) - 1

Bit 5: Phase # = (phaseControlGroupNumber \* 8) - 2

Bit 4: Phase # = (phaseControlGroupNumber \* 8) - 3

Bit 3: Phase # = (phaseControlGroupNumber \* 8) - 4

Bit 2: Phase # = (phaseControlGroupNumber \* 8) - 5

Bit 1: Phase # = (phaseControlGroupNumber \* 8) - 6

Bit 0: Phase # = (phaseControlGroupNumber \* 8) - 7

The device shall reset this object to ZERO when in BACKUP Mode. A write to this object shall reset the Backup timer to ZERO (see unitBackupTime).

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.5.1.6"

::= { phaseControlGroupEntry 6 }

#### Pedestrian Call Control

phaseControlGroupPedCall OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object is used to allow a

remote entity to place calls for ped service in the device. When a bit = 1, the device shall place a call for ped service on that phase. When a bit = 0, the device shall not place a call for ped service on that phase.

Bit 7: Phase # = (phaseControlGroupNumber \* 8)

Bit 6: Phase # = (phaseControlGroupNumber \* 8) - 1

Bit 5: Phase # = (phaseControlGroupNumber \* 8) - 2

Bit 4: Phase # = (phaseControlGroupNumber \* 8) - 3

Bit 3: Phase # = (phaseControlGroupNumber \* 8) - 4

Bit 2: Phase # = (phaseControlGroupNumber \* 8) - 5

Bit 1: Phase # = (phaseControlGroupNumber \* 8) - 6

Bit 0: Phase # = (phaseControlGroupNumber \* 8) - 7

The device shall reset this object to ZERO when in BACKUP Mode. A write to this object shall reset the Backup timer to ZERO (see unitBackupTime).

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.1.5.1.7"

::= { phaseControlGroupEntry 7 }

## **Detector Parameters**

### **Maximum Vehicle Detectors**

maxVehicleDetectors OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The Maximum Number of Vehicle

Detectors this Controller Unit supports. This object indicates the maximum rows which shall appear in the vehicleDetectorTable object.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.1

<Unit> detector"

::= { detector 1 }

### **Vehicle Detector Parameter Table**

vehicleDetectorTable OBJECT-TYPE

SYNTAX SEQUENCE OF VehicleDetectorEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> A table containing Controller

Unit vehicle detector parameters. The number of rows in this table is equal to the maxVehicleDetectors object.

<TableType> static

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.2"

::= { detector 2 }

vehicleDetectorEntry OBJECT-TYPE

SYNTAX VehicleDetectorEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> Parameters for a specific

Controller Unit detector.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.2.1"

INDEX { vehicleDetectorNumber }

::= { vehicleDetectorTable 1 }

VehicleDetectorEntry ::= SEQUENCE {

vehicleDetectorNumber INTEGER,

vehicleDetectorOptions INTEGER,

vehicleDetectorCallPhase INTEGER,

vehicleDetectorSwitchPhase INTEGER,

vehicleDetectorDelay INTEGER,

vehicleDetectorExtend INTEGER,

vehicleDetectorQueueLimit INTEGER,

vehicleDetectorNoActivity INTEGER,

vehicleDetectorMaxPresence INTEGER,

vehicleDetectorErraticCounts INTEGER,

vehicleDetectorFailTime INTEGER,

vehicleDetectorAlarms INTEGER,

vehicleDetectorReportedAlarms INTEGER,

vehicleDetectorReset INTEGER,

vehicleDetectorOptions2 INTEGER,

vehicleDetectorPairedDetector INTEGER,

vehicleDetectorPairedDetectorSpacing INTEGER,

vehicleDetectorAvgVehicleLength INTEGER,

vehicleDetectorLength INTEGER,

vehicleDetectorTravelMode INTEGER }

#### Vehicle Detector Number

vehicleDetectorNumber OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The vehicle detector number for

objects in this row. The value shall not exceed the maxVehicleDetectors object value.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.2.1.1

<Unit> detector"

::= { vehicleDetectorEntry 1 }

#### Vehicle Detector Options Parameter

vehicleDetectorOptions OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Vehicle Detector Options

Parameter as follows

(0=Disabled, 1=Enabled):

Bit 7: Call - if Enabled, the CU shall place a demand

for vehicular service on the assigned phase when the phase is not timing the green interval and an actuation is present.

Bit 6: Queue - if Enabled, the CU shall extend the

green interval of the assigned phase until a gap occurs (no actuation) or until the green has been active longer than the vehicleDetectorQueueLimit time. This is optional.

Bit 5: AddedInitial - if Enabled, the CU shall

accumulate detector actuation counts for use in the added initial calculations. Counts shall be accumulated from the beginning of the yellow interval to the beginning of the green interval.

Bit 4: Passage - if Enabled, the CU shall maintain a

reset to the associated phase passage timer for the duration of the detector actuation when the phase is green.

Bit 3: Red Lock Call - if Enabled, the detector will

lock a call to the assigned phase if an actuation occurs while the phase is not timing Green or Yellow. This mode is optional.

Bit 2: Yellow Lock Call - if Enabled, the detector

will lock a call to the assigned phase if an actuation occurs while the phase is not timing Green.

Bit 1: Occupancy Detector - if Enabled, the detector

collects data for the associated detector occupancy object(s). This capability may not be supported on all detector inputs to a device.

Bit 0: Volume Detector - if Enabled, the detector

collects data for the associated detector volume object(s). This capability may not be supported on all detector inputs to a device.

A SET of both bits 2 & 3 = 1 shall result in bit 2=1 and bit 3=0.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.2.1.2"

::= { vehicleDetectorEntry 2}

-- Note: { vehicleDetectorEntry 3} is not used.

#### Vehicle Detector Call Phase Parameter

vehicleDetectorCallPhase OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object contains assigned

phase number for the detector input associated with this row. The associated detector call capability is enabled when this object is set to a non-zero value. The value shall not exceed the value of maxPhases.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.2.1.4

<Unit> phase"

REFERENCE "NEMA TS 2 Clause 3.5.5.5.4 and 3.5.5.5.5"

::= { vehicleDetectorEntry 4 }

#### Vehicle Detector Switch Phase Parameter

vehicleDetectorSwitchPhase OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Detector Switch Phase Parameter

(i.e., Phase Number). The phase to which a vehicle detector actuation shall be switched when the assigned phase is Yellow or Red and the Switch Phase is Green.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.2.1.5

<Unit> phase"

REFERENCE "NEMA TS 2 Clause 3.5.5.5.4.c"

::= { vehicleDetectorEntry 5 }

#### Vehicle Detector Delay Parameter

vehicleDetectorDelay OBJECT-TYPE

SYNTAX INTEGER (0..65535)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Detector Delay Parameter in

tenth seconds (0–255.0 sec). The period a detector actuation (input recognition) shall be delayed when the phase is not Green. If a management station attempts to set a value between 2551 and 65535, inclusive, the parameter is undefined.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.2.1.6

<Unit> tenth second"

REFERENCE "NEMA TS 2 Clause 3.5.5.5.4.a"

::= { vehicleDetectorEntry 6 }

#### Vehicle Detector Extend Parameter

vehicleDetectorExtend OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Detector Extend Parameter in

tenth seconds (0–25.5 sec). The period a vehicle detector actuation (input duration) shall be extended from the point of termination, when the phase is Green.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.2.1.7

<Unit> tenth second"

REFERENCE "NEMA TS 2 Clause 3.5.5.5.4.b"

::= { vehicleDetectorEntry 7 }

#### Vehicle Detector Queue Limit

vehicleDetectorQueueLimit OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Detector Queue Limit parameter

in seconds (0-255 sec). The length of time that an actuation from a queue detector may continue into the phase green. This time begins when the phase becomes green and when it expires any associated detector inputs shall be ignored. This time may be shorter due to other overriding device parameters (i.e. Maximum time, Force Offs, ...).

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.2.1.8

<Unit> second"

::= { vehicleDetectorEntry 8 }

#### Vehicle Detector No Activity Parameter

vehicleDetectorNoActivity OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Detector No Activity diagnostic

Parameter in minutes (0–255 min.). If an active detector does not exhibit an actuation in the specified period, it is considered a fault by the diagnostics and the detector is classified as Failed. A value of 0 for this object shall disable this diagnostic for this detector.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.2.1.9

<Unit> minute"

REFERENCE "NEMA TS 2 Clause 3.9.3.1.4.1"

::= { vehicleDetectorEntry 9 }

#### Vehicle Detector Maximum Presence Parameter

vehicleDetectorMaxPresence OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Detector Maximum Presence

diagnostic Parameter in minutes (0-255 min.). If an active detector exhibitscontinuous detection for too long a period, it is considered a fault by the diagnostics and the detector is classified as Failed. A value of 0 for this object shall disable this diagnostic for this detector.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.2.1.10

<Unit> minute"

REFERENCE "NEMA TS 2 Clause 3.9.3.1.4.2"

::= { vehicleDetectorEntry 10 }

#### Vehicle Detector Erratic Counts Parameter

vehicleDetectorErraticCounts OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Detector Erratic Counts

diagnostic Parameter in counts/minute (0-255 cpm). If an active detector exhibits excessive actuations, it is considered a fault by the diagnostics and the detector is classified as Failed. A value of 0 for this object shall disable this diagnostic for this detector.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.2.1.11

<Unit> count"

REFERENCE "NEMA TS 2 Clause 3.9.3.1.4.3"

::= { vehicleDetectorEntry 11 }

#### Vehicle Detector Fail Time Parameter

vehicleDetectorFailTime OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Detector Fail Time in seconds

(0..255 sec). If a detector diagnostic indicates that the associated detector input is failed, then a call shall be placed on the associated phase during all non-green intervals. When each green interval begins the call shall be maintained for the length of time specified by this object and then removed. If the value of this object equals the maximum value (255) then a constant call shall be placed on the ssociated phase (max recall). If the value of this object equals zero then no call shall be placed on the associated phase for any interval (no recall). Compliant devices may support a limited capability for this object (i.e. only max recall or max recall and no recall). At a minimum the max recall setting must be supported.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.2.1.12

<Unit> second"

::= { vehicleDetectorEntry 12 }

#### Vehicle Detector Alarms

vehicleDetectorAlarms OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> This object shall return

indications of detector alarms. Detector Alarms are indicated as follows:

Bit 7: Other Fault - The detector has failed due to

some other cause.

Bit 6: Reserved.

Bit 5: Reserved.

Bit 4: Configuration Fault - Detector is assigned but

is not supported.

Bit 3: Communications Fault - Communications to the

device (if present) have failed.

Bit 2: Erratic Output Fault - This detector has been

flagged as non-operational due to erratic outputs (excessive counts) by the CU detector diagnostic.

Bit 1: Max Presence Fault - This detector has been

flagged as non-operational due to a presence indicator that exceeded the maximum expected time by the CU detector diagnostic.

Bit 0: No Activity Fault - This detector has been

flagged as nonoperational due to lower than expected activity by the CU detector diagnostic.

Once set a bit shall maintain its state as long as the condition exists. The bit shall clear when the condition no longer exists.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.2.1.13"

::= { vehicleDetectorEntry 13 }

#### Vehicle Detector Reported Alarms

vehicleDetectorReportedAlarms OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> This object shall return

detector device reported alarms (via some communications mechanism). Inductive Loop Detector Alarms are indicated as follows:

Bit 7: Reserved.

Bit 6: Reserved.

Bit 5: Reserved.

Bit 4: Excessive Change Fault - This detector has

been flagged as non-operational due to an inductance change that exceeded expected values.

Bit 3: Shorted Loop Fault - This detector has been

flagged as non-operational due to a shorted loop wire.

Bit 2: Open Loop Fault - This detector has been

flagged as nonoperational due to an open loop (broken wire).

Bit 1: Watchdog Fault - This detector has been

flagged as nonoperational due to a watchdog error.

Bit 0: Other - This detector has been flagged as non-

operational due to some other error.

Once set a bit shall maintain its state as long as the condition exists. The bit shall clear when the condition no longer exists.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.2.1.14"

::= { vehicleDetectorEntry 14 }

#### Vehicle Detector Reset

vehicleDetectorReset OBJECT-TYPE

SYNTAX INTEGER (0..1)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object when set to TRUE

(one) shall cause the CU to command the associated detector to reset. This object shall automatically return to FALSE (zero) after the CU has issued the reset command.

Note: this may affect other detector (detector channels) that are physically attached to a common reset line.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.2.1.15"

::= { vehicleDetectorEntry 15 }

#### Vehicle Detector Options 2

vehicleDetectorOptions2 OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> A bit-mapped value as defined

below for configuring detector options.

<Format>

bits 7-3 Reserved.

bit 2 0=CUSTOM, 1=NTCIP Default Detector Speed Mode

Option. For a vehicle detector operating in pairs, this option is used when there is an error on one of the paired detectors. It identifies how the controller should calculate speed without the other detector. CUSTOM indicates a manufacturer specific calculation. NTCIP indicates the use of the calculation Speed = (Average Vehicle Length + Detector Length) / Detect Time.

bit 1 0=TRAIL, 1=LEAD Detector Placement Option. For a

vehicle detector operating in pairs, this option indicates the leading and trailing detectors. LEAD indicates that the detector is the leading detector of the pair. TRAIL indicates that the detector is a

trailing detector in the pair.

bit 0 0=DISABLED, 1=ENABLED

Speed Detector. If enabled, the detector is used to collect speed data (See volumeOccupancyTable and detectorAvgSpeed). This capability may not be supported on all detector inputs to a device.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.2.1.16"

::= { vehicleDetectorEntry 16 }

#### Vehicle Detector Paired Detector

vehicleDetectorPairedDetector OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This is a detector identifier

(vehicleDetectorNumber) that is used to determine speed. A value of 0 indicates there is no paired detector. Setting this value will automatically add this detector as the given detector's vehicleDetectorPairedDetector.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.2.1.17"

DEFVAL { 0 }

::= { vehicleDetectorEntry 17 }

#### Vehicle Detector Paired Detector Spacing

vehicleDetectorPairedDetectorSpacing OBJECT-TYPE

SYNTAX INTEGER (0..65535)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This parameter allows the user

to set the spacing, in 0.01 meters, between paired detectors for use in calculating vehicle speeds. This parameter is measured from the leading edge of one detector to the leading edge of the paired detector. A value of 0 indicates there is no paired detector.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.2.1.18

<unit> one-hundredth of a meter"

DEFVAL { 0 }

::= { vehicleDetectorEntry 18 }

#### Vehicle Detector Average Vehicle Length

vehicleDetectorAvgVehicleLength OBJECT-TYPE

SYNTAX INTEGER (1..4000)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This parameter allows the user

to set the average vehicle length for use in determining speed and classification. This allows for a range of lengths between 0.01 meters to 40 meters in length.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.2.1.19

<Unit> one-hundredth of a meter"

::= { vehicleDetectorEntry 19 }

#### Vehicle Detector Length Parameter

vehicleDetectorLength OBJECT-TYPE

SYNTAX INTEGER (1..65535)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This parameter allows the user

to set the length of the detection zone. In the case of a loop detector, this is the length of the loop.

<Valid Value Rule> Values 01 to 4000 are used to represent

the length. This allows for a range of lengths between 0.01 meters to 40 meters in length. The value of 65535 shall be returned to represent no length set. Values 4001 to 65534 are not used.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.2.1.20

<Unit> one-hundredth of a meter"

DEFVAL { 65535 }

::= { vehicleDetectorEntry 20 }

#### Vehicle Detector Travel Mode

vehicleDetectorTravelMode OBJECT-TYPE

SYNTAX INTEGER { other (1),

vehicle (2),

transit (3),

bicycle (4) }

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This parameter allows the user

to identify detectors for specific types of travel modes.

other: refers to a detector for a travel type not defined in this standard

vehicle: refers to a detector identified for vehicles.

transit: refers to a detector identified for transit vehicles.

bicycle: refers to a detector identified for bicycles.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.2.1.21"

DEFVAL { vehicle }

::= { vehicleDetectorEntry 21 }

### **Maximum Vehicle Detector Status Groups**

maxVehicleDetectorStatusGroups OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The maximum number of detector

status groups (8 detectors per group) this device supports. This value is equal to TRUNCATE [(maxVehicleDetectors + 7 ) / 8]. This object indicates the maximum number of rows which shall appear in the

vehicleDetectorStatusGroupTable object.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.3

<Unit> group"

::= { detector 3 }

### **Vehicle Detector Status Group Table**

vehicleDetectorStatusGroupTable OBJECT-TYPE

SYNTAX SEQUENCE OF VehicleDetectorStatusGroupEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> A table containing detector

status in groups of eight detectors. The number of rows in this table is equal to the maxVehicleDetectorStatusGroups object.

<TableType> static

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.4"

::= { detector 4 }

vehicleDetectorStatusGroupEntry OBJECT-TYPE

SYNTAX VehicleDetectorStatusGroupEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> A group (row) of detector status.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.4.1"

INDEX { vehicleDetectorStatusGroupNumber }

::= { vehicleDetectorStatusGroupTable 1 }

VehicleDetectorStatusGroupEntry ::= SEQUENCE {

vehicleDetectorStatusGroupNumber INTEGER,

vehicleDetectorStatusGroupActive INTEGER,

vehicleDetectorStatusGroupAlarms INTEGER }

#### Detector Status Group Number

vehicleDetectorStatusGroupNumber OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The detector status group number

for objects in this row. This value shall not exceed the maxVehicleDetectorStatusGroups object value.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.4.1.1

<Unit> group"

::= { vehicleDetectorStatusGroupEntry 1 }

#### Detector Status Group Active

vehicleDetectorStatusGroupActive OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> This object shall return the

detection STATUS of each detector associated with the group. Each detector shall be represented as ON (detect) or OFF (no-detect) by individual bits in this object. If a detector is ON then the associated bit shall be set (1). If a detector is OFF then the associated bit shall be clear (0).

Bit 7: Det # = ( vehicleDetectorStatusGroupNumber \* 8)

Bit 6: Det # = ( vehicleDetectorStatusGroupNumber \* 8) - 1

Bit 5: Det # = ( vehicleDetectorStatusGroupNumber \* 8) - 2

Bit 4: Det # = ( vehicleDetectorStatusGroupNumber \* 8) - 3

Bit 3: Det # = ( vehicleDetectorStatusGroupNumber \* 8) - 4

Bit 2: Det # = ( vehicleDetectorStatusGroupNumber \* 8) - 5

Bit 1: Det # = ( vehicleDetectorStatusGroupNumber \* 8) - 6

Bit 0: Det # = ( vehicleDetectorStatusGroupNumber \* 8) - 7

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.4.1.2"

::= { vehicleDetectorStatusGroupEntry 2 }

#### Detector Alarm Status

vehicleDetectorStatusGroupAlarms OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> This object shall return the

alarm status of the detectors associated with the group. Each detector alarm status shall be represented as ON or OFF by individual bits in this object. If any detector alarm (defined in the vehicleDetectorAlarm object) is active the associated bit shall be set (1). If a detector alarm is not active the associated bit shall be clear (0).

Bit 7: Det # = ( vehicleDetectorStatusGroupNumber \* 8)

Bit 6: Det # = ( vehicleDetectorStatusGroupNumber \* 8) - 1

Bit 5: Det # = ( vehicleDetectorStatusGroupNumber \* 8) - 2

Bit 4: Det # = ( vehicleDetectorStatusGroupNumber \* 8) - 3

Bit 3: Det # = ( vehicleDetectorStatusGroupNumber \* 8) - 4

Bit 2: Det # = ( vehicleDetectorStatusGroupNumber \* 8) - 5

Bit 1: Det # = ( vehicleDetectorStatusGroupNumber \* 8) - 6

Bit 0: Det # = ( vehicleDetectorStatusGroupNumber \* 8) – 7

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.4.1.3"

::= { vehicleDetectorStatusGroupEntry 3 }

### **Volume / Occupancy Report**

volumeOccupancyReport OBJECT IDENTIFIER

::= { detector 5 }

-- This node contains the objects necessary to support volume /

-- occupancy reporting.

#### Volume / Occupancy Sequence

volumeOccupancySequence OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> This object defines a Sequence

Number for Volume/Occupancy data collection. This object is used to detect duplicate or missing reports. The value cycles within the limits of 0 to 255. This object is incremented by one at the expiration of the volumeOccupancyPeriod time.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.5.1

<Unit> sequence"

::= { volumeOccupancyReport 1 }

#### Volume / Occupancy Period

volumeOccupancyPeriod OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object defines the number

of seconds (0- 255 sec) that comprise the Volume/Occupancy/Speed collection period. When the collection period expires the device shall increment the volumeOccupancySequence, update the volumeOccupancyTable entries and reset the volume occupancy timer. If the value is 0, the value in volumeOccupancyPeriodV3 is used if supported. If both the volumeOccupancyPeriod and volumeOccupancyPeriodV3 are 0, then no sampling is to be performed. If both the volumeOccupancyPeriod and olumeOccupancyPeriodV3 are non-zero then the volumeOccupancyPeriod takes precedence.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.5.2

<Unit> second"

::= { volumeOccupancyReport 2 }

#### Active Volume / Occupancy Detectors

activeVolumeOccupancyDetectors OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The number of detectors in this

device. This object indicates how many rows are in the volumeOccupancyTable object. There shall be a row for every detector that is collecting volume, occupancy, or speed data (refer to detectorOptions in the detectorTable).

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.5.3

<Unit> detector"

::= { volumeOccupancyReport 3 }

#### Volume / Occupancy Table

volumeOccupancyTable OBJECT-TYPE

SYNTAX SEQUENCE OF VolumeOccupancyEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> A table containing Detector

Volume, Occupancy and Speed data collected. The number of rows in this table is equal to the activeVolumeOccupancyDetectors object.

<TableType> static

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.5.4"

::= { volumeOccupancyReport 4 }

volumeOccupancyEntry OBJECT-TYPE

SYNTAX VolumeOccupancyEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> The Volume, Occupancy and Speed

data collected for one of the detectors in the device.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.5.4.1"

INDEX { vehicleDetectorNumber }

::= { volumeOccupancyTable 1 }

VolumeOccupancyEntry ::= SEQUENCE {

detectorVolume INTEGER,

detectorOccupancy INTEGER,

detectorAvgSpeed INTEGER }

##### **Volume Data**

detectorVolume OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> Detector Volume data collected

over the volumeOccupancyPeriod. This value shall range from 0 to 254 indicating the volume of traffic crossing the associated detectorNumber during the collection period. The value 255 shall indicate volume overflow.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.5.4.1.1

<Unit> volume"

::= { volumeOccupancyEntry 1 }

##### **Occupancy Data**

detectorOccupancy OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> Detector Occupancy as a

percentage of the volumeOccupancyPeriod over which the data was collected or Detector Unit Diagnostic Information. The value of the object shall indicate occupancy or detector diagnostic information as follows:

Range Meaning

0-200 Detector Occupancy in 0.5% Increments

201-209 Reserved

210 Max Presence Fault

211 No Activity Fault

212 Open loop Fault

213 Shorted loop Fault

214 Excessive Change Fault

215 Reserved

216 Watchdog Fault

217 Erratic Output Fault

218-255 Reserved

Faults shall be indicated for all collection periods during which a fault is detected if either occupancy data or volume data is being collected. The highest numbered fault shall be presented if more than one fault is active (i.e. indicate OpenLoop rather than NoActivity).

