

Data Element

<i>Name</i>	CC-AdherenceMsgType
<i>Identifier</i>	ccdd 108
<i>Purpose</i>	Identify the reason that a CcPTVAdherence was sent.

Usage

DRAFT

Definition

```

ENUMERATED
{
Initial No Exception (0),
Initial Late (1),
Initial Early (2),
Initial Late Off Route (3),
Initial Early Off Route (4),
Initial Off Route (5),
--6-9 Reserved,
becameLate (10)
becameEarly (11),
recoveredLate (12), --no longer late
recoveredEarly (13), --no longer early
--14-19 Reserved
becameOffRoute (20),
recovered OffRoute (21),
--22-29 Reserved
--30-39 local use
... -- # LOCAL_CONTENT
}

```

Data Element

<i>Name</i>	CC-AgencyData
<i>Identifier</i>	ccdd 100
<i>Purpose</i>	Provide a field to include agency defined data in a poll or poll response.

Usage

DRAFT

Definition MEMSHORT16

Data Element

<i>Name</i>	CC-AlarmCode
<i>Identifier</i>	ccdd 31
<i>Purpose</i>	The type of automatic alarm that may occur on a revenue vehicle.

Usage

DRAFT

Definition

```
ENUMERATED
{
  fire (1),
  smoke (2),
  high-acceleration (3), --e.g. accident
  fuel-spill (4)
  --5-100 reserved
  --101-200 local use
  ... -- # LOCAL_CONTENT
}
```

Data Element

<i>Name</i>	CC-AlarmText
<i>Identifier</i>	ccdd 110
<i>Purpose</i>	Provide the text to identify a manually selected alarm.

Usage

DRAFT

Definition NAME30

Data Element

<i>Name</i>	CC-AnnouncementMsgData
<i>Identifier</i>	ccdd 1
<i>Purpose</i>	A textual description of the announcement or part of an announcement. An announcement may be displayed or annunciated.

Usage UCS open: no constraints on size of message.

Definition FOOTNOTE

Data Element

Name CC-AnnouncementMsgID

Identifier codd 2

Purpose A number associated with an announcement message as assigned by the transit agency.

Usage

DRAFT

Definition USHORT

Data Element

<i>Name</i>	CC-BlockIDShort
<i>Identifier</i>	ccdd 3
<i>Purpose</i>	A short version of Block ID (12 bits). If used, this data element should be correlated to SCH-BlockID or SCH-BlockDesignator by inserting it in the SchBlock message.

Usage (0..4095)

DRAFT

Definition USHORT

Data Element

<i>Name</i>	CC-CallStatus
<i>Identifier</i>	ccdd 109
<i>Purpose</i>	Define the status of a voice radio call request.

Usage

DRAFT

Definition

```
ENUMERATED
{
  denied (0),
  connect (1),
  disconnect (2)
}
```


Data Element

<i>Name</i>	CC-CannedMsgID
<i>Identifier</i>	ccdd 104
<i>Purpose</i>	Identify a canned (predefined) message. Use of canned message identifiers allows the short identifier to be transmitted rather than the entire message.

Usage

DRAFT

Definition USHORT

Data Element

Name CC-CannedMsgTakeID

Identifier ccdd 102

Purpose Identify a take in a take list. A take is text which can be inserted into blanks in a canned message.

Usage

DRAFT

Definition USHORT

Data Element

<i>Name</i>	CC-CannedMsgTakeListID
<i>Identifier</i>	ccdd 103
<i>Purpose</i>	Identify a list of takes (text inserts) from which fill in the blank material for canned mesaged can be drawn.

Usage

DRAFT

Definition USHORT

Data Element

Name CC-ConfigurationData

Identifier ccdd 112

Purpose Convey the binary software configuration data (manufacturer -defined) for an onboard component.

Usage This element conveys up to 2,000,000 octets of manufacturer-defined software configuration data.

Definition MEMLONG

Data Element

<i>Name</i>	CC-DeltaTime
<i>Identifier</i>	ccdd 4
<i>Purpose</i>	The deviation from the scheduled time at a trip time (from a given time point). A positive number (+) signifies late, and a negative number (-) implies the vehicle is early.

Usage IEEE/ASTM SI:time special codes

Definition UBYTE

Data Element

<i>Name</i>	CC-DestinationMessageID
<i>Identifier</i>	ccdd 107
<i>Purpose</i>	Provide a unique identifier for a destination sign message.

Usage

DRAFT

<i>Definition</i>	IDENL
--------------------------	-------

Data Element

<i>Name</i>	CC-DetourID
<i>Identifier</i>	ccdd 5
<i>Purpose</i>	A number associated with a detour as assigned by a transit agency. The detour identifier may not necessarily be unique, but should be unique over the activation time and date.

Usage

DRAFT

Definition UBYTE

Data Element

Name CC-ExceptionFrequencyReport

Identifier ccdd 7

Purpose The frequency between reports required when a transit vehicle in revenue service deviates from an adherence requirement.

Usage Expressed in 10 second intervals.

DRAFT

Definition UBYTE

Data Element

<i>Name</i>	CC-ExecutableSoftware
<i>Identifier</i>	ccdd 105
<i>Purpose</i>	Convey the binary executable for an onboard component

Usage This element conveys up to 2,000,000 octets of executable software. For larger executables, a sequence of these elements is required. The contents of the sequence of the elements are concatenated to create a longer executable file.

Definition MEMLONG

Data Element

<i>Name</i>	CC-ManualAlarmID
<i>Identifier</i>	ccdd 111
<i>Purpose</i>	Identify an alarm for manual initiation by a vehicle operator.

Usage

DRAFT

<i>Definition</i>	IDENL
--------------------------	-------

Data Element

Name CC-ManufacturerData

Identifier ccdd 100

Purpose Allow manufacturer-defined data to be appended to a standard TCIP message. This may be useful for locally-defined extensions to messages between the control center and vehicles.

Usage Information in this field is not useful in a multivendor environment, use of this field increases the message size, increasing network capacity requirements and may result in longer location reporting intervals.

Definition FOOTNOTE

Data Element

Name CC-MobileUnitID
Identifier ccdd 8
Purpose A unique number used to identify the mobile unit (e.g., mobile radio unit).

Usage (0..4095)

DRAFT

Definition ULONG

Data Element

<i>Name</i>	CC-MsgAddressGroup
<i>Identifier</i>	ccdd 9
<i>Purpose</i>	Identifies the type of audience for the messages(s).

Usage

DRAFT

Definition

```

ENUMERATED
{
  vehicle-list(4),
  block-list(5),
  run-list(6),
  pattern-list(7),
  manifest(8),
  beat(9),
  district(10),
  radio-zone(11),
  agencyID(12),
  --100-200 local use
  ... -- # LOCAL_CONTENT
}

```

Data Element

Name CC-MsgCounter

Identifier ccdd 101

Purpose Provide an identifier for a message transmitted across the TCIP polled radio channel. Also provide a count of messages waiting to be transmitted across the radio channel.

Usage the value zero indicates none, value FFH is reserved, all other values are valid message identifiers.

Definition UBYTE

Data Element

<i>Name</i>	CC-MsgResponse
<i>Identifier</i>	ccdd 10
<i>Purpose</i>	Defines whether a response is required of the operator to an associated message.

Usage

DRAFT

Definition

```
ENUMERATED
{
  noResponse(0),
  responseRequired(1)
}
```

Data Element

<i>Name</i>	CC-MsgResponseType
<i>Identifier</i>	ccdd 11
<i>Purpose</i>	Determines the type of response required of an operator. This data element must be included in CcMsgRecord if message is destined for operator.

Usage

DRAFT

Definition

```
ENUMERATED
{
  noResponse(0),
  responseAck(1),
  responseYN(2),
  responseVar(3)
  ... -- # LOCAL_CONTENT
}
```


Data Element

Name CC-OffRouteDistance

Identifier cccd 13

Purpose The orthogonal distance in meters from the scheduled route of a transit vehicle in revenue service which will set a route adherence exception alarm. This data element is part of the CCActivateRouteAdherenceException which indicates the requirements for route adherence.

Usage

DRAFT

Definition ULONG

Data Element

Name CC-OperatorAssignType

Identifier ccdd 14

Purpose The type of operator assignment associated with a run. They include:
 Pick: operator picks a piece of work
 Planned: short term assignment managed by operator base (garage)
 Actual: as operated

Usage

DRAFT

Definition

```

ENUMERATED
{
  pick(1),
  planned(2),
  actual(3),
  --4-155 reserved
  --156-255 local use
  ... -- # LOCAL_CONTENT
}

```

Data Element

Name	CC-PollData
Identifier	ccdd 103
Purpose	Identify the fields that the polling controller wants returned by the PTV in response to a poll.

Usage

This is a 16 bit structure, the values of the bits are as follows: bit 0=don't include heading 1=include heading

bit 1	0=don't include speed	1=include speed
bit 2	0=don't include time	1= include time
bit 3	0=don't include activeAlarms	1=include activeAlarms
bit 4	0=don't include currentRoute	1=include currentRoute
bit 5	0=don't include lastTimepoint	1=include lastTimepoint
bit 6	0=don't include lastStoppoint	1=include lastStoppoint
bit 7	0=don't include lastTimepointTime	1=include lastTimepointTime
bit 8	0=don't include lastTimepointOffSched	1=include lastTimepointOffSched
bit 9	0=don't include currentPattern	1=include currentPattern
bit 10	0=don't include currentSegment	1=include currentSegment
bit 11	0=don't include passengerCount	1=include passengerCount
bit 12	0=don't include agency data	1=include agency data
bit 13	Reserved	
bit 14	Reserved	
bit 15	Reserved	

Definition

USHORT

Data Element

Name CC-PollingGroup

Identifier ccdd 32

Purpose Define a group address for PTVs to allow the TCIP Polling Controller to send a message to a specified group of PTVs.

Usage

DRAFT

Definition UBYTE

Data Element

<i>Name</i>	CC-PollingSlot
<i>Identifier</i>	ccdd 15
<i>Purpose</i>	The reporting slot number in a cyclical polling process (on one channel) assigned to a mobile radio.

Usage

DRAFT

Definition USHORT

Data Element

<i>Name</i>	CC-PollResponseStatus
<i>Identifier</i>	ccdd 102
<i>Purpose</i>	provide a packed vehicle status indication in a poll response.

<i>Usage</i>	This is a 8-bit structure, the values of the bits are as follows: bit 0 0=no route adh alarm 1=route adh alarm active
	bit 1 0=no schedule adh alarm 1=schedule adh alarm active
	bit 2 0=no priority voice request 1= priority voice request
	bit 3 0=no voice requested 1=voice requested
	bit 4 0=silent alarm not active 1=silent alarm activated
	bit 5 0= passenger alarm not active 1=passenger alarm activated
	bit 6 0=PTV not in revenue service 1=PTV in revenue service
	bit 7 0=other alarms inactive 1=other alarms active

<i>Definition</i>	UBYTE
--------------------------	-------

Data Element

<i>Name</i>	CC-RadioMode
<i>Identifier</i>	ccdd 17
<i>Purpose</i>	The type of communication mode supported by the radio channel.

Usage

DRAFT

Definition

```
ENUMERATED
{
  voice(0),
  data(1),
  both(2),
  --3-100 reserved
  --101-200 local use
  ... --# LOCAL_CONTENT
}
```

Data Element

<i>Name</i>	CC-RadioVoiceControl
<i>Identifier</i>	ccdd 18
<i>Purpose</i>	Directs the voice traffic to the specified interface device.

Usage

DRAFT

Definition

```
ENUMERATED
{
  handset(0),
  announcement(1),
  pa-covert(2),
  pa-interior(3),
  pa-exterior(4),
  pa-interior-exterior(5),
  telephone-interconnect(6),
  reserved(7),
  --8-99 reserved
  --100-200 local use
  ... -- # LOCAL_CONTENT
}
```


Data Element

<i>Name</i>	CC-ResponseRequestType
<i>Identifier</i>	ccdd 19
<i>Purpose</i>	This defines the type of message sent by the transit vehicle to the control center. This data element is used in the CcPTVehicleMessageTemplate to distinguish between request for voice, silent alarm or data messages.

Usage

DRAFT

Definition

```
ENUMERATED
{
  request-to-talk(0),
  priority-RTT(1),
  urgent(2),
  data(3),
  spare-1(4),
  spare-2(5),
  silent-alarm(6),
  remote-silent-alarm(7)
}
```

Data Element

Name CC-ReturnToleranceEarly

Identifier ccdd 20

Purpose The deviation from scheduled time in seconds a transit vehicle must adhere to (once considered early) before it is considered on time (i.e., on-schedule) again.

Usage

DRAFT

Definition USHORT

Data Element

Name CC-ReturnToleranceLate

Identifier cccd 21

Purpose The deviation from scheduled time in seconds a transit vehicle must adhere to (once considered late) before it is considered on time (i.e., on schedule) again.

Usage

DRAFT

Definition USHORT

Data Element

<i>Name</i>	CC-RouteDirectionShort
<i>Identifier</i>	ccdd 22
<i>Purpose</i>	This is a constrained version of SCH-RouteDirectionName.

Usage

DRAFT

Definition

```
ENUMERATED
{
north(0),
sourth(1),
east(2),
west(3),
inbound(4),
outbound(5),
clockwise(6),
counter-clockwise(7)
}
```

Data Element

<i>Name</i>	CC-RouteIDShort
<i>Identifier</i>	ccdd 23
<i>Purpose</i>	A short version of the SCH-RouteID. This data element should be mapped to the SCH-RouteID by its inclusion in the SchRoute message (record).

Usage

DRAFT

Definition UBYTE

Data Element

Name CC-RunIDShort

Identifier codd 24

Purpose A short version of Run ID. If used, this data element should be correlated to SCH-RunID or SCH-RunDesignator by inserting it in the SchRun message.

Usage (1..4096)

DRAFT

Definition USHORT

Data Element

Name CC-ScheduleToleranceEarly

Identifier cccd 25

Purpose The deviation from schedule in seconds before a transit vehicle in revenue service is considered early.

Usage

DRAFT

Definition USHORT

Data Element

Name CC-ScheduleToleranceLate

Identifier ccdd 26

Purpose The deviation from scheduled time in seconds before a transit vehicle in revenue service is considered late.

Usage

DRAFT

Definition USHORT

Data Element

<i>Name</i>	CC-VehicleIDShort
<i>Identifier</i>	ccdd 16
<i>Purpose</i>	A short version of the CPT-VehicleID. This data element should be mapped to the CPT-VehicleID by its inclusion in the CptPTVehicle message (record).

Usage (1..4096)

DRAFT

Definition USHORT

Data Element

<i>Name</i>	CC-ZeroPeriod
<i>Identifier</i>	ccdd 30
<i>Purpose</i>	The start time (zero hour) of a polling period. The data element is defined as the number of seconds since the top of the hour (see CC-SecSinceTopHour).

Usage IEEE/ASTM SI: time [s] (0..65,535)

Definition USHORT

DRAFT

Data Frame

<i>Name</i>	CCDestinationSignRule
<i>Identifier</i>	cc 1005
<i>Purpose</i>	Provide instructions on what should be displayed on a bus's destination message sign during each portion of its scheduled trips.

<i>Usage</i>	Up to 4 messages may be specified for any trip segment. These messages are then scrolled or displayed alternately.
---------------------	--

<i>Definition</i>	<pre> SEQUENCE { tripID SCH-TripID, fromTimePoint SCH-TimepointID, toTimePoint SCH-TimepointID, messages SEQUENCE (SIZE(1..10)) OF CC-DestinationMessageID } </pre>
--------------------------	---

Data Frame

Name	CCDetourRecord
Identifier	cc 1008
Purpose	Define a detour's impact on a specific route and direction.

Usage

1. The departurePoint field and the returnPoint fields define the points at which the PTV leaves and reenters the scheduled route. If the vehicle does not return to the original route, the returnPoint field is omitted. 2. The waypoints field allows points along the detour to be specified to facilitate mapping, or other applications requiring detailed detour routing data. 3. The "approach.." fields are used to define an approach interval to the detour during which the destination sign is altered to display a detour-specific message. Agencies may elect to use this feature or not on a policy level or on a case by case basis. Approach text may be used without an icon. 4. The "detour..." fields define a message to be displayed on the destination sign while on the detour. 5. The timeStopPointsSkipped field lists timepoints and stoppoints that are skipped as a result of the detour. This field is omitted if no timepoints or stoppoints are skipped. 6. The addScheduleTime field defines the time to be added to the scheduled time for timepoints beyond the detour, if applicable. 7. The added Stop PointList field allows stop points to be specified along the detour route. These stop points must have been previously specified to the vehicle. 8. the newStopPointList field allows temporary stop points along the detour to be specified.

Definition

```
SEQUENCE {
  route                SCH-RouteID,
  direction            SCH-RouteDirectionName,
  departurePoint      LRMS.GeoLocation,
  returnPoint         LRMS.GeoLocation
  waypoints           SEQUENCE (SIZE(1..100)) OF LRMS.GeoLocation OPTIONAL,
  approachTimepoint  SCH-TimepointID OPTIONAL,
  approachDestSignText PI-DMSMessage OPTIONAL,
  approachDestSignIcon PI-BinaryImageData OPTIONAL,
  detourDestSignText PI-DMSMessage OPTIONAL,
  detourDestSignIcon PI-BinaryImageData OPTIONAL,
  iconFormat          PI-GraphicFormat OPTIONAL,
  detourDirections    CPT-Footnote OPTIONAL,
  timeStopPointsSkipped SEQUENCE (SIZE(1..100)) OF SCHTimeStoppoint OPTIONAL,
  addScheduleTime     CPT-TimeInterval OPTIONAL,
  addedStopPointList SEQUENCE (SIZE(1..100)) OF CPT-StoppointID OPTIONAL,
  newStopPointList    SEQUENCE (SIZE(1..100)) OF LRMS.GeoLocation OPTIONAL
}
```

Data Frame

<i>Name</i>	CCEngineStartStop
<i>Identifier</i>	cc 1010
<i>Purpose</i>	Record an engine start or stop event on a PTV.

<i>Usage</i>	1. The start field is true if this represents an engine start event and false if this represents an engine shutdown event.
---------------------	--

<i>Definition</i>	SEQUENCE { start CPT-Boolean, time CPT-DateTime }
--------------------------	--

Data Frame

<i>Name</i>	CCLogOffOperator
<i>Identifier</i>	cc 12
<i>Purpose</i>	Parameters which indicate and validate that an operator or supervisor logged off a vehicle log-on device (e.g., MDT, Farebox, VCH). CPT-VehicleID, and CPT-BlockID or CPT-RunID are sent as part of the template message.

Usage

DRAFT

Definition

```

SEQUENCE {
  employee          CPT-EmployeeID,
  job-category     CPT-EmployeeJobCategory  OPTIONAL,
  agencyID        CPT-AgencyID             OPTIONAL,
  logOffDateTime  CPT-DateTime
}

```

Data Frame

<i>Name</i>	CCLogOnOperator
<i>Identifier</i>	cc 14
<i>Purpose</i>	Parameters which indicate and validate that an operator or supervisor logged onto a vehicle long-on device (e.g., MDT, Farebox, VCH).

Usage

DRAFT

Definition

```
SEQUENCE {
  employee          CPT-EmployeeID,
  job-category      CPT-EmployeeJobCategory   OPTIONAL,
  operational-status SCH-ServiceType          OPTIONAL,
  organization-ID   CPT-OrganizationalUnitID  OPTIONAL,
  agencyID          CPT-AgencyID             OPTIONAL,
  vehicle-base     CPTPTVehicleBase         OPTIONAL,
  block-id          CC-BlockIDShort           OPTIONAL,
  run-id            CC-RunIDShort             OPTIONAL,
  route-id          CC-RouteIDShort           OPTIONAL,
  activationDateTime CPT-DateTime
}
```

Data Frame

<i>Name</i>	CCManualAlarmDefinition
<i>Identifier</i>	cc 1018
<i>Purpose</i>	Define an alarm to be available to a vehicle operator for manual activation

Usage

DRAFT

Definition

```
SEQUENCE {  
  alarmID      CC-ManualAlarmID,  
  alarmText    CC-AlarmText  
}
```


Data Frame

<i>Name</i>	CCOffRouteTrack
<i>Identifier</i>	cc 1016
<i>Purpose</i>	Provide tracking information for an off route vehicle.

Usage

DRAFT

Definition

```
SEQUENCE {  
  location  SPGeoDynamicPoint,  
  time      CPT-DateTime  
}
```

Data Frame

<i>Name</i>	CCOperatingRecord
<i>Identifier</i>	Cc 1023
<i>Purpose</i>	Convey operating information logged by a PTV.

Usage

DRAFT

Definition

```

SEQUENCE {
vehicleID          CPT-VehicleID          OPTIONAL,
begin-datetime    CPT-DateTime,
end-datetime      CPT-DateTime,
operators         SEQUENCE (SIZE(1..100)) OF CCSignOnOff    OPTIONAL,
engine-cycles     SEQUENCE (SIZE(1..100)) OF CCEngineStartStop  OPTIONAL,
vehicle-parameters SEQUENCE (SIZE(1..100000)) OF OBParameterDumpEntry OPTIONAL,
work-history      SEQUENCE (SIZE(1..100000)) OF CCBlockWorkRecord  OPTIONAL
}

```

Data Frame

Name	CCOperatorAssignmentChange
Identifier	CC 1013
Purpose	Change a bound operator assignment that was previously provided, to a different operator.

Usage

1. The original-operator field may optionally be used to identify the originally assigned operator. The new-operator field must be used to identify the new operator.
2. The run or the specific-trips field must be present to define the run or sequence of trips for which the change is to be made.
3. The begin and end fields may be used to limit the scope in time for which the substitution is made.

Definition

```

SEQUENCE {
run          SCH-RunID          OPTIONAL,
specific-trips SEQUENCE (SIZE(1..50)) OF SCH-TripID  OPTIONAL,
original-operator CPT-OperatorID  OPTIONAL,
new-operator    CPT-OperatorID,
begin          CPT-DateTime      OPTIONAL,
end            CPT-DateTime      OPTIONAL,
} ( WITH COMPONENTS {..., run PRESENT}
WITH COMPONENTS {..., specific-trips PRESENT})

```

Data Frame

<i>Name</i>	CCParameterRateConfiguration
<i>Identifier</i>	cc 17
<i>Purpose</i>	The rate at which a logical device should report a specific parameter's value. The device may be a trip recorder, logic unit, or the source device.

Usage

DRAFT

Definition

```
SEQUENCE {  
  parameters SEQUENCE (SIZE(1..100)) OF OB-PID,  
  rate      OB-Rate  
}
```

Data Frame

<i>Name</i>	CCParameterReportRequest
<i>Identifier</i>	cc 18
<i>Purpose</i>	A request by the CC to the OB to reconfigure the reporting capabilities to report a specific parameter(s) at a specified rate (for over the air/real-time reporting).