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.5.4.1.2

<Unit> occupancy"

::= { volumeOccupancyEntry 2 }

##### **Speed Data**

detectorAvgSpeed OBJECT-TYPE

SYNTAX INTEGER (0..511)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>Average vehicle speed during the

volumeOccupancyPeriod over which the data was collected. The

value of the object shall indicate average vehicle speed as

follows:

Range Meaning

0-508 Average vehicle speed in 0.5 kilometers per hour

509 Reserved

510 Average vehicle speed is 255 kilometers per hour or higher

511 Invalid or missing value

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.5.4.1.3

<Unit>0.5 kilometers/hour"

DEFVAL { 511 }

::= { volumeOccupancyEntry 3 }

#### Volume / Occupancy Period - Version 3

volumeOccupancyPeriodV3 OBJECT-TYPE

SYNTAX INTEGER (0..65535)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object indicates the number

of seconds (0-3600 seconds) that comprise the Volume/Occupancy/Speed collection period. When the collection period expires the device shall increment the volumeOccupancySequence, update the volumeOccupancyTable entries and reset the volume occupancy timer. If the value is 0, the value in volumeOccupancyPeriod is used if indicated (has a valid non-zero value). If both the

volumeOccupancyPeriod and volumeOccupancyPeriodV3 are 0, then no sampling is to be performed. If both the volumeOccupancyPeriod and volumeOccupancyPeriodV3 are non-zero then the volumeOccupancyPeriod takes precedence.

A value of 65535 indicates that the sample period equal to

current cycle length recorded at local zero. If the sample period is configured to use the cycle length but the ASC is running in Free mode, then no data collection is performed.

Value Indication

0 Value of volumeOccupancyPeriod is used if indicated

1-3600 Volume/Occupancy/Speed period in seconds

3601-65534 Reserved

65535 Sample period is same as cycle period recorded

at local zero.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.5.5

<Unit> second"

::= { volumeOccupancyReport 5 }

#### Volume / Occupancy Sample Time

detectorSampleTime OBJECT-TYPE

SYNTAX Counter

ACCESS read-only

STATUS mandatory

DESCRIPTION "The local time, expressed in seconds since

00:00:00 (midnight) January 1, 1970 of the same time offset, representing the end time of the last completed vehicle detector data collection period. This value changes by 3600 seconds in response to a DST event.

<Unit>second

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.5.6

<Unit> local time"

::= { volumeOccupancyReport 6 }

#### Volume / Occupancy Sample Duration

detectorSampleDuration OBJECT-TYPE

SYNTAX INTEGER (0..65535)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> This object indicates the number

of seconds (1-3600 seconds) that have elapsed in the current vehicle detector data collection period. A value of 0 indicates that duration is invalid. Values of 3601-65535 are reserved.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.5.7

<Unit> second"

::= { volumeOccupancyReport 7 }

### **Maximum Pedestrian Detectors**

maxPedestrianDetectors OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The Maximum Number of Pedestrian

Detectors this Controller Unit supports. This object indicates the maximum rows which shall appear in the pedestrianDetectorTable object.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.6

<Unit> detector"

::= { detector 6 }

### **Pedestrian Detector Parameter Table**

pedestrianDetectorTable OBJECT-TYPE

SYNTAX SEQUENCE OF PedestrianDetectorEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> A table containing Controller

Unit pedestrian detector parameters. The number of rows in this table is equal to the maxPedestrianDetectors object.

<TableType> static

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.7"

::= { detector 7 }

pedestrianDetectorEntry OBJECT-TYPE

SYNTAX PedestrianDetectorEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> Parameters for a specific

Controller Unit pedestrian detector.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.7.1"

INDEX { pedestrianDetectorNumber }

::= { pedestrianDetectorTable 1 }

PedestrianDetectorEntry ::= SEQUENCE {

pedestrianDetectorNumber INTEGER,

pedestrianDetectorCallPhase INTEGER,

pedestrianDetectorNoActivity INTEGER,

pedestrianDetectorMaxPresence INTEGER,

pedestrianDetectorErraticCounts INTEGER,

pedestrianDetectorAlarms INTEGER,

pedestrianDetectorReset INTEGER,

pedestrianButtonPushTime INTEGER,

pedestrianDetectorOptions INTEGER }

#### Pedestrian Detector Number

pedestrianDetectorNumber OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The pedestrianDetector number

for objects in this row. The value shall not exceed the maxPedestrianDetectors

object value.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.7.1.1

<Unit> detector"

::= { pedestrianDetectorEntry 1 }

#### Pedestrian Detector Call Phase Parameter

pedestrianDetectorCallPhase OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object contains assigned

phase number for the pedestrian detector input associated with this row. The associated detector call capability is enabled when this object is set to a non-zero value. The value shall not exceed the value of maxPhases.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.7.1.2

<Unit> phase"

::= { pedestrianDetectorEntry 2 }

#### Pedestrian Detector No Activity Parameter

pedestrianDetectorNoActivity OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Pedestrian Detector No Activity

diagnostic Parameter in minutes (0–255 min.). If an active detector does not exhibit an actuation in the specified period, it is considered a fault by the diagnostics and the detector is classified as Failed. A value of 0 for this object shall disable this diagnostic for this detector.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.7.1.3

<Unit> minute"

REFERENCE "NEMA TS 2 Clause 3.9.3.1.4.1"

::= { pedestrianDetectorEntry 3 }

#### Pedestrian Detector Maximum Presence Parameter

pedestrianDetectorMaxPresence OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Pedestrian Detector Maximum

Presence diagnostic Parameter in minutes (0-255 min.). If an active detector exhibits continuous detection for too long a period, it is considered a fault by the diagnostics and the detector is classified as Failed. A value of 0 for this object shall disable this diagnostic for this detector.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.7.1.4

<Unit> minute"

REFERENCE "NEMA TS 2 Clause 3.9.3.1.4.2"

::= { pedestrianDetectorEntry 4 }

#### Pedestrian Detector Erratic Counts Parameter

pedestrianDetectorErraticCounts OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Pedestrian Detector Erratic

Counts diagnostic Parameter in counts/minute (0-255 cpm). If an active detector exhibits excessive actuations, it is considered a fault by the diagnostics and the detector is classified as Failed. A value of 0 for this object shall disable this diagnostic for this detector.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.7.1.5

<Unit> count"

REFERENCE "NEMA TS 2 Clause 3.9.3.1.4.3"

::= { pedestrianDetectorEntry 5 }

#### Pedestrian Detector Alarms

pedestrianDetectorAlarms OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> This object shall return

indications of detector alarms. Detector Alarms are indicated as follows (0 = False, 1 = True):

Bit 7: Other Fault - The detector has failed due to some other

cause.

Bit 6: Reserved.

Bit 5: Reserved.

Bit 4: Configuration Fault - Detector is assigned but is not

supported.

Bit 3: Communications Fault - Communications to the device (if

present) have failed.

Bit 2: Erratic Output Fault - This detector has been flagged as non-operational due to erratic outputs (excessive counts)

by the CU detector diagnostic.

Bit 1: Max Presence Fault - This detector has been flagged as

non-operational due to a presence indicator that exceeded

the maximum expected time by the CU detector diagnostic.

Bit 0: No Activity Fault - This detector has been flagged as nonoperational due to lower than expected activity by the CU

detector diagnostic

Once set a bit shall maintain its state as long as the condition exists. The bit shall clear when the condition no longer exists.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.7.1.6"

::= { pedestrianDetectorEntry 6 }

#### Pedestrian Detector Reset

pedestrianDetectorReset OBJECT-TYPE

SYNTAX INTEGER (0..1)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object when set to TRUE

(one) shall cause the CU to command the associated detector to reset. This object shall automatically return to FALSE (zero) after the CU has issued the reset command.

Note: this may affect other detector (detector channels) that are physically attached to a common reset line.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.7.1.7"

DEFVAL { 0 }

::= { pedestrianDetectorEntry 7 }

#### Pedestrian Pushbutton Duration Parameter

pedestrianButtonPushTime OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> The minimum

amount of time, in tenths of a second, a pedestrian call button is pressed to actuate additional accessible features such as increased pedestrian crossing times (phasePedAlternateWalk) or pedestrian clearance times (phasePedAlternateClearance). A value of 0 indicates that all accessible pedestrian signal (APS) features are disabled for the associated detector.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.7.1.8

<Unit> tenth of a second"

DEFVAL { 0 }

::= { pedestrianDetectorEntry 8 }

#### Pedestrian Detector Options

pedestrianDetectorOptions OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION " <Definition> Pedestrian Detector

Options Parameter as follows (0=Disabled, 1=Enabled):

Bit 7: Reserved.

Bit 6: Reserved.

Bit 5: Reserved.

Bit 4: Reserved.

Bit 3: Reserved.

Bit 2: Non-locking: If enabled, detector will place a non-locked calls instead of a locked calls.

Bit 1: Alternate timing: If enabled, detector will place calls for alternate ped timing instead of normal ped timing.

Bit 0: Presence: If enabled, detector indicates presence of pedestrians in the crosswalk instead of placing calls for service.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.7.1.9"

DEFVAL { 0 }

::= { pedestrianDetectorEntry 9 }

### **Maximum Pedestrian Detector Groups**

maxPedestrianDetectorGroups OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>The maximum number of pedestrian

detector status groups (8 detectors per group) this device supports. This value is equal to TRUNCATE [(maxPedestrianDetectors + 7 ) / 8]. This object indicates the maximum number of rows which shall appear in the pedestrianDetectorStatusGroupTable object.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.8

<Unit> group"

::= { detector 8 }

### **Pedestrian Detector Status Group Table**

pedestrianDetectorStatusGroupTable OBJECT-TYPE

SYNTAX SEQUENCE OF PedestrianDetectorStatusGroupEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> A table containing pedestrian

detector status in groups of eight detectors. The number of rows in this table is equal to the maxPedestrianDetectorGroups object.

<TableType> static

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.9"

::= { detector 9 }

pedestrianDetectorStatusGroupEntry OBJECT-TYPE

SYNTAX PedestrianDetectorStatusGroupEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> A group (row) of pedestrian

detector status.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.9.1"

INDEX { pedestrianDetectorStatusGroupNumber }

::= { pedestrianDetectorStatusGroupTable 1 }

PedestrianDetectorStatusGroupEntry ::= SEQUENCE {

pedestrianDetectorStatusGroupNumber INTEGER,

pedestrianDetectorStatusGroupActive INTEGER,

pedestrianDetectorStatusGroupAlarms INTEGER }

#### Pedestrian Detector Status Group Number

pedestrianDetectorStatusGroupNumber OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The pedestrian detector status

group number for objects in this row. This value shall not exceed the maxPedestrianDetectorGroups object value.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.9.1.1

<Unit> group"

::= { pedestrianDetectorStatusGroupEntry 1 }

#### Pedestrian Detector Status Group Active

pedestrianDetectorStatusGroupActive OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>This object shall return the

detection status of each pedestrian detector associated with the group. Each detector shall be represented as ON (detect) or OFF (no-detect) by individual bits in this object. If a detector is ON then the associated bit shall be set (1). If a detector is OFF then the associated bit shall be clear (0).

Bit 7: Det # = ( pedestrianDetectorStatusGroupNumber \* 8)

Bit 6: Det # = ( pedestrianDetectorStatusGroupNumber \* 8) - 1

Bit 5: Det # = ( pedestrianDetectorStatusGroupNumber \* 8) - 2

Bit 4: Det # = ( pedestrianDetectorStatusGroupNumber \* 8) - 3

Bit 3: Det # = ( pedestrianDetectorStatusGroupNumber \* 8) - 4

Bit 2: Det # = ( pedestrianDetectorStatusGroupNumber \* 8) - 5

Bit 1: Det # = ( pedestrianDetectorStatusGroupNumber \* 8) - 6

Bit 0: Det # = ( pedestrianDetectorStatusGroupNumber \* 8) - 7

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.9.1.2"

::= { pedestrianDetectorStatusGroupEntry 2 }

#### Pedestrian Detector Alarm Status

pedestrianDetectorStatusGroupAlarms OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> This object shall return the

alarm status of the pedestrian detectors associated with the group. Each pedestrian detector alarm status shall be represented as ON or OFF by individual bits in this object. If any pedestrian detector alarm (defined in the pedestrianDetectorAlarms object) is active the associated bit shall be set (1). If a pedestrian detector alarm is not active the associated bit shall be clear (0).

Bit 7: Det # = ( pedestrianDetectorStatusGroupNumber \* 8)

Bit 6: Det # = ( pedestrianDetectorStatusGroupNumber \* 8) - 1

Bit 5: Det # = ( pedestrianDetectorStatusGroupNumber \* 8) - 2

Bit 4: Det # = ( pedestrianDetectorStatusGroupNumber \* 8) - 3

Bit 3: Det # = ( pedestrianDetectorStatusGroupNumber \* 8) - 4

Bit 2: Det # = ( pedestrianDetectorStatusGroupNumber \* 8) - 5

Bit 1: Det # = ( pedestrianDetectorStatusGroupNumber \* 8) - 6

Bit 0: Det # = ( pedestrianDetectorStatusGroupNumber \* 8) - 7

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.9.1.3"

::= { pedestrianDetectorStatusGroupEntry 3 }

### **Pedestrian Detector Report**

pedestrianDetectorReport OBJECT IDENTIFIER

::= { detector 10 }

-- This node contains the objects necessary to support pedestrian

-- detector reporting.

#### Pedestrian Sample Sequence

pedestrianDetectorSequence OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> This object defines a Sequence

Number for the pedestrian detector data collection. This object is used to detect duplicate or missing reports. The value cycles within the limits of 0 to 255. This object is incremented by one at the expiration of the pedestrianDetectorPeriod time.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.10.1

<Unit> sequence"

::= { pedestrianDetectorReport 1 }

#### Pedestrian Sample Period

pedestrianDetectorPeriod OBJECT-TYPE

SYNTAX INTEGER (0..65535)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object defines the number

of seconds (0- 3600 seconds) that comprise the pedestrian detector data collection period. When the collection period expires the device shall increment the pedestrianDetectorSequence, update the pedestrianSampleTable entries and reset the pedestrian volume timer. A value of 0 indicates that no sampling is to be performed.

A value of 65534 indicates that the pedestrian detector data

collection period is equal to vehicle sample period in effect.

A value of 65535 indicates that the sample period equal to

current cycle length recorded at local zero. If the sample period is configured to use the cycle length but the ASC is running in Free mode, then no data collection is performed.

Value Indication

0 No pedestrian data collection is performed

1-3600 Pedestrian data collection period in seconds

3601-65533 Reserved

65534 Pedestrian data collection period is equal to

the vehicle sample period in effect

65535 Pedestrian data collection period is same as

cycle period recorded at local zero

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.10.2

<Unit> second"

::= { pedestrianDetectorReport 2 }

#### Active Pedestrian Sample Detectors

activePedestrianDetectors OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The number of detectors in this

device. This object indicates how many rows are in the pedestrianSampleTable object. There shall be a row for every pedestrian detector that is collecting pedestrian data.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.10.3

<Unit> detector"

::= { pedestrianDetectorReport 3 }

#### Pedestrian Sample Table

pedestrianSampleTable OBJECT-TYPE

SYNTAX SEQUENCE OF PedestrianSampleEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> A table containing pedestrian

data collected. The number of rows in this table is equal to the activePedestrianDetectors object.

<TableType> static

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.10.4"

::= { pedestrianDetectorReport 4 }

pedestrianSampleEntry OBJECT-TYPE

SYNTAX PedestrianSampleEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> The data collected for one of

the detectors in the device as part of a pedestrian detector data collection.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.10.4.1"

INDEX { pedestrianDetectorNumber }

::= { pedestrianSampleTable 1 }

PedestrianSampleEntry ::= SEQUENCE {

pedestrianDetectorVolume INTEGER,

pedestrianDetectorActuations INTEGER,

pedestrianDetectorServices INTEGER }

##### **Pedestrian Sample Volume**

pedestrianDetectorVolume OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>Pedestrian detector data

collected over the data collection period. This value shall range from 0 to 254 indicating the volume of pedestrians crossing the associated pedestrian detector zone during the data collection period. The value 255 shall indicate volume overflow.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.10.4.1.1

<Unit> volume"

::= { pedestrianSampleEntry 1 }

##### **Pedestrian Sample Actuations**

pedestrianDetectorActuations OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition>Pedestrian actuations collected

over the data collection period. The value of the object shall indicate pedestrian actuations or pedestrian detector diagnostic information as follows:

Value Indication

0-200 Number of actuations

201 Number of actuations exceeds 200.

202-208 Reserved

209 Other Fault

210 Max Presence Fault

2 212 Reserved

213 Reserved

214 Reserved

215 Configuration Fault

216 Communications Fault

217 Erratic Output Fault

218-255 Reserved

Faults shall be indicated for all collection periods during which a fault is detected if either pedestrian volume or pedestrian actuations is being collected. The highest numbered fault shall be presented if more than one fault is active (i.e. indicate OpenLoop rather than NoActivity).

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.10.4.1.2

<Unit> volume"

::= { pedestrianSampleEntry 2 }11 No Activity Fault

##### **Pedestrian Sample Services**

pedestrianDetectorServices OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The number of pedestrian

services (number of times the ped transitioned from don't walk to walk) collected over the data collection period. This value shall range from 0- 254. A value of 255 indicates an overflow condition.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.10.4.1.3

<Unit> volume"

::= { pedestrianSampleEntry 3 }

#### Pedestrian Volume / Actuation Sample Time

pedestrianDetectorSampleTime OBJECT-TYPE

SYNTAX Counter

ACCESS read-only

STATUS mandatory

DESCRIPTION "The local time expressed in seconds since

00:00:00 (midnight) January 1, 1970 of the same time offset, representing the end time of the last completed pedestrian detector data collection period. This value changes by 3600 seconds in response to a DST event.

<Unit> second

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.10.5

<Unit> local time"

::= { pedestrianDetectorReport 5 }

#### Pedestrian Volume / Actuation Sample Duration

pedestrianDetectorSampleDuration OBJECT-TYPE

SYNTAX INTEGER (0..65535)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> This object indicates the number

of seconds (1-3600 seconds) that comprise the duration of the pedestrian detector data collection period. A value of 0 indicates that duration is invalid. Values of 3601-65535 are reserved.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.10.6

<Unit> second"

::= { pedestrianDetectorReport 6 }

### **Maximum Vehicle Detector Control Groups**

maxVehicleDetectorControlGroups OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The maximum number of vehicle

detector control groups (8 detectors per group) this device supports. This value is equal to TRUNCATE (maxVehicleDetectors + 7 ) / 8]. This object indicates the maximum number of rows which shall appear in the vehicleDetectorControlGroupTable object.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.11

<Unit> group"

::= { detector 11 }

#### Vehicle Detector Control Group Table

vehicleDetectorControlGroupTable OBJECT-TYPE

SYNTAX SEQUENCE OF VehicleDetectorControlGroupEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> A table containing vehicle

detector control in groups of eight detectors. The number of rows in this table is equal to the maxVehicleDetectorControlGroups object.

<TableType> static

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.12"

::= { detector 12 }

vehicleDetectorControlGroupEntry OBJECT-TYPE

SYNTAX VehicleDetectorControlGroupEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> A group (row) of vehicle detector controls.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.12.1"

INDEX { vehicleDetectorControlGroupNumber }

::= { vehicleDetectorControlGroupTable 1 }

VehicleDetectorControlGroupEntry ::= SEQUENCE {

vehicleDetectorControlGroupNumber INTEGER,

vehicleDetectorControlGroupActuation INTEGER }

#### Vehicle Detector Control Group Number

vehicleDetectorControlGroupNumber OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The vehicle detector control

group number for objects in this row. This value shall not exceed the maxVehicleDetectorControlGroups object value.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.12.1.1

<Unit> group"

::= { vehicleDetectorControlGroupEntry 1 }

#### Vehicle Detector Control Group Actuation

vehicleDetectorControlGroupActuation OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object is used to allow a

remote entity to place an actuation on a vehicle detector. When a bit = 1, an actuation is placed on the vehicle detector. When a bit = 0, no actuation is placed on the vehicle detector. An NTCIP actuation is placed using this object and is treated the same as an external actuation, so all detector functions are still applicable, including delay, extension, diagnostics, and report objects, such as vehicleDetectorStatusGroupActive and volumeOccupancyReport.

Bit 7: Det # = ( vehicleDetectorControlGroupNumber \* 8)

Bit 6: Det # = ( vehicleDetectorControlGroupNumber \* 8) - 1

Bit 5: Det # = ( vehicleDetectorControlGroupNumber \* 8) - 2

Bit 4: Det # = ( vehicleDetectorControlGroupNumber \* 8) - 3

Bit 3: Det # = ( vehicleDetectorControlGroupNumber \* 8) - 4

Bit 2: Det # = ( vehicleDetectorControlGroupNumber \* 8) - 5

Bit 1: Det # = ( vehicleDetectorControlGroupNumber \* 8) - 6

Bit 0: Det # = ( vehicleDetectorControlGroupNumber \* 8) – 7

The device shall reset this object to ZERO when in BACKUP Mode. A write to this object shall reset the Backup timer to ZERO (see unitBackupTime).

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.12.1.2"

::= { vehicleDetectorControlGroupEntry 2 }

### **Pedestrian Detector Control Group Table**

pedestrianDetectorControlGroupTable OBJECT-TYPE

SYNTAX SEQUENCE OF PedestrianDetectorControlGroupEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> A table containing pedestrian

detector control in groups of eight detectors. The number of rows in this table is equal to the maxPedestrianDetectorGroups object.

<TableType> static

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.13"

::= { detector 13 }

pedestrianDetectorControlGroupEntry OBJECT-TYPE

SYNTAX PedestrianDetectorControlGroupEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> A group (row) of pedestrian

detector controls.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.13.1"

INDEX { pedestrianDetectorControlGroupNumber }

::= { pedestrianDetectorControlGroupTable 1 }

PedestrianDetectorControlGroupEntry ::= SEQUENCE {

pedestrianDetectorControlGroupNumber INTEGER,

pedestrianDetectorControlGroupActuation INTEGER }

#### Pedestrian Detector Control Group Number

pedestrianDetectorControlGroupNumber OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The pedestrian detector control

group number for objects in this row. This value shall not exceed the maxPedestrianDetectorGroups object value.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.13.1.1

<Unit> group"

::= { pedestrianDetectorControlGroupEntry 1 }

#### Pedestrian Detector Control Group Actuation

pedestrianDetectorControlGroupActuation OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object is used to allow a

remote entity to place an actuation on a pedestrian detector. When a bit = 1, an actuation is placed on the pedestrian detector. When a bit = 0, no actuation is placed on the pedestrian detector. An NTCIP actuation is placed using this object and is treated the same as an external actuation, so all detector functions are still applicable, including delay, extension, diagnostics, and report objects, such as pedestrianDetectorStatusGroupActive and pedestrianDetectorReport.