Usage

DRAFT

Definition

```
SEQUENCE {  
  logical-device-address OB-MID,  
  parameter-rate-request SEQUENCE (SIZE(1..100)) OF CCParameterRateConfiguration  
}
```

Data Frame

<i>Name</i>	CCParameterThreshold
<i>Identifier</i>	cc 19
<i>Purpose</i>	The definition of the threshold in which a parameter value is constrained before it triggers an exception (alarm).

Usage

DRAFT

All OB-Parameters are of the type specified by OB-PID. The hi-value-alarm and low-value-alarm fields indicate the thresholds that, when exceeded will trigger an alarm. The hi-value-recover, and low-value-recover fields indicate the thresholds that allow the parameter to be declared back within range. Normally the range of the recovery values is smaller than the range of alarm values to prevent excessive numbers of alarms and recoveries when the parameter hovers near the alarm threshold value.

Definition

```
SEQUENCE {
parameter          OB-Parameter,
hi-value-alarm     OB-Parameter,
hi-value-recover   OB-Parameter,
lo-value-alarm     OB-Parameter,
lo-value-recover   OB-Parameter,
source-device      OB-MID          OPTIONAL
}
```

Data Frame

Name CCPatternDeltaTime

Identifier cc 20

Purpose The offset (early or late) from an expected trip time. This offset may be due to an expected delay or to a delay at a specified location (e.g., lane closed). May be used in a detour situation to adjust trip times.

Usage

DRAFT

Definition

```
SEQUENCE {
delta-time          CC-DeltaTime, --include point class or time point
location           LRMS.GeoLocation          OPTIONAL,
timepoint-id      SCH-TimepointID          OPTIONAL,
pattern-id        SCH-PatternID,
trips-affected    SEQUENCE (SIZE(1..100)) OF SCH-TripID  OPTIONAL, --if not included, then affects only trip at activation time
activation-time    CPT-ActivationTime,
deactivation-time  CPT-DeactivationTime      OPTIONAL,
footnote          CPT-Footnote              OPTIONAL --message to driver
}
```

Data Frame

<i>Name</i>	CCPollContents
<i>Identifier</i>	Cc 1021
<i>Purpose</i>	Convey data from the polling controller to the PTV associated with a poll.

Usage

The last-message field conveys the number of the last message wrapper received from the PTV, zero if none since slot was allocated.

Definition

SEQUENCE {		
last-message	CC-MsgCounter,	
polling-group	CC-PollingGroup,	
data-requested	CC-PollData,	
agency-data	CC-AgencyData	OPTIONAL
}		

Data Frame

<i>Name</i>	CCPollControl
<i>Identifier</i>	CC 1019
<i>Purpose</i>	Convey polling control information for a single PTV from the CAD/AVL System to the Polling Controller.

Usage

DRAFT

Definition

```
SEQUENCE {
  vehicle          CPT-VehicleID,
  group-id        CC-PollingGroup,
  data-requested  CC-PollData,
  agency-data     CC-AgencyData  OPTIONAL
}
```

Data Frame

<i>Name</i>	CCPollingGroupInit
<i>Identifier</i>	Cc 1029
<i>Purpose</i>	Initialize a polling group by assigning it a group number and IP address

Usage

DRAFT

Definition

```
SEQUENCE {  
  group      CC-PollingGroup,  
  ip-address CPT-IP-Address  
}
```

Data Frame

<i>Name</i>	CCPollingGroupUpdate
<i>Identifier</i>	Cc 1028
<i>Purpose</i>	Identify changes to polling groups used by the TCIP Polling Controller.

Usage Any group assignment, overrides previous assignments for that PTV. Assignment of group zero removes the PTV from all polling groups.

Definition

```
SEQUENCE {  
  vehicle    CPT-VehicleID,  
  group      CC-PollingGroup  
}
```

Data Frame

Name	CCPollResponseContents
Identifier	Cc 1020
Purpose	Convey operational data from the PTV to the CAD/AVL System via the polling controller

Usage The last-message field indicates the number of the last message wrapper received from the polling controller, zero if none received so far.

Definition

SEQUENCE {		
last-message	CC-MsgCounter,	
latitude	LRMS.Latitude,	
longitude	LRMS.Longitude,	
heading	SP-AngularDirection	OPTIONAL,
speed	OB-J1587-VelocityVectorSpeed	OPTIONAL,
statusMap	CC-PollResponseStatus,	
qLength	CC-MsgCounter,	
time	CPT-DateTime	OPTIONAL,
activeAlarms	SEQUENCE (SIZE(1..4)) OF CCAAlarm	OPTIONAL,
currentRoute	SCH-RouteID	OPTIONAL,
lastTimepoint	SCH-TimepointID	OPTIONAL,
lastStoppoint	CPT-StoppointID	OPTIONAL,
lastTimepointTime	SCH-TripTimePtTime	OPTIONAL,
lastTimepointOffSched	PI-OffSchedule	OPTIONAL,
currentPattern	SCH-PatternSegmentID	OPTIONAL,
currentSegment	SCH-PatternSegmentID	OPTIONAL,
passengerCount	OB-J1587-PassengerCounterPatronCount	OPTIONAL,
agencyData	CC-AgencyData	OPTIONAL
}		

Data Frame

<i>Name</i>	CCPTVAlarm
<i>Identifier</i>	Cc 1026
<i>Purpose</i>	Convey a health alarm concerning a PTV.

Usage

DRAFT

Definition

```
SEQUENCE {  
  vehicle      CPT-VehicleID,  
  alarm-info  CCAAlarm  
}
```

Data Frame

<i>Name</i>	CCPTVLocation
<i>Identifier</i>	Cc 1027
<i>Purpose</i>	Convey a PTV's current location.

Usage

DRAFT

Definition

```
SEQUENCE {  
  vehicle    CPT-VehicleID,  
  date-time  CPT-DateTime,  
  location   SPGeoDynamicPoint  
}
```

Data Frame

Name CCPTVTripData

Identifier cc 1000

Purpose Used in a CcPTVTrips message to convey information about a trip that the vehicle has been assigned to. Also used in ObNotifyTripStart message to notify onboard components about trip information at the start of a trip.

Usage

1. This data block provides the trip to be run in one of two ways: As a series of patterns or as a series of timepoint identifiers. If the patterns field is used, the vehicle must already have the associated pattern list identified by the pattern-version field which must be present, and the associated timepoints list identified by timepoint-version which must be present, and the timepoints field must be omitted. If the timepoints field is used, then the locations of the timepoints to be transited are provided, and the pattern-version and patterns fields must be omitted. 2. If the vehicle is to start or end its association with trip-id at a location other than the scheduled beginning or end of the trip, then the start-location, or end-location should reflect the beginning and/or end of the vehicle's association with the trip, rather than the trip's beginning or end. 3. If the operator is to change in the middle of the trip on the same PTV, the operator-ID2 field is used to reflect the second operator, and the operator-change field is included to reflect the location for the change. 4. Recommend avoiding the use of the event-list, operating-time type, trip-type, notes, and service type fields if it is operationally feasible to do so to conserve narrow band link capacity.

Definition

```
SEQUENCE {
operator-ID          CPT-OperatorID,
operator-ID2        CPT-OperatorID          OPTIONAL,
pattern-Version      SCH-TimetableVersionID  OPTIONAL,
timepoint-Version    SCH-TimetableVersionID  OPTIONAL,
patterns             SEQUENCE (SIZE(1..100)) OF SCH-PatternID  OPTIONAL,
start-Time           SCH-TripTimePtTime, --may not be a timept, but use same time format
end-Time             SCH-TripTimePtTime, --may not be a timept, but use same time format
start-Location       LRMS.GeoLocation,
end-Location         LRMS.GeoLocation,
timePoints           SEQUENCE (SIZE(1..10)) OF LRMS.GeoLocation  OPTIONAL,
timePoint-times      SEQUENCE (SIZE(1..10)) OF SCH-TripTimePtTime  OPTIONAL,
trip-ID              SCH-TripID,
operator-Change      LRMS.GeoLocation          OPTIONAL,
event-List           SEQUENCE (SIZE(1..5)) OF SCHEvent          OPTIONAL,
notes                SEQUENCE (SIZE(1..5)) OF SCHNoteInfo       OPTIONAL,
operating-Time-Type  SCH-OperatingTimeType    OPTIONAL,
trip-type            SCH-TripType              OPTIONAL,
service-type         SCH-ServiceType          OPTIONAL
}
```

Data Frame

<i>Name</i>	CCPullInReport
<i>Identifier</i>	Cc 1024
<i>Purpose</i>	Report a pull in event.

Usage

DRAFT

Definition

```
SEQUENCE {
vehicleID      CPT-VehicleID,
pullin-time    CPT-DateTime      OPTIONAL,
pullin-trip    SCH-TripID        OPTIONAL,
pullin-location LRMS.GeoLocation  OPTIONAL
}
```


Data Frame

<i>Name</i>	CCPullOutReport
<i>Identifier</i>	Cc 1025
<i>Purpose</i>	Report a pull out event.

Usage

DRAFT

Definition

```
SEQUENCE {
  vehicleID          CPT-VehicleID,
  pullout-time       CPT-DateTime   OPTIONAL,
  pullout-trip       SCH-TripID     OPTIONAL,
  pullout-location   LRMS.GeoLocation OPTIONAL
}
```

Data Frame

<i>Name</i>	CCRouteAdherenceEntry
<i>Identifier</i>	cc 24
<i>Purpose</i>	Define off route detection and reporting criteria. It records the frequency that a transit vehicle must report when it is off route (report-frequency). The off-route-distance is the (total) minimum distance the vehicle must be off route for this reporting rate take effect.

Usage

DRAFT

Definition

```
SEQUENCE {
  off-route-distance CC-OffRouteDistance,
  report-frequency  CC-ExceptionFrequencyReport  OPTIONAL
}
```

Data Frame

<i>Name</i>	CCRouteDeviationRecord
<i>Identifier</i>	cc 1009
<i>Purpose</i>	Provide historical information on a route deviation by a PTV

Usage

1. The begin-time, and end-time fields specify the interval of departure from the scheduled route. 2. The track field specifies a series of locations and times that the vehicle transited while off route. 3. The interval between track entries is governed by the field offRouteLogRates in the CcPTVAlarmLimits message.

Definition

```
SEQUENCE {
begin-time    CPT-DateTime,
end-time      CPT-DateTime,
run           SCH-RunID,
track         SEQUENCE (SIZE(1..15000)) OF CCOffRouteTrack
}
```

Data Frame

<i>Name</i>	CCSignOnOff
<i>Identifier</i>	cc 1014
<i>Purpose</i>	Record an operator sign on or sign off event.

Usage

1. The sign-on field is true if this represents a sign-on event, and false if this represents a sign-off event. 2. The run field is optional because a run might not be identifiable for all cases (e.g. wrong operators, no run assigned).

Definition

```
SEQUENCE {  
operator    CPT-OperatorID,  
sign-on    CPT-Boolean,  
time       CPT-DateTime,  
run        SCH-RunID    OPTIONAL  
}
```

Data Frame

Name	CCStopAnnunciationRecord
Identifier	cc 1006
Purpose	Provides stop point specific information to be used in announcing a bus stop.

Usage

1. Agencies may specify text-only, or audio-only announcements. 2. The stop-distance field is present only if this stop requires a customized announcement trigger distance in advance of the stop; otherwise the default distance provided in the CcStopAndDestInfo message is used to determine when the announcement should be triggered. 3. A CcStopAnnunciationRecord is stored until overwritten by another record with the same stop point identifier. 4. Other stop point information (e.g. stop point location) is provided using the Load Schedule dialog. 5. The audio format is defined in CcStopAndDestInfo message.

Definition

```
SEQUENCE {
  stop-id          CPT-StoppointID,
  stop-name-audio  PI-BinaryAudioData  OPTIONAL,
  stop-name-text   PI-PIDTakeText     OPTIONAL,
  stop-Distance    SP-DistanceInMeters OPTIONAL,
}
```

Data Frame

<i>Name</i>	CCTakeListDefinition
<i>Identifier</i>	cc 1004
<i>Purpose</i>	Define a take list element for use in filling in blanks in a canned message.

Usage

The takeListID identifies the list of takes to which the item belongs (a list might be the list of destination names another list would be a list of route names and so on). The takeID field identifies the item number within the list. The takeText field provides the content of the item. When Identifying an item for deletion from onboard storage, the takeText field is omitted.

Definition

```
SEQUENCE {  
  takeListID  CC-CannedMsgTakeListID,  
  takeID      CC-CannedMsgTakeID,  
  takeText    CPT-Footer           OPTIONAL  
}
```

Data Frame

<i>Name</i>	CCTimePointHistory
<i>Identifier</i>	cc 1012
<i>Purpose</i>	Provided a history of times that timepoints were encountered in a block of work.

Usage

DRAFT

Definition

```
SEQUENCE {  
  timepoint    SCH-TimepointID,  
  run          SCH-RunID,  
  scheduledTime SCH-TripTimePtTime,  
  actualTime   SCH-TripTimePtTime  
}
```

Data Frame

Name	CCVehicleAssignmentChange
Identifier	cc 1015
Purpose	Change a bound vehicle assignment that was previously provided to a different vehicle.

Usage

1. The original-vehicle field may optionally be used to identify the vehicle released from the assignment. The new-vehicle field must be used to identify the new vehicle. 2. The block or specific-trips field must be present to identify the run or sequence of trips for which the change is made. 3. The begin and end fields may be used to limit the scope in time for which the substitution is made.

Definition

```
SEQUENCE {
  block          SCH-BlockID          OPTIONAL,
  specific-trips SEQUENCE (SIZE(1..50)) OF SCH-TripID  OPTIONAL,
  original-operator CPT-OperatorID    OPTIONAL,
  new-operator    CPT-OperatorID,
  begin           CPT-DateTime        OPTIONAL,
  end             CPT-DateTime        OPTIONAL,
} ( WITH COMPONENTS {..., block PRESENT}
  WITH COMPONENTS {..., specific-trips PRESENT})
```


Data Frame

<i>Name</i>	CCVideoRecord
<i>Identifier</i>	Cc 1022
<i>Purpose</i>	Convey a digitized video image sequence from a video camera.

Usage

DRAFT

Definition

```

SEQUENCE {
  vehicleID          CPT-VehicleID          OPTIONAL,
  stoppointID       CPT-StoppointID        OPTIONAL,
  cameraNumber      CPT-GenericCounter,
  begin-datetime    CPT-DateTime,
  end-datetime      CPT-DateTime,
  video-images      SEQUENCE (SIZE(1..10000)) OF PI-BinaryVideoData
}
(WITH COMPONENTS {..., vehicleID PRESENT})
(WITH COMPONENTS {..., stoppointID PRESENT})

```

Message

<i>Name</i>	CcAcceptCallRequest
<i>Identifier</i>	Cc 2036
<i>Purpose</i>	Notify the VLU/MDT that an operator requested voice call is in effect.

Usage

DRAFT

Definition

```
SEQUENCE {  
  call-type-requested  
  call-type-actual  
  channel  
  CC-ResponseRequestType,  
  CC-RadioVoiceControl,  
  CPT-ChannelID  
}
```

OPTIONAL

Message

<i>Name</i>	CcAckManualAlarm
<i>Identifier</i>	Cc 2043
<i>Purpose</i>	Acknowledge a manually initiated alarm.

Usage

1. The alarm-id field identifies the type of the original alarm and the time field identifies the time of the original alarm to ensure that if multiple alarms are simultaneously active the correct alarm gets acknowledged.

Definition

```
SEQUENCE {  
  alarm-id          CC-ManualAlarmID,  
  alarm-time       CPT-DateTime  
}
```

Message

<i>Name</i>	CcAnnunciatorCallSetup
<i>Identifier</i>	Cc 2039
<i>Purpose</i>	Notify the annunciator to connect to a voice radio call.

Usage

DRAFT

Definition

```
SEQUENCE {  
  call-type    CC-RadioVoiceControl  
}
```

Message

<i>Name</i>	CcCallTermination
<i>Identifier</i>	Cc 2040
<i>Purpose</i>	Notify the annunciator to disconnect from a voice radio call.

Usage

DRAFT

Definition

```
SEQUENCE {  
  call-type    CC-RadioVoiceControl  
}
```

Message

Name	CcCancelDetour
Identifier	Cc 2027
Purpose	Notify the onboard equipment (Vehicle Logic Unit or Mobile Data Terminal) of a detour cancellation.

Usage

1. The end-time field is used to notify the equipment of an end time in advance of the event's occurrence. Lack of an end-time field implies the cancellation is immediate. 2. The detour-name must match the detour-name in the CcNotifyDetour message exactly.

Definition

```
SEQUENCE {  
  end-time    CPT-DateTime    OPTIONAL,  
  detourID    CC-DetourID  
}
```

Message

<i>Name</i>	CcCancelDetourAck
<i>Identifier</i>	CC 2028
<i>Purpose</i>	Acknowledge that a PTV has received a detour cancellation.

Usage

DRAFT

Definition

```
SEQUENCE {  
  detourID    CC-DetourID  
}
```

Message

Name	CcCannedMessageText
Identifier	Cc 2019
Purpose	Provide an load of canned message content definitions for use in sending canned messages between the VehicleLogicUnit or MobileDataTerminal (VLU/MDT) and the Computer Aided Dispatch (CAD) system.

Usage

DRAFT

Definition

```

SEQUENCE {
fileHeader          CPTLoadFileHeader,
canned-messages    SEQUENCE (SIZE(1..100)) OF CCCannedMsgDefinition OPTIONAL,
take-lists         SEQUENCE (SIZE(1..100)) OF CCTakeListDefinition    OPTIONAL,
delete-take-lists SEQUENCE (SIZE(1..100)) OF CCTakeListDefinition    OPTIONAL,
delete-msgs        SEQUENCE (SIZE(1..100)) OF CC-CannedMsgID        OPTIONAL
}

```


Message

Name	CcChangeAssignments
Identifier	Cc 2030
Purpose	Change previously delivered assignment(s) of operators or vehicles to work.

Usage

DRAFT

Definition

```

SEQUENCE {
  commandID      CPT-CommandID,
  time           CPT-DateTime, --time the change is sent
  operator-changes SEQUENCE (SIZE(1..1000)) OF CCOperatorAssignmentChange OPTIONAL,
  vehicle-changes SEQUENCE (SIZE(1..1000)) OF CCVehicleAssignmentChange OPTIONAL,
}
(WITH COMPONENTS {..., operator-changes PRESENT})
(WITH COMPONENTS {..., vehicle-changes PRESENT})

```

Message

Name	CcChangeAssignmentsAck
Identifier	Cc 2031
Purpose	Acknowledge receipt of operator or vehicle assignment changes.

Usage

The bad-changes field indicates that some commanded changes were invalid (e.g. specified a nonexistent trip, block or run). If bad-changes is set to true, than invalid operator or vehicle changes are included in either or both of the following two fields. If bad-changes is false, the following two fields must be absent.

Definition

```

SEQUENCE {
  commandID          CPT-CommandID,
  bad-changes        CPT-Boolean,
  bad-operator-changes SEQUENCE (SIZE(1..1000)) OF CCOperatorAssignmentChange OPTIONAL,
  bad-vehicle-changes SEQUENCE (SIZE(1..1000)) OF CCVehicleAssignmentChange OPTIONAL
}

```

Message

<i>Name</i>	CcDenyCallRequest
<i>Identifier</i>	Cc 2035
<i>Purpose</i>	Notify the VLU/MDT that an operator-requested voice call has been denied by the dispatcher.

Usage

DRAFT

Definition

```
SEQUENCE {  
  call-type    CC-ResponseRequestType  
}
```

Message

<i>Name</i>	CcDetourAck
<i>Identifier</i>	CC 2025
<i>Purpose</i>	Acknowledge the receipt of a detour by a PTV.

Usage

DRAFT

Definition

```
SEQUENCE {  
  detourID    CC-DetourID  
}
```

Message

Name CcDispatchCallEnd

Identifier Cc 2041

Purpose Notify a separate MDT that a dispatcher-initiated voice call is being disconnected.

Usage

DRAFT

Definition

```
SEQUENCE {  
  call-type    CC-RadioVoiceControl  
}
```

Message

<i>Name</i>	CcDispatchCallSetup
<i>Identifier</i>	Cc 2037
<i>Purpose</i>	Notify the VLU/MDT that a dispatcher-initiated voice call is being established.

Usage

DRAFT

Definition

```
SEQUENCE {  
  call-type    CC-RadioVoiceControl,  
  channel      CPT-ChannelID    OPTIONAL  
}
```

Message

Name	CcDispatchMessage
Identifier	Cc 2016
Purpose	Provide a canned or text message from the dispatch center to the vehicle.

Usage

Either a test message or a canned message can be included. If a canned message is used takes can be used to fill in the blanks to create parameterized displays. The "Load Canned Message Text" and "Load Canned Message Takes" dialogs are used to store the canned messages and take lists into the VLU/MDT.

Definition

```

SEQUENCE {
time          CPT-DateTime,
text-msg     CPT-Footnote          OPTIONAL,
canned-msg   CC-CannedMsgID       OPTIONAL,
takes        SEQUENCE (SIZE(1..100)) OF CC-CannedMsgTakeID  OPTIONAL
}

```

Message

Name	CcDispatchMessageAck
Identifier	Cc 2021
Purpose	Provide an acknowledgement to the CAD system that an operator saw a canned or text message from the dispatcher.

Usage

1. The positive-ack field is used to indicate that the operator generated a positive response. Not all implementations support a negative response capability. 2. The error field is only included if an error precluded delivery or the message. For example, an invalid canned message or take specification. The error field is always TRUE if present.

Definition

```

SEQUENCE {
  vehicle      CPT-VehicleID,
  time         CPT-DateTime,
  positive-Ack CPT-Boolean,
  error        CPT-Boolean   OPTIONAL
}

```


Message

Name	CcFleetHealthAlarm
Identifier	CC 2066
Purpose	Provide fleet health alarm information.

Usage

the vehicles field should only be included if it was present in the subscription request.

DRAFT

Definition

SEQUENCE {			
subscriptionInfo	CPTSubscriptionHeader,		
vehicles	SEQUENCE (SIZE(1..25000)) OF CPT-VehicleID	OPTIONAL,	
alarms	SEQUENCE (SIZE(1..25000)) OF CCPTVAlarm	OPTIONAL	
}			

Message

Name	CcFleetHealthAlarmSub
Identifier	CC 2065
Purpose	Request PTV fleet health information.

Usage

If the vehicles field is absent, all vehicles are requested.