Bit 7: Det # = ( pedestrianDetectorControlGroupNumber \* 8)

Bit 6: Det # = ( pedestrianDetectorControlGroupNumber \* 8) - 1

Bit 5: Det # = ( pedestrianDetectorControlGroupNumber \* 8) - 2

Bit 4: Det # = ( pedestrianDetectorControlGroupNumber \* 8) - 3

Bit 3: Det # = ( pedestrianDetectorControlGroupNumber \* 8) - 4

Bit 2: Det # = ( pedestrianDetectorControlGroupNumber \* 8) - 5

Bit 1: Det # = ( pedestrianDetectorControlGroupNumber \* 8) - 6

Bit 0: Det # = ( pedestrianDetectorControlGroupNumber \* 8) – 7

The device shall reset this object to ZERO when in BACKUP Mode. A write to this object shall reset the Backup timer to ZERO (see unitBackupTime).

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.2.13.1.2"

::= { pedestrianDetectorControlGroupEntry 2 }

## **Unit Parameters**

unit OBJECT IDENTIFIER

::= { asc 3 }

--This defines a node for supporting unit objects.

### **Startup Flash Parameter**

unitStartUpFlash OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Unit Start up Flash time

parameter in seconds (0 to 255 sec). The period/state (Start-Up Flash) occurs when power is restored following a device defined power interruption. During the Start-Up Flash state, the Fault Monitor and Voltage Monitor outputs shall be inactive (if present) and the Channel Flash settings shall be overridden.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.3.1

<Unit> second"

REFERENCE "NEMA TS 2 Clause 3.9.1.1"

::= { unit 1 }

### **Automatic Ped Clear Parameter**

unitAutoPedestrianClear OBJECT-TYPE

SYNTAX INTEGER { disable(1),

enable (2) }

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Unit Automatic Ped Clear

parameter (1 = False/Disable 2=True/Enable). When enabled, the CU shall time the Pedestrian Clearance interval when Manual Control Enable is active and prevent the Pedestrian Clearance interval from being terminated by the Interval Advance input.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.3.2"

REFERENCE "NEMA TS 2 Clause 3.5.3.10"

::= { unit 2 }

### **Backup Time Parameter**

unitBackupTime OBJECT-TYPE

SYNTAX INTEGER (0..65535)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> The Backup Time in seconds (0-

65535 sec). When any of the defined system control parameters is SET, the backup timer is reset. After reset the CU times the unitBackupTime interval. If the unitBackupTime interval expires without a SET operation to any of the system control parameters, then the CU shall revert to Backup Mode. A value of zero (0) for this object shall disable this feature. The setting of this object shall be ignored if the unitUserDefinedBackupTime is set to a non-zero value. The system control parameters are:

phaseControlGroupPhaseOmit,

phaseControlGroupPedOmit,

phaseControlGroupHold,

phaseControlGroupForceOff,

phaseControlGroupVehCall,

phaseControlGroupPedCall,

systemPatternControl,

systemSyncControl,

preemptControlState,

ringControlGroupStopTime,

ringControlGroupForceOff,

ringControlGroupMax2,

ringControlGroupMaxInhibit,

ringControlGroupPedRecycle,

ringControlGroupRedRest,

ringControlGroupOmitRedClear,

unitControl,

specialFunctionOutputState (deprecated), and

specialFunctionOutputControl.

These system control parameters are added for controllers that

support 1202 v3 and above:

ringControlGroupMax3

vehicleDetectorControlGroupActuation

pedestrianDetectorControlGroupActuation

actionPlanControl

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.3.3

<Unit> second"

::= { unit 3 }

### **Unit Red Revert Parameter**

unitRedRevert OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> The red revert in tenth seconds

( 0.0 - 25.5 sec). This value shall provide the minimum red revert time for all phases (i.e. if it is greater than a phaseRedRevert object value, then this value shall be used as the red revert time for the affected phase). This object provides a minimum Red indication following the Yellow Change interval and prior to the next display of Green on the same signal output driver group.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.3.4

<Unit> tenth second"

::= { unit 4 }

### **Unit Control Status**

unitControlStatus OBJECT-TYPE

SYNTAX INTEGER { other (1),

systemControl (2),

systemStandby (3),

backupMode(4),

manual (5),

timebase (6),

interconnect (7),

interconnectBackup (8),

remoteManualControl (9),

localManualControl (10) }

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The Control Mode for Pattern,

Flash, or Free at the device:

**other:** control by a source other than those listed here.

**systemControl:** control by master or central commands.

**systemStandby:** control by local based on master or central

command to use local control.

**backupMode:** Backup Mode (see Terms).

**manual:** control by entry other than zero in coordOperationalMode.

**timebase:** control by the local Time Base.

**interconnect:** control by the local Interconnect inputs.

**interconnectBackup:** control by local TBC due to invalid

Interconnect inputs or loss of sync.

**remoteManualControl:** control by central command via remote MCE

commands (See unitMCEIntAdv and unitMCETimeout).

**localManualControl:** control via MCE and Interval Advance inputs

(e.g., police panel)

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.3.5"

::= { unit 5 }

### **Unit Flash Status**

unitFlashStatus OBJECT-TYPE

SYNTAX INTEGER { other(1),

notFlash(2),

automatic(3),

localManual(4),

faultMonitor(5),

mmu(6),

startup(7),

preempt (8)}

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The Flash modes:

**other:** the CU is in flash for some other reason.

**notFlash:** the CU is not in Flash

**automatic:** the CU is currently in an Automatic Flash state.

**localManual:** the Controller Unit Local Flash input is active, MMU Flash input is not active, and Flash is not commanded by the Master.

**faultMonitor:** the CU is currently in a Fault Monitor State.

**mmu:** the Controller Unit MMU Flash input is active and the CU is not in Start-Up Flash.

**startup:** the CU is currently timing the Start-Up Flash period.

**preempt:** the CU is currently timing the preempt Flash.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.3.6"

::= { unit 6 }

### **Unit Alarm Status 2**

unitAlarmStatus2 OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> Device Alarm Mask 2 ( 0 = False,

1 = True) as follows:

Bit 7: Process Failure - Whenever the CU detects a process (task) failure.

Bit 6: Stall Condition - Whenever the CU detects a watchdog condition on any 'critical' watchdog. A 'critical' watchdog timer is any timer for a process or service that may jeopardize the safe operation of the ASC.

Bit 5: Offset Transitioning - Whenever the CU is performing an offset transition (correction in process)

Bit 4: Stop Time - When either CU Stop Time Input becomes active.

Bit 3: External Start - When the CU External Start becomes active.

Bit 2: Response Fault - When any NEMA TS2 Port 1 response frame fault occurs.

Bit 1: Low Battery - When any battery voltage falls below the required level.

Bit 0: Power Restart - When power returns after a power interruption. Once set, a bit shall maintain its state as long as the condition exists. Bit 0 (Power Restart) status shall be maintained until a READ of this object occurs.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.3.7"

::= { unit 7 }

### **Unit Alarm Status 1**

unitAlarmStatus1 OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> Device Alarm Mask 1 ( 0 = False,

1 = True) as follows:

Bit 7: CoordActive - When coordination is active and not preempted or overridden.

Bit 6: Local Free - When any of the CU inputs and/or programming cause it not to run coordination.

Bit 5: Local Flash - When the Controller Unit Local Flash input becomes active, MMU Flash input is not active, and Flash is not commanded by the system.

Bit 4: MMU Flash - When the Controller Unit MMU Flash input remains active for a period of time exceeding the Start-Up Flash time.

Bit 3: Cycle Fail - When a local Controller Unit is operating in the non-coordinated mode, whether the result of a Cycle Fault or Free being the current normal mode, and cycling diagnostics indicate that a serviceable call exists that has not been serviced for two cycles.

Bit 2: Coord Fail - When a Coord Fault is in effect and a Cycle Fault occurs again within two cycles of the coordination retry.

Bit 1: Coord Fault - When a Cycle Fault is in effect and the serviceable call has been serviced within two cycles after the Cycle Fault.

Bit 0: Cycle Fault - When the Controller Unit is operating in the coordinated mode and cycling diagnostics indicate that a

serviceable call exists that has not been serviced for two cycles.

Once set, a bit shall maintain its state as long as the condition exists.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.3.8"

::= { unit 8 }

### **Short Alarm Status**

shortAlarmStatus OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> Short Alarm Mask ( 0 = False, 1

= True) as follows:

Bit 7: Critical Alarm - When the Stop Time input is active.

Bit 6: Non-Critical Alarm - When an physical alarm input is active.

Bit 5: Detector Fault - When any detectorAlarm fault occurs.

Bit 4: Coordination Alarm - When the CU is not running the called pattern without offset correction within three cycles of the command. An offset correction requiring less than three cycles due to cycle overrun caused by servicing a pedestrian call shall not cause a Coordination Alarm.

Bit 3: Local Override - When any of the CU inputs and/or programming cause it not to run coordination.

Bit 2: Local Cycle Zero - When running coordinated and the Coord Cycle Status (coordCycleStatus) has passed through zero.

Bit 1: T&F Flash - When either the Local Flash or MMU Flash input becomes active.

Bit 0: Preempt - When any of the CU Preempt inputs become active.

Once set, a bit shall maintain its state as long as the condition exists. Bit 2 (Local Cycle Zero) status shall be maintained until a READ of this object occurs.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.3.9"

::= { unit 9 }

### **Unit Control**

unitControl OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object is used to allow a

remote entity to activate unit functions in the device ( 0 = False / Disabled, 1 = True / Enabled) as follows:

Bit 7: Dimming Enable - when set to 1, causes channel dimming to operate as configured. For dimming to occur, (this control OR a dimming input) AND a 'timebaseAscAuxillaryFunction' must be True.

REFERENCE NEMA TS 2 Clause 3.9.2

Bit 6: Interconnect - when set to 1, shall cause the interconnect inputs to operate at a higher priority than the timebase control (TBC On Line).

REFERENCE NEMA TS 2 Clause 3.6.2.3 and 3.8.3

Bit 5: Walk Rest Modifier - when set to 1, causes non-actuated phases to remain in the timed-out Walk state (rest in Walk) in the absence of a serviceable conflicting call.

REFERENCE NEMA TS 2 Clause 3.5.5.5.13

Bit 4: Call to Non-Actuated 2 - when set to 1, causes any phase(s) appropriately programmed in the phaseOptions object to operate in the Non-Actuated Mode.

REFERENCE NEMA TS 2 Clause 3.5.5.5.8

Bit 3: Call to Non-Actuated 1 - when set to 1, causes any phase(s) appropriately programmed in the phaseOptions object to operate in the Non-Actuated Mode.

REFERENCE NEMA TS 2 Clause 3.5.5.5.8

Bit 2: External Minimum Recall - when set to 1, causes a recurring demand on all vehicle phases for a minimum vehicle service.

REFERENCE NEMA TS 2 Clause 3.5.5.5.9

Bit 1: Disable Remote Commands - when set to 1, causes a CU to ignore commands (all SET requests) from all management station except and until this bit is SET to 0 (i.e., a management station can still SET this bit to 0 to enable Remote Command).

Bit 0: Reserved

When a bit = 1, the device shall activate the Unit control. When a bit = 0, the device shall not activate the Unit control. A SET of a 'reserved' bit to a value other than zero (0) shall return a badValue(3) error.

The device shall reset this object to ZERO when in BACKUP Mode. A write to this object shall reset the BACKUP timer (see unitBackupTime).

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.3.10"

::= { unit 10 }

### **Maximum Alarm Groups**

maxAlarmGroups OBJECT-TYPE

SYNTAX INTEGER(1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> This object contains the maximum

number of alarm groups (8 alarm inputs per group) this device supports. This object indicates the maximum rows which shall appear in the alarmGroupTable object.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.3.11

<Unit> alarm Group"

::= { unit 11 }

### **Alarm Group Table**

alarmGroupTable OBJECT-TYPE

SYNTAX SEQUENCE OF AlarmGroupEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> This table contains alarm input

status in groups of eight inputs. The number of rows in this table is equal to the maxAlarmGroups object.

<TableType> static

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.3.12"

::= { unit 12 }

alarmGroupEntry OBJECT-TYPE

SYNTAX AlarmGroupEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> Status for eight alarm inputs.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.3.12.1"

INDEX { alarmGroupNumber }

::= { alarmGroupTable 1 }

AlarmGroupEntry::= SEQUENCE {

alarmGroupNumber INTEGER,

alarmGroupState INTEGER}

#### Alarm Group Number

alarmGroupNumber OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The alarm group number for

objects in this row. This value shall not exceed the maxAlarmGroups object value.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.3.12.1.1

<Unit> group"

::= { alarmGroupEntry 1 }

#### Alarm Group State

alarmGroupState OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> Alarm input state bit field.

When a bit = 1, the associated physical alarm input is active. When a bit = 0, the associated alarm input is NOT active.

Bit 7: Alarm Input # = ( alarmGroupNumber \* 8)

Bit 6: Alarm Input # = ( alarmGroupNumber \* 8) -1

Bit 5: Alarm Input # = ( alarmGroupNumber \* 8) -2

Bit 4: Alarm Input # = ( alarmGroupNumber \* 8) -3

Bit 3: Alarm Input # = ( alarmGroupNumber \* 8) -4

Bit 2: Alarm Input # = ( alarmGroupNumber \* 8) -5

Bit 1: Alarm Input # = ( alarmGroupNumber \* 8) -6

Bit 0: Alarm Input # = ( alarmGroupNumber \* 8) -7

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.3.12.1.2"

::= {alarmGroupEntry 2 }

### **Startup Flash Mode**

unitStartUpFlashMode OBJECT-TYPE

SYNTAX INTEGER { autoFlash (1),allRedFlashOverride (2) }

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Defines the startup flash state

for the unit. For autoFlash (1), the startup flash state for each signal indication is also the state of the channel during Automatic Flash mode. For allRedFlashOverride (2), during the Start-Up Flash state, the Fault Monitor and Voltage Monitor outputs

shall be inactive (if present) and the Channel Flash settings shall be overridden.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.3.18"

DEFVAL { autoFlash }

::= { unit 18 }

### **ASC Clock**

ascClock OBJECT IDENTIFIER

::= { unit 22 }

-- This note contains the objects necessary to support time sources.

#### Maximum Number of Time Sources

maxTimeSources OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The maximum number of time

sources that this Controller Unit supports. This object indicates the maximum rows which shall appear in the unitTimeTable object.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.3.22.1

<Unit> timeSource"

::= { ascClock 1 }

#### Unit Time Source Table

unitTimeTable OBJECT-TYPE

SYNTAX SEQUENCE OF UnitTimeEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> A table containing Controller

Unit time sources. The number of rows in this table is equal to the maxTimeSources object.

<TableType> static

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.3.22.2"

::= { ascClock 2 }

unitTimeEntry OBJECT-TYPE

SYNTAX UnitTimeEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> Parameters for a specific

Controller Unit time source.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.3.22.2.1"

INDEX { unitTimeIndex }

::= { unitTimeTable 1 }

UnitTimeEntry ::= SEQUENCE {

unitTimeIndex INTEGER,

unitTimeSourceAvailable INTEGER }

##### **Unit Time Source Index**

unitTimeIndex OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The index number for objects in

this row. The value shall not exceed the maxTimeSources object value.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.3.22.2.1.1

<Unit> timeSource"

::= { unitTimeEntry 1 }

##### **Unit Time Source**

unitTimeSourceAvailable OBJECT-TYPE

SYNTAX INTEGER { other (1),

lineSync (2),

rtcSqwr (3),

crystal (4),

gnss (5),

ntp (6) }

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> An enumerated value representing

the available sources for adjusting the clock. This object sets up the clock sources available for use by the CU.

**other:** the source of the unit time is not defined by this standard.

**lineSync:** the source of the unit time is determined by tracking the (AC) power line frequency

**rtcSqwr:** the source of the unit time a Real Time Clock Square Wave output

**crystal:** the source of the unit time is the internal crystal. This might also be used if the unit time normally uses line frequency but appears to be drifting too much as might happen when on a power generator.

**gnss:** a GNSS device is being used to update the unit's internal reference on a frequent basis (e.g., once per minute))

**ntp:** the network time protocol (NTP) is being used to update the unit's internal reference

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.3.22.2.1.2"

DEFVAL { lineSync }

::= { unitTimeEntry 2 }

#### ASC Clock Source – Commanded

unitTimeSourceCommanded OBJECT-TYPE

SYNTAX INTEGER { other (1),

lineSync (2),

rtcSqwr (3),

crystal (4),

gnss (5),

ntp (6) }

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Commands the unit to the primary

source for adjusting the unit clock:

**other:** the source of the unit time is not defined by this standard.

**lineSync:** the source of the unit time is determined by tracking the (AC) power line frequency

**rtcSqwr:** the source of the unit time a Real Time Clock Square Wave output

**crystal:** the source of the unit time is the internal crystal. This might also be used if the unit time normally uses line frequency but appears to be drifting too much as might happen when on a power generator.

**gnss:** a GNSS device is being used to update the unit's internal reference on a frequent basis (e.g., once per minute))

**ntp:** the network time protocol (NTP) is being used to update the unit's internal reference

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.3.22.3"

DEFVAL { lineSync }

::= { ascClock 3 }

#### ASC Clock Source – Current

unitTimeSourceCurrent OBJECT-TYPE

SYNTAX INTEGER { other (1),

lineSync (2),

rtcSqwr (3),

crystal (4),

gnss (5),

ntp (6) }

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> An enumerated value representing

the current source for adjusting the unit clock as follows:

**other:** the source of the unit time is not defined by this standard.

**lineSync:** the source of the unit time is determined by tracking the (AC) power line frequency

**rtcSqwr:** the source of the unit time is a Real Time Clock Square Wave output

**crystal:** the source of the unit time is the internal crystal. This might also be used if the unit time normally uses line frequency but appears to be drifting too much as might happen when on a power generator.

**gnss:** a GNSS device is being used to update the unit's internal reference on a frequent basis (e.g., once per minute))

**ntp:** the network time protocol (NTP) is being used to update the unit's internal reference

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.3.22.4"

DEFVAL { lineSync }

::= { ascClock 4 }

#### Unit Time Source Status

unitTimeSourceStatus OBJECT-TYPE

SYNTAX INTEGER { notActive (1),

active (2),

dataError (3),

dataTimeOutError (4),

pendingUpdate (5),

nonSequential (6) }

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> An enumerated value representing

the status of the current unit clock source (unitTimeSourceCurrent).

**notActive:** The unit is not monitoring this clock source, or updates are not available.

**active:** The unit is receiving valid updates and is updating the controller time without errors.

**dataError:** A data error, such as a crc mismatch, was detected.

**dataTimeoutError:** No data has been received from the

unitTimeSourceCurrent within a reasonable amount of time. This timeout will be preset by the driver for this time source as it depends on the specific implementation.

**pendingUpdate:** The unit is pending an update from the

unitTimeSourceCurrent, such as when the controller is in the startup period and is waiting for the external device to sync to its reference and send the time to the unit.

**nonSequential:** A non-sequential clock change occurrence. Note this value should be cleared upon reading it (i.e., a GET on this object) or 10 seconds after its occurrence, whichever comes first.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.3.22.5"

::= { ascClock 5 }

#### ASC Clock Non-Sequential Time Source

unitTimeNonSequentialSource OBJECT-TYPE

SYNTAX INTEGER { unknown (1),

dstChange (2),

managementStation (3),

localUser (4),

timeSourceChange (5),

timeSourceDiscontinuity (6) }

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> An enumerated value that

indicates the source of a non-sequential change to the ASC clock time. A nonsequential change occurs anytime the clock changes by more than 1 increment (whether in seconds or milliseconds).

**unknown:** the source of the non-sequential change to the unit time is unknown or cannot be determined.

**dstChange:** the source of the non-sequential change to the unit time is a change in daytime savings time.

**managementStation:** the source of the non-sequential change to the unit time is a command from a management station.

**localUser:** the source of the non-sequential change to the unit time is a command from a user or device at the controller unit.

**timeSourceChange:** A change in the time source (e.g., external1)

**timeSourceDiscontinuity:** A change as determined by an external time source (e.g., GNSS).

The value is latched until another non-sequential change to the ASC clock time or until the ASC is powered off.

If a non-sequential change occurs or globalTime is SET, then the event should be logged. This object is used with the unitTimeNonSequentialChange and the

unitTimeNonSequentialDelta objects.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.3.22.6"

DEFVAL { unknown }

::= { ascClock 6 }

#### ASC Clock Non-Sequential Time Change

unitTimeNonSequentialChange OBJECT-TYPE

SYNTAX Counter

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The 'new' globalTime after a

non-sequential change to the ASC clock time. A non-sequential change occurs anytime the clock changes by more than 1 increment (whether in seconds or milliseconds). The value of this object is number of seconds since the epoch of 00:00:00 (midnight) January 1, 1970 UTC (a.k.a. Zulu or GMT).

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.3.22.7

<Unit> second"

DEFVAL { 0 }

::= { ascClock 7 }

#### ASC Clock Non-Sequential Time Difference

unitTimeNonSequentialDelta OBJECT-TYPE

SYNTAX OCTET STRING (SIZE(0 | 5))

ACCESS read-only

STATUS mandatory

DESCRIPTION

"<Definition> An octet string indicating the difference between the 'expected' time and the new time for the ASC clock after a nonsequential change to the ASC clock. A non-sequential change occurs anytime the clock changes by more than 1 increment

(whether in seconds or milliseconds). A positive value indicates time jumped ahead while a negative value indicates time jumped back. The first octet is from -23 to +23 hours, the second octet is in minutes, the third octet represents seconds, and the last two octets represents milliseconds.

This object is used with the unitTimeNonSequentialSource and the

unitTimeNonSequentialChange objects.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.3.22.8"

DEFVAL { "" }

::= { ascClock 8 }

### **Communications**

#### Maximum Ethernet Ports

maxEthernetPorts OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The Maximum Number of Ethernet

communications ports this device supports. This object indicates the maximum rows which shall appear in the ethernetConfigTable object.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.3.23.3

<Unit> ethernetPorts"

::= { commPorts 3 }

#### Ethernet Port Configuration Table

ethernetConfigTable OBJECT-TYPE

SYNTAX SEQUENCE OF EthernetConfigEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> This table extends

configurations for the Ethernet ports on the device by providing objects that extend standard configuration tables such as those contained in RFC

1213. The number of rows in this table is equal to the maxEthernetPorts object. This table only contains rows for communication ports with commPortType = ethernet (2). Note that the Ethernet port’s MAC address can be found via the ifPhysAddress object in the ifTable at the same value of ifIndex.