Definition

```
SEQUENCE {
  subscriptionInfo CPTSubscriptionHeader,
  vehicles SEQUENCE (SIZE(1..25000)) OF CPT-VehicleID OPTIONAL
}
```

Message

<i>Name</i>	CcFleetLocation
<i>Identifier</i>	CC 2064
<i>Purpose</i>	Provide PTV fleet location information.

Usage

DRAFT

Definition

```
SEQUENCE {  
  subscriptionInfo  
  locations  
}  
CPTSubscriptionHeader,  
SEQUENCE (SIZE(1..25000)) OF CCPTVLocation
```

Message

Name	CcFleetLocationSub
Identifier	CC 2063
Purpose	Request PTV fleet location information.

Usage

If the vehicles field is absent, all vehicles are requested.

Definition

```
SEQUENCE {  
  subscriptionInfo CPTSubscriptionHeader,  
  vehicles SEQUENCE (SIZE(1..25000)) OF CPT-VehicleID OPTIONAL  
}
```

Message

Name	CcLocationReport
Identifier	CC 2000
Purpose	Provide vehicle location and other information from the vehicle to the control center.

Usage

1. Note that this message does not replicate the subscription header data block from the CcLocationReportSub message. This is because the CcLocationReport is expected to be transmitted across narrow band links very frequently, and the message size needs to be kept to a minimum. 2. Inclusion or exclusion of the current trip identifier, and the last timepoint number is a local agency decision. 3. Manufacturer data is for vendor or agency-specific uses. 4. PTVehicleID is intended for use with networks that do not provide an identifier for the source vehicle to the control center with the delivered message, when used with networks that provide message source identification this field can be omitted.

Definition

```
SEQUENCE {
  request-id          CPT-RequestIdentifier, -- from subscription request,
  vehicleID          CPT-VehicleID          OPTIONAL,
  status-info        CC-VehicleStatusBitmap,
  trip-num           SCH-TripID             OPTIONAL,
  last-timepoint     SCH-TimepointID       OPTIONAL,
  time-reported      CPT-DateTime,
  locationAndSPeed   SPGeoDynamicPoint,
  manufacturer-data  CC-ManufacturerData  OPTIONAL
}
```

Message

<i>Name</i>	CcLocationReportSub
<i>Identifier</i>	CC 2001
<i>Purpose</i>	Request a vehicle to begin location reporting to the control center.

Usage

DRAFT

Definition

```
SEQUENCE {  
  subscriptionHeader CPTSubscriptionHeader  
}
```

Message

<i>Name</i>	CcManualAlarm
<i>Identifier</i>	Cc 2042
<i>Purpose</i>	Notify the CAD/AVL system of a manually initiated alarm.

Usage

DRAFT

Definition

```
SEQUENCE {  
  vehicle-id      CPT-VehicleID,  
  alarm-id       CC-ManualAlarmID,  
  location        SPGeoDynamicPoint,  
  alarm-time     CPT-DateTime  
}
```

Message

Name	CcNotifyDetour
Identifier	CC 2026
Purpose	Notify the onboard equipment (VLU/MDT) of a detour.

Usage

DRAFT

Definition

```
SEQUENCE {
  start-time CPT-DateTime,
  end-time   CPT-DateTime   OPTIONAL,
  detourID   CC-DetourID,
  detour-name CPT-Footnote,
  impacts    SEQUENCE (SIZE(1..100)) OF CCDetourRecord
  detourType IM-DetourType   OPTIONAL
}
```


Message

<i>Name</i>	CcNotifyIncomingCall
<i>Identifier</i>	Cc 2038
<i>Purpose</i>	Notify a separate MDT that a dispatcher initiated voice call is being set up.

Usage

DRAFT

Definition

```
SEQUENCE {  
  call-type    CC-RadioVoiceControl  
}
```

Message

Name	CcOnboardConfigurationData
Identifier	Cc 2022
Purpose	Provide manufacturer-defined configuration data for an onboard computer.

Usage

The software-description field identifies the software component for which configuration information is being provided. If there are 2,000,000 octets or less of configuration information, there will be only one instance of CC-ConfigurationData. If there are more than 2,000,000 octets to convey, additional data elements are included and concatenated to create the configuration data file.

Definition

```
SEQUENCE {
file-header          CPTLoadFileHeader,
software-description OBSWComponent,
configuration        SEQUENCE (SIZE(1..10)) OF CC-ConfigurationData
}
```

Message

Name	CcOnboardSoftware
Identifier	Cc 2020
Purpose	Convey the executable software for an onboard device.

Usage

DRAFT

It there are 2,000,000 octets or less there will be only one instance of CC-ExecutableSoftware, If there are more than 2,000,000 octets to be conveyed, additional data elements in the sequence are concatenated as required to achieve the necessary executable software file size.

Definition

```

SEQUENCE {
file-header          CPTLoadFileHeader,
software-description OBSWComponent,
executable           SEQUENCE (SIZE(1..10)) OF CC-ExecutableSoftware
}

```

Message

Name	CcOperatingData
Identifier	Cc 2055
Purpose	Provide PTV operating data from a data store to an authorized subscriber.

Usage

DRAFT

Definition

```
SEQUENCE {
  subscription-info CPTSubscriptionHeader,
  vehicleIDs SEQUENCE (SIZE(1..25000)) OF CPT-VehicleID,
  begin-date CPT-DateTime,
  end-date CPT-DateTime,
  operating-datasets SEQUENCE (SIZE(1..500000)) OF CCOperatingRecord
}
```

Message

<i>Name</i>	CcOperatingDataSub
<i>Identifier</i>	Cc 2056
<i>Purpose</i>	Query a data store for operating data previously unloaded from PTV(s).

Usage

DRAFT

Definition

```
SEQUENCE {  
  subscription-info CPTSubscriptionHeader,  
  vehicleIDs       SEQUENCE (SIZE(1..25000)) OF CPT-VehicleID,  
  begin-date       CPT-DateTime,  
  end-date         CPT-DateTime  
}
```

Message

<i>Name</i>	CcOperatorCallRequest
<i>Identifier</i>	Cc 2034
<i>Purpose</i>	Notify the CAD/AVL system that a vehicle operator has requested a voice call.

Usage

DRAFT

Definition

```
SEQUENCE {  
  vehicleID    CPT-VehicleID,  
  call-type    CC-ResponseRequestType,  
}
```

Message

Name	CcOperatorMessage
Identifier	Cc 2014
Purpose	Provide a canned or text message from the vehicle operator to the dispatch center.

Usage

DR A E T

Either a text message or a canned message can be included. If a canned message is used, takes can be used to fill in the blanks to create parameterized messages. The "LoadCannedMessagesText" and "LoadCannedMessageTakes" dialogs are used to store the canned messages and takelists into the VLU/MDT.

Definition

```
SEQUENCE {
vehicle      CPT-VehicleID,
time         CPT-DateTime,
text-msg     CPT-Footnote                               OPTIONAL,
canned-msg  CC-CannedMsgID                             OPTIONAL,
takes       SEQUENCE (SIZE(1..100)) OF CC-CannedMsgTakeID  OPTIONAL
}
```

Message

Name	CcOperatorMessageAck
Identifier	Cc 2015
Purpose	Provide an acknowledgement to a vehicle operator initiated canned or text message.

Usage

The error field indicates that the message could not be delivered due to an error (e.g. unknown canned msg). The error field is always TRUE if present.

Definition

```
SEQUENCE {  
  vehicle  
  time          CPT-VehicleID,  
  error         CPT-DateTime,  
                CPT-Boolean      OPTIONAL  
}
```


Message

<i>Name</i>	CcOperatorSignOff
<i>Identifier</i>	CC 2007
<i>Purpose</i>	Notify the control center that an operator signed off from a vehicle.

Usage

DRAFT

Definition

```
SEQUENCE {  
  vehicle          CPT-VehicleID,  
  logoff-Info     CCLogOffOperator,  
  block           SCH-BlockID, --current or most recent block,  
  run             SCH-RunID --current or most recent run  
}
```

Message

Name	CcOperatorSignOffAck
Identifier	CC 2006
Purpose	Acknowledge receipt of an operator sign off message from a vehicle.

Usage

The contact-dispatch field is provided to support an option to trigger a contact dispatch response accompanying the acknowledgement. Agencies may elect whether to use this feature.

Definition

```
SEQUENCE {  
  vehicle      CPT-VehicleID,  
  operator     CPT-OperatorID,  
  contact-dispatch CPT-Boolean      OPTIONAL  
}
```

Message

Name CcOperatorSignOn

Identifier Cc 2004

Purpose Notify the control center that an operator has signed onto a vehicle.

Usage

DRAFT

Definition

```
SEQUENCE {  
  vehicle      CPT-VehicleID,  
  logon-info   CCLogOnOperator  
}
```

Message

<i>Name</i>	CcOperatorSignOnAck
<i>Identifier</i>	Cc 2005
<i>Purpose</i>	Acknowledge receipt of an operator sign on message from a vehicle.

Usage

If the login-error field is present and True it is intended to trigger vendor/locally defined recovery procedures from an invalid login.

Definition

```
SEQUENCE {  
  vehicle      CPT-VehicleID,  
  operator     CPT-OperatorID,  
  logon-error  CPT-Boolean   OPTIONAL  
}
```

Message

<i>Name</i>	CcPassengerAlarm
<i>Identifier</i>	Cc 2044
<i>Purpose</i>	Report to the CAD/AVL System that a passenger on a PTV activated an alarm.

Usage

DRAFT

Definition

```
SEQUENCE {  
  vehicle-id      CPT-VehicleID,  
  location        SPGeoDynamicPoint,  
  time            CPT-DateTime  
}
```

Message

<i>Name</i>	CcPassengerAlarmAck
<i>Identifier</i>	Cc 2045
<i>Purpose</i>	Acknowledge a passenger alarm.

Usage

DRAFT

Definition

```
SEQUENCE {  
  alarm-time CPT-DateTime  
}
```

Message

Name	CcPollParameters
Identifier	CC 2047
Purpose	Provide polling parameters to the TCIP Polling Controller from the CAD/AVL System.

Usage Normally the global configuration information is sent initially when the subscription is established and not repeated.

Definition

```

SEQUENCE {
  subscriptionInfo          CPTSubscriptionHeader,-- global configuration info for controller
  nAgencyDataMaxTries     CPT-GenericCounter          OPTIONAL,
  nAllocRetry              CPT-GenericCounter          OPTIONAL,
  nBitRate                 CPT-GenericCounter          OPTIONAL,
  nBitSync                 CPT-GenericCounter          OPTIONAL,
  nCtlPTVQ                 CPT-GenericCounter          OPTIONAL,
  nMaxBadPoll              CPT-GenericCounter          OPTIONAL,
  nMaxMsgLengthToPTV      CPT-GenericCounter          OPTIONAL,
  nMaxMsgLengthFromPTV    CPT-GenericCounter          OPTIONAL,
  nMsgMaxTries             CPT-GenericCounter          OPTIONAL,
  tRadioTime               CPT-MillisecondDuration     OPTIONAL,
  tFastPollInterval       CPT-TimeInterval            OPTIONAL,
  tPriorityPoll            CPT-TimeInterval            OPTIONAL,
  tSessionOnly            CPT-TimeInterval            OPTIONAL,
  tSessionPollStart       CPT-TimeInterval            OPTIONAL,
  tSartup                  CPT-TimeInterval            OPTIONAL,
  tSessionPoll            CPT-TimeInterval            OPTIONAL,
  init-polling-groups      SEQUENCE (SIZE(1..255)) OF CCPollingGroupInit  OPTIONAL,
  add-group-PTVs           SEQUENCE (SIZE(1..200)) OF CCPollingGroupUpdate  OPTIONAL,
  --PTV Specific parameters
  ptv-poll-datasets        SEQUENCE (SIZE(1..3000)) OF CCPollControl        OPTIONAL
}

```

Message

Name CcPollParametersSub

Identifier CC 2046

Purpose Subscribe to PTV Polling parameters from the CAD/AVL System.

Usage

DRAFT

Definition

```
SEQUENCE {  
  subscriptionInfo CPTSubscriptionHeader  
}
```


Message

<i>Name</i>	CcPollResults
<i>Identifier</i>	Cc 2048
<i>Purpose</i>	Convey the operational information obtained by polling a PTV to the CAD/AVL System from the TCIP Polling Controller.

Usage

DRAFT

Definition

```
SEQUENCE {  
  vehicle      CPT-VehicleID,  
  date-time    CPT-DateTime,  
  ptv-info     CCPollResponseContents  
}
```

Message

Name	CcPTVAdherence
Identifier	Cc 2033
Purpose	Provide route/schedule adherence status information

Usage

1. The reason field provides the reason the message was generated. In the case of an initial report, when the vehicle has not yet started its run, the reason should be initialNoException. 2. If the vehicle is on a run and not on time as of the last timepoint or is recovering to on time status, the timepoint and actualTime fields are included to specify the vehicle's time at the most recently passed timepoint. 3. If the vehicle is off route, the lastOnRoute field is included to specify the location where the vehicle left its route.

Definition

```
SEQUENCE {
subscriptionInfo    CPTSubscriptionHeader,
reason              CC-AdherenceMsgType,
timepoint           SCH-TimepointID      OPTIONAL,
actualTime          SCH-TripTimePtTime   OPTIONAL,
lastOnRoute         LRMS.GeoLocation     OPTIONAL,
currentLocation     LRMS.GeoLocation,
currentTime         CPT-DateTime,
scheduleDeviation  PI-OffSchedule
}
```

Message

Name	CcPTVAdherenceSub
Identifier	Cc 2032
Purpose	Request a subscription to vehicle route/schedule adherence monitoring.

Usage

1. The custom-route-params field is present only if the subscriber wants to override the route adherence parameters previously provided in the "Load PTV Alarm Limits" dialog 2. The custom-sched-params field is present only if the subscriber wants to override the schedule adherence parameters previously provided in the "Load PTV Alarm Limits" dialog.

Definition

```
SEQUENCE {
  subscriptionInfo          CPTSubscriptionHeader,
  custom-route-params      CCActivateRouteAdherence OPTIONAL,
  custom-sched-params      CCActivateScheduleAdherence OPTIONAL
}
```

Message

Name	CcPTVAlarmLimits
Identifier	Cc 2024
Purpose	Provide alarm thresholds and related configuration information from the fixed component (data repository, CAD/AVL system, or laptop computer), to the onboard component (Vehicle Logic Unit or Mobile Data Terminal).

Usage

DRAFT

1. This message establishes default alarm thresholds for onboard parameters, however an individual alarm subscriber can customize these thresholds using the CcPTVehicleAlarmSub message. 2. Parameters which are not included in the thresholds field, maintain their existing threshold values. Thus the fixed end has the option to leave the parameter thresholds unchanged by omitting this field. 3. Parameter values are logged for later unloading, via the "Unload PTVPerformanceData" dialog, at rates specified in the parameterLogRates field. Parameters not listed in this field are not logged onboard for later unloads. 4. The offRouteLogRates field governs the off route determination, and off route tracking data collection rates for logging purposes. Logged data is provided to the fixed component via the "Unload PTVPerformanceData" dialog. 5. The offRouteReportRates field governs route adherence determination and reporting for real-time use in reporting to the dispatcher via the "Subscribe PTV-AVL" dialog. 6. The offScheduleReportRates field governs schedule adherence and reporting for real time use in reporting to the dispatcher via the "Subscribe PTV-AVL" dialog.

Definition

```

SEQUENCE {
fileHeader          CPTLoadFileHeader,
thresholds          SEQUENCE (SIZE(1..100)) OF CCPParameterThreshold      OPTIONAL,
parameterLogRates  SEQUENCE (SIZE(1..100)) OF CCPParameterReportRequestOPTIONAL,
offRouteLogRates   CCActivateRouteAdherence,
offRouteReportRates CCActivateRouteAdherence                            OPTIONAL,
offScheduleReportRates CCActivateScheduleAdherence                    OPTIONAL,
manualAlarms       SEQUENCE (SIZE(1..100)) OF CCManualAlarmDefinition    OPTIONAL,
enableCode         CPT-GenericCounter                                  OPTIONAL,
disableCode        CPT-GenericCounter                                  OPTIONAL
}

```

Message

Name	CcPTVehicleAlarm
Identifier	Cc 2018
Purpose	Notify a subscriber of any vehicle alarms in effect when an alarm subscription is initiated, and of any subsequent alarms or alarm recoveries.

Usage

The only case where this message would be sent with the alarms field absent, is in response to a CcPTVehicleAlarmSub message when no alarms are active.

Definition

```
SEQUENCE {
  subscriptionInfo
  alarms
  CPTSubscriptionHeader,
  SEQUENCE (SIZE(1..20)) OF CCAAlarm    OPTIONAL
}
```

Message

Name	CcPTVehicleAlarmSub
Identifier	Cc 2017
Purpose	Request a subscription to vehicle health alarms.

Usage

The custom-limits field is only used if the subscriber wants to obtain alarms using thresholds other than the defaults specified using the dialog. "Load PTV Alarm Limits".

Definition

```
SEQUENCE {
  subscriptionInfo          CPTSubscriptionHeader,
  custom-limits             SEQUENCE (SIZE(1..100)) OF CCParameterThreshold  OPTIONAL
}
```

Message

<i>Name</i>	CcPTVehicleParameter
<i>Identifier</i>	Cc 2013
<i>Purpose</i>	Provide vehicle parameter information to a subscriber.

Usage

DRAFT

Definition

```
SEQUENCE {  
  subscriptionInfo  
  rate  
  time  
  parameters  
}
```

CPTSubscriptionHeader,
CPT-TimeInterval,
CPT-DateTime,
SEQUENCE (SIZE(1..100)) OF OBParameterDumpEntry

Message

Name	CcPTVehicleParameterSub
Identifier	Cc 2012
Purpose	Request a subscription to specified vehicle parameters.

Usage

Recommend that reporting rates less than 60 seconds not be used.

Definition

```
SEQUENCE {  
  subscriptionInfo  
  rate  
  parameters  
}  
CPTSubscriptionHeader,  
CPT-TimeInterval,  
SEQUENCE (SIZE(1..100)) OF OB-PID
```


Message

Name	CcPTVNotReady
Identifier	CC 2067
Purpose	Report that a PTV assigned for service is not service-ready.

Usage

DRAFT

Definition

```
SEQUENCE {  
  vehicleID      CPT-VehicleID,  
  employeeID     CPT-EmployeeID, --who determined PTV not ready  
  time           CPT-DateTime, --when employee reported problem  
  reason         IM-IncidentSubtype  
}
```

Message

Name	CCPTVNotReadyAck
Identifier	CC 2068
Purpose	Acknowledge a CcPTVNotReady message.

Usage

DRAFT

Definition

```
SEQUENCE {
  vehicleID          CPT-VehicleID,
  employeeID         CPT-EmployeeID, --who determined PTV not ready
  time               CPT-DateTime, --when employee reported problem
  reason             IM-IncidentSubtype
  time-acknowledged CPT-DateTime,
  ack-employeeID    CPT-EmployeeID
}
```

Message

Name CcPTVPerformanceData

Identifier Cc 2029

Purpose Provide vehicle performance information from an onboard component (usually the Vehicle Logic Unit or Mobile Data Terminal) and a fixed component which may be the CAD/AVL system, or a data repository.

Usage

1. The fileHeader field defines the applicable interval for which data is provided. 2. The operators field records any operator sign on or sign off events occurring during the interval, and is omitted if no such events occurred. 3. The engine-cycles field records any engine stop or start events occurring during the interval, and is omitted if no such events occurred. 4. The vehicle-parameters field records any parameters specified for batch reporting in the LoadPTVAlarmLimits dialog. The field is omitted if there are no parameters to report. 5. The work-history field describes the work done by the vehicle. If the vehicle did no work the field is omitted. This field has an entry for each block of work performed.

Definition

```
SEQUENCE {
fileHeader          CPTUnloadFileHeader,
vehicleID           CPT-VehicleID,
operators           SEQUENCE (SIZE(1..100)) OF CCSignOnOff          OPTIONAL,
engine-cycles      SEQUENCE (SIZE(1..100)) OF CCEngineStartStop    OPTIONAL,
vehicle-parameters SEQUENCE (SIZE(1..100000)) OF OBParameterDumpEntry OPTIONAL,
work-history       SEQUENCE (SIZE(1..100000)) OF CCBlockWorkRecord  OPTIONAL
}
```

Message

Name	CcPTVTripResponse
Identifier	CC 2003
Purpose	Provide an acknowledgement from the PTV to the Control Center of a CcPTVTrips message. This message may indicate that the trips were or were not accepted successfully.

Usage

1. Error code 058-message reference invalid should be used if the CcPTVTrips message refers to a pattern version or a timepoint version which is not on hand.

Definition

```

SEQUENCE {
  command-ID          CPT-CommandID, --copy from CCPTVTrips message
  vehicle-ID          CPT-VehicleID,
  command-Accepted    CPT-Boolean --true if CCPTVTrips message was valid
  error-Code          CPT-ErrorCode                               OPTIONAL
}

```

Message

Name	CcPTVTrips
Identifier	CC 2002
Purpose	Provide trip information to a single PTV, usually over a narrowband link.

Usage

1. This message is not intended to convey multiple days of assignment information, however it does support assignments that start before midnight or end after midnight.
2. If a bus is to service multiple routes, multiple instances of this message are required.

Definition

```

SEQUENCE {
command-ID      CPT-CommandID,
vehicle-ID      CPT-VehicleID,
pullout-Time    SCH-PullOutTime,
pullin-Time     SCH-PullInTime,
route           SCH-RouteID,
route-Designator SCH-RouteDesignator          OPTIONAL,
route-Direction SCH-RouteDirectionName,
date            CPT-ActivationDate,
trips           SEQUENCE (SIZE(1..3)) OF CCPTVTripData,
notes          SEQUENCE (SIZE(1..5)) OF SCHNoteInfo  OPTIONAL
}

```

Message

Name	CcRemotePTVDisable
Identifier	Cc 2048
Purpose	Command a PTV to be disabled as a result of a security event or other incident.

Usage

DRAFT

Definition

```
SEQUENCE {  
  commandID      CPT-CommandID,  
  vehicleID      CPT-VehicleID,  
  time           CPT-DateTime,  
  disable-code   CPT-GenericCounter,  
  verify-command CPT-Boolean -- always true  
}
```

Message

<i>Name</i>	CcRemotePTVDisableAck
<i>Identifier</i>	Cc 2049
<i>Purpose</i>	Notify the controller of the result of a PTV disable command.

Usage

DRAFT

Definition

```
SEQUENCE {  
  commandID    CPT-CommandID,  
  vehicleID    CPT-VehicleID,  
  time         CPT-DateTime,  
  vehicleDisabled CPT-Boolean  
}
```

Message

Name	CcRemotePTVEnable
Identifier	Cc 2050
Purpose	Command PTV to be reenabled after a previous disable command.

Usage

DRAFT

Definition

```
SEQUENCE {  
  commandID      CPT-CommandID,  
  vehicleID      CPT-VehicleID,  
  time           CPT-DateTime,  
  enable-code    CPT-GenericCounter,  
  verify-command CPT-Boolean -- always true  
}
```


Message

<i>Name</i>	CcRemotePTVEnableAck
<i>Identifier</i>	Cc 2051
<i>Purpose</i>	Notify the fixed controller and PTVOPR of the result of a PTV enable command.

Usage

DRAFT

Definition

```
SEQUENCE {  
  commandID    CPT-CommandID,  
  vehicleID    CPT-VehicleID,  
  time         CPT-DateTime,  
  vehicleEnabled CPT-Boolean  
}
```

Message

<i>Name</i>	CcReportPullIns
<i>Identifier</i>	CC 2059
<i>Purpose</i>	Notify a business system that one or more PTVs pulled in after service operations.

Usage

DRAFT

Definition

```
SEQUENCE {  
  report-employeeID CPT-EmployeeID, --show made the report  
  report-time CPT-DateTime, --when the report was made  
  pull-ins SEQUENCE (SIZE(1..100)) OF CCPullInReport  
}
```

Message

<i>Name</i>	CcReportPullInsAck
<i>Identifier</i>	CC 2060
<i>Purpose</i>	Acknowledge reported pull ins.

Usage

DRAFT

Definition

SEQUENCE {	
report-employeeID	CPT-EmployeeID,
report-time	CPT-DateTime,
ack-employeeID	CPT-EmployeeID,
ack-time	CPT-DateTime
}	

Message

Name	CcReportPullOuts
Identifier	CC 2061
Purpose	Notify a business system that one or more PTVs pulled out for service operations.

Usage

DRAFT

Definition

SEQUENCE {	
report-employeeID	CPT-EmployeeID,
report-time	CPT-DateTime,
pull-outs	SEQUENCE (SIZE(1..100)) OF CCPullOutReport
}	

Message

<i>Name</i>	CcReportPullOutsAck
<i>Identifier</i>	CC 2062
<i>Purpose</i>	Acknowledge reported pull outs.

Usage

DRAFT

Definition

SEQUENCE {	
report-employeeID	CPT-EmployeeID,
report-time	CPT-DateTime,
ack-employeeID	CPT-EmployeeID,
ack-time	CPT-DateTime
}	

Message

Name	CcStopAndDestInfo
Identifier	Cc 2023
Purpose	Provide information to the onboard annunciation system to allow the destination sign to be updated, and for audio and visual stop announcements to be made.

Usage

DRAFT

1. The destination field specifies destination messages that can later be displayed on the destination sign(s). These records are overwritten if another record with the same destinationID is received. Otherwise they remain stored in the annunciation system. Consequently this field is not required when there are no destination messages to add or alter. 2. The destinationSignPlan field defines what destination sign content will be displayed during what portions of what trip(s). This structure is intended to allow up to 4 destination sign messages to be scrolled/alternated during a trip segment. 3. The audioFormat field identifies the format to be used in audio files conveyed with this message. If audio is not supported by the onboard equipment, this field is omitted. 4. The defaultStopDistance field governs the distance within which a bus must approach a scheduled stop to trigger an automated announcement for that stop. 5. The beforeStopAudio and beforeStopText fields provide announcement content to precede the name of the announced stop (e.g. "The next stop is..."). If the stop names are to be announced without preamble, this field is omitted. 6. The afterStopAudio and afterStopText fields provide announcement text to follow the stop name similar to beforeStopAudio and beforeStopText. 7. The stopNames field provides the audio and/or text names of the bus stops for use in announcing the stops.

Definition

```
SEQUENCE {
fileHeader          CPTLoadFileHeader,
destinations        SEQUENCE (SIZE(1..100)) OF CcDestinationSignMessage  OPTIONAL,
destinationSignPlan SEQUENCE (SIZE(1..100)) OF CcDestinationSignRule,
audioFormat         PI-AudioFormat                                     OPTIONAL,
defaultStopDistance SP-DistanceInMeters,
beforeStopAudio     PI-BinaryAudioData                               OPTIONAL,
beforeStopText      PI-DMSMessage                                    OPTIONAL,
afterStopAudio      PI-BinaryAudioData                               OPTIONAL,
afterStopText       PI-DMSMessage                                    OPTIONAL,
stopNames           SEQUENCE (SIZE(1..25000)) OF CcStopAnnunciationRecord OPTIONAL
}
```

Message

<i>Name</i>	CcTravelerAlarm
<i>Identifier</i>	Cc 2053
<i>Purpose</i>	Report to the CAD/AVL System that a traveler in a PTSF activated an alarm.

Usage

DRAFT

Definition

```
SEQUENCE {  
  stoppointID CPT-StoppointID,  
  time        CPT-DateTime  
}
```

Message

<i>Name</i>	CcTravelerAlarmAck
<i>Identifier</i>	Cc 2052
<i>Purpose</i>	Acknowledge a traveler alarm.

Usage

DRAFT

Definition

```
SEQUENCE {  
  alarm-time CPT-DateTime  
}
```


Message

Name	CcUnloadImages
Identifier	Cc 2054
Purpose	Move video camera images from a PTV or PTSF to a data store.

Usage

DRAFT

Definition

```

SEQUENCE {
fileHeader      CPTUnloadFileHeader,
vehicleID       CPT-VehicleID           OPTIONAL,
stoppointID    CPT-StoppointID        OPTIONAL,
field-address   CPT-IP-Address         OPTIONAL,
field-port     CPT-UDP-TCP-PortNumber  OPTIONAL,
video-datasets SEQUENCE (SIZE(1..1000)) OF CCVideoRecord
}

```

Message

Name	CcVehicleShutdownAck
Identifier	Cc 2009
Purpose	Acknowledge the CcVehicleShutdownReport message.

Usage

DRAFT

Definition

```
SEQUENCE {  
  vehicle-id          CPT-VehicleID,  
  display-message    OB-TextMessage  OPTIONAL  
}
```

Message

Name	CcVehicleShutdownReport
Identifier	Cc 2008
Purpose	Provide a notification from the Vehicle Logic Unit or Mobile Data Terminal to the Computer Aided Dispatch system that the vehicle's engine has been shutdown.

Usage

The open-alarms field is intended as an optional mechanism to provide the current values for vehicle parameters that remained outside of their allowed range when the vehicle was shut off.

Definition

```
SEQUENCE {
  vehicle-id      CPT-VehicleID,
  date-time      CPT-DateTime,
  open-alarms    SEQUENCE (SIZE(1..100)) OF OBParameterDumpEntry  OPTIONAL
}
```

Message

Name	CcVehicleStartupAck
Identifier	Cc 2010
Purpose	Acknowledge the CcVehicleStartupReport message

Usage

The display-message field optionally conveys a text message to be displayed on the operator's display.

Definition

```
SEQUENCE {  
  vehicle-id          CPT-VehicleID,  
  display-message     OB-TextMessage OPTIONAL  
}
```

Message

Name CcVehicleStartupReport

Identifier Cc 2011

Purpose Provide a notification from the Vehicle Logic Unit or Mobile Data Terminal to the Computer Aided Dispatch system that the vehicle's engine or the computer(s) on the PTV have been started.

Usage

If the computers are started, send the report, and subsequently the engine start is detected, a second report is generated.

Definition

```
SEQUENCE {
  vehicle-id          CPT-VehicleID,
  date-time          CPT-DateTime,
  open-alarms        SEQUENCE (SIZE(1..100)) OF OBParameterDumpEntry  OPTIONAL,
  engine-running     CPT-Boolean
}
```

Message

Name	CcVideoFeed
Identifier	CC 2058
Purpose	Provide a frame of a video feed from one or more video cameras.

Usage

DRAFT

Definition

SEQUENCE{		
subscriptionInfo	CPTSubscriptionHeader,	
cameras	SEQUENCE (SIZE(1..5))OF CPT-GenericCounter	OPTIONAL,
begin	CPT-DateTime	OPTIONAL --default to immediate,
format	PI-GraphicFormat,	
images	SEQUENCE (SIZE(1..5))OF PI-BinaryVideoData	
}		

Message

Name	CcVideoFeedSub
Identifier	CC 2057
Purpose	Request one or more video feeds from a security camera.

Usage The cameras field is optional if the publisher has a single camera.

DRAFT

Definition

```

SEQUENCE{
subscriptionInfo CPTSubscriptionHeader,
cameras SEQUENCE (SIZE(1..5)) OF CPT-GenericCounter OPTIONAL,
begin CPT-DateTime OPTIONAL --default to immediate
}

```

Message

Name	CcVideoImages
Identifier	Cc 2057
Purpose	Provide video images from a data store to an authorized subscriber.

Usage

DRAFT

Definition

```

SEQUENCE {
subscription-info    CPTSubscriptionHeader,
vehicleIDs           SEQUENCE (SIZE(1..25000)) OF CPT-VehicleID    OPTIONAL,
stoppointIDs        SEQUENCE (SIZE(1..25000)) OF CPT-StoppointID  OPTIONAL,
begin-datetime       CPT-DateTime,
end-datetime         CPT-DateTime,
video-datasets       SEQUENCE (SIZE(1..1000000)) OF CCVideoRecord
}

```


Message

Name	CcVideoImagesSub
Identifier	Cc 2058
Purpose	Query for video images from a PTV or PTSF previously unloaded to a data store.

Usage

DRAFT

Definition

SEQUENCE {		
subscription-info	CPTSubscriptionHeader,	
vehicleIDs	SEQUENCE (SIZE(1..25000)) OF CPT-VehicleID	OPTIONAL,
stoppointIDs	SEQUENCE (SIZE(1..25000)) OF CPT-StoppointID	OPTIONAL,
begin-datetime	CPT-DateTime,	
end-datetime	CPT-DateTime	
}		

Subscribe PTV Health Alarms**TCIP Dialog Definition Page 1**

Dialog Name: Subscribe PTV Health Alarms

Business Area: CC

Dialog Pattern: Subscription-Event

Purpose: Provide the capability for a Computer Aided Dispatch (CAD) or Maintenance System to subscribe to exception-based health information from a vehicle.

Assumptions:

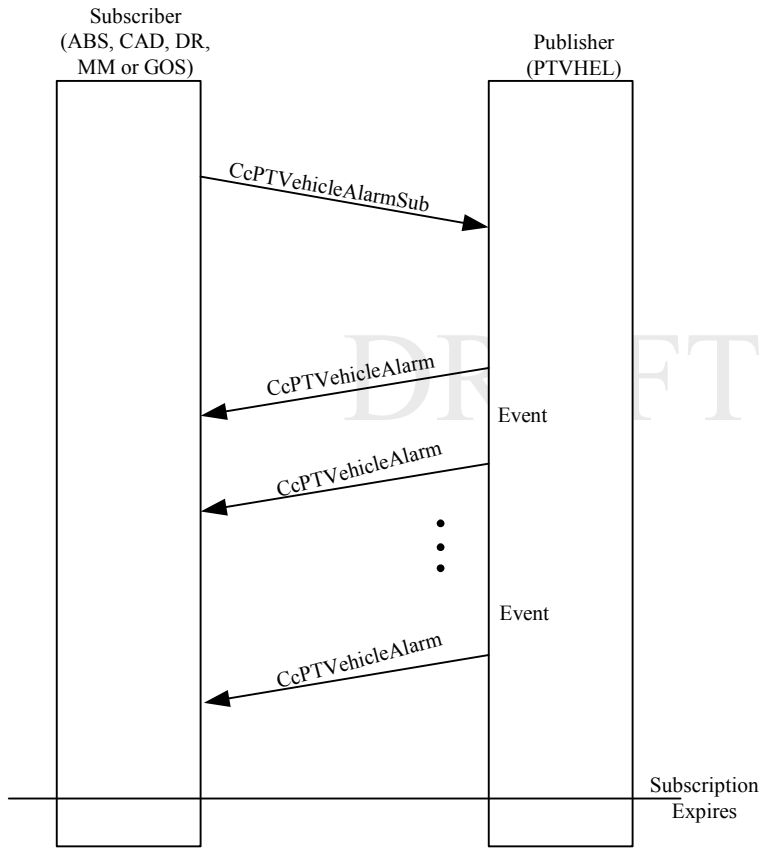
1. The PTVHEL (VLU/MDT) obtains the information from the vehicle, compares the parameter values with the specified limits, and sends an alarm to the subscriber when the limits are exceeded, or when the value returns to the specified range.
2. Alarm limits may be customized for an individual subscriber by including them in the subscription request, customized limits may be modified sending a subsequent subscription request with the same request identifier value specifying new custom limits.
3. Parameters that do not have specified customized alarm limits, are monitored based on default alarm limit values provided by the “Load PTV Alarm Limits” dialog.
4. The publisher may be a PTV Monitor/Report Health (PTVHEL)
5. The subscriber may be an Authorized Business System (ABS), CAD/AVL System (CAD), Data Repository (DR), Maintenance Management System (MM) or a Garage Operations System (GOS).

Narrative:

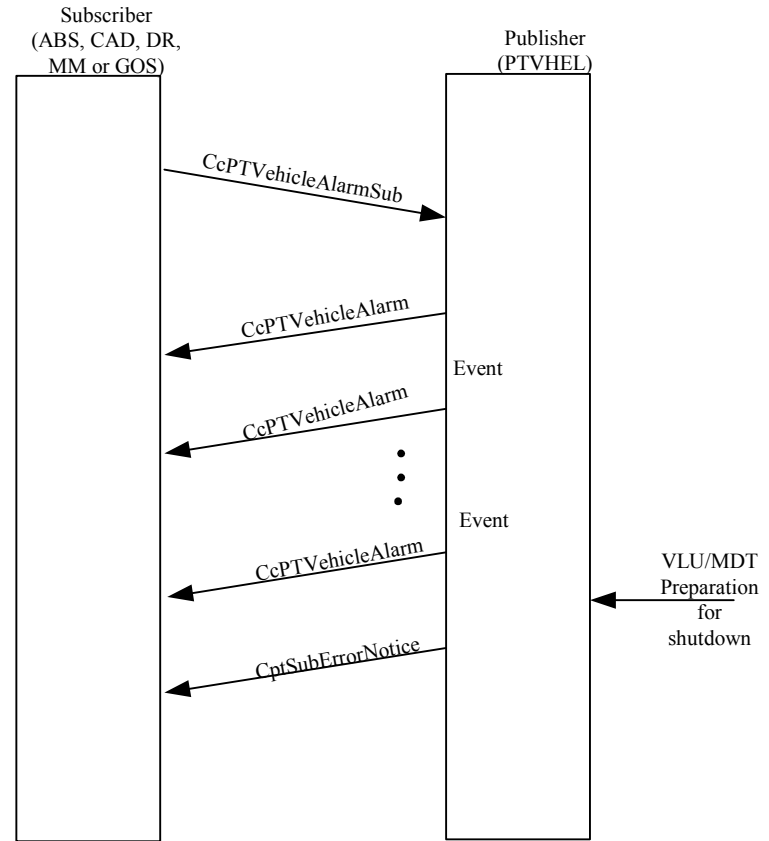
1. The subscriber sends a CcPTVehicleAlarmSub message to PTVHEL (publisher).
2. The VLU/MDT (publisher) validates the message and determines:
 - A. The request is invalid, unauthorized, or cannot be serviced. The publisher sends a CptSubErrorNotice to the subscriber and the dialog ends.
 - B. The request can be serviced. The publisher sends an initial CcPTVehicleAlarm message to the subscriber containing any out of range parameters.
3. The publisher sends a new CcPTVehicleAlarm message each time a parameter exceeds its range, or recovers to within the specified range. These subsequent CcPTVehicleAlarm messages only convey parameters that have exceeded their range or recovered to their specified range since the previous message.
4. The dialog ends:
 - A. If the VLU/MDT initiates its shutdown process (e.g. due to an earlier engine shutdown), PTVHEL sends a CptErrorSubNotice to the subscriber and the dialog ends.
 - B. If the subscription expires, the PTVHEL stops sending information to the subscriber.
 - C. If the subscriber sends a new CcPTVehicleAlarmSub message with the same requestIdentifier value as the original subscription request and a requestedType of cancel, the PTVHEL cancels the subscription and sends no more alarms based on that subscription.

DRAFT

Message Sequence Diagram Page 2



Normal Execution of the Event-Driven "Subscribe PTV Health Alarms" Dialog Terminated by an Expiration



Normal Execution of the Event-Driven "Subscribe PTV Health Alarms" Dialog Terminated by a VLU/MDT Shutdown

TCIP Dialog Definition Page 3		
Dialog Name: Subscribe PTV Health Alarms		
Business Area: CC		
Dialog Pattern: Subscription-Event		
Message Name	Message Identifier	Role
CcPTVehicleAlarmSub	Cc 2017	Request a subscription to vehicle health parameter monitoring
CcPTVehicleAlarm	Cc 2018	Provide vehicle health monitoring information
CptSubErrorNotice	Cpt 2000	Notify the subscriber that a subscription was discontinued with an error status.
Notes: The CAD/AVL System may provide the capability to automatically generate incident reports based on some or all HealthAlarmEvents.		

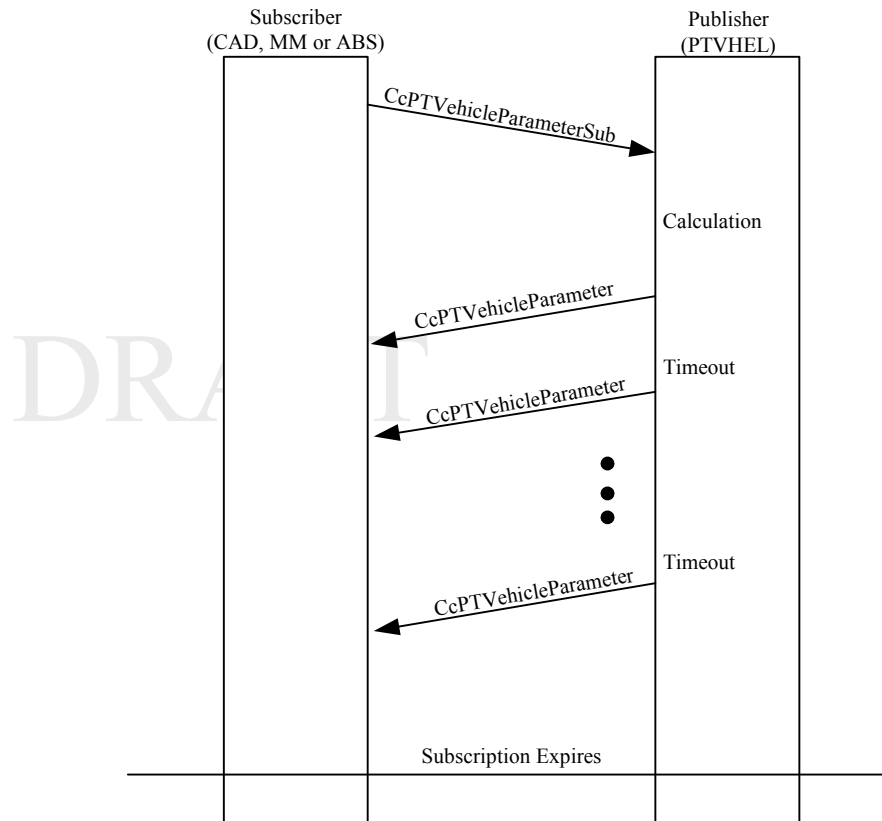
Subscribe PTV Parameters**TCIP Dialog Definition Page 1****Dialog Name:** Subscribe PTV Parameters**Business Area:** CC**Dialog Pattern:** Subscription-Periodic**Purpose:** Provide the capability for a Computer Aided Dispatch (CAD) or Maintenance System to subscribe to periodic onboard parameter reporting.**Assumptions:**

1. The subscription can be modified-update period changed, parameters to be monitored added or deleted, by sending a new Cc-PTVehicleParameterSub message with the same request identifier and the new period and parameter list.
2. The publisher may be PTV Monitor/Report Health (PTVHEL).
3. The subscriber may be a CAD/AVL System (CAD), Maintenance Management System (MM) or an Authorized Business System (ABS).

Narrative:

1. The subscriber sends a CcPTVehicleParameterSub message to the PTVHEL (publisher)
2. The publisher validates the message and determines:
 - A. The request is invalid unauthorized or cannot be serviced. The publisher sends a CptSubErrorNotice to the subscriber and the dialog ends.
 - B. The request can be serviced. PTVHEL sends a CcPTVehicleParameter message to the subscriber
3. PTVHEL sends a new CcPtVehicleParameter message to the subscriber each time the subscription interval expires.
4. The dialog ends:
 - A. If the VLU/MDT initiates the shutdown process, PTVHEL sends a CptSubError message to the subscriber and the dialog ends
 - B. If the subscription expires, the PTVHEL stops sending the parameter updates.
 - C. If the subscriber sends a new CcPTVehicleParameterSub message with same request identifier value as the original subscription, and a request type of cancel, PTVHEL cancels the subscription and sends no more updates.

Message Sequence Diagram Page 2



Normal Execution of the "Subscribe PTV Parameters" Periodic Subscription

TCIP Dialog Definition Page 3		
Dialog Name: Subscribe PTV Parameters		
Business Area: CC		
Dialog Pattern: Subscription-Periodic		
Message Name	Message Identifier	Role
CcPTVehicleParameterSub	Cc 2012	Request a subscription to specified onboard parameters.
CcPTVehicleParameter	Cc 2013	Provide onboard parameter values.
CptSubErrorNotice	Cpt 2000	Notify the subscriber that the subscription has been ended with an error condition.
Notes:		

Report Vehicle Startup**TCIP Dialog Definition Page 1**

Dialog Name: Report Vehicle Startup

Business Area: CC

Dialog Pattern: Report

Purpose: PTVHEL reports to CAD/AVL System (CAD) that the vehicle's engine was started.