<TableType> static

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.3.23.4"

::= { commPorts 4 }

ethernetConfigEntry OBJECT-TYPE

SYNTAX EthernetConfigEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> This object defines a row in the

Ethernet Port Configuration Table.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.3.23.4.1"

INDEX { ifIndex }

::= { ethernetConfigTable 1 }

EthernetConfigEntry ::= SEQUENCE {

ecfgIpAddr IpAddress,

ecfgNetMask IpAddress,

ecfgGateway IpAddress,

ecfgDNS IpAddress,

ecfgMode INTEGER,

ecfgLogicalName OCTET STRING,

ecfgStaticIpAddr IpAddress,

ecfgStaticNetMask IpAddress,

ecfgStaticGateway IpAddress,

ecfgStaticDNS IpAddress }

##### **IP Address Parameter**

ecfgIpAddr OBJECT-TYPE

SYNTAX IpAddress

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> This object contains the IP

address of this logical Ethernet Port.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.3.23.4.1.1"

::= { ethernetConfigEntry 1 }

##### **Net Mask Parameter**

ecfgNetMask OBJECT-TYPE

SYNTAX IpAddress

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> This object contains the network

mask for this Ethernet Port.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.3.23.4.1.2"

::= { ethernetConfigEntry 2 }

##### **Gateway Parameter**

ecfgGateway OBJECT-TYPE

SYNTAX IpAddress

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> This object contains the gateway

IP address for this Ethernet Port.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.3.23.4.1.3"

::= { ethernetConfigEntry 3 }

##### **Domain Name Server Parameter**

ecfgDNS OBJECT-TYPE

SYNTAX IpAddress

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> This object contains the domain

name server IP address for this Ethernet Port.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.3.23.4.1.4"

::= { ethernetConfigEntry 4 }

##### **Ethernet Configuration Mode Parameter**

ecfgMode OBJECT-TYPE

SYNTAX INTEGER { other (1),

static (2),

dHCPclient (3) }

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object determines how the

IPv4 interface is configured:

other: the interface is configured with some other mechanism not defined by this standard

static: the interface is configured using the static values in this table

dHCPclient: the interface is configured via DHCP request

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.3.23.4.1.5"

DEFVAL { other }

::= { ethernetConfigEntry 5 }

##### **DHCP Logical Name Parameter**

ecfgLogicalName OBJECT-TYPE

SYNTAX OCTET STRING

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object contains the Logical

Name used for this port if DHCP client is enabled. If DHCP client is disabled then this object contains the last Logical Name used for this port (if none, then the object would be a zero length octet string).

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.3.23.4.1.6"

::= { ethernetConfigEntry 6 }

##### **Static IP Address Parameter**

ecfgStaticIpAddr OBJECT-TYPE

SYNTAX IpAddress

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object contains the IP

address to be used for this logical Ethernet Port if the ecfgMode object is static (2).

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.3.23.4.1.7"

::= { ethernetConfigEntry 7 }

##### **Static Net Mask Parameter**

ecfgStaticNetMask OBJECT-TYPE

SYNTAX IpAddress

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object contains the network

mask to be used for this Ethernet Port if the ecfgMode object is static (2).

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.3.23.4.1.8"

::= { ethernetConfigEntry 8 }

##### **Static Gateway Parameter**

ecfgStaticGateway OBJECT-TYPE

SYNTAX IpAddress

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object contains the gateway

IP address to be used for this Ethernet Port if the ecfgMode object is static (2).

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.3.23.4.1.9"

::= { ethernetConfigEntry 9 }

##### **Static Domain Name Server Parameter**

ecfgStaticDNS OBJECT-TYPE

SYNTAX IpAddress

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object contains the domain

name server IP address to be used for this Ethernet Port if the ecfgMode object is static (2).

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.3.23.4.1.10"

::= { ethernetConfigEntry 10 }

### **Unit Alarm Status 3**

unitAlarmStatus3 OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION

"<Definition> Device Alarm Mask 3 ( 0 = False, 1 = True) as follows:

Bit 7: Reserved

Bit 6: Reserved

Bit 5: CV Certificate = Whenever the CU detects a fault related to invalid connected vehicle certificates.

Bit 4: Power Issues = Whenever the CU detects power issues such as brown-outs or brief black outs but do not lead to a shutdown of the CU

Bit 3: RSU Link Status = Whenever the CU is configured to communicate with a RSU but the communications link is failed (e.g., timeouts, errors).

Bit 2: UPS Link Status = Whenever the CU is configured to communicate with a UPS but the communications link is failed (e.g., timeouts, errors).

Bit 1: CMU Link Status = Whenever the CU is configured to communicate with CMU but the communication link is failed (e.g., timeouts, errors).

Bit 0: Communications Timeout = Whenever the CU detects a communications timeout on an enabled communications port on the ASC.

Once set, a bit shall maintain its state as long as the condition

exists.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.3.26"

::= { unit 26 }

### **Unit Alarm Status 4**

unitAlarmStatus4 OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION

"<Definition> Device Alarm Mask 4 ( 0 = False, 1 = True) as follows:

Bit 7: Reserved

Bit 6: Reserved

Bit 5: USB = Whenever the CU detects a USB memory device.

Bit 4: Scheduler = Whenever the CU is not implementing a scheduled pattern or scheduled action.

Bit 3: Clock = Whenever the CU detects an error with the CU's internal clock.

Bit 2: Cabinet Environmental Sensors = Whenever the cabinet environmental conditions measured by the CU exceeds the thresholds (e.g., temperature, humidity).

Bit 1: Preempt Maximum Presence - Preempt maximum presence time exceeded

Bit 0: Memory Fault = Whenever the CU detects a memory fault within the controller unit, such as in the firmware, a database or RAM.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.3.27"

::= { unit 27 }

## **Coordination Parameters**

coord OBJECT IDENTIFIER

::= { asc 4 }

-- The coord node contains objects that support coordination

-- configuration, status and control functions for the device.

### **Coord Operational Mode Parameter**

coordOperationalMode OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object defines the

operational mode for coordination. The possible modes are:

Value DESCRIPTION

0 Automatic - this mode provides for coord operation, free,and flash to be determined automatically by the possible sources (i.e. Interconnect, Time Base, or System Commands).

1-253 Manual Pattern - these modes provides for Coord operation running this pattern. This selection of pattern overrides all other pattern commands.

254 Manual Free - this mode provides for Free operation without coordination or Automatic Flash from any source.

255 Manual Flash - this mode provides for Automatic Flash without coordination or Free from any source.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.4.1"

REFERENCE "NEMA TS 2 Clause 3.6.2.4"

::= { coord 1 }

### **Coord Correction Mode Parameters**

coordCorrectionMode OBJECT-TYPE

SYNTAX INTEGER { other (1),

dwell (2),

shortway (3),

addOnly (4),

subtractOnly (5) }

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object defines the Coord

Correction Mode. The possible modes are:

**other:** the coordinator establishes a new offset by a mechanism not defined in this standard.

**dwell:** when changing offset, the coordinator shall establish a new offset by dwelling in the coord phase(s) until the desired offset is reached.

**shortway (Smooth):** when changing offset, the coordinator shall establish a new offset by adding or subtracting to/from the timings in a manner that limits the cycle change. This operation is performed in a device specific manner.

**addOnly:** when changing offset, the coordinator shall establish a new offset by adding to the timings in a manner that limits the cycle change. This operation is performed in a device specific manner.

**subtractOnly:** when changing offset, the coordinator shall establish a new offset by subtracting from the timings in a manner that limits the cycle change. This operation is performed in a device specific manner.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.4.2"

::= { coord 2 }

### **Coord Maximum Mode Parameter**

coordMaximumMode OBJECT-TYPE

SYNTAX INTEGER { other (1),

maximum1 (2),

maximum2 (3),

maxInhibit (4),

maximum3 (5) }

ACCESS read-write

STATUS mandatory

DESCRIPTION "This object defines the Coord Maximum Mode.

The possible modes are:

**other:** the maximum mode is determined by some other mechanism not defined in this standard.

**maximum1:** the internal Maximum 1 Timing shall be effective while coordination is running a pattern.

**maximum2:** the internal Maximum 2 Timing shall be effective while coordination is running a pattern.

maxInhibit: the internal Maximum Timing shall be inhibited while coordination is running a pattern.

**maximum3:** the internal Maximum 3 Timing shall be effective while coordination is running a pattern.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.4.3"

::= { coord 3 }

### **Coord Force Mode Parameter**

coordForceMode OBJECT-TYPE

SYNTAX INTEGER { other(1),

floating (2),

fixed (3) }

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object defines the Pattern

Force Mode. The possible modes are:

**other:** the CU implements a mechanism not defined in this standard.

**floating:** each non-coord phase will be forced to limit its time to the split time value. This allows unused split time to revert to the coord phase.

**fixed:** each non-coord phase will be forced at a fixed position in the cycle. This allows unused split time to revert to the following phase.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.4.4"

::= { coord 4 }

### **Maximum Patterns Parameter**

maxPatterns OBJECT-TYPE

SYNTAX INTEGER (1..253)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The maximum number of Patterns

this Controller Unit supports. This object indicates how many rows are in the patternTable object (254 and 255 are defined as nonpattern Status for Free and Flash).

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.4.5

<Unit> pattern"

::= { coord 5 }

### **Pattern Table Type**

patternTableType OBJECT-TYPE

SYNTAX INTEGER { other (1),

patterns (2),

offset3 (3),

offset5 (4) }

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> This object provides information

about any special organizational structure required for the pattern table. The defined structures are as follows:

**other:** The pattern table setup is not described in this standard, refer to device manual.

**patterns:** Each row of the pattern table represents a unique pattern and has no dependencies on other rows.

**offset3:** The pattern table is organized into plans which have three offsets. Each plan uses three consecutive rows. Only patternOffsetTime and patternSequenceNumber values may vary between each of the three rows. Plan 1 is contained in rows 1, 2 and 3, Plan 2 is contained in rows 4, 5 and 6, Plan 3 is in rows 7, 8 and 9, etc.

**offset5:** The pattern table is organized into plans which have five offsets. Each plan occupies five consecutive rows. Only patternOffsetTime and patternSequenceNumber values may vary between each of the rows. Plan 1 is contained in rows 1, 2, 3, 4 and 5, Plan 2 is contained in rows 6, 7, 8, 9 and 10, Plan 3 is contained in rows 11, 12, 13, 14 and 15, etc.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.4.6"

REFERENCE "NEMA TS 2 Clause 3.6.2.1 and 3.6.2.2"

::= { coord 6 }

### **Pattern Table**

patternTable OBJECT-TYPE

SYNTAX SEQUENCE OF PatternEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> A table containing Actuated

Controller Unit coordination Pattern parameters. The number of rows in this table is equal to the maxPatterns object.

<TableType> static

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.4.7"

::= { coord 7 }

patternEntry OBJECT-TYPE

SYNTAX PatternEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> Parameters for a specific

Actuated Controller Unit pattern.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.4.7.1"

INDEX { patternNumber }

::= { patternTable 1 }

PatternEntry ::= SEQUENCE {

patternNumber INTEGER,

patternCycleTime INTEGER,

patternOffsetTime INTEGER,

patternSplitNumber INTEGER,

patternSequenceNumber INTEGER,

patternCoordSyncPoint INTEGER,

patternOptions INTEGER,

patternSpatEnabledLanes OCTET STRING }

#### Pattern Number Entry

patternNumber OBJECT-TYPE

SYNTAX INTEGER (1..253)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The pattern number for objects

in this row. This value shall not exceed the maxPatterns object value.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.4.7.1.1

<Unit> pattern"

::= { patternEntry 1 }

#### Pattern Cycle Time

patternCycleTime OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> The patternCycleTime object

specifies the length of the pattern cycle in seconds (NEMA TS 2 range: 30-255). A pattern cycle time less than adequate to service the minimum requirements of all phases shall result in Free mode. While this condition exists, the Local Free bit of unitAlarmStatus1 and the Local Override bit of shortAlarmStatus shall be set to one (1).

The minimum requirements of a phase with a not-actuated ped include Minimum Green, Walk, Pedestrian Clear, Yellow Clearance, and Red Clearance; the minimum requirements of a phase with an actuated pedestrian include Minimum Green, Yellow Clearance, and Red Clearance. If the pattern cycle time is zero and the associated split table (if any) contains values greater than zero, then the CU shall utilize the split time values as maximum values for each phase.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.4.7.1.2

<Unit> second"

REFERENCE "NEMA TS 2 Clause 3.6.2.1.1"

::= { patternEntry 2 }

#### Pattern Offset Time Parameter

patternOffsetTime OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> The patternOffsetTime defines by

how many seconds (NEMA TS 2 range: 0-254) the local time zero shall lag the system time zero (synchronization pulse) for this pattern. An offset value equal to or greater than the patternCycleTime shall result in Free being the operational mode. While this condition exists, the Local Free bit of unitAlarmStatus1 and the LocalOverride bit of shortAlarmStatus shall be set to one (1).

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.4.7.1.3

<Unit> second"

REFERENCE "NEMA TS 2 Clause 3.6.2.2"

::= { patternEntry 3 }

#### Pattern Split Number Parameter

patternSplitNumber OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> This object is used to locate

information in the splitTable to use for this pattern. This value shall not exceed the maxSplits object value.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.4.7.1.4

<Unit> split"

::= { patternEntry 4 }

#### Pattern Sequence Number Parameter

patternSequenceNumber OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object is used to locate

information in the sequenceTable to use with this pattern. This value shall not exceed the maxSequences object value.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.4.7.1.5

<Unit> sequence"

::= { patternEntry 5 }

#### Pattern Coordination Sync Point

patternCoordSyncPoint OBJECT-TYPE

SYNTAX INTEGER { other (1),

unitCoordSyncPoint (2),

firstCoordPhsGrnBegin (3),

lastCoordPhsGrnBegin (4),

firstCoordPhsGrnEnd (5),

lastCoordPhsGrnEnd (6),

firstCoordPhsYelEnd (7),

lastCoordPhsYelEnd (8) }

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object is used to indicate

the location of the system reference point for this pattern. The valid coordination sync points are:

**other:** the coordination sync point is not described in this standard

**unitCoordSyncPoint:** the coordination point is defined by unitCoordSyncPoint.

**firstCoordPhsGrnBegin:** the coordination point is the beginning of the Green indication of the first coordinated phase.

**lastCoordPhsGrnBegin:** the coordination point is the beginning of the Green indication of the last coordinated phase.

**firstCoordPhsGrnEnd:** the coordination point is end of the green indication of the first coordinated phase.

**lastCoordPhsGrnEnd:** the coordination point is the end of the green indication of the last coordinated phase.

**firstCoordPhsYelEnd:** the coordination point is the end of the yellow indication of the first coordinated phase.

**lastCoordPhsYelEnd:** the coordination point is the end of the yellow indication of the last coordinated phase.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.4.7.1.6"

DEFVAL { firstCoordPhsGrnBegin }

::= { patternEntry 6 }

#### Pattern Options

patternOptions OBJECT-TYPE

SYNTAX INTEGER { other (1),

coordMaximumMode (2),

maxInhibit (3),

maximum1 (4),

maximum2 (5),

maximum3 (6) }

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object represents the

maximum mode to be used for the pattern. The valid maximum modes are:

**other:** the maximum mode is determined by some other mechanism not defined in this standard.

**coordMaximumMode:** use the maximum mode defined by the

coordMaximumMode object.

**maxInhibit:** the internal maximum timing shall be inhibited while coordination is running this pattern.

**maximum1:** the internal Maximum 1 Timing shall be effective while coordination is running this pattern.

**maximum2:** the internal Maximum 2 Timing shall be effective while coordination is running this pattern.

**maximum3:** the internal Maximum 3 Timing shall be effective while coordination is running this pattern.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.4.7.1.7"

::= { patternEntry 7 }

#### Pattern Enabled Lanes

patternSpatEnabledLanes OBJECT-TYPE

SYNTAX OCTET STRING

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Each octet in this octet string

represents the index of the lanes (mapLaneIndex) that are activated for the current MAP plan in effect(xxxx).Each indexed lane should have its revocable Lane bit set (Bit 0 set to (1) in the mapLaneAttribute object).

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.4.7.1.8"

::= { patternEntry 8 }

### **Maximum Splits**

maxSplits OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The maximum number of Split

Plans this Actuated Controller Unit supports. This object indicates how many Split plans are in the splitTable object.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.4.8

<Unit> split"

::= { coord 8 }

* + 1. **Split Table**

splitTable OBJECT-TYPE

SYNTAX SEQUENCE OF SplitEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> A table containing Actuated

Controller Unit coordination split parameters. The number of rows in this table is equal to maxSplits.

<TableType> static

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.4.9"

::= { coord 9 }

splitEntry OBJECT-TYPE

SYNTAX SplitEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> Split type Parameters for a

specific Actuated Controller Unit phase.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.4.9.1"

INDEX { splitNumber, splitPhase }

::= { splitTable 1 }

SplitEntry ::= SEQUENCE {

splitNumber INTEGER,

splitPhase INTEGER,

splitTime INTEGER,

splitMode INTEGER,

splitCoordPhase INTEGER,

splitOptions INTEGER }

* + - 1. Split Number

splitNumber OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The object defines which rows of

the split table comprise a split group. All rows that have the same splitNumber are in the same split group. The value of this object shall not exceed the maxSplits object value.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.4.9.1.1

<Unit> split"

::= { splitEntry 1 }

* + - 1. **Split Phase Number**

splitPhase OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The phase number for objects in

this row. The value of this object shall not exceed the maxPhases object value.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.4.9.1.2

<Unit> phase"

::= { splitEntry 2 }

* + - 1. **Split Time Parameter**

splitTime OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> The time in seconds the

splitPhase is allowed to receive (i.e. before a Force Off is applied) when constant demands exist on all phases. In floating coordForceMode, this is always the maximum time a non-coordinated phase is allowed to receive. In fixed coordForceMode, the actual allowed time may be longer if a previous phase gapped out.

The splitTime includes all phase clearance times for the associated phase. The split time shall be longer than the sum of the phase minimum service requirements for the phase. When the time is NOT adequate to service the minimum service requirements of the phase, Free Mode shall be the result. The minimum requirements of a phase with a not-actuated ped include Minimum Green, Walk, Pedestrian Clear, Yellow Clearance, and Red Clearance; the minimum requirements of a phase with an actuated pedestrian include Minimum Green, Yellow Clearance, and Red Clearance.

If the cycleTime entry of the associated patternTable entry is zero (i.e. the device is in Free Mode), then the value of this object shall be applied, if non-zero, as a maximum time for the associated phase.

If the critical path through the phase diagram is less than the cycleTime entry of the associated patternTable entry, all extra time is allotted to the coordination phase in each ring.

If the critical path through the phase diagram is greater than the cycleTime entry of the associated patternTable entry (and the cycleTime is not zero) the device shall operate in the Free Mode.

While the Free Mode condition exists, the Local Override bit of shortAlarm shall be set to one (1).

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.4.9.1.3

<Unit> second"

REFERENCE "NEMA TS 2 Clause 3.6.2.1.2"

::= { splitEntry 3 }

* + - 1. **Split Mode Parameter**

splitMode OBJECT-TYPE

SYNTAX INTEGER { other(1),

none (2),

minimumVehicleRecall (3),

maximumVehicleRecall (4),

pedestrianRecall (5),

maximumVehicleAndPedestrianRecall (6),

phaseOmitted (7),

nonActuated (8) }

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object defines operational

characteristics of the phase. The following options are available:

**other:** the operation is not specified in this

standard

**none:** no split mode control.

**minimumVehicleRecall:** this phase operates with a

minimum vehicle recall.

**maximumVehicleRecall:** this phase operates with a

maximum vehicle recall. This value shall also be used for bicycle phase recalls and transit phase recalls.

**pedestrianRecall:** this phase operates with a

pedestrian recall.

**maximumVehicleAndPedestrianRecall:** this phase

operates with a maximum vehicle & pedestrian recall.

**phaseOmitted:** this phase is omitted.

**nonActuated:** this phase operates with a fixed split

time.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.4.9.1.4"

::= { splitEntry 4 }

* + - 1. **Split Coordinated Phase**

splitCoordPhase OBJECT-TYPE

SYNTAX INTEGER (0..1)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> To select the associated phase

as a coordinated phase this object shall be set to TRUE (non zero).

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.4.9.1.5"

::= { splitEntry 5 }

* + - 1. **Split Options**

splitOptions OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Optional split functions (0 =

False/Disabled,

1 = True/Enabled).

Bit 7: Reserved

Bit 6: Reserved

Bit 5: Reserved

Bit 4: Reserved

Bit 3: Reserved

Bit 2: Reserved

Bit 1: Reserved

Bit 0: Transition Phase Omit - To allow the associated phase to be omitted during coord Correction Mode (transitions), this object shall be set to TRUE (1). If the associated phase is not allowed to be omitted, this object shall be set to FALSE (0).

A SET of a 'reserved' bit to a value other than zero (0) shall return a badValue(3) error.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.4.9.1.6"

::= { splitEntry 6 }

### **Coordination Pattern Status**

coordPatternStatus OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> This object defines the running

coordination pattern/mode in the device. The possible values are:

Value Description

0 Not used

1-253 Pattern - indicates the currently running pattern

254 Free - indicates Free operation without coordination.

255 Flash - indicates Automatic Flash without coordination.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.4.10"

::= { coord 10 }

### **Local Free Status**

localFreeStatus OBJECT-TYPE

SYNTAX INTEGER { other(1),

notFree(2),

commandFree(3),

transitionFree(4),

inputFree(5),

coordFree(6),

badPlan(7),

badCycleTime(8),

splitOverrun (9),

invalidOffset (10),

failed(11) }

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The Free modes:

**other:** Some other condition has caused the device to run in free mode.

**notFree:** The unit is not running in free mode.

commandFree: the current pattern command is the Free mode pattern.

**transitionFree:** the CU has a pattern command but is cycling to a point to begin coordination.

**inputFree:** one of the CU inputs cause it to not respond to coordination.

**coordFree:** the CU programming for the called pattern is to run Free.

**badPlan:** Free - the called pattern is invalid.

**badCycleTime:** the pattern cycle time is less than adequate to service the minimum requirements of all phases.

**splitOverrun:** Free - the sum of the critical path splitTime’s exceed the programmed patternCycleTime value.

**invalidOffset:** Free - reserved / not used

**failed:** cycling diagnostics have called for Free.

An ASC may provide diagnostics beyond those stated herein. Therefore, for a set of given bad data, the free status between devices may be inconsistent.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.4.11"

::= { coord 11 }

### **Coordination Cycle Status**

coordCycleStatus OBJECT-TYPE

SYNTAX INTEGER (0..510)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The Coord Cycle Status

represents the current position in the local coord cycle of the running pattern (0 to 510 sec). This value normally counts down from patternCycleTime to Zero. This value may exceed the patternCycleTime during a coord cycle with offset correction (patternCycleTime + correction).