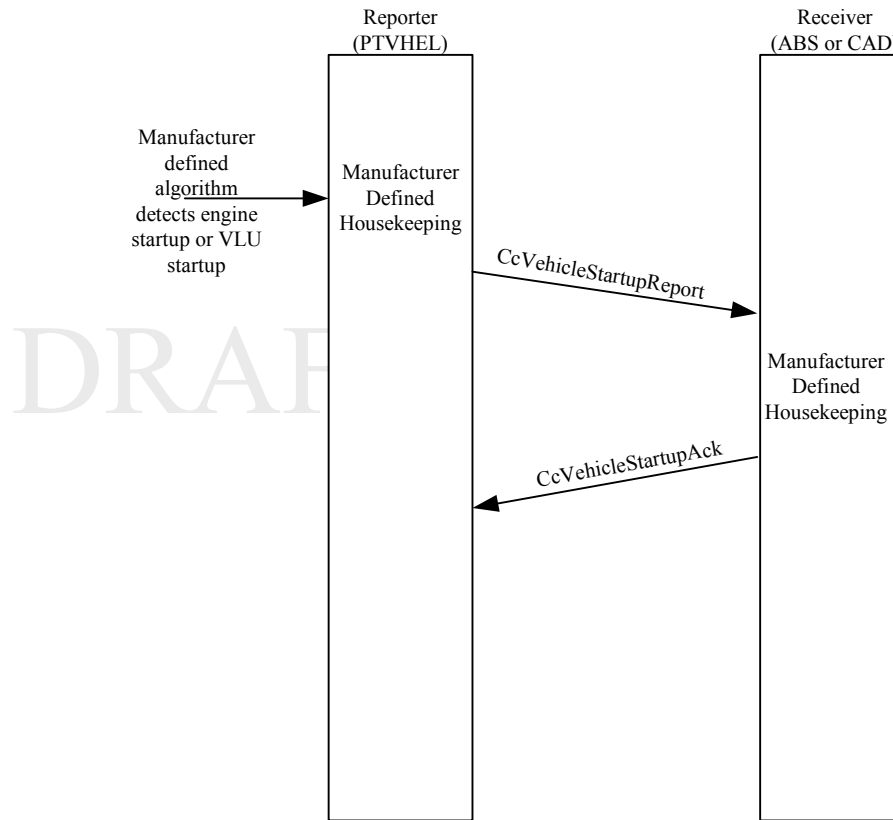
Assumptions:

1. VLU/MDT may already be operating or may start up as a result of the engine starting, or may start up independently of the engine. All 3 of these cases trigger this dialog.
2. If the "Report Vehicle Shutdown" dialog is in progress, it is aborted and this dialog initiated.
3. Manufacturer-defined recovery procedures are followed if the CcVehicleStartupAck message is not received.
4. The reporter may be PTV Monitor/Report Health (PTVHEL).
5. The receiver may be an Authorized Business System (ABS) or a CAD/AVL System (CAD).

Narrative:

1. PTVHEL detects that the VLU has been started or that the vehicle's engine has been started, and sends a CcVehicleStartupReport message to the Computer Aided Dispatch (CAD) system.
2. The CAD system sends a CcVehicleStartupAck message to the VLU/MDT and the dialog ends.

Message Sequence Diagram Page 2



Normal Execution of the "Report Vehicle Startup" Dialog

TCIP Dialog Definition Page 3		
Dialog Name: Report Vehicle Startup		
Business Area: CC		
Dialog Pattern: Report		
Message Name	Message Identifier	Role
CcVehicleStartupReport	CC 2011	Notify the CAD system that the vehicle's and/or VLU engine has been started.
CcVehicleStartupAck	CC 2010	Acknowledge the CcVehicleStartupReport.
Notes:		

Report Operator Sign-On**TCIP Dialog Definition Page 1**

Dialog Name: Report Operator Sign-On

Business Area: CC

Dialog Pattern: Report

Purpose: Notify the CAD/AVL System (CAD) or an Authorized Business System (ABS) that an operator signed onto a vehicle.

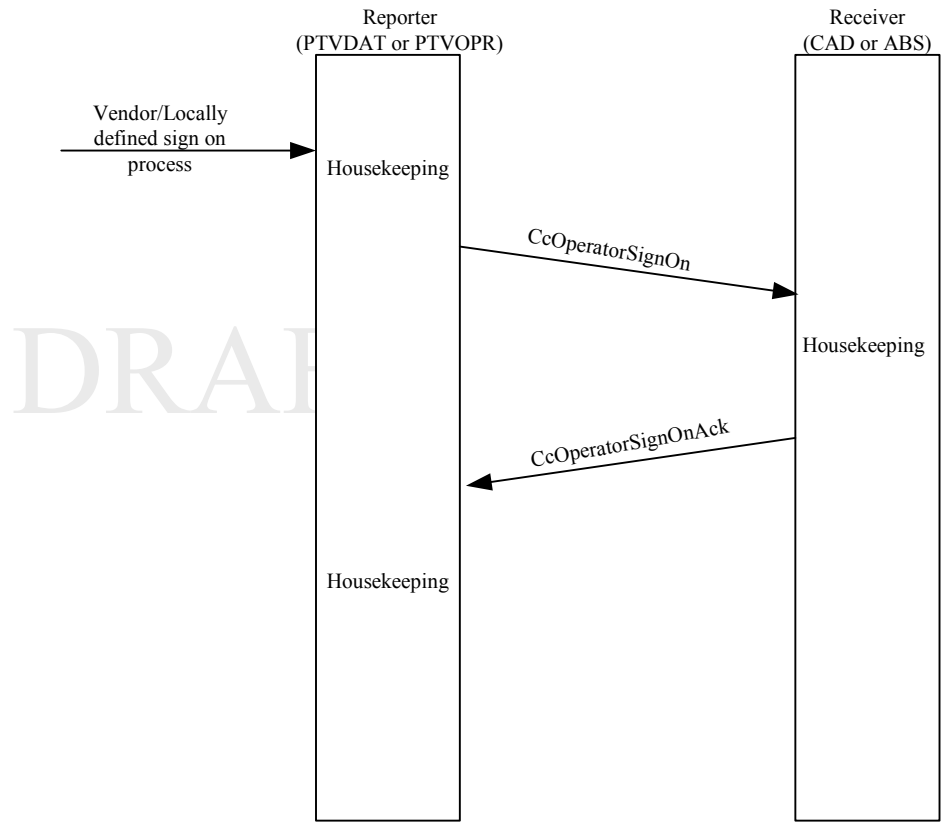
Assumptions:

1. The reporter may be PTV Manage VLU Data (PTVDAT), or PTVOPR.
2. The receiver may be a CAD/AVL System (CAD) or an Authorized Business System (ABS).
3. Operator may log on manually or using a smart card. Agencies may allow a default or supervisor logon as well as driver logon.

Narrative:

1. The operator signs on using a vendor/locally defined procedure.
2. The vehicle's PTVOPR, or PTVDAT (reporter) sends a CcOperatorSignOn message, and performs vendor/locally defined housekeeping functions.
3. The control center (receiver) performs vendor/locally defined housekeeping functions and sends a CcOperatorSignOnAck message back to the reporter.
4. The reporter may perform additional housekeeping functions based on the acknowledgement.

Message Sequence Diagram Page 2



Normal Execution of the "Report Operator Sign-On" Dialog.

TCIP Dialog Definition Page 3		
Dialog Name: Report Operator Sign-On		
Business Area: CC		
Dialog Pattern: Report		
Message Name	Message Identifier	Role
CcOperatorSignOn	CC 2004	Notify the control center that an operator signed on to a vehicle.
CcOperatorSignOnAck	CC 2005	Acknowledge that the control center received the sign on message.
<p>Notes:</p> <ol style="list-style-type: none"> 1. Housekeeping functions may include validation, alarms, logging, etc. 2. If the login-error field is used and is set to true, it indicates that the dispatches and/or the control center systems found the login to be in error. Vendor/locally defined procedures govern recovery from a bad login. 		

Report Dispatch Message**TCIP Dialog Definition Page 1**

Dialog Name: Report Dispatch Message

Business Area: CC

Dialog Pattern: Report

Purpose: Provide a canned or text message from the dispatcher to the vehicle operator.

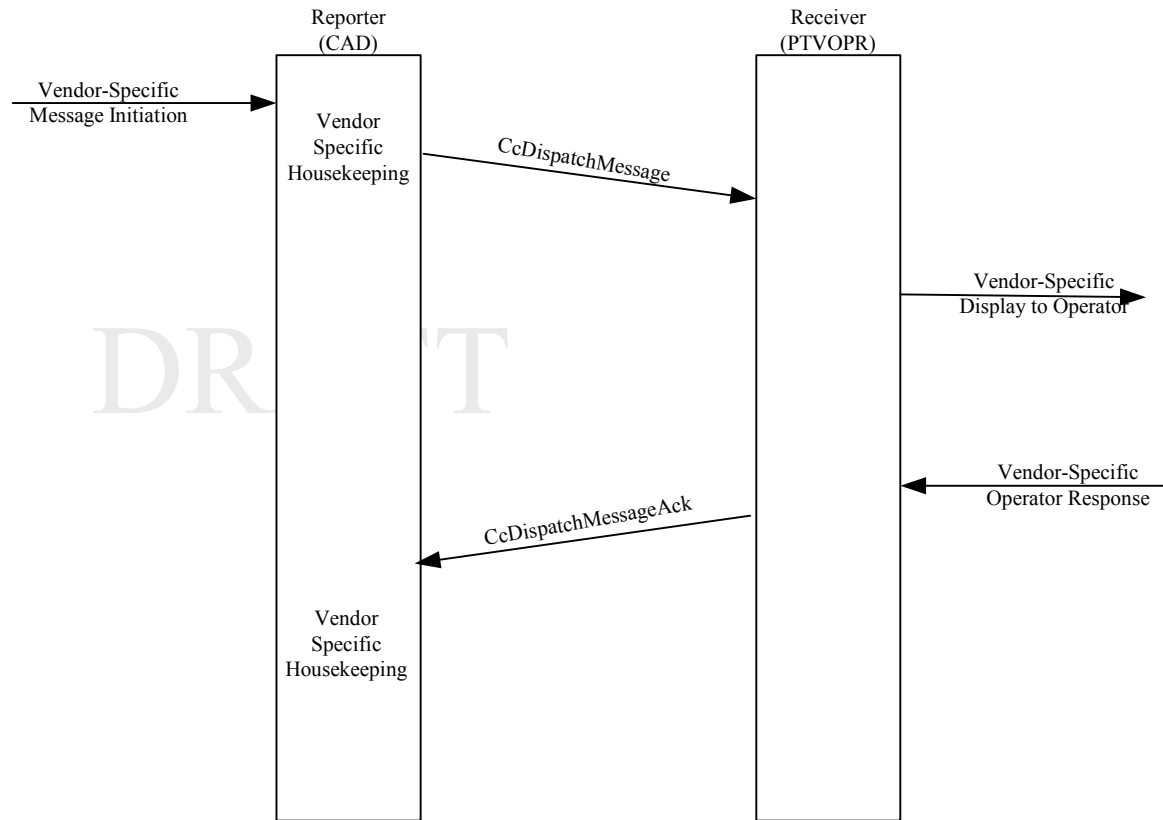
Assumptions:

1. This dialog is not intended to send messages to the entire fleet.
2. Some vendors may not provide a negative acknowledgement capability. In this case the operators acknowledgement always results in a positive acknowledgement.
3. The reporter may be a CAD/AVL System (CAD).
4. The receiver may be a PTV Operator Interface (PTVOPR).

Narrative:

1. The dispatcher uses a vendor-defined mechanism within the Computer Aided Dispatch/Automatic Vehicle Location System (CAD) to trigger a canned or text message to a vehicle operator.
2. The CAD/AVL System sends a CcDispatchMessage to PTVOPR.
3. PTVOPR makes the message available for the vehicle operator to read using vendor-defined mechanisms.
4. The operator reads the message and provides a positive or negative acknowledgement using the PTVOPR's vendor-defined mechanism.
5. PTVOPR sends a CcDispatchMessageAck to CAD.
6. CAD system performs vendor-defined housekeeping and the dialog ends.

Message Sequence Diagram Page 2



Normal Execution of the "Report Dispatch Message" Dialog

TCIP Dialog Definition Page 3		
Dialog Name: Report Dispatch Message		
Business Area: CC		
Dialog Pattern: Report		
Message Name	Message Identifier	Role
CcDispatchMessage	Cc 2016	Provide a canned or text message from the dispatcher to one or more vehicles.
CcDispatchMessageAck	Cc 2021	Acknowledge the message from the dispatcher.
Notes:		

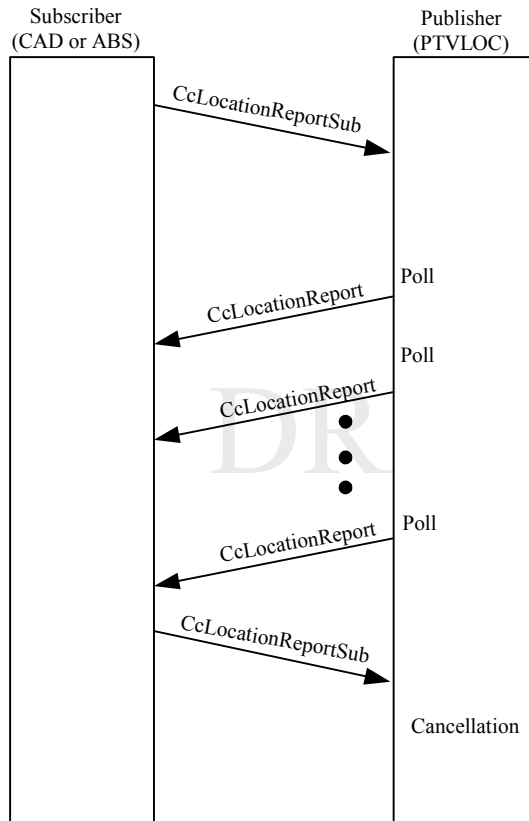
Subscribe PTV AVL**TCIP Dialog Definition Page 1****Dialog Name:** Subscribe PTV-AVL**Business Area:** CC**Dialog Pattern:** Subscription**Purpose:** Provide vehicle location and other real-time information from the PTVLOC to the control center (CAD).**Assumptions:**

1. The control center initiates the subscription based on locally or vendor defined criteria, such as vehicle start up of operator sign-on. Similarly the control center may cancel the subscription by sending a CptSubErrorNotice based on operator sign-off or vehicle shutdown.
2. The publisher may be PTV Monitor/Report Location (PTVLOC).
3. The subscriber may be a CAD/AVL System (CAD) or an Authorized Business System (ABS).
4. Normally this dialog will not be used with the TCIP Polling Protocol.

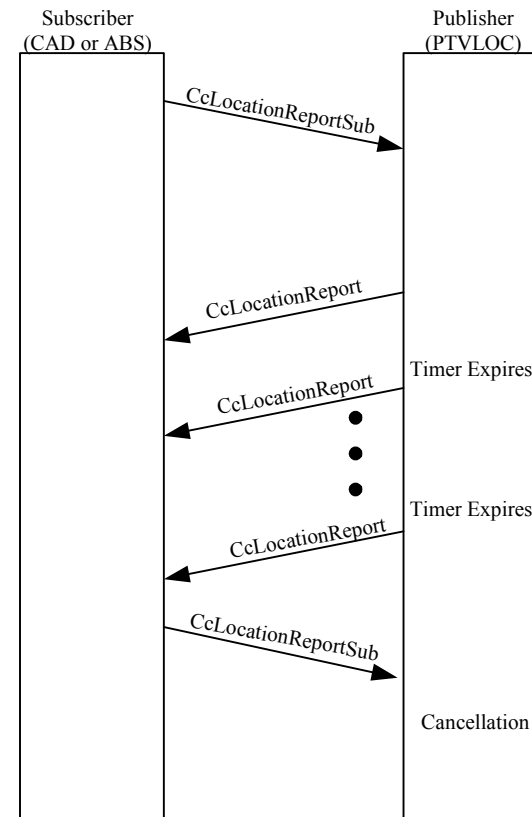
Narrative:

1. CAD or ABS (subscriber) sends a CcLocationReportSub message to PTVLOC with the subscription type of event or periodic (see note 1, and assumption 1).
2. PTVLOC (publisher) validates the request and determines:
 - A. The request is invalid, unauthorized, or cannot be serviced. The publisher then generates a CptSubErrorNotice to the subscriber and the dialog ends.
 - B. The request can be serviced. If the request type is event, the publisher begins sending a CcLocationReport message in response to each poll. If the request type is periodic, the publisher sends a CcLocationReport and then begins sending additional reports at the specified interval.
3. The dialog ends if the publisher sends a CptSubErrorNotice at any time for the subscription request, or if the subscriber sends a CcLocationReportSub with a request number matching the original request and a request type of cancel or if the subscriber initiates a new Subscribe PT-AVL dialog. By sending a CcLocationReportSub with the cancel-request field containing a request number matching the request number in the original dialog.

Message Sequence Diagram Page 2



Normal Execution of Event-Driven "Subscribe PTV-AVL" Subscription Dialog



Normal Execution of hte Periodic "Subscribe PTV-AVL" Subscription Dialog

TCIP Dialog Definition Page 3		
Dialog Name: Subscribe PTV- AVL		
Business Area: CC		
Dialog Pattern: Subscription		
Message Name	Message Identifier	Role
CcLocationReportSub	Cc 2001	Establish or cancel location reporting subscription
CcLocationReport	Cc 2000	Provide location and other real-time information on bus status to central.
CptSubErrorNotice	Cpt 2000	End the dialog with an error notice from the publisher to the subscriber.
<p>Notes:</p> <ol style="list-style-type: none"> 1. This dialog is dependent on the communications system used by the local agency for AVL. Some AVL communications networks are polled (location reports are sent from the vehicle on request from the fixed-end), and some are demand-based (location reports are offered by the vehicle to the network periodically). For polled networks, the subscription type should be “event” and the poll is the event that elicits the report. For demand-based networks, the subscription type should be periodic. For networks using the TCIP Polling Protocol, this dialog is not required. 2. Agencies sometimes require that the AVL update rate be changed dynamically (e.g. in response to an incident being opened or closed). In a polled network this is accomplished by changing the polling rate for a specified vehicle. In a demand network this is accomplished by opening a new subscription with the new reporting rate with the field cancel-request present to cancel the existing subscription. 3. If the vehicle is off-route, or off-schedule, and the subscription type is periodic, then the update rate is altered automatically based on parameters provided in the “Load PTV Alarm Limits” dialog. This externally triggered change in update rate is not common within the periodic subscription pattern, and is a unique feature to this specific dialog. 		

Report Operator Message**TCIP Dialog Definition Page 1**

Dialog Name: Report Operator Message

Business Area: CC

Dialog Pattern: Report

Purpose: Provide a canned or text message from the vehicle operator to the dispatcher.

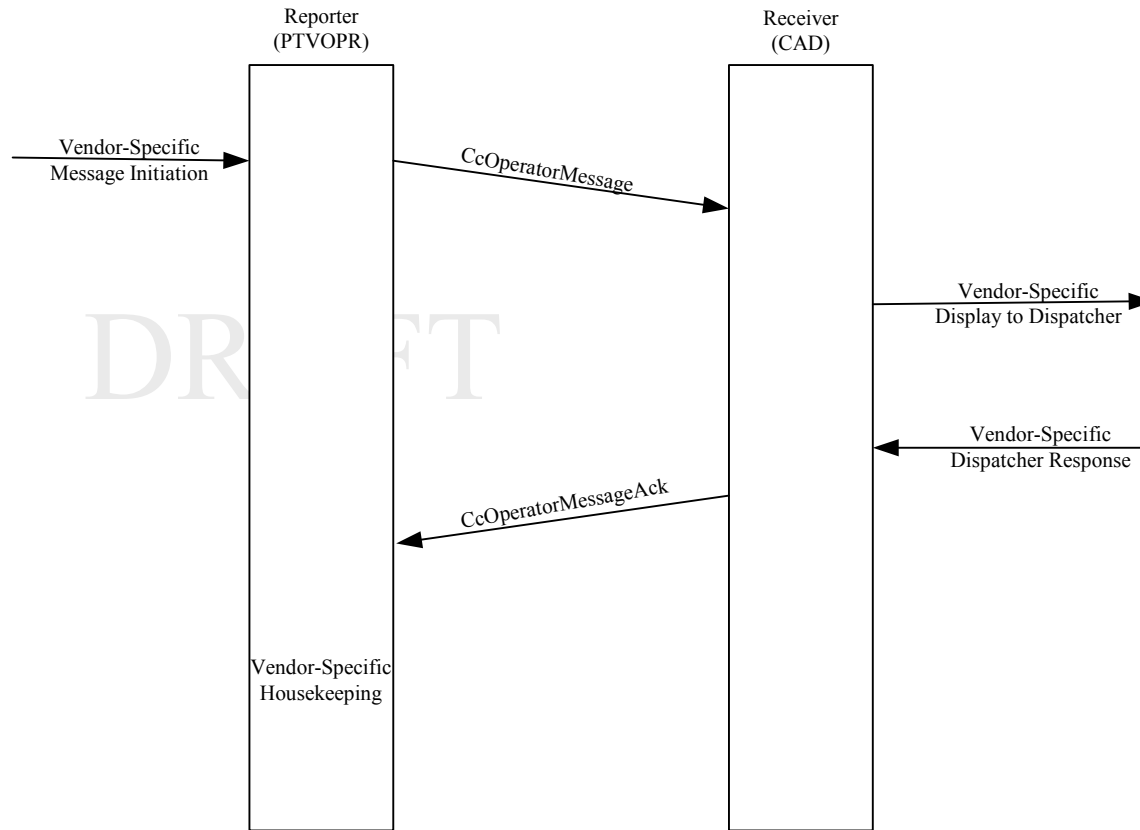
Assumptions:

1. The reporter may be PTV Operator Interface (PTVOPR).
2. The receiver may be a CAD/AVL System (CAD).

Narrative:

1. The vehicle operator uses a vendor-defined mechanism within the VLU/MDT (PTVOPR) to trigger a text or canned message to the dispatcher.
2. PTVOPR sends a CcOperatorMessage to CAD.
3. CAD makes the message available to the dispatcher using vendor-defined mechanisms.
4. The dispatcher reads the message and triggers CAD to deliver a CcOperatorMessageAck to the PTVOPR.
5. PTVOPR performs vendor defined housekeeping and the dialog ends.

Message Sequence Diagram Page 2



Normal Execution of the "Report Operator Message" Dialog

TCIP Dialog Definition Page 3		
Dialog Name: Report Operator Message		
Business Area: CC		
Dialog Pattern: Report		
Message Name	Message Identifier	Role
CcOperatorMessage	Cc 2014	Provide a text or canned message from the vehicle operator to the dispatcher.
CcOperatorMessageAck	Cc 2015	Acknowledge receipt of an operator message to dispatch.
Notes:		

Report Operator Sign-Off**TCIP Dialog Definition Page 1**

Dialog Name: Report Operator Sign-Off

Business Area: CC

Dialog Pattern: Report

Purpose: Notify the control center that the operator signed off from a vehicle

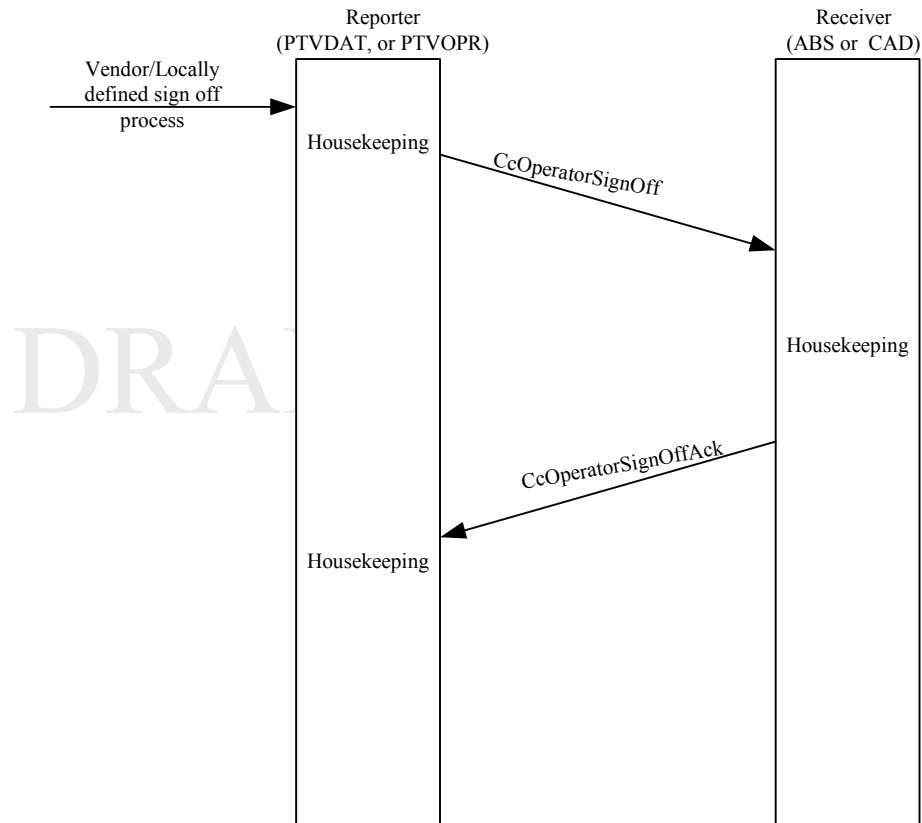
Assumptions:

1. The operator has previously signed on to the MDT.
2. The reporter may be a PTV Manage VLU Data (PTVDAT), or PTVOPR.
3. The receiver may be a CAD/AVL System (CAD) or an Authorized Business System (ABS).

Narrative:

1. The operator signs off using a vendor/locally defined procedure.
2. PTVDAT or PTVOPR (reporter) sends a CcOperatorSignOff message, and performs vendor/locally defined housekeeping functions.
3. CAD or ABS (receiver) performs vendor/locally defined housekeeping functions and sends a CcOperatorSignOffAck message back to the reporter.
4. The reporter may perform additional housekeeping functions based on the acknowledgement.

Message Sequence Diagram Page 2



Normal Execution of the "Report Operator Sign-Off" Dialog

TCIP Dialog Definition Page 3		
Dialog Name: Report Operator Sign-Off		
Business Area: CC		
Dialog Pattern: Report		
Message Name	Message Identifier	Role
CcOperatorSignOff	CC 2007	Notify the control center of the sign off event.
CcOperatorSignOffAck	CC 2006	Acknowledge that the control center received the sign off message.
<p>Notes:</p> <ol style="list-style-type: none"> 1. Housekeeping function may include alarms (e.g. to the dispatcher if the current run is not complete), log entries etc 2. If the contact-dispatch field is used in the acknowledgment message, and is set to True, it is intended to trigger a vendor/locally defined notification to the operator to contact the dispatcher. 		

Report Vehicle Shut Down**TCIP Dialog Definition Page 1**

Dialog Name: Report Vehicle Shut Down

Business Area: CC

Dialog Pattern: Report

Purpose: PTVHEL reports to the dispatch center that the vehicle's engine was shutdown.

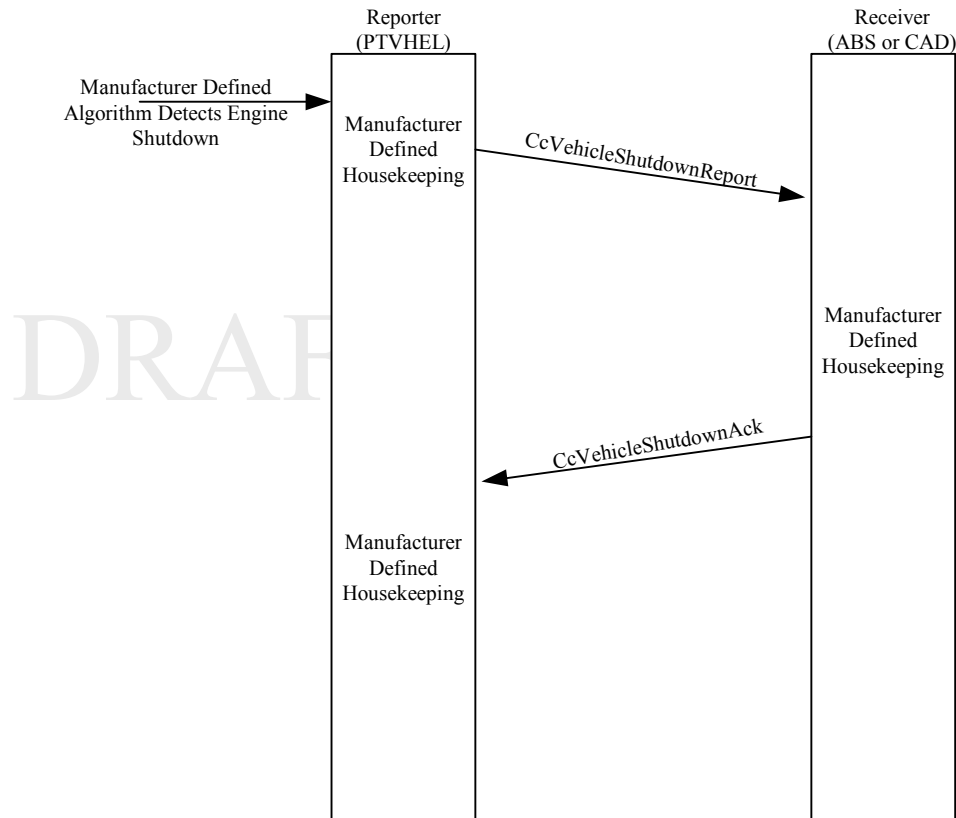
Assumptions:

1. The VLU (PTVHEL) detects that the vehicle has shut down, but continues to operate for some period of time, executes this dialog, and optionally performs other vendor-defined activities and housekeeping.
2. If the vehicle is restarted after this dialog is initiated, the VLU/MDT initiates the "Report Vehicle Startup" dialog, and aborts this dialog.
3. Manufacturer defined recovery procedures are followed if the CcVehicleShutdownAck message is not received.
4. The reporter may be PTV Monitor/Report Health (PTVHEL).
5. The receiver may be a CAD/AVL System (CAD) or an Authorized Business System (ABS).

Narrative:

1. PTVHEL detects that the vehicles' engine has been shut down, and sends a CcVehicleShutdownReport message to the (CAD).
2. CAD sends a CcVehicleShutdownAck message to PTVHEL and the dialog ends.

Message Sequence Diagram Page 2



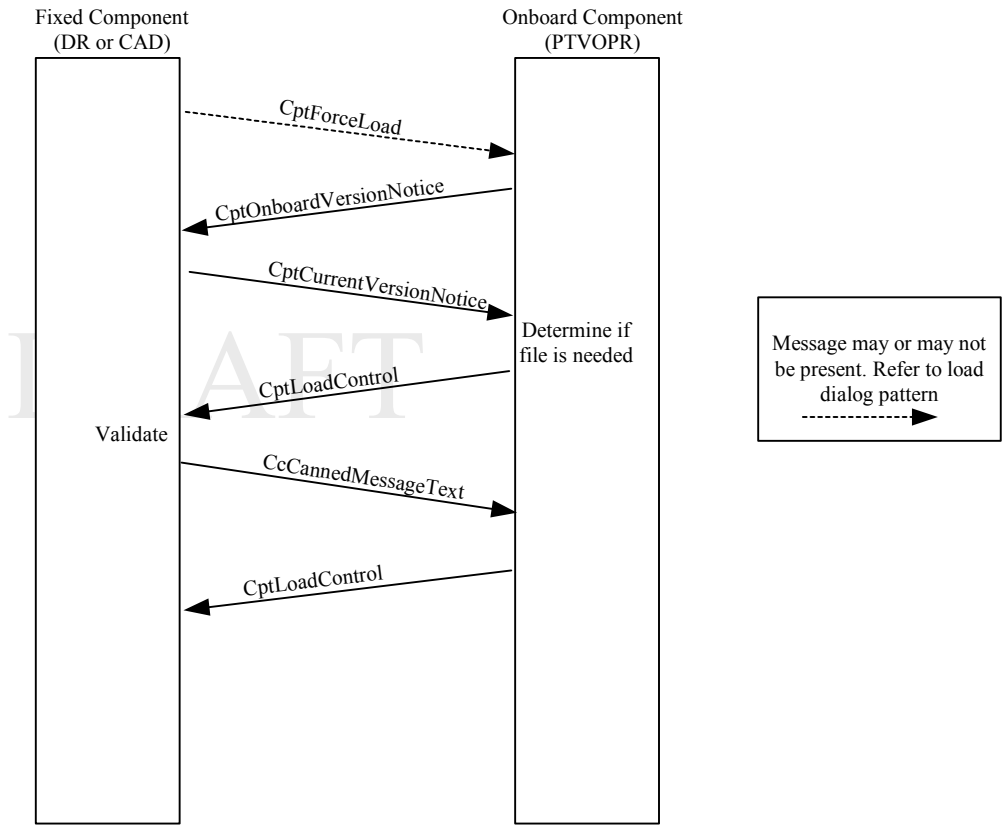
Normal Execution of the "Report Vehicle Shutdown" Dialog

TCIP Dialog Definition Page 3		
Dialog Name: Report Vehicle Shut-Down		
Business Area: CC		
Dialog Pattern: Report		
Message Name	Message Identifier	Role
CcVehicleShutdownReport	Cc 2008	Notify the CAD system that the vehicle's engine has been shut off.
CcVehicleShutdownAck	Cc 2009	Acknowledge the CcVehicleShutdownReport.
<p>Notes:</p> <p>PTVHEL logs engine cycles, and reports these separately.</p>		

Load Canned Message Text

TCIP Dialog Definition Page 1
<p>Dialog Name: Load Canned Message Text</p> <p>Business Area: CC</p> <p>Dialog Pattern: Load</p>
<p>Purpose: Load the text of canned messages and associated takes to PTVOPR. This allows canned messages to be triggered by message identifiers over narrowband links rather than sending the text of the message each time.</p>
<p>Assumptions:</p> <ol style="list-style-type: none"> 4. If a new canned message has the same identifiers as an already stored canned message, the old canned message text is replaced with new canned message text. 5. The “onboard component” may be PTV Operator Interface (PTVOPR) . 6. The “fixed component” can be a Data Repository (DR) or a CAD/AVL System (CAD).
<p>Narrative:</p> <ol style="list-style-type: none"> 6. The onboard component triggers the dialog (based on the state of the wireless LAN, internal timers, and/or CptForceLoad message from the fixed component) by initiating a CptOnboardVersionNotice/CptCurrentVersionNotice exchange with the fixed component. The onboard component determines if new canned message text is required. 7. If the canned message text is current, the onboard component sends a CptLoadControl message ending the dialog. 8. If the canned message text is not current, the onboard component sends a CptLoadControl message requesting the current version. 9. The fixed component validates the request and terminates the dialog with a CptBadLoadRequest message (if the file request is invalid) or sends the current CcCannedMessageText message. 10. The onboard component receives and validates the CcCannedMessageText message and sends a CptLoadControl message terminating the dialog.

Message Sequence Diagram Page 2



Normal Execution of the "Load Canned Message Text" Dialog

TCIP Dialog Definition Page 3		
Dialog Name: Load Canned Message Text		
Business Area: CC		
Dialog Pattern: Load		
Message Name	Message Identifier	Role
CptForceLoad	Cpt 2011	Used by the fixed component to force the onboard component to initiate the load.
CptOnboardVersionNotice	Cpt 2010	Onboard component provides the version number of the canned msg text on hand.
CptCurrentVersionNotice	Cpt 2009	Fixed component notifies the onboard component of the up to date version of the canned messages.
CptLoadControl	Cpt 2007	Onboard component controls the load process with this message.
CcCannedMsgText	Cc 2019	Conveys the content of canned messages, and fill in the blank material from the fixed component to the onboard component.
CptBadLoadRequest	Cpt 2008	Fixed component aborts the dialog with an error notice to the onboard component with this message.
Notes:		

Load Destination and Stop Annunciations**TCIP Dialog Definition Page 1****Dialog Name:** Load Destination and Stop Annunciations**Business Area:** CC**Dialog Pattern:** Load**Purpose:** Provide the information necessary for the bus to update its destination signs, and provide automated stop announcements.**Assumptions:**

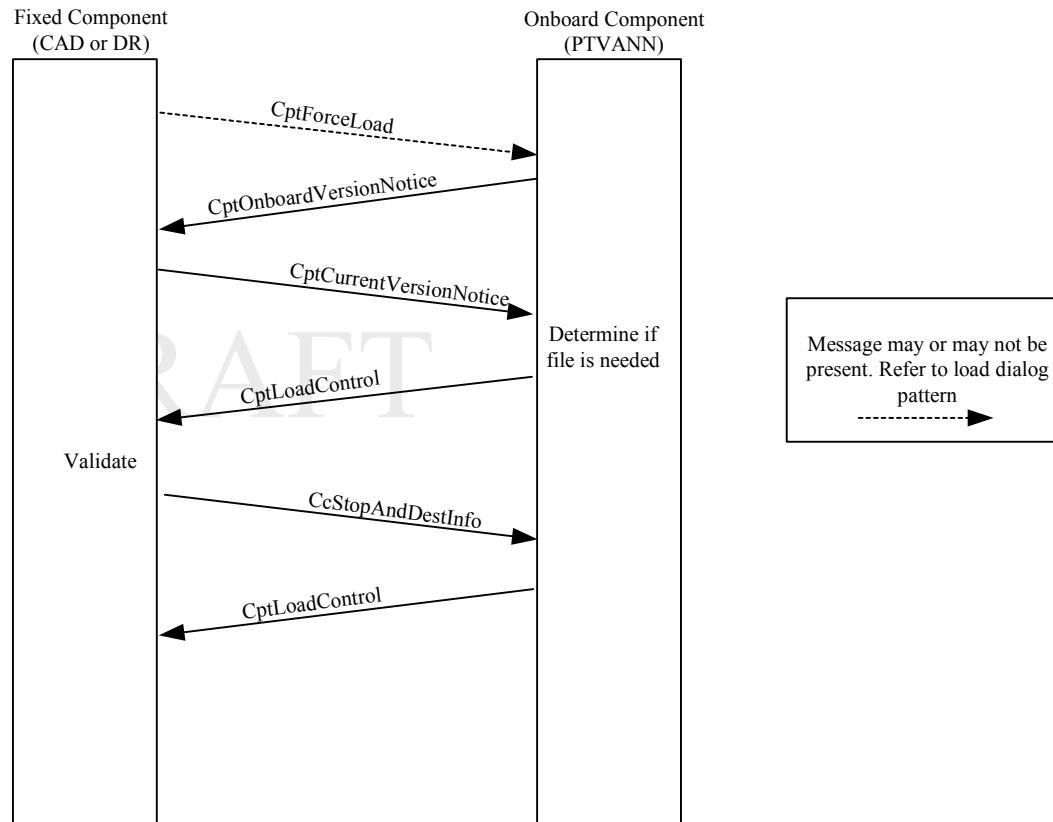
The fixed component may be a CAD/AVL System (CAD) or a Data Repository (DR).

The onboard component may be PTV Passenger Information (PTVANN).

Narrative:

1. The onboard component (PTVANN) triggers the dialog (based on the state of the wireless LAN, internal timers, and/or CptForceLoad message from the fixed component), by initiating a CptOnboardVersionNotice/CptCurrentVersionNotice exchange. The onboard component determines if a new CcStopAndDestInfo message is required.
2. If the CcStopAndDestInfo is current, the onboard component sends a CptLoadControl message ending the dialog.
3. If the CcStopAndDestInfo is not current, the onboard component sends a CptLoadControl message requesting the current version.
4. The fixed component validates the request and terminates the dialog with a CptBadLoadRequest message (if the file request is invalid), or sends the current CcStopAndDestInfo message.
5. The onboard component receives the CcStopAndDestInfo message and sends a CptLoadControl message terminating the dialog.

Message Sequence Diagram Page 2



Normal Execution of the "Load Destination and Stop Annunciations" Dialog

TCIP Dialog Definition Page 3		
Dialog Name: Load Destination and Stop Annunciations		
Business Area: CC		
Dialog Pattern: Load		
Message Name	Message Identifier	Role
CcStopAndDestInfo	Cc 2023	Provide information to the onboard annunciation system to allow the destination sign to be updated, and for audio and visual stop announcements to be made.
CptOnboardVersionNotice	Cpt 2010	Onboard component provides the version number of the stop destination information on hand.
CptCurrentVersionNotice	Cpt 2009	Fixed component notifies the onboard component of the up to date version of the stop and destination information.
CptLoadControl	Cpt 2007	Onboard component controls the load process with this message.
CptBadLoadRequest	Cpt 2008	Fixed component aborts the dialog with an error notice to the onboard component with this message.
CptForceLoad	Cpt 2011	Used by the fixed component to force the onboard component to initiate the load.
Notes:		

Load Component Configuration Data**TCIP Dialog Definition Page 1**

Dialog Name: Load Component Configuration Data

Business Area: CC

Dialog Pattern: Load

Purpose: Provide updated, manufacturer-specific, component configuration data to an onboard component.

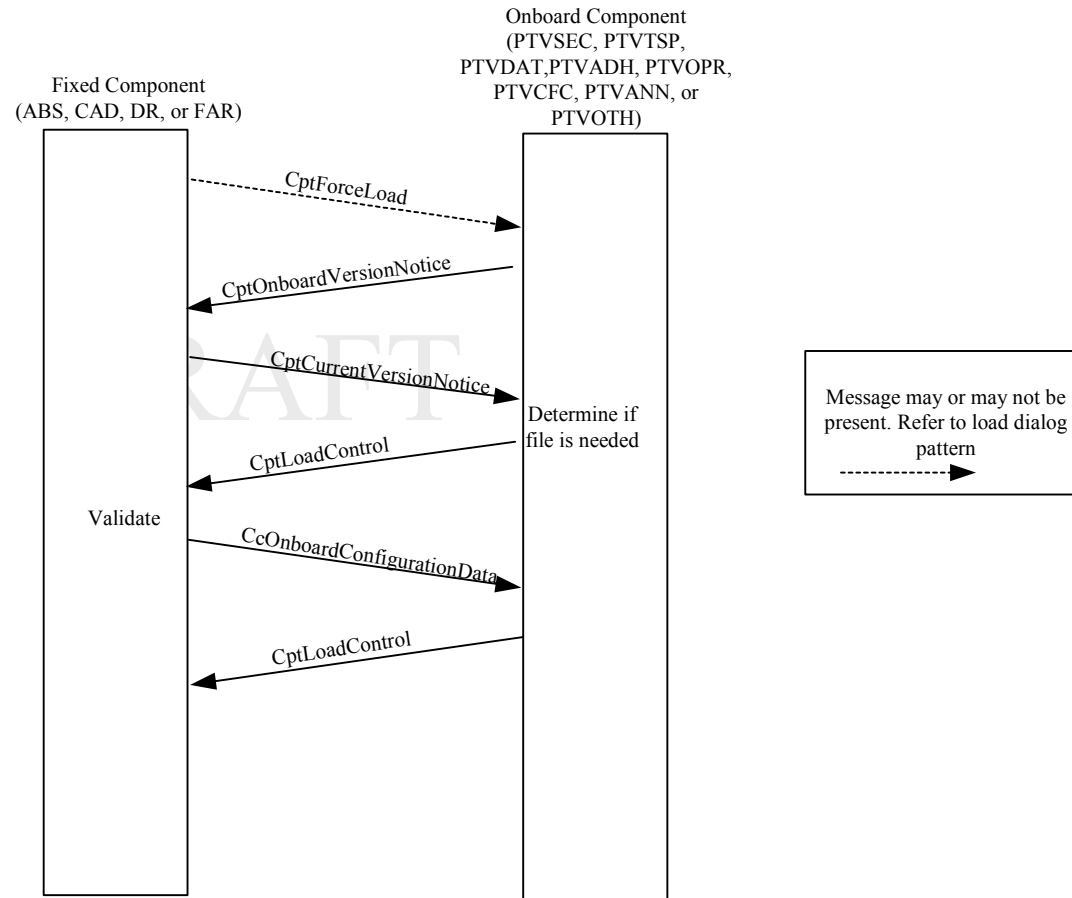
Assumptions:

1. The fixed component can be an Authorized Business System (ABS), CAD/AVL System (CAD), Data Repository (DR), or a FareSystem (FAR).
2. The onboard component can be PTV Manage Security (PTVSEC), PTV Manage Transit Signal Priority (PTVTSP), PTV Manage VLU DATA (PTV DAT), PTV Monitor/Report Adherence (PTVADH), PTV Operator Interface (PTVOPR), PTV Collect Fares (PTVCFC), PTV Passenger Information (PTVANN), or PTV Other Onboard Component (PTVOTH).
3. Schedules, annunciator and destination sign information, component software, PTV Alarm Limits, and MDT canned text messages are loaded using other dialogs.

Narrative:

1. The onboard component initiates the dialog (based on the state of the wireless LAN, internal timers, and/or CptForceLoad message from the fixed component) by initiating a CptOnboardVersionNotice/CptCurrentVersionNotice exchange with the fixed component. The onboard component determines whether new configuration data needs to be loaded.
2. The onboard component sends a CptLoadControl message terminating the dialog (if no new file is required), or requesting the new configuration.
3. The fixed component validates the file request and terminates the dialog with a CptBadLoadRequest message (if the file request is invalid) or sends the requested file.
4. The onboard component receives and validates the file, and sends a CptLoadControl message terminating the dialog.