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.4.12

<Unit> second"

::= { coord 12 }

### **Coordination Sync Status**

coordSyncStatus OBJECT-TYPE

SYNTAX INTEGER (0..510)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The Coord Sync Status represents

the time since the system reference point for the running pattern (0 to 510 sec). This value normally counts up from Zero to the next system reference point (patternCycleTime). This value may exceed the patternCycleTime during a coord cycle in which the system reference point has changed.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.4.13

<Unit> second"

::= { coord 13 }

### **System Pattern Control**

systemPatternControl OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object is used to establish

the Called System Pattern/Mode for the device. The possible values are:

Value DESCRIPTION

0 Standby - the system relinquishes control of the device.

1-253 Pattern - these values indicate the system commanded pattern

254 Free - this value indicates a call for Free

255 Flash - this value indicates a call for Automatic Flash

If an unsupported / invalid pattern is called, Free shall be the operational mode. The device shall reset this object to ZERO when in BACKUP Mode. A write to this object shall reset the Backup timer to ZERO (see unitBackupTime).

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.4.14"

::= { coord 14 }

### **System Sync Control**

systemSyncControl OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object is used to establish

the system reference point for the Called System Pattern by providing the current position in the system pattern cycle (0-254 sec). The device shall recognize a write to this object as a command to establish the time until the next system reference point. Thereafter, the system reference point shall be assumed to occur at a frequency equal to the patternCycleTime.

When the value in the object is 255, the system REFERENCE point shall be referenced to the local Time Base in accordance with its programming.

This CU must maintain an accuracy of 0.1 seconds based on the receipt of the SET packet. The device shall reset this object to ZERO when in BACKUP Mode. A write to this object shall reset the Backup timer to ZERO (see unitBackupTime).

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.4.15

<Unit> second"

::= { coord 15 }

### **Unit Coordination Sync Point**

unitCoordSyncPoint OBJECT-TYPE

SYNTAX INTEGER { other (1),

firstPhaseGreenBegin (2),

lastPhaseGreenBegin (3),

firstPhaseGreenEnd (4),

lastPhaseGreenEnd (5),

firstPhaseYellowEnd (6),

lastPhaseYellowEnd (7) }

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object is used to indicate

the location of the system reference point for the running pattern. The valid coordination sync points are:

**other:** the coordination sync point is not described in this standard

**firstPhaseGreenBegin:** the coordination point is the beginning of the Green indication of the first coordinated phase.

**lastPhaseGreenBegin:** the coordination point is the beginning of the Green indication of the last coordinated phase.

**firstPhaseGreenEnd:** the coordination point is end of the green indication of the first coordinated phase.

**lastPhaseGreenEnd:** the coordination point is the end of the green indication of the last coordinated phase.

**firstPhaseYellowEnd:** the coordination point is the end of the yellow indication of the first coordinated phase.

**lastPhaseYellowEnd:** the coordination point is the end of the yellow indication of the last coordinated phase.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.4.16"

DEFVAL { firstPhaseGreenBegin }

::= { coord 16 }

## **Time Base Parameters**

timebaseAsc OBJECT IDENTIFIER

::= { asc 5 }

-- This object is an identifier used to group all objects for

-- support of timebase functions. If a device implements timebase

-- functions then these objects shall be supported.

### **Time Base Pattern Sync Parameter**

timebaseAscPatternSync OBJECT-TYPE

SYNTAX INTEGER (0..65535)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Pattern Sync Reference in

minutes past midnight. When the value is 65535, the controller unit shall use the Action time as the Sync Reference for that pattern. Action time is the hour and minute associated with the active dayPlanEventNumber (as defined in NTCIP 1201).

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.5.1

<Unit> minute"

REFERENCE "NEMA TS 2 Clause 3.8.2"

::= { timebaseAsc 1 }

### **Maximum Time Base Actions**

maxTimebaseAscActions OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The Maximum Number of Actions

this device supports. This object indicates the maximum rows which shall appear in the timebaseAscActionTable object.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.5.2

<Unit> action"

::= { timebaseAsc 2 }

### **Time Base Asc Action Table**

timebaseAscActionTable OBJECT-TYPE

SYNTAX SEQUENCE OF TimebaseAscActionEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> A table containing Actuated

Controller Unit Time Base action parameters. The number of rows in this table is equal to the maxTimebaseAscActions object.

<TableType> static

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.5.3"

::= { timebaseAsc 3 }

timebaseAscActionEntry OBJECT-TYPE

SYNTAX TimebaseAscActionEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> Action Parameters for a Actuated

Controller Unit Time Base Program.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.5.3.1"

INDEX { timebaseAscActionNumber }

::= { timebaseAscActionTable 1 }

TimebaseAscActionEntry ::= SEQUENCE {

timebaseAscActionNumber INTEGER,

timebaseAscPattern INTEGER,

timebaseAscAuxiliaryFunction INTEGER,

timebaseAscSpecialFunction INTEGER }

#### Time Base Action Number

timebaseAscActionNumber OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The time base Action number for

objects in this row. This value shall not exceed the maxTimebaseAscActions object value. This object may be defined as a dayPlanActionOID (as defined in NTCIP 1201).

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.5.3.1.1

<Unit> action"

::= { timebaseAscActionEntry 1 }

#### Time Base Action Pattern Parameter

timebaseAscPattern OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> The Pattern that shall be active

when this Action is active. The value shall not exceed the value of maxPatterns, except for flash or free. A pattern of zero indicates that no pattern is being selected. A pattern = 0 relinquishes control to entity of a lower priority than timebase and allows that entity to control (i.e., interconnect if available).

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.5.3.1.2

<Unit> pattern"

::= { timebaseAscActionEntry 2 }

#### Time Base Action Auxiliary Function Parameter

timebaseAscAuxiliaryFunction OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> The Auxiliary functions that

shall be active when this Action is active.

Bit 7: Reserved

Bit 6: Reserved

Bit 5: Reserved

Bit 4: Reserved

Bit 3: Dimming enabled if set (non-zero), disabled if

clear (zero). For dimming to occur, this control AND ('unitControl' OR a dimming input) must be True.

Bit 2: Auxiliary Function 3 enabled if set (non-

zero), disabled if clear (zero).

Bit 1: Auxiliary Function 2 enabled if set (non-

zero), disabled if clear (zero).

Bit 0: Auxiliary Function 1 enabled if set (non-

zero), disabled if clear (zero).

A SET of a 'reserved' bit to a value other than zero (0) shall return a badValue(3) error.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.5.3.1.3"

::= { timebaseAscActionEntry 3 }

#### Time Base Action Special Function Parameter

timebaseAscSpecialFunction OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> The Special Functions that shall

be active when this Action is active.

Bit 7: Special Function 8

Bit 6: Special Function 7

Bit 5: Special Function 6

Bit 4: Special Function 5

Bit 3: Special Function 4

Bit 2: Special Function 3

Bit 1: Special Function 2

Bit 0: Special Function 1

Bit = 0 - False/Disabled, Bit = 1 - True/Enabled

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.5.3.1.4"

::= { timebaseAscActionEntry 4 }

### **Time Base Asc Action Status**

timebaseAscActionStatus OBJECT-TYPE

SYNTAX INTEGER(0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> This object indicates the

current time base Action Table row that will be used when the CU is in Time Base operation. A value of zero indicates that no time base Action is selected.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.5.4"

::= { timebaseAsc 4 }

### **Action Plan Command**

actionPlanControl OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object is used to activate

a configured action plan by referencing the Action number (timebaseAscActionNumber). When this action plan is in effect, the CU shall operate as if the action plan has been activated by the time base scheduler. A value of 0 shall deactivate the action plan and returns to what would normally have been in operation if the action plan was not in effect. If an unsupported / invalid Action number is called, Free shall be the operational mode. The device shall reset this object to ZERO when in BACKUP Mode. A write to this object shall reset the Backup timer to ZERO (see unitBackupTime).

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.5.5"

DEFVAL { 0 }

::= { timebaseAsc 5 }

## **Preempt Parameters**

preempt OBJECT IDENTIFIER

::= { asc 6 }

-- The preempt node contains objects that support preempt input

-- functions for the device.

### **Maximum Preempts**

maxPreempts OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The Maximum Number of Preempts

this Actuated Controller Unit supports. This object indicates the maximum rows which shall appear in the preemptTable object.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.1

<Unit> preempt"

REFERENCE "NEMA TS 2 Clause 3.7"

::= { preempt 1 }

### **Preempt Table**

preemptTable OBJECT-TYPE

SYNTAX SEQUENCE OF PreemptEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> A table containing Actuated

Controller Unit preemption parameters. The number of rows in this table is equal to the maxPreempts object.

<TableType> static

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.2"

::={ preempt 2 }

preemptEntry OBJECT-TYPE

SYNTAX PreemptEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> Parameters for a specific

Actuated Controller Unit preemptor.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.2.1"

INDEX { preemptNumber }

::={ preemptTable 1}

PreemptEntry ::= SEQUENCE {

preemptNumber INTEGER,

preemptControl INTEGER,

preemptLink INTEGER,

preemptDelay INTEGER,

preemptMinimumDuration INTEGER,

preemptMinimumGreen INTEGER,

preemptMinimumWalk INTEGER,

preemptEnterPedClear INTEGER,

preemptTrackGreen INTEGER,

preemptDwellGreen INTEGER,

preemptMaximumPresence INTEGER,

preemptTrackPhase OCTET STRING,

preemptDwellPhase OCTET STRING,

preemptDwellPed OCTET STRING,

preemptExitPhase OCTET STRING,

preemptState INTEGER,

preemptTrackOverlap OCTET STRING,

preemptDwellOverlap OCTET STRING,

preemptCyclingPhase OCTET STRING,

preemptCyclingPed OCTET STRING,

preemptCyclingOverlap OCTET STRING,

preemptEnterYellowChange INTEGER,

preemptEnterRedClear INTEGER,

preemptTrackYellowChange INTEGER,

preemptTrackRedClear INTEGER,

preemptSequenceNumber INTEGER,

preemptExitType INTEGER }

#### Preempt Number

preemptNumber OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The preempt number for objects

in this row. The value shall not exceed the maxPreempts object value. When all preemptControl objects have a value where bit 2 = 0, each preemptNumber routine shall be a higher priority and override all preemptNumber routines that have a larger preemptNumber.

When a preemptControl object has a value where bit 2 = 1, the next higher preemptNumber becomes of equal priority with the preemptNumber but may still be a higher priority than larger preemptNumbers depending on bit 2 of the relavent preemptControl objects.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.2.1.1

<Unit> preempt"

::= { preemptEntry 1 }

#### Preempt Control Parameter

preemptControl OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Preempt Miscellaneous Control

Parameter Mask (Bit=0: False/Disabled, Bit=1: True/Enabled) as follows:

Bit 7: Reserved

Bit 6: Reserved

Bit 5: All Red Flash - the CU shall enter to all red

flash instead of normal operations when the preemptMaximumPresence is exceeded

Bit 4: Preempt Enable - enables or disables this

preemption input. Disabling preempts should be done with extreme caution.

Bit 3: Flash Dwell - the CU shall cause the phases

listed in the preemptDwellPhase object to flash Yellow during the Dwell interval. All active phases not listed in preemptDwellPhase shall flash Red.

The CU shall cause the overlaps listed in the preemptDwellOverlap object to flash Yellow during the Dwell state. All active overlaps not listed in preemptDwellOverlap shall flash Red. Preempt cycling phase programming is ignored if this bit is set. This control is optional.

Bit 2: Preempt Override preemptNumber + 1 - provide a

means to define whether this preempt shall NOT override the next higher numbered Preempt. When set (1) this preempt shall not override the next higher numbered preempt. Lowered numbered preempts override higher numbered preempts. For example, 1 overrides 3, and the only way to get 3 equal to 1, is to set both 1 and 2 to NOT override the next higher numbered preempt. This parameter shall be ignored when preemptNumber equals maxPreempts.

Bit 1: Preempt Override Flash - provide a means to

define whether this preempt shall NOT override Automatic Flash. When set (1) this preempt shall not override Automatic Flash.

Bit 0: Non-Locking Memory - provide a means to enable

an operation which does not require detector memory. When set (1) a preempt sequence shall not occur if the preempt input terminates prior to expiration of the preemptDelay time.

A SET of a 'reserved' bit to a value other than zero (0) shall return a badValue(3) error. Support for Preempt Enable and All Red Flash added in NTCIP 1202 v03.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.2.1.2"

REFERENCE "NEMA TS 2 Clause 3.7.2.1 and 3.7.2.2"

DEFVAL { 0 }

::= { preemptEntry 2 }

#### Preempt Link Parameter

preemptLink OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object provides a means to

define a higher priority preempt to be combined (linked) with this preempt. At the end of preemptDwellGreen, the linked preempt shall receive an automatic call that shall be maintained as long as the demand for this preempt is active. Any value that is not a higher priority preempt or a valid preempt shall be ignored. The value shall not exceed the maxPreempts object value.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.2.1.3

<Unit> preempt"

DEFVAL { 0 }

::= { preemptEntry 3 }

#### Preempt Delay Parameter

preemptDelay OBJECT-TYPE

SYNTAX INTEGER (0..65535)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Preempt Delay Time in seconds

(0-600 sec). This value determines the time the preempt input shall be active prior to initiating any preempt sequence. A non-locking preempt input which is removed prior to the completion of this time shall not cause a preempt sequence to occur.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.2.1.4

<Unit> second"

DEFVAL { 0 }

::= { preemptEntry 4 }

#### Preempt Duration Parameter

preemptMinimumDuration OBJECT-TYPE

SYNTAX INTEGER (0..65535)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Preempt Minimum Duration Time in

seconds (0..65535 sec). This value determines the minimum time during which the preempt is active. Duration begins timing at the end of Preempt Delay (if non zero) and will prevent an exit from the Dwell interval until this time has elapsed.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.2.1.5

<Unit> second"

DEFVAL { 0 }

::= { preemptEntry 5 }

#### Preempt Minimum Green Parameter

preemptMinimumGreen OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Preempt Minimum Green Time in

seconds (0-255 sec). A preempt initiated transition shall not cause the termination of an existing Green prior to its display for lesser of the phase’s Minimum Green time or this period. CAUTION – if this value is zero, phase Green is terminated immediately.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.2.1.6

<Unit> second"

DEFVAL { 255 }

::= { preemptEntry 6 }

#### Preempt Minimum Walk Parameter

preemptMinimumWalk OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Preempt Minimum Walk Time in

seconds (0-255 sec). A preempt initiated transition shall not cause the termination of an existing Walk prior to its display for the lesser of the phase’s Walk time or this period. CAUTION - if this value is zero, phase Walk is terminated immediately.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.2.1.7

<Unit> second"

DEFVAL { 255 }

::= { preemptEntry 7 }

#### Preempt Enter Pedestrian Clear Parameter

preemptEnterPedClear OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Enter Ped ClearTime in seconds

(0-255 sec). This parameter controls the ped clear timing for a normal Walk signal terminated by a preempt initiated transition. A preempt initiated transition shall not cause the termination of a Pedestrian Clearance prior to its display for the lesser of the phase’s Pedestrian Clearance time or this period. CAUTION – if this value is zero, phase Ped Clear is terminated immediately.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.2.1.8

<Unit> second"

DEFVAL { 255 }

::= { preemptEntry 8 }

#### Preempt Track Green Parameter

preemptTrackGreen OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Track Clear Green Time in

seconds (0-255 sec). This parameter controls the green timing for the track clearance movement. Track Clear phase(s) are enabled in the preemptTrackPhase object. If this value is zero, the track clearance movement is omitted, regardless of preemptTrackPhase programming.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.2.1.9

<Unit> second"

DEFVAL { 0 }

::= { preemptEntry 9 }

#### Preempt Minimum Dwell Parameter

preemptDwellGreen OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Minimum Dwell interval in

seconds (1-255 sec). This parameter controls the minimum timing for the dwell interval. Phase(s) active during the Dwell interval are enabled in preemptDwellPhase and preemptCyclingPhase objects. The Dwell interval shall not terminate prior to the completion of preemptMinimumDuration, preemptDwellGreen (this object), and the call is no longer present.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.2.1.10

<Unit> second"

DEFVAL { 10 }

::= { preemptEntry 10 }

#### Preempt Maximum Presence Parameter

preemptMaximumPresence OBJECT-TYPE

SYNTAX INTEGER (0..65535)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Preempt Maximum Presence time in

seconds (0- 65535 sec). This value determines the maximum time which a preempt call may remain active and be considered valid. When the preempt call has been active for this time period, the CU shall return to normal operation. This preempt call shall be considered invalid until such time as a change in state occurs (no longer active). When set to zero the preempt maximum presence time is disabled.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.2.1.11

<Unit> second"

DEFVAL { 0 }

::= { preemptEntry 11 }

#### Preempt Track Phase Parameter

preemptTrackPhase OBJECT-TYPE

SYNTAX OCTET STRING

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Each octet within the octet

string contains a phaseNumber(binary value) that shall be active during the Preempt Track Clear intervals. The values of phaseNumber used here shall not exceed maxPhases or violate the Consistency Checks defined in Section 4.3.2.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.2.1.12"

DEFVAL { "" }

::= { preemptEntry 12 }

#### Preempt Dwell Phase Parameter

preemptDwellPhase OBJECT-TYPE

SYNTAX OCTET STRING

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Each octet within the octet

string contains a phaseNumber (binary value) that specifies the phase(s) to be served in the Preempt Dwell interval. The phase(s) defined in preemptCyclingPhase shall occur after those defined herein. The values of phaseNumber used here shall not exceed maxPhases or violate the Consistency Checks defined in Section 4.3.2.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.2.1.13"

DEFVAL { "" }

::= { preemptEntry 13 }

#### Preempt Dwell Ped Parameter

preemptDwellPed OBJECT-TYPE

SYNTAX OCTET STRING

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Each octet within the octet

string contains a phaseNumber (binary value) that specifies the pedestrian movement(s) to be served in the Preempt Dwell interval. The peds defined in preemptCyclingPed shall occur after those defined herein. The values of phaseNumber used here shall not exceed maxPhases or violate the Consistency Checks defined in Section 4.3.2.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.2.1.14"

DEFVAL { "" }

::= { preemptEntry 14 }

#### Preempt Exit Phase Parameter

preemptExitPhase OBJECT-TYPE

SYNTAX OCTET STRING

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Each octet within the octet

string contains a phaseNumber (binary value) that shall be active following Preempt. The values of phaseNumber used here shall not exceed maxPhases or violate the Consistency Checks defined in Section 4.3.2.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.2.1.15"

DEFVAL { "" }

::= { preemptEntry 15 }

#### Preempt State

preemptState OBJECT-TYPE

SYNTAX INTEGER { other (1),

notActive (2),

notActiveWithCall (3),

entryStarted (4),

trackService (5),

dwell (6),

linkActive (7),

exitStarted (8),

maxPresence (9),

advancedPreempt (10) }

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> Preempt State provides status on

which state the associated preempt is in. The states are as follows:

**other:** preempt service is not specified in this standard.

**notActive:** preempt input is not active, this preempt is not active.

**notActiveWithCall:** preempt input is active, preempt service has not started.

**entryStarted:** preempt service is timing the entry intervals.

**trackService:** preempt service is timing the track intervals.

**dwell:** preempt service is timing the dwell intervals.

**linkActive:** preempt service is performing linked operation.

**exitStarted:** preempt service is timing the exit intervals.

**maxPresence:** preempt input has exceeded maxPresence time

**advancedPreempt:** preempt service is timing the advanced preemption time.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.2.1.16"

::= { preemptEntry 16}

#### Preempt Track Overlap Parameter

preemptTrackOverlap OBJECT-TYPE

SYNTAX OCTET STRING

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Each octet within the octet

string contains a overlapNumber (binary value) that shall be active during the Preempt Track Clear intervals. The values of overlapNumber used here shall not exceed maxOverlaps or violate the consistency checks defined in Section 4.3.2.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.2.1.17"

DEFVAL { "" }

::= { preemptEntry 17 }

#### Preempt Dwell Overlap Parameter

preemptDwellOverlap OBJECT-TYPE

SYNTAX OCTET STRING

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Each octet within the octet

string contains a overlapNumber (binary value) that is allowed during the Preempt Dwell interval. The values of overlapNumber used here shall not exceed maxOverlaps or violate the consistency checks defined in Section 4.3.2.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.2.1.18"

DEFVAL { "" }

::= { preemptEntry 18 }

#### Preempt Cycling Phase Parameter

preemptCyclingPhase OBJECT-TYPE

SYNTAX OCTET STRING

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Each octet within the octet

string contains a phaseNumber (binary value) that is allowed to cycle during the Preempt Dwell interval. The values of phaseNumber used here shall not exceed maxPhases or violate the Consistency Checks defined in Section 4.3.2.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.2.1.19"

DEFVAL { "" }

::= { preemptEntry 19 }

#### Preempt Cycling Ped Parameter

preemptCyclingPed OBJECT-TYPE

SYNTAX OCTET STRING

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Each octet within the octet

string contains a phaseNumber (binary value) indicating a pedestrian movement that is allowed to cycle during the Preempt Dwell interval. The values of phaseNumber used here shall not exceed maxPhases or violate the consistency checks defined in Section 4.3.2.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.2.1.20"

DEFVAL { "" }

::= { preemptEntry 20 }

#### Preempt Cycling Overlap Parameter

preemptCyclingOverlap OBJECT-TYPE

SYNTAX OCTET STRING

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Each octet within the octet

string contains a overlapNumber (binary value) that is allowed to cycle during the Preempt Dwell interval. The values of overlapNumber used here shall not exceed maxOverlaps or violate the consistency checks defined in Section 4.3.2.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.2.1.21"

DEFVAL { "" }

::= { preemptEntry 21 }

#### Preempt Enter Yellow Change Parameter

preemptEnterYellowChange OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Enter Yellow Change in tenth

seconds (0-25.5 sec). This parameter controls the yellow change timing for a normal Yellow Change signal terminated by a preempt initiated transition. A preempt initiated transition shall not cause the termination of a Yellow Change prior to its display for the lesser of the phase’s Yellow Change time or this period. CAUTION - if this value is zero, phase Yellow Change is terminated immediately.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.2.1.22

<Unit> tenth second"

DEFVAL { 255 }

::= { preemptEntry 22 }

#### Preempt Enter Red Clear Parameter

preemptEnterRedClear OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Enter Red Clear in tenth seconds

(0-25.5 sec). This parameter controls the red clearance timing for a normal Red Clear signal terminated by a preempt initiated transition. A preempt initiated transition shall not cause the termination of a Red Clear prior to its display for the lesser of the phase’s Red Clear time or this period. CAUTION - if this value is zero, phase Red Clear is terminated immediately.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.2.1.23

<Unit> tenth second"

DEFVAL { 255 }

::= { preemptEntry 23 }

#### Preempt Track Yellow Change Parameter

preemptTrackYellowChange OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Track Clear Yellow Change time

in tenth seconds (0-25.5 sec). The lesser of the phase’s Yellow Change time or this parameter controls the yellow timing for the track clearance movement. Track clear phase(s) are enabled in the preemptTrackPhase object.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.2.1.24

<Unit> tenth second"

DEFVAL { 255 }

::= { preemptEntry 24 }

#### Preempt Track Red Clear Parameter

preemptTrackRedClear OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Track Clear Red Clear time in

tenth seconds (0-25.5 sec). The lesser of the phase’s Red Clear time or this parameter controls the Red Clear timing for the track clearance movement. Track clear phase(s) are enabled in the preemptTrackPhase object.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.2.1.25

<Unit> tenth second"

DEFVAL { 255 }

::= { preemptEntry 25 }

#### Preempt Sequence Number

preemptSequenceNumber OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object is used to configure

the sequenceNumber to run during the preempt's dwell duration. This value shall not exceed the maxSequences object value.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.2.1.26

<Unit> sequence"

::= { preemptEntry 26 }

#### Preempt Exit Type

preemptExitType OBJECT-TYPE

SYNTAX INTEGER { exitPhases (1),

queueDelayRecovery (2),

shortService (3),

exitCoord (4)}

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object defines the exit

strategy (type) to be used following the end of the preempt. The exit types are as follows:

**exitPhases:** the CU immediately enters the exit phases

to be active as configured

**queueDelayRecovery:** the CU immediately enters the

phase with the highest demand or longest wait time

**shortService:** the CU immediately enters the first

short service phase. The first short service phase is a phase where only the preempt minimum green time was serviced during the advanced preemption time or the right-of-way transfer time

**exitCoord:** the CU immediately returns to the place in

the coordinated cycle where the ASC would have been if there was no preempt

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.2.1.27"

::= { preemptEntry 28 }

### **Preempt Control Table**

preemptControlTable OBJECT-TYPE

SYNTAX SEQUENCE OF PreemptControlEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> This table contains the control

objects that allow the preempts to be activated remotely. There shall be one control object for each preempt input supported by the device. The number of rows in this table shall be equal to maxPreempts.