Message Sequence Diagram Page 2



Normal Execution of the "Load Component Configuration Data" Dialog

TCIP Dialog Definition Page 3		
Dialog Name: Load Component Configuration Data		
Business Area: CC		
Dialog Pattern: Load		
Message Name	Message Identifier	Role
CcOnboardConfigurationData	Cc 2022	Provide manufacturer-defined configuration data for an onboard component.
CptForceLoad	Cpt 2011	Used by the fixed component to force the onboard component to initiate the load.
CptOnboardVersionNotice	Cpt 2010	Onboard component provides the version number of the configuration information on hand.
CptCurrentVersionNotice	Cpt 2009	Fixed component notifies the onboard component of the up to date version of the configuration information.
CptLoadControl	Cpt 2007	Onboard component controls the load process with this message.
CptBadLoadRequest	Cpt 2008	Fixed component aborts the dialog with an error notice to the onboard component with this message.
Notes:		

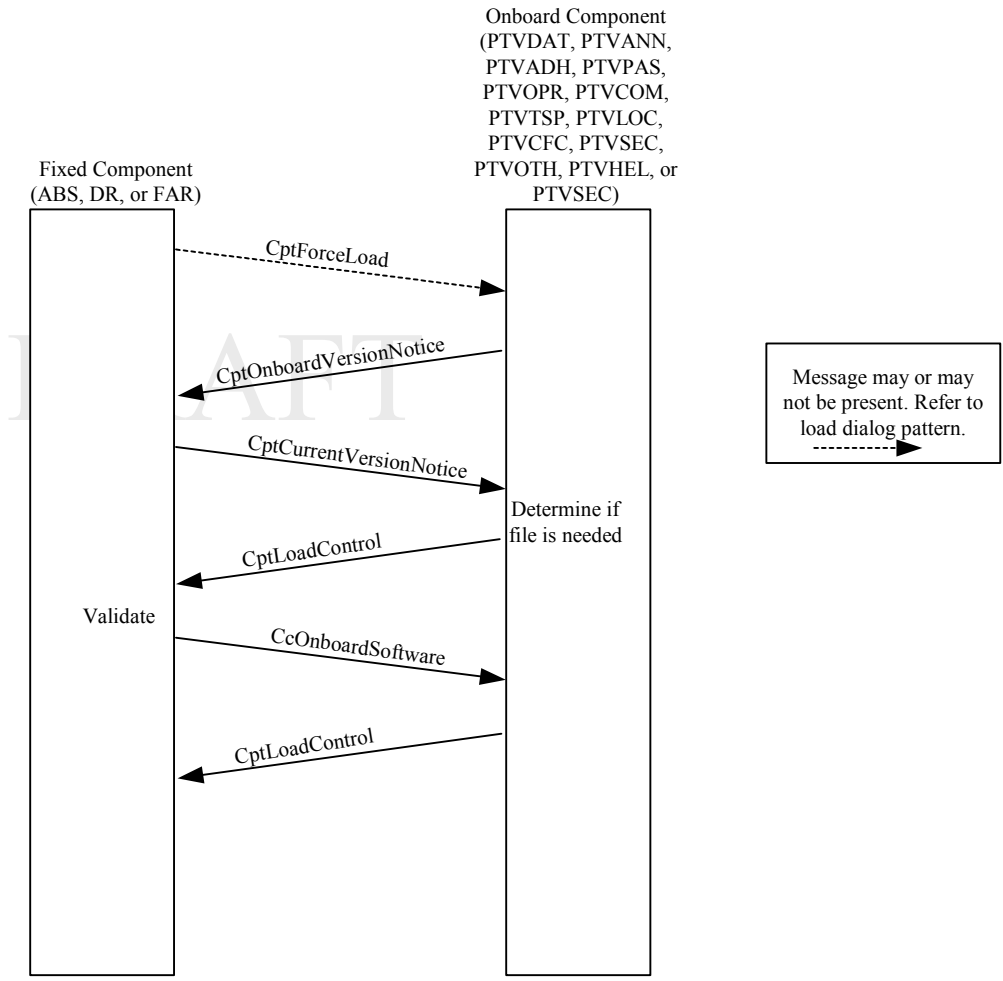
Load Component Software**TCIP Dialog Definition Page 1****Dialog Name:** Load Component Software**Business Area:** CC**Dialog Pattern:** Load**Purpose:** Load new software into an onboard component.**Assumptions:**

1. The “fixed component” can be an Authorized Business System (ABS), Data Repository (DR), or Fare System (FAR).
2. The onboard component can be PTV Manage VLU DATA (PTVDAT), PTV Passenger Information (PTVANN), PTV Monitor/Report Adherence (PTVADH), PTV Count Passengers (PTVPAS), PTV Operator Interface (PTVOPR), PTV Communications Manager (PTVCOM), PTV Manage Transit Signal Priority (PTVTSP), PTV Monitor/Report Location (PTVLOC), PTV Collect Fares (PTVCFC), PTV Other Onboard Component (PTVOTH), PTV Monitor/Report Health (PTVHEL), or PTV Manage Security (PTVSEC).
3. The process for actuating the new software version is manufacturer defined. The software may automatically load and execute on completion of this dialog, or the manufacturer may require a specific action to actuate the new software.
4. The format of the information inside the data element CC-ExecutableSoftware is manufacturer defined. It is dependent on processor type operating system etc.

Narrative:

1. The onboard component triggers the dialog (based on the state of the wireless LAN, internal timers, and/or CptForceLoad message from the fixed component) by initiating a CptOnboardVersionNotice/CptCurrentVersionNotice exchange with the fixed component. The onboard component determines whether a new software version needs to be loaded.
2. The onboard component sends a CptLoadControl message terminating the dialog (if no new file is required) or requesting the new software version.
3. The fixed component validates the file request and terminates the dialog with a CptBadLoadRequest message (if the file request is invalid) or sends the requested file.
4. The onboard component receives and validates the file, and sends a CptLoadControl message terminating the dialog.

Message Sequence Diagram Page 2



Normal Execution of the "Load Component Software" Dialog

TCIP Dialog Definition Page 3		
Dialog Name: Load Component Software		
Business Area: CC		
Dialog Pattern: Load		
Message Name	Message Identifier	Role
CcOnboardSoftware	Cc 2020	Provide the new software version for the onboard component.
CptForceLoad	CPT 2011	Used by the fixed component to force the onboard component to initiate the load.
CptOnboardVersionNotice	Cpt 2010	Onboard component provides the version number of the canned msg text on hand.
CptCurrentVersionNotice	Cpt 2009	Fixed component notifies the onboard component of the up to date version of the canned messages.
CptLoadControl	Cpt 2007	Onboard component controls the load process with this message.
CptBadLoadRequest	Cpt 2008	Fixed component aborts the dialog with an error notice to the onboard component with this message.
Notes:		

Command Load PTV Trips**TCIP Dialog Definition Page 1****Dialog Name:** Command Load PTV Trips**Business Area:** CC**Dialog Pattern:** Command Response

Purpose: Load trips assigned to a PTV. This dialog is intended for use in cases where the vehicle cannot load the entire route schedule with associated pattern, stop point, note, and time point information, such as when the agency has no wireless LAN, or the vehicle needs to receive new assigned work information outside the range of the wireless LAN.

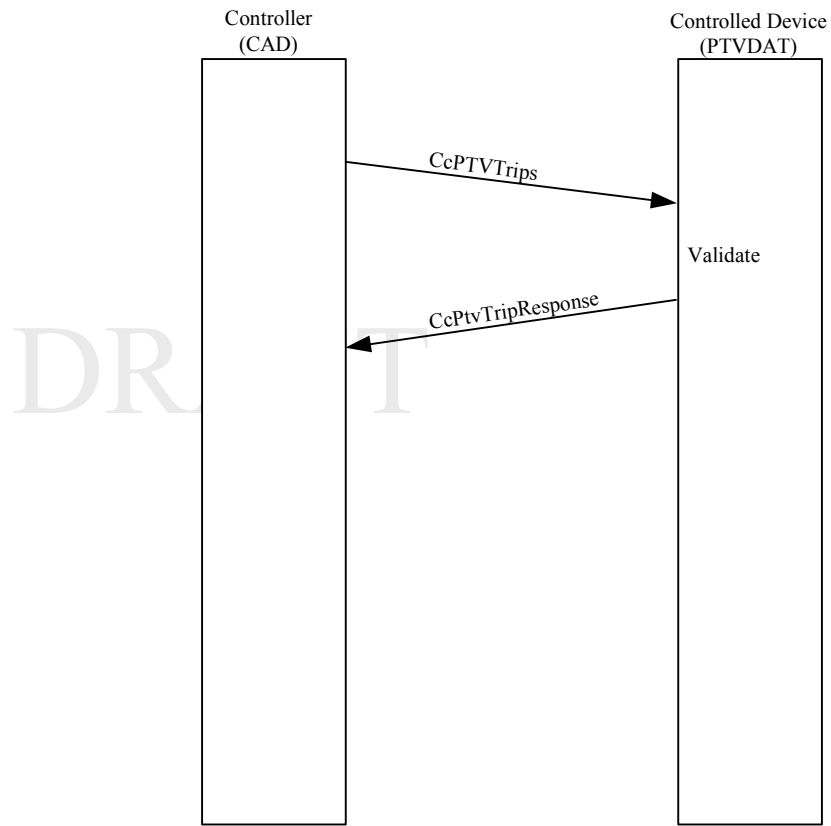
Assumptions:

1. The controller may be a CAD/AVL System (CAD).
2. The controlled device may be a PTV Manage VLU DATA (PTVDAT).

Narrative:

1. CAD (controller) determines that a vehicle needs new trip information, and cannot wait for a wireless LAN load. CAD sends a CcPTVTrips message to the PTVDAT.
2. PTVDAT receives the message and determines whether it is able to accept the information in the message. This validation routine is manufacturer-defined.
3. PTVDAT unit sends a CcPTVTripsResponse message indicating that it received the message and whether the trips were accepted.

Message Sequence Diagram Page 2



Normal Execution of the "Command Load PTV Trips" Dialog

TCIP Dialog Definition Page 3		
Dialog Name: Command Load PTV Trips		
Business Area: CC		
Dialog Pattern: Command Response		
Message Name	Message Identifier	Role
CcPTVTrips	CC 2004	Provide trip information specific to a single PTV, usually over a narrowband link.
CcPTVTripResponse	CC 2003	Notify the control center that the trip(s) were received and whether they were validated successfully.
<p>Notes:</p> <p>While this dialog provides a much smaller message for loading scheduled trip information compared to a complete schedule load via the wireless LAN, the message can still be rather large. Recommend that agencies and suppliers use as few optional fields in the CcPTVTrips message as practicable to conserve available narrow band network capacity.</p>		

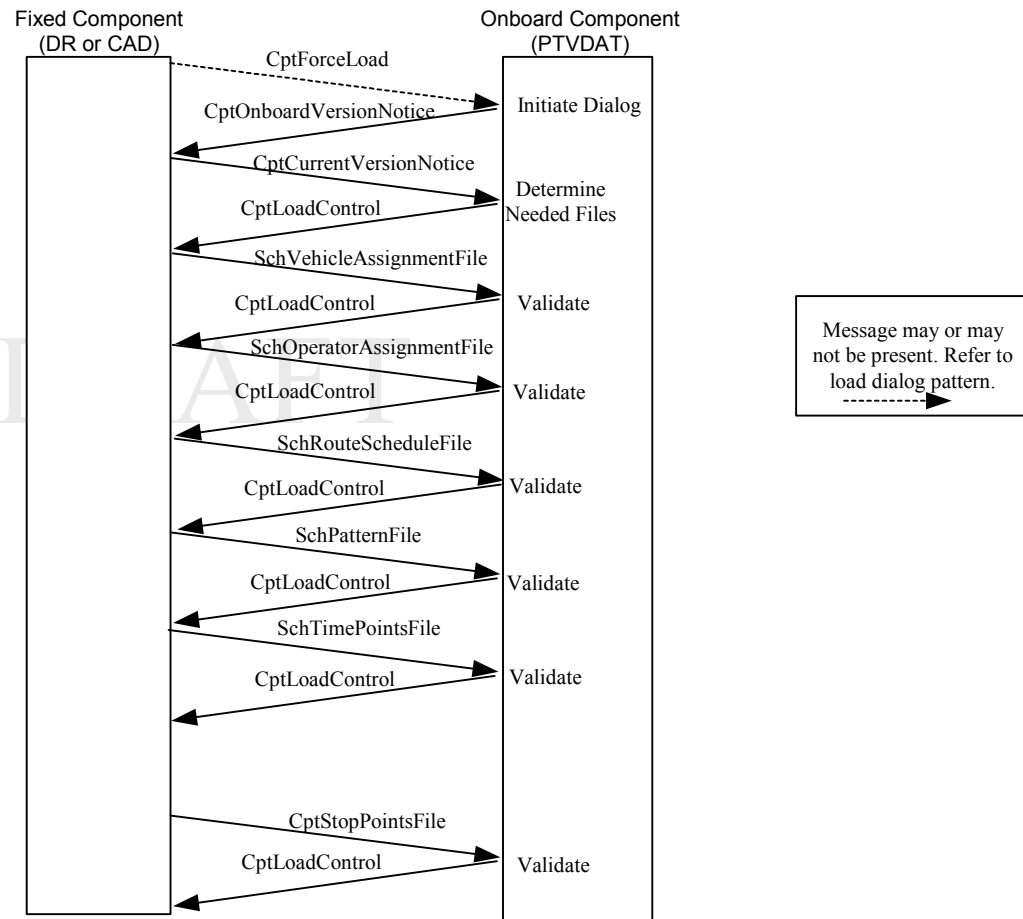
Load Schedule**TCIP Dialog Definition Page 1****Dialog Name:** Load Schedule**Business Area:** CC**Dialog Pattern:** Load**Purpose:** Load schedule information to the PTV. Local agency policy determines the scope of the schedule information to be stored on the PTV (whole agency schedule on every PTV, all routes within a garage to all PTVs from that garage, or only information relevant to the trips for that PTV).**Assumptions:**

1. The “fixed component” may be a Data Repository (DR) or a CAD/AVL System (CAD).
2. The “onboard component” can be PTV Manage VLU DATA (PTVDAT).
3. Multiple instances of the same file type may be loaded by this dialog (e.g. RouteScheduleFiles for each route).

Narrative:

1. The onboard component triggers the dialog (based on the state of the wireless LAN, internal timers and/or CptForceLoad message from the fixed component) by initiating a CptOnboardVersionNotice/ CptCurrentVersionNotice exchange with the fixed component. The onboard component determines what files (if any) need to be loaded.
2. The onboard component sends a CptLoadControl message terminating the dialog (if no files are required) or requesting the first required file that is not on hand.
3. The fixed component validates the file request and terminates the dialog with a CptBadLoadRequest message (if the file request is invalid) or sends the requested file.
4. The onboard component receives the file, validates it, and sends a CptLoadControl terminating the dialog (if the request is invalid or all needed files have been received), or requests the next requested file – returning to step 3 above.

Message Sequence Diagram Page 2



Normal Execution of the "Load Schedule" Dialog With all Schedule Files Requested to be Loaded

TCIP Dialog Definition Page 3		
Dialog Name: Load Schedule		
Business Area: CC		
Dialog Pattern: Load		
Message Name	Message Identifier	Role
CptForceLoad	Cpt 2011	Used by the fixed component to force the onboard component to initiate the load.
CptOnboardVersionNotice	Cpt 2010	Onboard component provides list of files and versions on hand to the fixed component.
CptLoadControl	Cpt 2008	Onboard component controls the load process with this message.
CptBadLoadRequest	Cpt 2007	Fixed component aborts the dialog with an error notice to the onboard component with this message.
CptCurrentVersionNotice	Cpt 2009	Fixed component notifies the onboard component of the up to date versions of files.
SchVehicleAssignmentFile	Sch 2037	Provides vehicle assignments for the loaded vehicle, and optionally other vehicles.
SchOperatorAssignmentFile	Sch 2036	Provides bound operator assignments (runs with operators identified).
SchRouteScheduleFile	Sch 2035	Provides scheduled trip information for a route.
SchPatternFile	Sch 2034	Provides timepoint and stoppoint sequences for use in defining a route.
SchTimePointsFile	Sch 2032	Provides timepoint information.
CptStopPointsFile	CPT 2016	Provides stoppoint information.

Notes:

1. The SchVehicleAssignmentFile message must contain the assignments for the vehicle being loaded, and those assignments must be bound to (specify) the vehicle. Other vehicle assignments may also be provided (local option) and those other assignments may be bound or unbound.
2. The use of SchOperatorAssignmentFile message is a local option. Agencies may choose not to use this file, to use it to convey only operator assignments relevant to the vehicle being loaded, or to convey additional assignments as well (e.g. all runs for a garage).
3. Local agencies may adopt a very simple management scheme for the schedule files wherein file version numbers are created directly from timetable version numbers and stop point version numbers assigned to the corresponding list messages, or may adopt a more complex configuration management scheme to facilitate tailoring file loads to each individual vehicle.

DRAFT

Report Detour**TCIP Dialog Definition Page 1**

Dialog Name: Report Detour

Business Area: CC

Dialog Pattern: Report

Purpose: Notify a PTV that a detour is in effect.

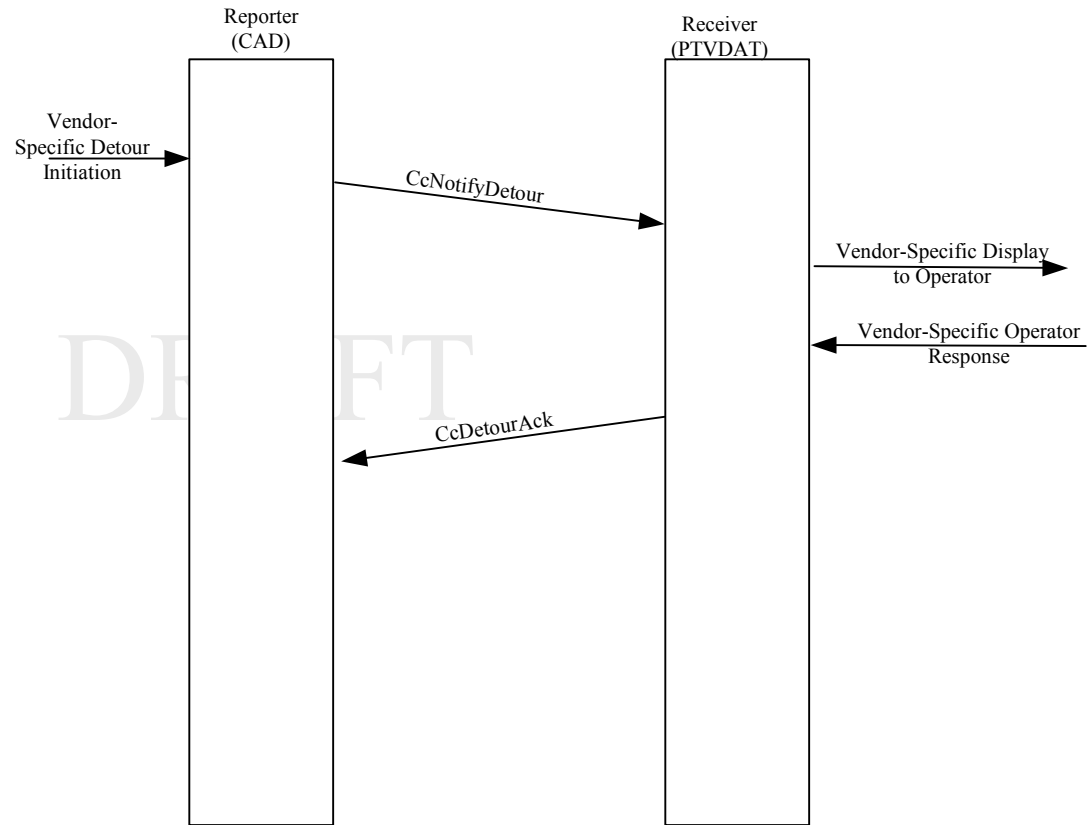
Assumptions:

1. The reporter may be a CAD/AVL System (CAD).
2. The receiver may be PTV Manage VLU DATA (PTVDAT).

Narrative:

1. The dispatcher enters a detour into the CAD/AVL system using manufacturer-defined procedures. CAD determines affected PTVs and initiate this dialog with each affected PTVDAT.
2. CAD sends a CcNotifyDetour message to the PTVDAT.
3. The PTVDAT makes the detour known to the operator using manufacturer-defined mechanisms.
4. The PTVDAT sends a CcDetourAck message to the CAD/AVL system, when the operator has acknowledges the detour
5. CAD performs vendor-defined housekeeping and the dialog ends.

Message Sequence Diagram Page 2



Normal Execution of the "Report Detour" Dialog

TCIP Dialog Definition Page 3		
Dialog Name: Report Detour		
Business Area: CC		
Dialog Pattern: Report		
Message Name	Message Identifier	Role
CcNotifyDetour	CC 2026	Notify the onboard equipment (VLU/MDT) of a detour.
CcDetourAck	CC 2025	Acknowledge receipt of a detour notice by the PTV
<p>Notes:</p> <ol style="list-style-type: none"> 1. Recommend that the CAD/AVL system only notify vehicles of the detour that are affected by it to conserve network capacity. 2. In a vehicle with a separate VLU and MDT, the “Report Menu Selection” dialog may be used to notify the operator of the detour (narrative step 3) 3. The detour remains in effect until the specified end-time occurs, or the detour is cancelled using the “Report Cancel Detour” dialog. 		