<TableType> static

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.3"

::= { preempt 3 }

preemptControlEntry OBJECT-TYPE

SYNTAX PreemptControlEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> Control objects for each preempt

input. These objects allow the system to activate preempt functions remotely.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.3.1"

INDEX { preemptControlNumber }

::= { preemptControlTable 1 }

PreemptControlEntry ::= SEQUENCE {

preemptControlNumber INTEGER,

preemptControlState INTEGER }

#### Preempt Control Number

preemptControlNumber OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> This object shall indicate the

preempt input number controlled by the associated preemptControlState object in this row.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.3.1.1

<Unit> preempt"

::= { preemptControlEntry 1 }

#### Preempt Control State

preemptControlState OBJECT-TYPE

SYNTAX INTEGER (0..1)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object when set to ON (one)

shall cause the associated preempt actions to occur unless the actions have already been started by the physical preempt input. The preempt shall remain active as long as this object is ON or the physical preempt input is ON. This object when set to OFF (zero) shall cause the physical preempt input to control the associated preempt actions. The device shall reset this object to ZERO when in BACKUP Mode. A write to this object shall reset the Backup timer to ZERO (see unitBackupTime).

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.3.1.2"

::= { preemptControlEntry 2 }

### **Preempt Status**

preemptStatus OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> This object defines the preempt

number that is currently being serviced in the device.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.4"

::= { preempt 4 }

### **Maximum Preempt Groups**

maxPreemptGroups OBJECT-TYPE

SYNTAX INTEGER (0..2)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The Maximum Number of Preempt

Groups (8 Preempt per group) this CU supports. This value is equal to TRUNCATE [(maxPreempts + 7) / 8]. This object indicates the maximum rows which shall appear in the preemptStatusGroupTable.

<<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.5

<Unit> group"

::= { preempt 5 }

### **Preempt Status Table**

preemptStatusGroupTable OBJECT-TYPE

SYNTAX SEQUENCE OF PreemptStatusGroupEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> A table containing the CU

preempt input signal status in groups of eight Preempts. The number of rows in this table is equal to the maxPreemptGroups object.

<TableType> static

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.6"

::= { preempt 6 }

preemptStatusGroupEntry OBJECT-TYPE

SYNTAX PreemptStatusGroupEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> Preempt input signal status for

eight preempt inputs.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.6.1"

INDEX { preemptStatusGroupNumber }

::= { preemptStatusGroupTable 1 }

PreemptStatusGroupEntry ::= SEQUENCE {

preemptStatusGroupNumber INTEGER,

preemptStatusGroup INTEGER }

#### Preempt Status Group Number

preemptStatusGroupNumber OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The Preempt StatusGroup number

for objects in this row. This value shall not exceed the maxPreemptGroups object value.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.6.1.1

<Unit> group"

::= { preemptStatusGroupEntry 1 }

#### Preempt Status Group

preemptStatusGroup OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> Preempt Input Signal Status

Mask, when a, when a bit = 1, a preempt input signal is detected, and when a bit = 0, no preempt input signal is detected.

Bit 7: Preempt # = (preemptStatusGroupNumber \* 8)

Bit 6: Preempt # = (preemptStatusGroupNumber \* 8) - 1

Bit 5: Preempt # = (preemptStatusGroupNumber \* 8) – 2

Bit 4: Preempt # = (preemptStatusGroupNumber \* 8) - 3

Bit 3: Preempt # = (preemptStatusGroupNumber \* 8) - 4

Bit 2: Preempt # = (preemptStatusGroupNumber \* 8) - 5

Bit 1: Preempt # = (preemptStatusGroupNumber \* 8) - 6

Bit 0: Preempt # = (preemptStatusGroupNumber \* 8) - 7

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.6.1.2"

::= { preemptStatusGroupEntry 2 }

### **Preempt Queue Delay Table**

preemptQueueDelayTable OBJECT-TYPE

SYNTAX SEQUENCE OF PreemptQueueDelayEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> A table containing CU detector

parameters for the queue delay recovery exit strategy. The number of rows in this table will not exceed the maxVehicleDetectors object.

<TableType> static

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.7"

::={ preempt 7 }

preemptQueueDelayEntry OBJECT-TYPE

SYNTAX PreemptQueueDelayEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> Parameters for a specific CU

preempt input if the queue delay recovery exit strategy is used.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.7.1"

INDEX { preemptNumber, vehicleDetectorNumber }

::={ preemptQueueDelayTable 1}

PreemptQueueDelayEntry ::= SEQUENCE {

preemptDetectorWeight INTEGER }

#### Preempt Detector Weight

preemptDetectorWeight OBJECT-TYPE

SYNTAX INTEGER (0..1000)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object defines the relative

weight for the associated detector when using the detector data to determine the queue delay recovery exit strategy from a preempt input. The association between the vehicleDetectorNumber and a phase is identified by the vehicleDetectorCallPhase.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.7.1.1"

::= { preemptQueueDelayEntry 1 }

### **Maximum Preemption Gates**

maxPreemptGates OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The maximum number of preempt

gates this CU supports. This object indicates the maximum rows which shall appear in the preemptGateTable.

<<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.8

<Unit> gates"

::= { preempt 8 }

### **Preempt Gate Table**

preemptGateTable OBJECT-TYPE

SYNTAX SEQUENCE OF PreemptGateEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> A table containing the status of

the gates that may be lowered during a preempt sequence.

<TableType> static

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.9"

::= { preempt 9 }

preemptGateEntry OBJECT-TYPE

SYNTAX PreemptGateEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> Gate status for preempt

sequences.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.9.1"

INDEX { preemptGateNumber }

::= { preemptGateTable 1 }

PreemptGateEntry ::= SEQUENCE {

preemptGateNumber INTEGER,

preemptGateStatus INTEGER,

preemptGateDescription DisplayString }

#### Preempt Gate Number

preemptGateNumber OBJECT-TYPE

SYNTAX INTEGER (1..8)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The Preempt Gate number for

objects in this row.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.9.1.1"

::= { preemptGateEntry 1 }

#### Preempt Gate Status

preemptGateStatus OBJECT-TYPE

SYNTAX INTEGER { unknown(1),

other(2),

up(3),

down(4) }

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The status of a gate that may be

lowered during a preempt sequence.

**unknown:** The status of unknown or no gate is present

**other:** The gate is neither in the locked up or locked down position

**up:** The gate is in an up position

**down:** The gate is in a down position

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.9.1.2"

DEFVAL { unknown }

::= { preemptGateEntry 2 }

#### Preempt Gate Description

preemptGateDescription OBJECT-TYPE

SYNTAX DisplayString (SIZE (0..255))

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> A textual string indicating the

location and perhaps type of gate.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.6.9.1.3"

::= { preemptGateEntry 3 }

## **5.8. Ring Parameters**

ring OBJECT IDENTIFIER

::= { asc 7 }

-- The ring node contains objects that support ring configuration,

-- status and control functions in the device.

### **5.8.1. Maximum Rings**

maxRings OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The value of this object shall

specify the maximum number of rings this device supports.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.7.1

<Unit> ring"

::= { ring 1 }

### **5.8.2. Maximum Sequences**

maxSequences OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The value of this object shall

specify the maximum number of sequence plans this device supports.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.7.2

<Unit> sequence"

::= { ring 2 }

### **5.8.3. Sequence Table**

sequenceTable OBJECT-TYPE

SYNTAX SEQUENCE OF SequenceEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> This table contains all the

sequence plans for the controller. A sequence plan shall consist of one row for each ring that the CU supports. Each row defines the phase service order for that ring.

<TableType> static

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.7.3"

::= { ring 3 }

sequenceEntry OBJECT-TYPE

SYNTAX SequenceEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> Phase Sequence Parameters for an

Actuated Controller Unit.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.7.3.1"

INDEX { sequenceNumber, sequenceRingNumber }

::= { sequenceTable 1 }

SequenceEntry ::= SEQUENCE {

sequenceNumber INTEGER,

sequenceRingNumber INTEGER,

sequenceData OCTET STRING }

#### Sequence Number

sequenceNumber OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> This number identifies a

sequence plan. Each row of the table contains the phase sequence for a ring. A sequence plan shall consist of one row for each ring that defines the phase sequences for that ring.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.7.3.1.1

<Unit> sequence"

::= { sequenceEntry 1 }

#### Sequence Ring Number

sequenceRingNumber OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> This number identifies the ring

number this phase sequence applies to.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.7.3.1.2

<Unit> ring"

::= { sequenceEntry 2 }

#### Sequence Data

sequenceData OBJECT-TYPE

SYNTAX OCTET STRING

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Each octet is a Phase Number

(binary value) within the associated ring number. The phase number value shall not exceed the maxPhases object value. The order of phase numbers determines the phase sequence for the ring. The phase numbers shall not be ordered in a manner that would violate the Consistency Checks defined in Section 4.3.2.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.7.3.1.3"

::= { sequenceEntry 3 }

### **5.8.4. Maximum Ring Control Groups**

maxRingControlGroups OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The maximum number of Ring

Control Groups (8 rings per group) this Actuated Controller Unit supports. This value is equal to TRUNCATE[(maxRings + 7) / 8]. This object indicates the maximum rows which shall appear in the ringControlGroupTable object.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.7.4

<Unit> group"

::= { ring 4 }

### **5.8.5. Ring Control Group Table**

ringControlGroupTable OBJECT-TYPE

SYNTAX SEQUENCE OF RingControlGroupEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> A table containing Actuated

Controller Unit Ring Control in groups of eight rings. The number of rows in this table is equal to the maxRingControlGroups object.

<TableType> static

<<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.7.5"

::= { ring 5 }

ringControlGroupEntry OBJECT-TYPE

SYNTAX RingControlGroupEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> Ring Control for eight Actuated

Controller Unit rings.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.7.5.1"

INDEX { ringControlGroupNumber }

::= { ringControlGroupTable 1 }

RingControlGroupEntry ::= SEQUENCE {

ringControlGroupNumber INTEGER,

ringControlGroupStopTime INTEGER,

ringControlGroupForceOff INTEGER,

ringControlGroupMax2 INTEGER,

ringControlGroupMaxInhibit INTEGER,

ringControlGroupPedRecycle INTEGER,

ringControlGroupRedRest INTEGER,

ringControlGroupOmitRedClear INTEGER,

ringControlGroupMax3 INTEGER }

#### Ring Control Group Number

ringControlGroupNumber OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The Ring Control Group number

for objects in this row. This value shall not exceed the maxRingControlGroups object value.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.7.5.1.1

<Unit> group"

::= { ringControlGroupEntry 1 }

#### Ring Stop Time Control

ringControlGroupStopTime OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object is used to allow a

remote entity to stop timing in the device. The device shall activate/deactivate the System Stop Time control for a ring according to the respective bit value as follows:

bit = 0 - deactivate the ring control

bit = 1 - activate the ring control

Bit 7: Ring # = (ringControlGroupNumber \* 8)

Bit 6: Ring # = (ringControlGroupNumber \* 8) - 1

Bit 5: Ring # = (ringControlGroupNumber \* 8) - 2

Bit 4: Ring # = (ringControlGroupNumber \* 8) - 3

Bit 3: Ring # = (ringControlGroupNumber \* 8) - 4

Bit 2: Ring # = (ringControlGroupNumber \* 8) - 5

Bit 1: Ring # = (ringControlGroupNumber \* 8) - 6

Bit 0: Ring # = (ringControlGroupNumber \* 8) - 7

The device shall reset this object to ZERO when in BACKUP Mode. A write to this object shall reset the Backup timer to ZERO (see unitBackupTime).

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.7.5.1.2"

REFERENCE "NEMA TS 2 Clause 3.5.4.1.6"

::= { ringControlGroupEntry 2 }

#### Ring Force Off Control

ringControlGroupForceOff OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object is used to allow a

remote entity to terminate phases via a force off command in the device. The device shall activate/deactivate the System Force Off control for a ring according to the respective bit value as follows:

bit = 0 - deactivate the ring control

bit = 1 - activate the ring control

Bit 7: Ring # = (ringControlGroupNumber \* 8)

Bit 6: Ring # = (ringControlGroupNumber \* 8) - 1

Bit 5: Ring # = (ringControlGroupNumber \* 8) – 2

Bit 4: Ring # = (ringControlGroupNumber \* 8) - 3

Bit 3: Ring # = (ringControlGroupNumber \* 8) - 4

Bit 2: Ring # = (ringControlGroupNumber \* 8) - 5

Bit 1: Ring # = (ringControlGroupNumber \* 8) - 6

Bit 0: Ring # = (ringControlGroupNumber \* 8) - 7

The device shall reset this object to ZERO when in BACKUP Mode. A write to this object shall reset the Backup timer to ZERO (see unitBackupTime).

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.7.5.1.3"

REFERENCE "NEMA TS 2 Clause 3.5.4.1.1"

::= { ringControlGroupEntry 3 }

#### Ring Max 2 Control

ringControlGroupMax2 OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object is used to allow a

remote entity to request Maximum 2 timings in the device. The device shall activate/deactivate the System Maximum 2 control for a ring according to the respective bit value as follows:

bit = 0 - deactivate the ring control

bit = 1 - activate the ring control

Bit 7: Ring # = (ringControlGroupNumber \* 8)

Bit 6: Ring # = (ringControlGroupNumber \* 8) - 1

Bit 5: Ring # = (ringControlGroupNumber \* 8) - 2

Bit 4: Ring # = (ringControlGroupNumber \* 8) - 3

Bit 3: Ring # = (ringControlGroupNumber \* 8) - 4

Bit 2: Ring # = (ringControlGroupNumber \* 8) - 5

Bit 1: Ring # = (ringControlGroupNumber \* 8) - 6

Bit 0: Ring # = (ringControlGroupNumber \* 8) - 7

The device shall reset this object to ZERO when in BACKUP Mode. A write to this object shall reset the Backup timer to ZERO (see unitBackupTime).

<<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.7.5.1.4"

REFERENCE "NEMA TS 2 Clause 3.5.4.1.7"

::= { ringControlGroupEntry 4 }

#### Ring Max Inhibit Control

ringControlGroupMaxInhibit OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION

"<Definition> This object is used to allow a remote entity to request internal maximum timings be inhibited in the device. The device shall activate/deactivate the System Max Inhibit control for a ring according to the respective bit value as follows:

bit = 0 - deactivate the ring control

bit = 1 - activate the ring control

Bit 7: Ring # = (ringControlGroupNumber \* 8)

Bit 6: Ring # = (ringControlGroupNumber \* 8) - 1

Bit 5: Ring # = (ringControlGroupNumber \* 8) - 2

Bit 4: Ring # = (ringControlGroupNumber \* 8) - 3

Bit 3: Ring # = (ringControlGroupNumber \* 8) – 4

Bit 2: Ring # = (ringControlGroupNumber \* 8) - 5

Bit 1: Ring # = (ringControlGroupNumber \* 8) - 6

Bit 0: Ring # = (ringControlGroupNumber \* 8) - 7

The device shall reset this object to ZERO when in BACKUP Mode. A write to this object shall reset the Backup timer to ZERO (see unitBackupTime).

<<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.7.5.1.5"

REFERENCE "NEMA TS 2 Clause 3.5.4.1.3"

::= { ringControlGroupEntry 5 }

#### Ring Ped Recycle Control

ringControlGroupPedRecycle OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object is used to allow a

remote entity to request a pedestrian recycle in the device. The device shall activate/deactivate the System Ped Recycle control for a ring according to the respective bit value as follows:

bit = 0 - deactivate the ring control

bit = 1 - activate the ring control

Bit 7: Ring # = (ringControlGroupNumber \* 8)

Bit 6: Ring # = (ringControlGroupNumber \* 8) - 1

Bit 5: Ring # = (ringControlGroupNumber \* 8) - 2

Bit 4: Ring # = (ringControlGroupNumber \* 8) - 3

Bit 3: Ring # = (ringControlGroupNumber \* 8) - 4

Bit 2: Ring # = (ringControlGroupNumber \* 8) - 5

Bit 1: Ring # = (ringControlGroupNumber \* 8) - 6

Bit 0: Ring # = (ringControlGroupNumber \* 8) - 7

The device shall reset this object to ZERO when in BACKUP Mode. A write to this object shall reset the Backup timer to ZERO (see unitBackupTime).

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.7.5.1.6"

REFERENCE "NEMA TS 2 Clause 3.5.4.1.5"

::= { ringControlGroupEntry 6 }

#### Ring Red Rest Control

ringControlGroupRedRest OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object is used to allow a

remote entity to request red rest in the device. The device shall activate/deactivate the System Red Rest control for a ring according to the respective bit value as follows:

bit = 0 - deactivate the ring control

bit = 1 - activate the ring control

Bit 7: Ring # = (ringControlGroupNumber \* 8)

Bit 6: Ring # = (ringControlGroupNumber \* 8) - 1

Bit 5: Ring # = (ringControlGroupNumber \* 8) - 2

Bit 4: Ring # = (ringControlGroupNumber \* 8) - 3

Bit 3: Ring # = (ringControlGroupNumber \* 8) - 4

Bit 2: Ring # = (ringControlGroupNumber \* 8) - 5

Bit 1: Ring # = (ringControlGroupNumber \* 8) - 6

Bit 0: Ring # = (ringControlGroupNumber \* 8) – 7

The device shall reset this object to ZERO when in BACKUP Mode. A write to this object shall reset the Backup timer to ZERO (see unitBackupTime).

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.7.5.1.7"

REFERENCE "NEMA TS 2 Clause 3.5.4.1.2"

::= { ringControlGroupEntry 7 }

#### Ring Omit Red Control

ringControlGroupOmitRedClear OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object is used to allow a

remote entity to omit red clearances in the device. The device shall activate/deactivate the System Omit Red Clear control for a ring according to the respective bit value as follows:

bit = 0 - deactivate the ring control

bit = 1 - activate the ring control

Bit 7: Ring # = (ringControlGroupNumber \* 8)

Bit 6: Ring # = (ringControlGroupNumber \* 8) - 1

Bit 5: Ring # = (ringControlGroupNumber \* 8) - 2

Bit 4: Ring # = (ringControlGroupNumber \* 8) - 3

Bit 3: Ring # = (ringControlGroupNumber \* 8) - 4

Bit 2: Ring # = (ringControlGroupNumber \* 8) - 5

Bit 1: Ring # = (ringControlGroupNumber \* 8) - 6

Bit 0: Ring # = (ringControlGroupNumber \* 8) - 7

The device shall reset this object to ZERO when in BACKUP Mode. A write to this object shall reset the Backup timer to ZERO (see unitBackupTime).

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.7.5.1.8"

REFERENCE "NEMA TS 2 Clause 3.5.4.1.4"

::= { ringControlGroupEntry 8 }

#### Ring Max 3 Control

ringControlGroupMax3 OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object is used to allow a

remote entity to request Maximum 3 timings in the device. The device shall activate/deactivate the System Maximum 3 control for a ring according to the respective bit value as follows:

bit = 0 - deactivate the ring control

bit = 1 - activate the ring control

Bit 7: Ring # = (ringControlGroupNumber \* 8)

Bit 6: Ring # = (ringControlGroupNumber \* 8) - 1

Bit 5: Ring # = (ringControlGroupNumber \* 8) - 2

Bit 4: Ring # = (ringControlGroupNumber \* 8) - 3

Bit 3: Ring # = (ringControlGroupNumber \* 8) - 4

Bit 2: Ring # = (ringControlGroupNumber \* 8) - 5

Bit 1: Ring # = (ringControlGroupNumber \* 8) - 6

Bit 0: Ring # = (ringControlGroupNumber \* 8) - 7

The device shall reset this object to ZERO when in BACKUP Mode. A write to this object shall reset the Backup timer to ZERO (see unitBackupTime).

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.7.5.1.9"

::= { ringControlGroupEntry 9 }

### **5.8.6 Ring Status Table**

ringStatusTable OBJECT-TYPE

SYNTAX SEQUENCE OF RingStatusEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> A table containing Actuated

Controller Unit Ring Status. The number of rows in this table is equal to the maxRings object.

<TableType> static

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.7.6"

::= { ring 6 }

ringStatusEntry OBJECT-TYPE

SYNTAX RingStatusEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> Ring Status for an Actuated

Controller Unit ring.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.7.6.1"

INDEX { sequenceRingNumber }

::= { ringStatusTable 1 }

RingStatusEntry ::= SEQUENCE {

ringStatus INTEGER }

#### Ring Status

ringStatus OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The Ring Status for this ring.

Bit 7: Reserved (always zero)

Bit 6: Reserved (always zero)

Bit 5: Force Off - When bit = 1, the active phase in

the ring was terminated by Force Off

Bit 4: Max Out - When bit = 1, the active phase in

the ring was terminated by Max Out

Bit 3: Gap Out - When bit = 1, the active phase in

the ring was terminated by Gap Out

Bit 2: Coded Status Bit C

Bit 1: Coded Status Bit B

Bit 0: Coded Status Bit A

+======+=====+=====+=====+===============+

| Code | Bit States | State |

| ## | A | B | C | Names |

+======+=====+=====+=====+===============+

| 0 | 0 | 0 | 0 | Min Green |

| 1 | 1 | 0 | 0 | Extension |

| 2 | 0 | 1 | 0 | Maximum |

| 3 | 1 | 1 | 0 | Green Rest |

| 4 | 0 | 0 | 1 | Yellow Change |

| 5 | 1 | 0 | 1 | Red Clearance |

| 6 | 0 | 1 | 1 | Red Rest |

| 7 | 1 | 1 | 1 | Undefined |

+======+=====+=====+=====+===============+

NEMA TS 2 Clause 3.5.4.2 provides further definition of Coded Status Bits.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.7.6.1.1"

::= { ringStatusEntry 1 }

## **Channel Parameters**

channel OBJECT IDENTIFIER

::= { asc 8 }

--This defines a node for supporting channel objects.

### **5.9.1. Maximum Channels**

maxChannels OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The Maximum Number of Channels

this Actuated Controller Unit supports. This object indicates the maximum rows which shall appear in the channelTable object.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.8.1

<Unit> channel"

::= { channel 1 }

### **5.9.2 Channel Table**

channelTable OBJECT-TYPE

SYNTAX SEQUENCE OF ChannelEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> A table containing Actuated

Controller Unit channel parameters. The number of rows in this table is equal to the maxChannels object.

<TableType> static

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.8.2"

::= { channel 2 }

channelEntry OBJECT-TYPE

SYNTAX ChannelEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> Parameters for a specific

Actuated Controller Unit channel.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.8.2.1"

INDEX { channelNumber }

::= { channelTable 1 }

ChannelEntry ::= SEQUENCE {

channelNumber INTEGER,

channelControlSource INTEGER,

channelControlType INTEGER,

channelFlash INTEGER,

channelDim INTEGER,

channelGreenType INTEGER,

channelGreenIncluded OCTET STRING,

channelIntersectionId INTEGER }

#### Channel Number

channelNumber OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The channel number for objects

in this row. This value shall not exceed the maxChannels object value.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.8.2.1.1

<Unit> channel"

::= { channelEntry 1 }

#### Channel Control Source Parameter

channelControlSource OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object defines the channel

control source (which Phase or Overlap). The value shall not exceed maxPhases or maxOverlaps as determined by channelControlType object:

Value 00 = No Control (Not In Use)

Value 01 = Phase 01 or Overlap A

Value 02 = Phase 02 or Overlap B

||

Value 15 = Phase 15 or Overlap O

Value 16 = Phase 16 or Overlap P

etc.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.8.2.1.2"

::= { channelEntry 2 }

#### Channel Control Type Parameter

channelControlType OBJECT-TYPE

SYNTAX INTEGER { other (1),

phaseVehicle (2),

phasePedestrian (3),

overlap (4),

pedOverlap (5),

queueJump (6) }

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object defines the channel

control type (Vehicle Phase, Pedestrian Phase, or Overlap):

**other:** The channel controls an other type of display.

**phaseVehicle:** The channel controls a vehicle phase display. Also valid for bicycle phases and transit phases.

**phasePedestrian:** The channel controls a pedestrian phase display.

**overlap:** The channel controls an overlap display, which might include flashing yellow arrows, flashing red arrows, vehicle overlaps, bicycle overlaps and transit overlaps.

**pedOverlap:** The channel controls an overlap for pedestrian display.

**queueJump:** The channel controls a queue jump display typically used for transit priority

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.8.2.1.3"

::= { channelEntry 3 }

#### Channel Flash Parameter

channelFlash OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object defines the channel

state during

Automatic Flash.

Bit 7: Reserved

Bit 6: Reserved

Bit 5: Reserved

Bit 4: Reserved

Bit 3: Flash Alternate Half Hertz

Bit=0: Off/Disabled & Bit=1: On/Enabled

Bit 2: Flash Red

Bit=0: Off/Red Dark & Bit=1: On/Flash Red

Bit 1: Flash Yellow

Bit=0: Off/Yellow Dark & Bit=1: On/Flash Yellow

Bit 0: Reserved

A SET of both bits 1 & 2 shall result in bit 1=0 and bit 2=1. A SET of a 'reserved' bit to a value other than zero (0) shall return a badValue(3) error.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.8.2.1.4"

::= { channelEntry 4 }

#### Channel Dim Parameter

channelDim OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object defines the channel

state during Dimming. Dimming shall be accomplished by the elimination of alternate one-half segments from the AC sinusoid applied to the field terminals.

Bit 7: Reserved

Bit 6: Reserved

Bit 5: Reserved

Bit 4: Reserved

Bit 3: Dim Alternate Half Line Cycle

Bit=0: Off/+ half cycle & Bit=1: On/- half cycle

Bit 2: Dim Red

Bit=0: Off/Red Not Dimmed & Bit=1: On/Dimmed Red

Bit 1: Dim Yellow

Bit=0: Off / Yellow Not Dimmed & Bit=1: On / Dimmed Yellow

Bit 0: Dim Green

Bit=0: Off / Green Not Dimmed & Bit=1: On / Dimmed Green

A SET of a 'reserved' bit to a value other than zero (0) shall return a badValue(3) error.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.8.2.1.5"

::= { channelEntry 5 }

#### Channel Movement Type

channelGreenType OBJECT-TYPE

SYNTAX INTEGER { other (1),

protected (2),

permissive (3),

flashYellow (4),

flashRed (5) }

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> This object defines the

signalState for this channel when the channel output is Green. This object is used to support the generation of SPAT data.

**other:** the allowed movement controlled by this channel is not defined by this standard.

**protected:** indicates that at least a portion of the green movement occurs in protected mode.

**permissive:** indicates that the green movement occurs in permissive mode, that is, any turns are permitted to be made only after yielding to pedestrians and/or any opposing traffic.

**flashYellow:** indicates that a vehicle may proceed but

with caution after yielding to pedestrians and/or any conflicting traffic. Includes flashing yellow arrows.

**flashRed:** indicates that a vehicle may proceed after stopping and yielding to pedestrians and/or any conflicting traffic. Includes flashing red arrows.

Note that there is a similar object called movementManeuverGreenType.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.8.2.1.6"

::= { channelEntry 6 }

#### Channel Included Movements

channelGreenIncluded OBJECT-TYPE

SYNTAX OCTET STRING

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> If the channelGreenType for this

channel is 'protected (2)', this object is used to indicate if and when this movement is in permissive mode. This object is used to support the generation of SPAT data and defines the signalState (See signalState) for the movements associated with this channel only IF the channelGreenType for this channel is 'protected (2)'. Each octet in the octet string represents a conflicting or opposing channelNumber, which if the status for any octet in the octet string is NOT Channel Red or is Dark, then the signalState for the movement is 'permissive-Movement-Allowed (5)' when the status for this channel is channel Green. Otherwise, the signalState for

the movement is 'protected-Movement-Allowed (6)' when the status for this channel is channel Green.

If channelGreenType in this row is not 'protected (2)', then this object value is ignored.

It is assumed that a clearance state following a signalState of 'permissive movement allowed' will be a signalState of 'permissive clearance', and a clearance state following a

signalState of 'protected movement allowed' will be a signalState of 'protected movement allowed'.

For example, assume channelNumber 1 represents a northbound left turn, while channelNumber 2 is a southbound through movement. A channelGreenType.1 of 'protected (2)' and channelGreenIncluded.1 of '02' indicates that if the status of channelNumber 2 is NOT Channel Red or is dark, then signalState for the movement associated with channelNumber.1 is 'permissive-Movement-Allowed (5)' when the status for channelNumber.1 is channel Green. Otherwise, the signalState for the movement associated with channelNumber.1 is 'protected-Movement-Allowed (6)' when the status for this channel is channel Green.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.8.2.1.7"

::= { channelEntry 7 }

#### Channel Intersection Identifier

channelIntersectionId OBJECT-TYPE

SYNTAX INTEGER (0..65535)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> To support SAE J2735, this

object is used to support the exchange of SPAT data and contains the (regionally) unique identifier of the intersection that the channel output is associated with. It is expected that this same identifier will be broadcasted in a MAP data message that describes the roadway geometry configuration of this intersection.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.8.2.1.8"

REFERENCE "SAE J2735\_201603 DE\_IntersectionID"

::= { channelEntry 8 }

### **Maximum Channel Status Groups**

maxChannelStatusGroups OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The maximum number of Channel Status Groups

(8 channels per group) this Actuated Controller Unit supports.

This value is equal to TRUNCATE [(maxChannels + 7) / 8]. This object indicates the maximum rows which shall appear in the channelStatusGroupTable object.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.8.3

<Unit> group"

::= { channel 3 }

### **Channel Status Group Table**

channelStatusGroupTable OBJECT-TYPE

SYNTAX SEQUENCE OF ChannelStatusGroupEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> A table containing Actuated Controller Unit

channel output (Red, Yellow, & Green) status in groups of eight

channels. The number of rows in this table is equal to the

maxChannelStatusGroups object.

<TableType> static

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.8.4"

::= { channel 4 }

channelStatusGroupEntry OBJECT-TYPE

SYNTAX ChannelStatusGroupEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> Red, Yellow, & Green Output Status for

eight Actuated Controller Unit channels.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.8.4.1"

INDEX { channelStatusGroupNumber }

::= { channelStatusGroupTable 1 }

ChannelStatusGroupEntry ::= SEQUENCE {

channelStatusGroupNumber INTEGER,

channelStatusGroupReds INTEGER,

channelStatusGroupYellows INTEGER,

channelStatusGroupGreens INTEGER }

#### Channel Status Group Number

channelStatusGroupNumber OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The channelStatusGroup number for objects

in this row. This value shall not exceed the maxChannelStatusGroups

object value.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.8.4.1.1

<Unit> group"

::= { channelStatusGroupEntry 1 }

#### Channel Status Group Reds

channelStatusGroupReds OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> Channel Red Output Status Mask, when a

bit=1,

the Channel Red is currently active. When a bit=0, the Channel

Red is NOT currently active.

Bit 7: Channel # = (channelStatusGroupNumber \* 8)

Bit 6: Channel # = (channelStatusGroupNumber \* 8) - 1

Bit 5: Channel # = (channelStatusGroupNumber \* 8) - 2

Bit 4: Channel # = (channelStatusGroupNumber \* 8) - 3

Bit 3: Channel # = (channelStatusGroupNumber \* 8) - 4

Bit 2: Channel # = (channelStatusGroupNumber \* 8) - 5

Bit 1: Channel # = (channelStatusGroupNumber \* 8) - 6

Bit 0: Channel # = (channelStatusGroupNumber \* 8) – 7

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.8.4.1.2"

::= { channelStatusGroupEntry 2 }

#### Channel Status Group Yellows

channelStatusGroupYellows OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> Channel Yellow Output Status Mask, when a

bit=1, the Channel Yellow is currently active. When a bit=0, the

Channel Yellow is NOT currently active.

Bit 7: Channel # = (channelStatusGroupNumber \* 8)

Bit 6: Channel # = (channelStatusGroupNumber \* 8) - 1

Bit 5: Channel # = (channelStatusGroupNumber \* 8) - 2

Bit 4: Channel # = (channelStatusGroupNumber \* 8) - 3

Bit 3: Channel # = (channelStatusGroupNumber \* 8) - 4

Bit 2: Channel # = (channelStatusGroupNumber \* 8) - 5

Bit 1: Channel # = (channelStatusGroupNumber \* 8) - 6

Bit 0: Channel # = (channelStatusGroupNumber \* 8) - 7

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.8.4.1.3"

::= { channelStatusGroupEntry 3 }

#### Channel Status Group Greens

channelStatusGroupGreens OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> Channel Green Output Status Mask, when a

bit=1, the Channel Green is currently active. When a bit=0, the

Channel Green is NOT currently active.

Bit 7: Channel # = (channelStatusGroupNumber \* 8)

Bit 6: Channel # = (channelStatusGroupNumber \* 8) - 1

Bit 5: Channel # = (channelStatusGroupNumber \* 8) - 2

Bit 4: Channel # = (channelStatusGroupNumber \* 8) - 3

Bit 3: Channel # = (channelStatusGroupNumber \* 8) - 4

Bit 2: Channel # = (channelStatusGroupNumber \* 8) - 5

Bit 1: Channel # = (channelStatusGroupNumber \* 8) - 6

Bit 0: Channel # = (channelStatusGroupNumber \* 8) - 7

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.8.4.1.4"

::= { channelStatusGroupEntry 4 }

## **Overlap Parameters**

overlap OBJECT IDENTIFIER

::= { asc 9 }

-- This node contains objects that configure, monitor and

-- control overlap functions.

### **5.10.1. Maximum Overlaps**

maxOverlaps OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The Maximum Number of Overlaps this

Actuated Controller Unit supports. This object indicates the maximum

number of rows which shall appear in the overlapTable object.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.9.1

<Unit> overlap"

::= { overlap 1 }

### **5.10.2. Overlap Table**

overlapTable OBJECT-TYPE

SYNTAX SEQUENCE OF OverlapEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> A table containing Actuated Controller Unit

overlap parameters. The number of rows in this table is equal to

the maxOverlaps object.

<TableType> static

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.9.2"

::= { overlap 2 }

overlapEntry OBJECT-TYPE

SYNTAX OverlapEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> Parameters for a specific Actuated Control

ler Unit overlap.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.9.2.1"

INDEX { overlapNumber }

::= { overlapTable 1 }

OverlapEntry ::= SEQUENCE {

overlapNumber INTEGER,

overlapType INTEGER,

overlapIncludedPhases OCTET STRING,

overlapModifierPhases OCTET STRING,

overlapTrailGreen INTEGER,

overlapTrailYellow INTEGER,

overlapTrailRed INTEGER,

overlapWalk INTEGER,

overlapPedClearance INTEGER,

overlapConflictingPedPhases OCTET STRING }

#### Overlap Number

overlapNumber OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The overlap number for objects in this row.

The value shall not exceed the maxOverlaps object. The value maps to the Overlap as follows:

1 = Overlap A, 2 = Overlap B etc.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.9.2.1.1

<Unit> overlap"

::= { overlapEntry 1 }

#### Overlap Type

overlapType OBJECT-TYPE

SYNTAX INTEGER { other(1),

normal (2),

minusGreenYellow (3),

pedestrianNormal (4),

fYAThreeSection (5),

fYAFourSection (6),

fRAThreeSection (7),

fRAFourSection (8),

transit-2 (9),

minusGreenYellowAlternate (10)}

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> The type of overlap operation for this row.

The types are as follows:

**other:** The overlap operates in another mode than those described herein.

**normal:** The overlap output shall be controlled by the

overlapIncludedPhases when this type is indicated. The overlap

output shall be green in the following situations:

(1) when an overlap included phase is green.

(2) when an overlap included phase is yellow (or red

clearance) and an overlap included phase is next.

The overlap output shall be yellow when an included phase is

yellow and an overlap included phase is not next. The overlap

output shall be red whenever the overlap green and yellow are not ON.

**minusGreenYellow:** The overlap output shall be controlled by the

overlapIncludedPhases and the overlapModifierPhases if this type is indicated. The overlap output shall be green in the following situations:

(1) when an overlap included phase is green and an overlap

modifier phase is NOT green.

(2) when an overlap included phase is yellow (or red

clearance) and an overlap included phase is next and an overlap

modifier phase is NOT green.

The overlap output shall be yellow when an overlap included phase is yellow and an overlap modifier phase is NOT yellow and an overlap included phase is not next. The overlap output shall be red whenever the overlap green and yellow are not ON.

**pedestrianNormal:** The overlap output shall be controlled by the

overlapIncludedPhases when this type is indicated. The overlap

output shall be Walk in the following situations:

(1) when an overlap included phase is green.

(2) when an overlap included phase is yellow (or red

clearance) and an overlap included phase is next.

(3) when an overlap included phase is Walk.

(4) when an overlap included phase is in a pedestrian

clearance interval and an overlap included phase is next.

Upon completion of the Walk interval, the overlap enters the

pedestrian clearance interval.

The overlap output shall exit the pedestrian clearance interval

to steady Dont Walk when the programmed pedestrian clearance time expires. The overlap output shall be steady Dont Walk whenever the overlap Walk and pedestrian clearance are not ON.

**fYAThreeSection:** The overlap output shall be controlled by the

overlapIncludedPhases and the overlapModifierPhases if this type is indicated. It shall be used with a 3-section signal head where the overlap output drives the green arrow, combined

yellow/flashing yellow arrow, and red arrow. The permissive

through phase opposing the left-turn signal is the

overlapIncludedPhases and the associated left-turn protected

phase is the overlapModifierPhases.

The overlap output shall be FYA in the following situations:

(1) when an overlap included phase is green and an overlap

modifier phase is NOT green.

(2) when an overlap included phase is yellow (or red

clearance), an overlap included phase is next or an overlap

modifier phase is next, and a modifier phase is NOT green.

The overlap output shall be yellow:

(1) when an overlap included phase is yellow, an overlap

included phase is not next, and an overlap modifier phase is NOT green.

(2) when an overlap modifier phase is yellow.

The overlap output shall be red:

(1) when an overlap included phase is red, an overlap

modifier phase is NOT green, and an overlap modifier phase is NOT yellow.

(2) when an overlap modifier phase is timing a redclearance

interval.

The overlap output shall be green:

(1) when an overlap modifier phase is green.

**fYAFourSection:** The overlap output shall be controlled by the

overlapIncludedPhases and the overlapModifierPhases if this type is indicated. It shall be used with a 4-section signal head where the overlap output drives the flashing yellow arrow, yellow and red. The permissive through phase opposing the left-turn signal is the overlapIncludedPhases and the associated left-turn protected phase is the overlapModifierPhases.

The overlap output shall be FYA in the following situations:

(1) when an overlap included phase is green and an overlap

modifier phase is NOT green.

(2) when an overlap included phase is yellow (or red

clearance), an overlap included phase or an overlap modifier

phase is next and an overlap modifier phase is NOT green.

The overlap output shall be yellow:

(1) when an overlap included phase is yellow, an overlap

included phase is not next, and an overlap modifier phase is NOTgreen.

(2) when an overlap modifier phase is yellow.

The overlap output shall be red:

(1) when an overlap included phase is red, an overlap

modifier phase is NOT green, and an overlap modifier phase is NOT yellow.

(2) when an overlap modifier phase is timing a redclearance

interval. The overlap output shall be blank/dark:

(1) when an overlap modifier phase is green

. **fRAThreeSection:** The overlap output shall be controlled by the overlapIncludedPhases and the overlapModifierPhases if this type is indicated. The overlap output drives the green arrow, yellow arrow, and combined red/flashing red arrow. The

overlapIncludedPhases is an opposing through phase and the

overlapModifierPhases is a protected left turn phase.

The overlap output shall be green when an overlap modifier phase is green.

The overlap output shall be yellow:

(1) when an overlap modifier phase is yellow.

(2) when an overlap modifier phase is red and an overlap

included phase is yellow.

The overlap output shall be red when the overlap modifier and

included phases are red.

The overlap output shall be flashing red when an overlap included phase is green and an overlap modifier phase is red.

**fRAFourSection:** The overlap output shall be controlled by the

overlapIncludedPhases and the overlapModifierPhases if this type is indicated. The overlap output drives the yellow arrow, red arrow, and flashing red arrow. The overlapIncludedPhases is an opposing through phase and the overlapModifierPhases is a

protected left turn phase.

The overlap outputs shall be blank when the overlapModifierPhase is green.

The overlap output shall be yellow:

(1) when an overlap modifier phase is yellow.

(2) when an overlap modifier phase is red and an overlap

included phase is yellow.

The overlap output shall be red when an overlap modifier phase

and an overlap included phase are red.

The overlap output shall be flashing red when an overlap included phase is green and an overlap modifier phase is red.

**transit-2:** The overlap output shall be controlled by the

overlapIncludedPhases when this type is indicated. The overlap

output drives a 2-section bar signal for transit vehicles using

overlap green (vertical bar) and red (horizontal bar) outputs.

The overlap output shall be green in the following situations:

(1) when an overlap included phase is green.

The overlap output shall be flashing green when an overlap

included phase is yellow and an overlap included phase is not

next.

The overlap output shall be red whenever an overlap included

phase is red.

**minusGreenYellowAlternate:** The overlap output shall be controlled by the overlapIncludedPhases and the overlapModifierPhases if this type is indicated. The overlap output shall be green in the following situations:

(1) when an overlap included phase is green and an overlap

modifier phase is NOT green.

(2) when an overlap included phase is yellow (or red

clearance) and an overlap included phase is next and an overlap

modifier phase is NOT green and an overlap modifier phase is not next.

The overlap output shall be yellow when an overlap included phase is yellow and an overlap modifier phase is NOT yellow and an overlap included phase is not next. The overlap output shall be red whenever the overlap green and yellow are not ON.

Note: Each enumeration requires the user to understand and avoid violation of MUTCD operational guidelines.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.9.2.1.2"

::= { overlapEntry 2 }

#### Overlap Included Phase Parameter

overlapIncludedPhases OBJECT-TYPE

SYNTAX OCTET STRING

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Each octet is a Phase (number) that shall

be an included phase for the overlap. The phase number value

shallnot exceed the maxPhases object value.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.9.2.1.3"

::= { overlapEntry 3 }

#### Overlap Modifier Phase Parameter

overlapModifierPhases OBJECT-TYPE

SYNTAX OCTET STRING

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Each octet is a Phase (number) that shall

be a modifier phase for the overlap. The phase number value shall not exceed the maxPhases object value. The use of this object is defined by the overlapType.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.9.2.1.4"

::= { overlapEntry 4 }

#### Overlap Trailing Green Parameter

overlapTrailGreen OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Overlap Trailing Green Parameter in seconds

(0-255 sec). When this value is greater than zero and the overlap green (or walk) would normally terminate, the overlap green (or walk) shall be extended by this additional time. This is

applicable to vehicle phases, bicycle phases, and transit phases.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.9.2.1.5

<Unit> second"

::= { overlapEntry 5 }

#### Overlap Trailing Yellow Change Parameter

overlapTrailYellow OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Overlap Trailing Yellow Change Parameter in

tenth seconds (NEMA range: 3.0-25.5 sec). When the overlap green has been extended (Trailing Green), this value shall determine the current length of the Yellow Change interval for the overlap. This is applicable to vehicle phases, bicycle phases, and transit phases.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.9.2.1.6

<Unit> tenth second"

::= { overlapEntry 6 }

#### Overlap Trailing Red Clear Parameter

overlapTrailRed OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Overlap Trailing Red Clear Parameter

in tenth seconds (0-25.5 sec). When the overlap green has been extended (Trailing Green), this value shall determine the current length of the Red Clearance interval for the overlap. This is applicable to vehicle phases, bicycle phases, and transit phases.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.9.2.1.7

<Unit> tenth second"

::= { overlapEntry 7 }

#### Overlap Walk Parameter

overlapWalk OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Overlap Walk Parameter in seconds (0-255

sec). This value is the length of the walk interval for a

pedestrian overlap. Upon completion of the Walk interval, the

overlap enters the pedestrian clearance interval.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.9.2.1.8

<Unit> second"

::= { overlapEntry 8 }

#### Overlap Pedestrian Clearance Parameter

overlapPedClearance OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-write

DESCRIPTION "<Definition> Overlap Pedestrian Clearance Parameter in

seconds (0-255 sec). This value is the length of the pedestrian

clearance interval.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.9.2.1.9

<Unit> second"

::= { overlapEntry 9 }

#### Overlap Conflicting Pedestrian Phase Parameter

overlapConflictingPedPhases OBJECT-TYPE

SYNTAX OCTET STRING

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Each octet is a Phase (number) that

shall be a pedestrian modifier phase for the overlap. The phase number value shall not exceed the maxPhases object value.

If the overlap type is 'normal', a non-null value would suppress the overlap when the pedestrian phase is active (in the walk or clearance interval). Upon completion of the active pedestrian phase and upon completion of a clearance interval (MUTCD requires 3 seconds), the overlap is allowed to proceed to the green state.

If the overlap type is fYAThreeSection or fYAFourSection, a nonnull value would maintain the overlap red state when the

pedestrian phase is active (in the walk or clearance interval).

Upon completion of the active pedestrian phase and upon

completion of a clearance interval (MUTCD requires 3 seconds),

the overlap is allowed to proceed to the flashing yellow state.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.9.2.1.10"

::= { overlapEntry 10 }

### **Maximum Overlap Status Groups**

maxOverlapStatusGroups OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The Maximum Number of Overlap Status Groups

(8 overlaps per group) this Actuated Controller Unit supports.

This value is equal to TRUNCATE [(maxOverlaps + 7) / 8]. This

object indicates the maximum rows which shall appear in the

overlapStatusGroupTable object.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.9.3

<Unit> group"

::= { overlap 3 }

### **Overlap Status Group Table**

overlapStatusGroupTable OBJECT-TYPE

SYNTAX SEQUENCE OF OverlapStatusGroupEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> A table containing Actuated Controller Unit

overlap output (Red, Yellow, & Green) status in groups of eight

overlaps. The number of rows in this table is equal to the

maxOverlapStatusGroups object.

<TableType> static

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.9.4"

::= { overlap 4 }

overlapStatusGroupEntry OBJECT-TYPE

SYNTAX OverlapStatusGroupEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> Red, Yellow, & Green Output Status

for eight Actuated Controller Unit overlaps.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.9.4.1"

INDEX { overlapStatusGroupNumber }

::= { overlapStatusGroupTable 1 }

OverlapStatusGroupEntry ::= SEQUENCE {

overlapStatusGroupNumber INTEGER,

overlapStatusGroupReds INTEGER,

overlapStatusGroupYellows INTEGER,

overlapStatusGroupGreens INTEGER }

**5.10.4.1 Overlap Status Group Number**

overlapStatusGroupNumber OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The overlap StatusGroup number for

objects in this row. This value shall not exceed the maxOverlapStatusGroups

object value.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.9.4.1.1

<Unit> group"

::= { overlapStatusGroupEntry 1 }

**5.10.4.2 Overlap Status Group Reds**

overlapStatusGroupReds OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> Overlap Red Output Status Mask, when

a bit=1,

the Overlap Red is currently active. When a bit=0, the Overlap

Red is NOT currently active.

Bit 7: Overlap # = (overlapStatusGroupNumber \* 8)

Bit 6: Overlap # = (overlapStatusGroupNumber \* 8) - 1

Bit 5: Overlap # = (overlapStatusGroupNumber \* 8) - 2

Bit 4: Overlap # = (overlapStatusGroupNumber \* 8) - 3

Bit 3: Overlap # = (overlapStatusGroupNumber \* 8) - 4

Bit 2: Overlap # = (overlapStatusGroupNumber \* 8) - 5

Bit 1: Overlap # = (overlapStatusGroupNumber \* 8) - 6

Bit 0: Overlap # = (overlapStatusGroupNumber \* 8) - 7

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.9.4.1.2"

::= { overlapStatusGroupEntry 2 }

**5.10.4.3 Overlap Status Group Yellows**

overlapStatusGroupYellows OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> Overlap Yellow Output Status Mask, when a

bit=1, the Overlap Yellow is currently active. When a bit=0, the Overlap Yellow is NOT currently active.

Bit 7: Overlap # = (overlapStatusGroupNumber \* 8)

Bit 6: Overlap # = (overlapStatusGroupNumber \* 8) - 1

Bit 5: Overlap # = (overlapStatusGroupNumber \* 8) - 2

Bit 4: Overlap # = (overlapStatusGroupNumber \* 8) - 3

Bit 3: Overlap # = (overlapStatusGroupNumber \* 8) - 4

Bit 2: Overlap # = (overlapStatusGroupNumber \* 8) - 5

Bit 1: Overlap # = (overlapStatusGroupNumber \* 8) - 6

Bit 0: Overlap # = (overlapStatusGroupNumber \* 8) - 7

For pedestrianNormal overlap type, this object is used to

represent the pedestrian clearance interval.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.9.4.1.3"

::= { overlapStatusGroupEntry 3 }

**5.10.4.4 Overlap Status Group Greens**

overlapStatusGroupGreens OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> Overlap Green Output Status Mask, when a

bit=1, the Overlap Green is currently active. When a bit=0, the

Overlap Green is NOT currently active.

Bit 7: Overlap # = (overlapStatusGroupNumber \* 8)

Bit 6: Overlap # = (overlapStatusGroupNumber \* 8) - 1

Bit 5: Overlap # = (overlapStatusGroupNumber \* 8) - 2

Bit 4: Overlap # = (overlapStatusGroupNumber \* 8) - 3

Bit 3: Overlap # = (overlapStatusGroupNumber \* 8) - 4

Bit 2: Overlap # = (overlapStatusGroupNumber \* 8) - 5

Bit 1: Overlap # = (overlapStatusGroupNumber \* 8) - 6

Bit 0: Overlap # = (overlapStatusGroupNumber \* 8) - 7

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.9.4.1.4"

::= { overlapStatusGroupEntry 4 }

## **ASC Block Objects**

ascBlock OBJECT IDENTIFIER

::= { asc 11 }

-- This object is an identifier used to group all objects for

-- support of ASC Block Upload and Download activities.

### **ASC Block Get Control**

ascBlockGetControl OBJECT-TYPE

SYNTAX OCTET STRING (SIZE(4..12))

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> An OER encoded string of

reference parameters for ASC Block Uploads. The parameter values in this string are:

ascBlockDataType INTEGER (0..255)

ascBlockDataID INTEGER (0..255)

ascBlockIndex1 INTEGER (0..255) if needed

ascBlockQuantity1 INTEGER (0..255) if needed

ascBlockIndex2 INTEGER (0..255) if needed

ascBlockQuantity2 INTEGER (0..255) if needed

ascBlockIndex3 INTEGER (0..255) if needed

ascBlockQuantity3 INTEGER (0..255) if needed

ascBlockIndex4 INTEGER (0..255) if needed

ascBlockQuantity4 INTEGER (0..255) if needed

ascBlockIndex5 INTEGER (0..255) if needed

ascBlockQuantity5 INTEGER (0..255) if needed

A GET of ascBlockData shall utilize values currently in this object to define the data to be returned.

A SET of this object shall be evaluated for validity and Error Status of badValue(3) be returned for the following conditions:

1) ascBlockDataType is not supported

2) ascBlockDataID is not supported

3) ascBlockIndex1 is zero or not supported

4) ascBlockQuantity1 is zero or ascBlockIndex1 +

ascBlockQuantity1 - 1 is not supported

5) ascBlockIndex2 is zero or not supported

6) ascBlockQuantity2 is zero or ascBlockIndex2 +

ascBlockQuantity2) - 1 is not supported

7) ascBlockIndex3 is zero or not supported

8) ascBlockQuantity3 is zero or ascBlockIndex3 +

scBlockQuantity3) - 1 is not supported

9) ascBlockIndex4 is zero or not supported

10) ascBlockQuantity4 is zero or ascBlockIndex4 +

ascBlockQuantity4) - 1 is not supported

11) ascBlockIndex5 is zero or not supported

12) ascBlockQuantity5 is zero or ascBlockIndex5 +

scBlockQuantity5) - 1 is not supported

13) if the SET length is zero or incorrect for ascBlockDataType &

ascBlockDataID

14) if the GetResponse length for a GET on ascBlockData using maximum data field sizes would exceed a local limitation When this validity check fails, ascBlockErrorStatus shall be set

equal to the Bullet Value above that generated the error.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.11.1

<Unit> "

::= { ascBlock 1 }

### **ASC Block Data**

ascBlockData OBJECT-TYPE

SYNTAX OCTET STRING (SIZE(6..65535))

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> An OER encoded string used for uploading and downloading ASC parameters. See SECTION 6 for encoding and decoding the block. A SET on this object shall require the use of 'dbCreateTransaction' defined in NTCIP 1201 Clause 2.3.1.

A SET of this object shall be evaluated for validity and Error Status of badValue(3) be returned for the following conditions:

1) ascBlockDataType is not supported

2) ascBlockDataID is not supported

3) ascBlockIndex1 is zero or not supported

4) ascBlockQuantity1 is zero or ascBlockIndex1 +

ascBlockQuantity1 - 1 is not supported

5) ascBlockIndex2 is zero or not supported

6) ascBlockQuantity2 is zero or ascBlockIndex2 +

ascBlockQuantity2) - 1 is not supported

7) ascBlockIndex3 is zero or not supported

8) ascBlockQuantity3 is zero or ascBlockIndex3 +

ascBlockQuantity3) - 1 is not supported

9) ascBlockIndex4 is zero or not supported

10) ascBlockQuantity4 is zero or ascBlockIndex4 +

ascBlockQuantity4) - 1 is not supported

11) ascBlockIndex5 is zero or not supported

12) ascBlockQuantity5 is zero or ascBlockIndex5 +

ascBlockQuantity5) - 1 is not supported

13) if the SET length is zero or incorrect for ascBlockDataType & ascBlockDataID

14) if the SET (SEQUENCE OF) value is incorrect.

When this validity check fails, ascBlockErrorStatus shall be set equal to the Bullet Value above that generated the error.

A SET that includes an unsupported value for a supported data element shall return an Error Status of badValue(3) and ascBlockErrorStatus shall be set equal to: (data Sequence # \* 100) + data Element # A SET that includes a non-zero or non-null value in the position of an unsupported data element shall return an Error Status of

badValue(3) and ascBlockErrorStatus shall be set equal to: (data Sequence # \* 100) + data Element # A GET on this object shall utilize values currently in

ascBlockGetControl to define the data to be returned. When

ascBlockGetControl has invalid data, an Error STATUS of

badValue(3) shall be returned. A GET shall return a zero or null value in the position of an

unsupported object.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.11.2

<Unit> "

::= { ascBlock 2 }

### **ASC Block Error Status**

ascBlockErrorStatus OBJECT-TYPE

SYNTAX INTEGER (0..65535)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> This object defines the

data element within ascBlockGetControl or ascBlockData that caused a badValue(3)

ErrorStatus. This object should equal zero after any successful SET to ascBlockGetControl or ascBlockData.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.11.3"

::= { ascBlock 3 }

## **Cabinet Parameters**

### **5.13.1 Maximum Cabinet Environmental Monitoring Devices**

maxCabinetEnvironDevices OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The maximum number of

Environmental monitoring devices this CU supports. This object indicates the maximum rows which shall appear in the cabinetEnvironDevicesTable object.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.12.1

<Unit> number"

::= { cabinetEnvironment 1 }

### **5.13.2 Cabinet Environmental Devices Table**

cabinetEnvironDevicesTable OBJECT-TYPE

SYNTAX SEQUENCE OF CabinetEnvironDeviceEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> A table containing the

parameters of the environmental monitoring devices contained in the cabinet. The number of rows in this table is equal to the maxCabinetEnvironDevices object.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.12.2

<TableType> static"

::= { cabinetEnvironment 2 }

cabinetEnvironDeviceEntry OBJECT-TYPE

SYNTAX CabinetEnvironDeviceEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> Parameters for a specific CU

cabinet environmental condition monitoring device.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.12.2.1"

INDEX { cabinetEnvironDeviceNumber, cabinetEnvironDeviceIndex }

::= { cabinetEnvironDevicesTable 1 }

CabinetEnvironDeviceEntry ::= SEQUENCE {

cabinetEnvironDeviceNumber INTEGER,

cabinetEnvironDeviceType INTEGER,

cabinetEnvironDeviceIndex INTEGER,

cabinetEnvironDeviceDescription DisplayString,

cabinetEnvironDeviceOnStatus INTEGER,

cabinetEnvironDeviceErrorStatus INTEGER }

#### Cabinet Environmental Monitoring Device Number

cabinetEnvironDeviceNumber OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The environmental monitoring number for

objects in this row. This value shall not exceed the

maxCabinetEnvironDevices object value.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.12.2.1.1

<Unit> monitoring device"

::= { cabinetEnvironDeviceEntry 1 }

#### Cabinet Environmental Monitoring Sensor Type

cabinetEnvironDeviceType OBJECT-TYPE

SYNTAX INTEGER { other (1),

door (2),

fan (3),

heater (4),

floatSwitch (5)}

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> The type of

environment monitoring device to monitor the cabinet is an enumerated integer.

**other:** the type of environmental monitoring device is not defined by this standard.

**door:** this cabinet environmental monitoring device is a door to the cabinet.

**fan:** this cabinet environmental monitoring device is a fan within the cabinet.

**heater:** this cabinet environmental monitoring device is a heater within the cabinet.

**floatSwitch:** this cabinet environmental monitoring device is a float switch for water level detection.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.12.2.1.2"

::= { cabinetEnvironDeviceEntry 2 }

#### Cabinet Environmental Monitoring Device Index

cabinetEnvironDeviceIndex OBJECT-TYPE

SYNTAX INTEGER (1..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> The index for the

cabinetEnvironDeviceType. This value allows support for multiple sensors of a specific environment monitoring device type.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.12.2.1.3"

::= { cabinetEnvironDeviceEntry 3 }

### **Maximum Number of Cabinet Temperature Sensors**

maxCabinetTempSensors OBJECT-TYPE

SYNTAX INTEGER (0..16)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> Indicates the number of rows in

the cabinetTempSensorStatusTable.

<Unit> temperature sensors

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.12.3"

::= { cabinetEnvironment 3 }

### **Cabinet Temperature Sensor Status Table**

cabinetTempSensorStatusTable OBJECT-TYPE

SYNTAX SEQUENCE OF CabinetTempSensorStatusEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> A table containing status

information for each temperature sensor within a CU and CU cabinet.

<Table Type> static

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.12.4"

::= { cabinetEnvironment 4 }

cabinetTempSensorStatusEntry OBJECT-TYPE

SYNTAX CabinetTempSensorStatusEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> An entry in the cabinet

temperature sensor status table.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.12.4.1"

INDEX { cabinetTempSensorIndex }

::= { cabinetTempSensorStatusTable 1}

CabinetTempSensorStatusEntry ::= SEQUENCE {

cabinetTempSensorIndex INTEGER,

cabinetTempSensorDescription DisplayString,

cabinetTempSensorCurrentReading INTEGER,

cabinetTempSensorHighThreshold INTEGER,

cabinetTempSensorLowThreshold INTEGER,

cabinetTempSensorStatus INTEGER }

#### Cabinet Temperature Sensor Index

cabinetTempSensorIndex OBJECT-TYPE

SYNTAX INTEGER (1..16)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> Index of the cabinet temperature

Sensor status table. This value shall not exceed maxCabinetTempSensors.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.12.4.1.1"

::= { cabinetTempSensorStatusEntry 1 }

#### Cabinet Temperature Sensor Description

cabinetTempSensorDescription OBJECT-TYPE

SYNTAX DisplayString (SIZE (0..64))

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Human-readable description

of the temperature sensor. This value should provide enough information for maintenance personnel to identify the physical location of the temperature sensor within the CU or CU cabinet.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.12.4.1.2"

::= { cabinetTempSensorStatusEntry 2 }

#### Cabinet Temperature Sensor Current Reading

cabinetTempSensorCurrentReading OBJECT-TYPE

SYNTAX INTEGER (-128..127)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> Indicates the current reading,

in degrees Celsius, of the temperature sensor.

<Valid Value Rule> The value -127 shall indicate a

temperature of – 127 degrees Celsius or lower. The value 127 shall indicate a temperature of 127 degrees Celsius or higher. The value -128 shall indicate an error condition or missing value.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.12.4.1.3

<Unit> degrees Celsius"

DEFVAL { -56 }

::= { cabinetTempSensorStatusEntry 3 }

#### Cabinet Temperature Sensor High Warning Temperature

cabinetTempSensorHighThreshold OBJECT-TYPE

SYNTAX INTEGER (-128..127)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Indicates the high value of the

temperature, in degrees Celsius, associated with this temperature sensor above which would generate a warning (Bit 3 of unitAlarmStatus4). This value should not be lower than the value of the cabinetTempSensorLowThreshold object.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.12.4.1.4

<Unit>degrees Celsius"

::= { cabinetTempSensorStatusEntry 4 }

#### Cabinet Temperature Sensor Low Warning Temperature

cabinetTempSensorLowThreshold OBJECT-TYPE

SYNTAX INTEGER (-128..127)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Indicates the low value of the

temperature, in degrees Celsius, associated with this temperature sensor below which would generate a warning (Bit 3 of unitAlarmStatus4). This value should not be higher than the value of the cabinetTempSensorHighThreshold object.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.12.4.1.5

<Unit>degrees Celsius"

::= { cabinetTempSensorStatusEntry 5 }

#### Cabinet Temperature Sensor Status

cabinetTempSensorStatus OBJECT-TYPE

SYNTAX INTEGER { other (1),

noError (2),

fail (3) }

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> Indicates the current status of

the İndicated temperature sensor.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.12.4.1.6"

::= { cabinetTempSensorStatusEntry 6 }

### **Maximum Number of Humidity Sensors**

maxCabinetHumiditySensors OBJECT-TYPE

SYNTAX INTEGER (0..16)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> Indicates the number of rows in

the cabinetHumiditySensorStatusTable.

<Unit> humidity sensors

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.12.5"

::= { cabinetEnvironment 5 }

### **Cabinet Humidity Sensor Status Table**

cabinetHumiditySensorStatusTable OBJECT-TYPE

SYNTAX SEQUENCE OF CabinetHumiditySensorStatusEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> A table containing status

information for each humidity sensor within a CU cabinet.

<Table Type> static

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.12.6"

::= { cabinetEnvironment 6 }

cabinetHumiditySensorStatusEntry OBJECT-TYPE

SYNTAX CabinetHumiditySensorStatusEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION "<Definition> An entry in the humidity sensor

Status table.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.12.6.1"

INDEX { cabinetHumiditySensorIndex }

::= { cabinetHumiditySensorStatusTable 1}

CabinetHumiditySensorStatusEntry ::= SEQUENCE {

cabinetHumiditySensorIndex INTEGER,

cabinetHumiditySensorDescription DisplayString,

cabinetHumiditySensorCurrentReading INTEGER,

cabinetHumidityThreshold INTEGER,

cabinetHumiditySensorStatus INTEGER }

#### Cabinet Humidity Sensor Index

cabinetHumiditySensorIndex OBJECT-TYPE

SYNTAX INTEGER (1..16)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> Index of the humidity sensor status table.

This value does not exceed maxCabinetHumiditySensors.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.12.6.1.1"

::= { cabinetHumiditySensorStatusEntry 1 }

#### Cabinet Humidity Sensor Description

cabinetHumiditySensorDescription OBJECT-TYPE

SYNTAX DisplayString (SIZE (0..64))

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Human-readable description of

the humidity sensor. This value should provide enough information for maintenance personnel to identify the physical location of the humidity sensor within the CU cabinet.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.12.6.1.2"

::= { cabinetHumiditySensorStatusEntry 2 }

#### Cabinet Humidity Sensor Current Reading

cabinetHumiditySensorCurrentReading OBJECT-TYPE

SYNTAX INTEGER (0..101)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> Indicates the current reading of

the Humidity sensor, in percent relative humidity.

<Valid Value Rule> The value 101 shall indicate an error

condition or missing value.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.12.6.1.3

<Unit>percent relative humidity"

DEFVAL { 101 }

::= { cabinetHumiditySensorStatusEntry 3 }

#### Cabinet Humidity Sensor Threshold

cabinetHumidityThreshold OBJECT-TYPE

SYNTAX INTEGER (0..101)

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Indicates the relative humidity,

in percent, within the CU cabinet above which the humidity threshold alarm shall be activated (Bit 3 of unitAlarmStatus4).

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.12.6.1.4

<Unit> percent humidity"

::= { cabinetHumiditySensorStatusEntry 4 }

#### Cabinet Humidity Sensor Status

cabinetHumiditySensorStatus OBJECT-TYPE

SYNTAX INTEGER { other (1), --not used

noError (2),

fail (3) }

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> Indicates the current status of

the indicated humidity sensor.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.12.6.1.5"

::= { cabinetHumiditySensorStatusEntry 5 }

### **Power Source**

ascPowerSource OBJECT-TYPE

SYNTAX INTEGER { unknown (1),

other (2),

acLine (3),

generator (4),

solar (5),

battery-UPS (6),

dc48VPower (7),

dc24Vpower (8) }

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> Integer value that indicates the

Current primary power source for the CU cabinet, expressed as an enumerated integer.

**unknown:** the current primary power source is unknown or cannot be determined.

**other:** the current primary power source is not defined by this standard.

**acLine:** the current primary power source is in-line AC power.

**generator:** the current primary power source is a generator that is operational.

**solar:** the current primary power source is solar equipment, that may be have a battery as an intermediary.

**battery-UPS:** the current primary power source is a battery or UPS with no significant charging occurring.

**dc48VPower:** the current primary power source is 48 volts DC directly into the cabinet.

**dc24VPower:** the current primary power source is 48 volts DC directly into the cabinet.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.12.7"

DEFVAL { unknown }

::= { cabinetEnvironment 7 }

### **Line Volts**

ascLineVolts OBJECT-TYPE

SYNTAX INTEGER (0..6001)

ACCESS read-only

STATUS mandatory

DESCRIPTION "<Definition> Indicates the voltage, in 0.1

RMS volt units, measured on the incoming power line for the CU. This object shall only be used to indicate A/C power conditions. If the line power is DC, this object shall not apply (i.e., this object will either not be supported or this object will have a value of 3001).

<Valid Value Rule> Values 0 through 5999 shall indicate

valid values.

The value 6000 shall mean a voltage of 600.0 Vrms or greater. The value of 6001 shall indicate an error condition or missing value.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.12.8

<Unit>0.1 Volts Root Mean Squared (Vrms)"

DEFVAL { 6001 }

::= { cabinetEnvironment 8 }

### **ATC Cabinet LED Displays**

atccLEDMode OBJECT-TYPE

SYNTAX INTEGER { other (1),

on (2),

off (3) }

ACCESS read-write

STATUS mandatory

DESCRIPTION "<Definition> Object that allows control of

the LED

displays within an ATC cabinet.

**other:** LED mode of operation is not defined by this standard.

**on:** ATCC module LEDs operate normally (e.g., full brightness and flashing are prescribed by module documentation).

**off:** ATCC module LEDs are off (sleep) when all cabinet door(s)

are closed.

All other values are RESERVED.

<Object Identifier> 1.3.6.1.4.1.1206.4.2.1.12.9"

::= { cabinetEnvironment 9 }