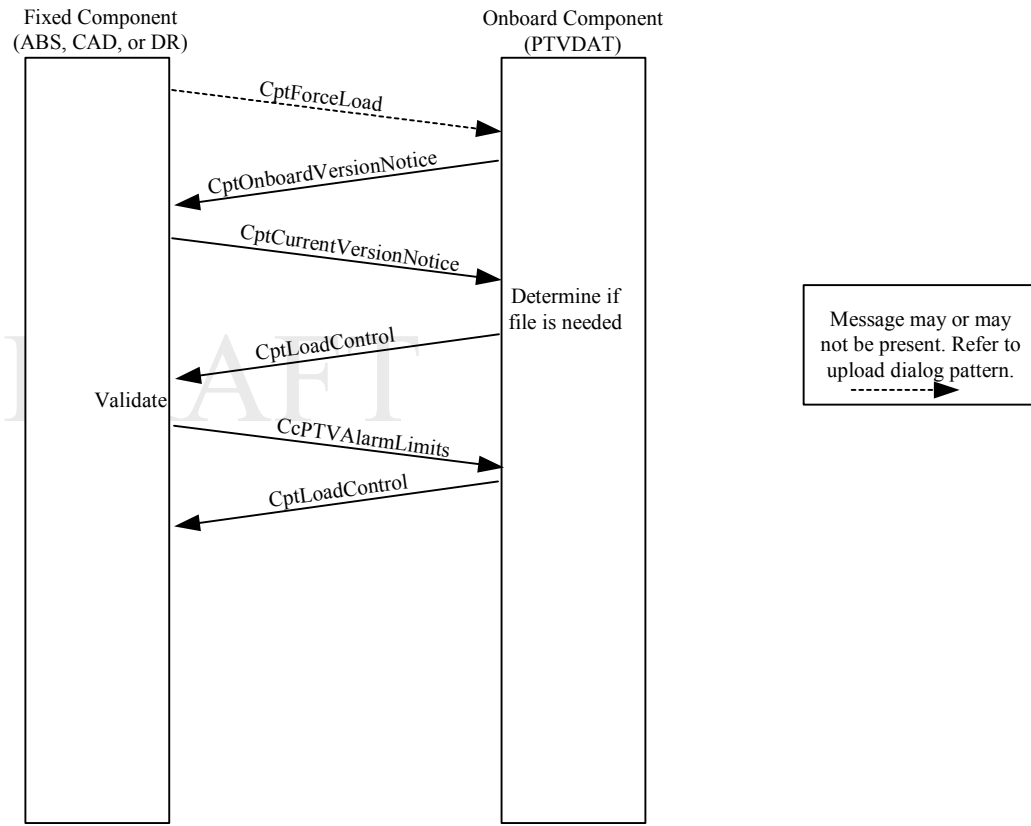
Load PTV Alarm Limits**TCIP Dialog Definition Page 1****Dialog Name:** Load PTV Alarm Limits**Business Area:** CC**Dialog Pattern:** Load**Purpose:** Provide default vehicle health alarm thresholds and other reporting-related configuration information to VLU.**Assumptions:**

1. The fixed component may be an Authorized Business System (ABS), CAD/AVL System (CAD), or Data Repository (DR).
2. The onboard component may be PTV Manage VLU DATA (PTV DAT).

Narrative:

1. The onboard component (PTV DAT) triggers the dialog (based on the state of the wireless LAN, internal timers, and/or CptForceLoad message from the fixed component), by initiating a CptOnboardVersionNotice/CptCurrentVersionNotice exchange. The onboard component determines if a new CcPTVAlarmLimits message is required.
2. If the CcPTVAlarmLimits message is current, the onboard component sends a CptLoadControl message ending the dialog.
3. If the CcPTVAlarmLimits message is not current, the onboard component sends a CptLoadControl message requesting the current version.
4. The fixed component validates the request and terminates the dialog with a CptBadLoadRequest message (if the file request is invalid), or sends the current CcPTVAlarmLimits message.
5. The onboard component receives the CcPTVAlarmLimits message and sends a CptLoadControl message terminating the dialog.

Message Sequence Diagram Page 2



Normal Execution of the "Load PTV Alarm Limits" Dialog

TCIP Dialog Definition Page 3		
Dialog Name: Load PTV Alarm Limits		
Business Area: CC		
Dialog Pattern: Load		
Message Name	Message Identifier	Role
CcPTVAlarmLimits	Cc 2024	Provide alarm thresholds and related configuration information to the onboard component.
CptForceLoad	CPT 2011	Used by the fixed component to force the onboard component to initiate the load.
CptOnboardVersionNotice	CPT 2010	Onboard component provides the version number of the alarm limits on hand.
CptLoadControl	CPT 2008	Onboard component controls the load process with this message.
CptBadLoadRequest	CPT 2007	Fixed component aborts the dialog with an error notice to the onboard component with this message.
CptCurrentVersionNotice	CPT 2009	Fixed component notifies the onboard component of the up to date version of the alarm limits.
Notes:		

Report Cancel Detour**TCIP Dialog Definition Page 1**

Dialog Name: Report Cancel Detour

Business Area: CC

Dialog Pattern: Report

Purpose: Cancel a detour previously placed in effect using the Report Detour dialog.

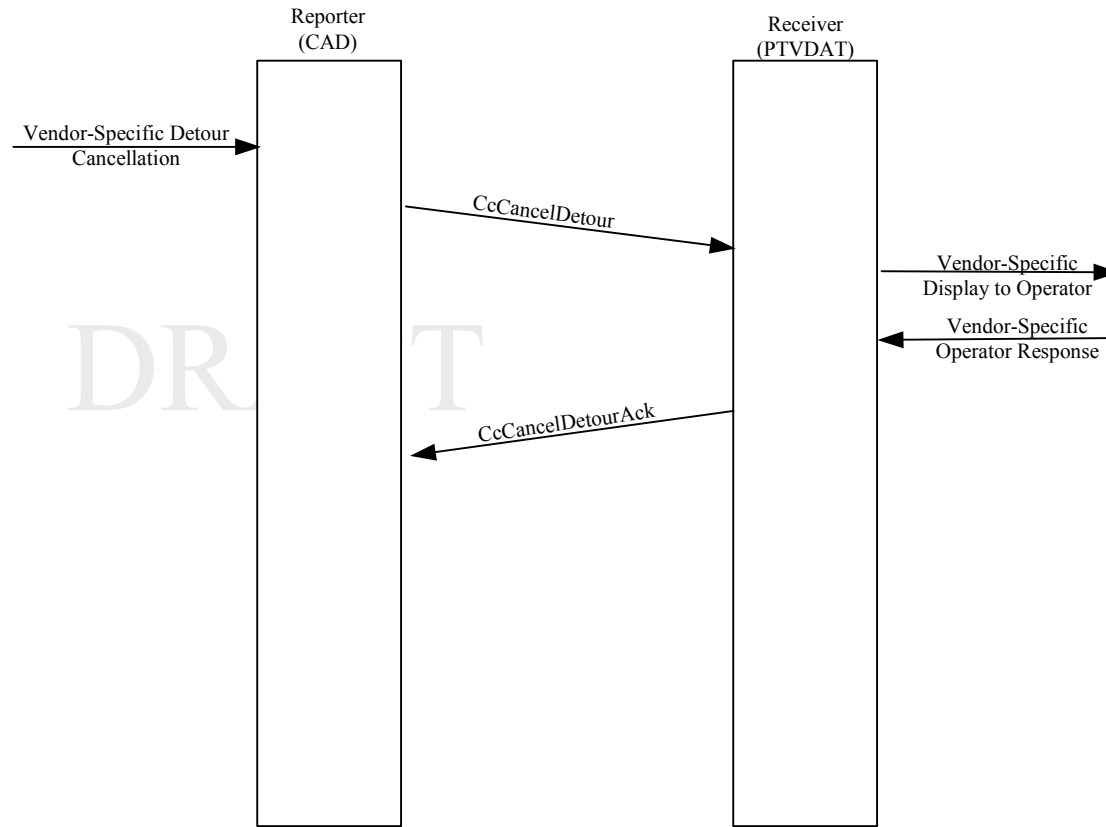
Assumptions:

1. The reporter may be a CAD/AVL System (CAD).
2. The receiver may be PTV Manage VLU DATA (PTV DAT).

Narrative:

1. The dispatcher enters a detour cancellation (or a time for the detour to end) into CAD using manufacturer-defined procedures. CAD determines affected PTVs and initiates this dialog with each affected PTV DAT.
2. CAD sends a CcCancelDetour message to the PTV DAT.
3. The PTV DAT makes the detour cancellations known to the operator using manufacturer defined mechanisms.
4. The PTV DAT sends a CcCancelDetourAck message to CAD, when the operator has acknowledged the cancellation.
5. CAD performs vendor-defined housekeeping and the dialog ends.

Message Sequence Diagram Page 2



Normal Execution of the "Report Cancel Detour" Dialog

TCIP Dialog Definition Page 3		
Dialog Name: Report Cancel Detour		
Business Area: CC		
Dialog Pattern: Report		
Message Name	Message Identifier	Role
CcCancelDetour	CC 2027	Notify the onboard equipment (VLU/MDT) or a detour cancellation
CcCancelDetourAck	CC 2028	Acknowledge that a PTV has received the detour cancellation.
<p>Notes:</p> <ol style="list-style-type: none"> 1. Recommend that only vehicles notified of the detour be notified of the cancellation, and that this dialog not be executed if the detour is ending at the previously specified time. 2. In a vehicle with a separate VLU and MDT, the “Report Menu Selection” dialog may be used to notify the operator of the cancellation (narrative step 3). 		

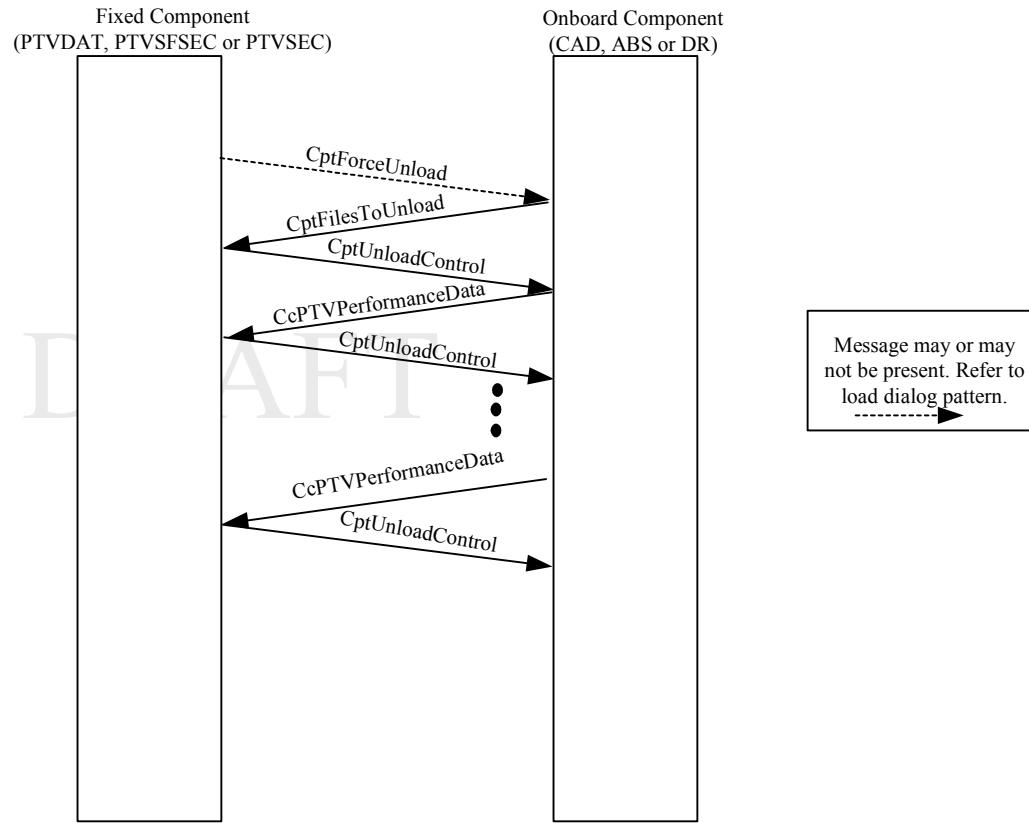
Unload PTV Performance Data**TCIP Dialog Definition Page 1****Dialog Name:** Unload PTV Performance Data**Business Area:** CC**Dialog Pattern:** Unload**Purpose:** Unload data on the performance of the PTV from the onboard component to the fixed component.**Assumptions:**

1. The onboard component may be PTV Manage VLU DATA (PTV DAT).
2. The fixed component may be a CAD/AVL System (CAD), Authorized Business System (ABS) or a Data Repository (DR).

Narrative:

1. The onboard component initiates the dialog based on a CptForceUnload message, or available files to Unload combined with WLAN availability, and sends a CptFilesToUnload message.
2. The fixed component determines what files are available, needed, or eligible for deletion and sends a CptUnloadControl message to the onboard component.
3. The onboard component deletes any files specified for deletion.
4. If there is no file specified to unload the dialog ends. If the specified file is not available, the onboard component sends a CptUnloadRequestError message and the dialog ends. If there is a file specified and it is available, the onboard component sends the specified CcPTVPerformanceData message (file) to the fixed component.
5. The fixed component receives and validates the CcPTVPerformanceData message and goes to step 2 above.

Message Sequence Diagram Page 2



Normal Execution of the "Unload PTV Performance Data" Dialog

TCIP Dialog Definition Page 3		
Dialog Name: Unload PTV Performance Data		
Business Area: CC		
Dialog Pattern: Unload		
Message Name	Message Identifier	Role
CptForceUnload	Cpt 2017	Trigger onboard component to initiate a unload process. Primary use is to unload via a laptop instead of a wireless LAN.
CptUnloadControl	Cpt 2014	Used by the fixed component to control the unload process.
CptUnloadRequestError	Cpt 2015	Used by the onboard component to notify the fixed component of a file request error.
CcPTVPerformanceData	Cc 2029	Conveys vehicle performance data from the onboard component to the fixed component.
CptFilesToUnload	Cpt 2013	Identifies files stored in an onboard component that are ready for unload to the corresponding fixed component.
Notes:		

Command Change Assignments**TCIP Dialog Definition Page 1**

Dialog Name: Command Change Assignments

Business Area: CC

Dialog Pattern: Command Response

Purpose: Change the binding of vehicle and/or operator assignments after they have already been provided.

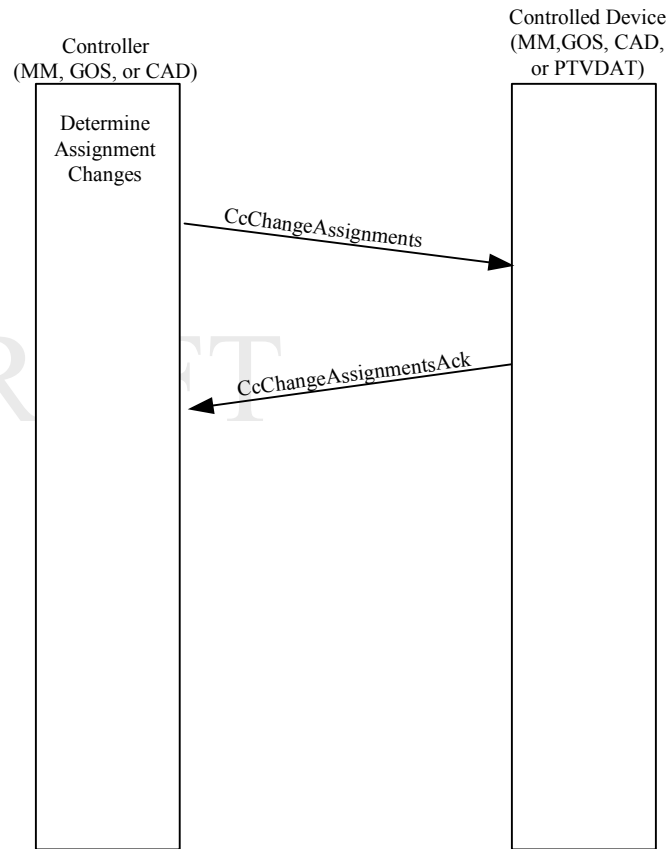
Assumptions:

1. Assignment changes are only sent to affected vehicles (not the whole fleet) to avoid excessive use of the narrowband wireless communications capacity.
2. The controller may be Garage Operations System (GOS), Maintenance Management (MM), or CAD/AVL System (CAD).
3. The controlled device may be Garage Operations System (GOS), Maintenance Management (MM), CAD/AVL System (CAD), or PTV Manage VLU DATA (PTVDAT).

Narrative:

1. The controller (GOS,MM or CAD) determines via manufacturer defined mechanism that previously provided bound operator or vehicle assignments must be changed. The controller sends a CcChangeAssignments message to the controlled device.
2. The controlled device receives the message and acknowledges its receipt with a CcChangeAssignmentsAck message.

Message Sequence Diagram Page 2



Normal Execution of the "Command Change Assignments" Dialog

TCIP Dialog Definition Page 3		
Dialog Name: Command Change Assignments		
Business Area: CC		
Dialog Pattern: Command Response		
Message Name	Message Identifier	Role
CcChangeAssignments	CC 2030	Notify the device (MM,GOS,CAD, or PTVDAT) of changes to operator or vehicle assignments.
CcChangeAssignmentsAck	CC 2031	Acknowledge receipt of the modified assignments.
DRAFT		
Notes:		

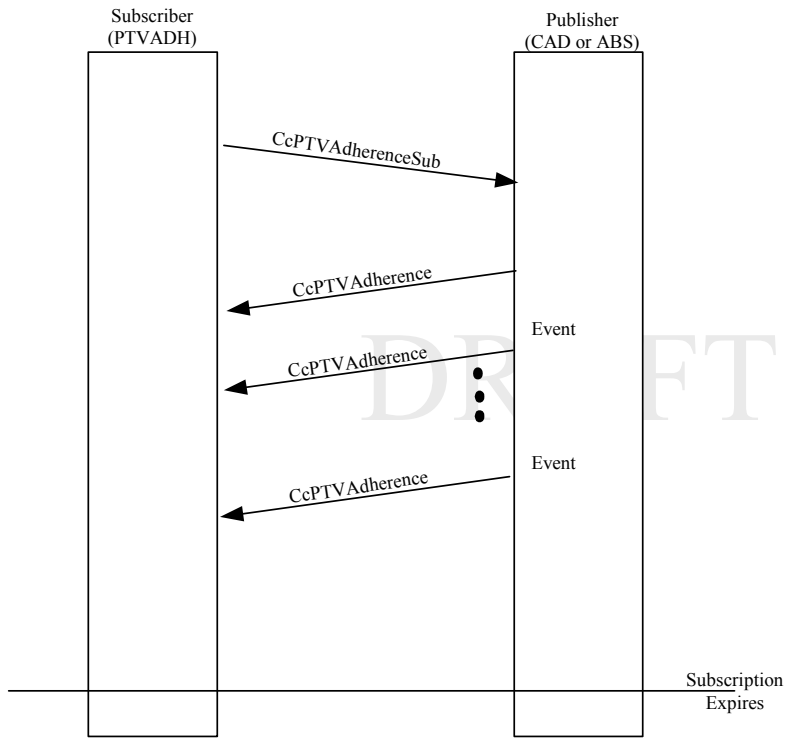
Subscribe PTV Adherence**TCIP Dialog Definition Page 1****Dialog Name:** Subscribe PTV Adherence**Business Area:** CC**Dialog Pattern:** Subscription-Event**Purpose:** Provide the capability for the Computer Aided Dispatch System (CAD) or other Authorized Business System (ABS) to subscribe to exception-based route and schedule adherence data for a vehicle.**Assumptions:**

1. Adherence parameters may be customized by the subscriber by including them in the subscription request, customized limits may be modified by sending a subsequent subscription request with the same request identifier value specifying new custom parameters.
2. If the subscription request does not specify custom adherence parameters, the parameters are obtained from the Load PTV Alarm Limits dialog (CcPTVAlarmLimits message).
3. The publisher may be PTV Monitor/Report Adherence (PTVADH).
4. The subscriber may be a CAD/AVL System (CAD), or an Authorized Business System (ABS).
5. Adherence parameters govern whether the vehicle is off route, what reporting rate(s) should be used while off route, and the criteria for detecting that the PTV is back on route.

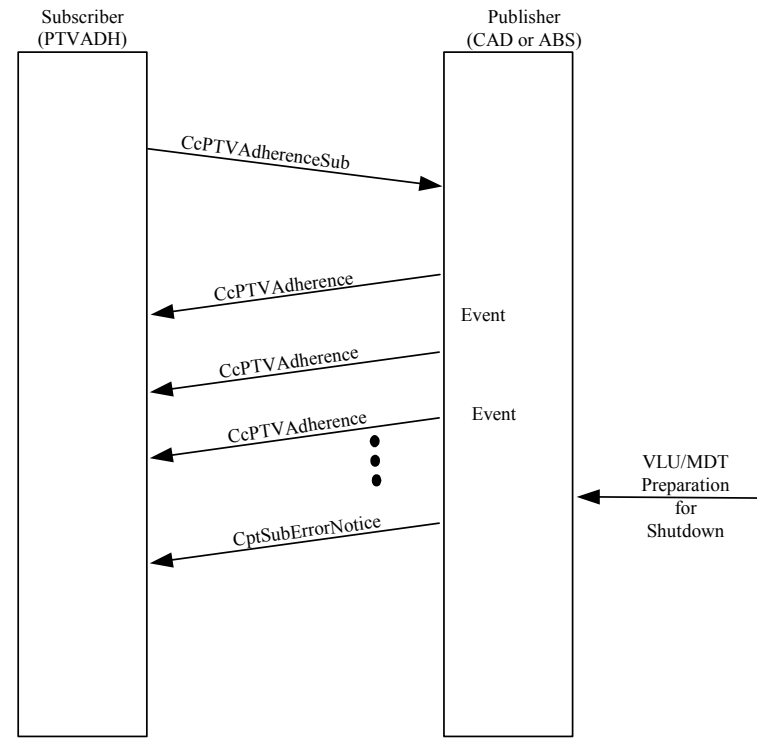
Narrative:

1. The subscriber sends a CcPTVAdherenceSub message to PTVADH.
2. PTVADH (publisher) validates the message and determines:
 - A. The request is invalid, unauthorized or cannot be serviced. PTVADH sends a CptSubErrorNotice to the subscriber and the dialog ends.
 - B. The request can be serviced. PTVADH sends a CcPTVAdherence message to the subscriber.
3. PTVADH sends a new CcPTVAdherence message to the subscriber upon each new adherence event (vehicle enters or leaves adherence violation state).
4. The dialog ends:
 - A. If PTVADH initiates its shutdown process (e.g. due to an earlier engine shutdown), PTVADH sends a CptErrorSubNotice to the subscriber and the dialog ends.
 - B. If the subscription expires, PTVADH stops sending information to the subscriber.
 - C. If the subscriber sends a new CcPTVAdherenceSub message with the same requestIdentifier as the original subscription and a requestedType of cancel, PTVADH cancels the subscription and sends no more CcPTVAdherence messages based on that subscription.

Message Sequence Diagram Page 2



Normal Execution of the Event-Driven "Subscribe PTV Adherence" Dialog



Normal Execution of the event-Driven "Subscribe PTV Adherence" Dialog Terminated by VLU/MDT Shutdown

TCIP Dialog Definition Page 3		
Dialog Name: Subscribe PTV Adherence		
Business Area: CC		
Dialog Pattern: Subscription-Event		
Message Name	Message Identifier	Role
CcPTVAdherenceSub	Cc 2032	Request a subscription to vehicle route/schedule adherence monitoring.
CcPTVAdherence	Cc 2033	Provide route/schedule adherence status information.
CptSubErrorNotice	Cpt 2000	Notify the subscriber that a subscription was discontinued with an error status.
Notes:		

Operator Initiated Voice Radio Call**TCIP Dialog Definition Page 1**

Dialog Name: Operator Initiated Voice Radio Call

Business Area: CC

Dialog Pattern: Operator Initiated Voice Radio Call

Purpose: Allow a vehicle operator to initiate a voice radio call with the dispatcher.

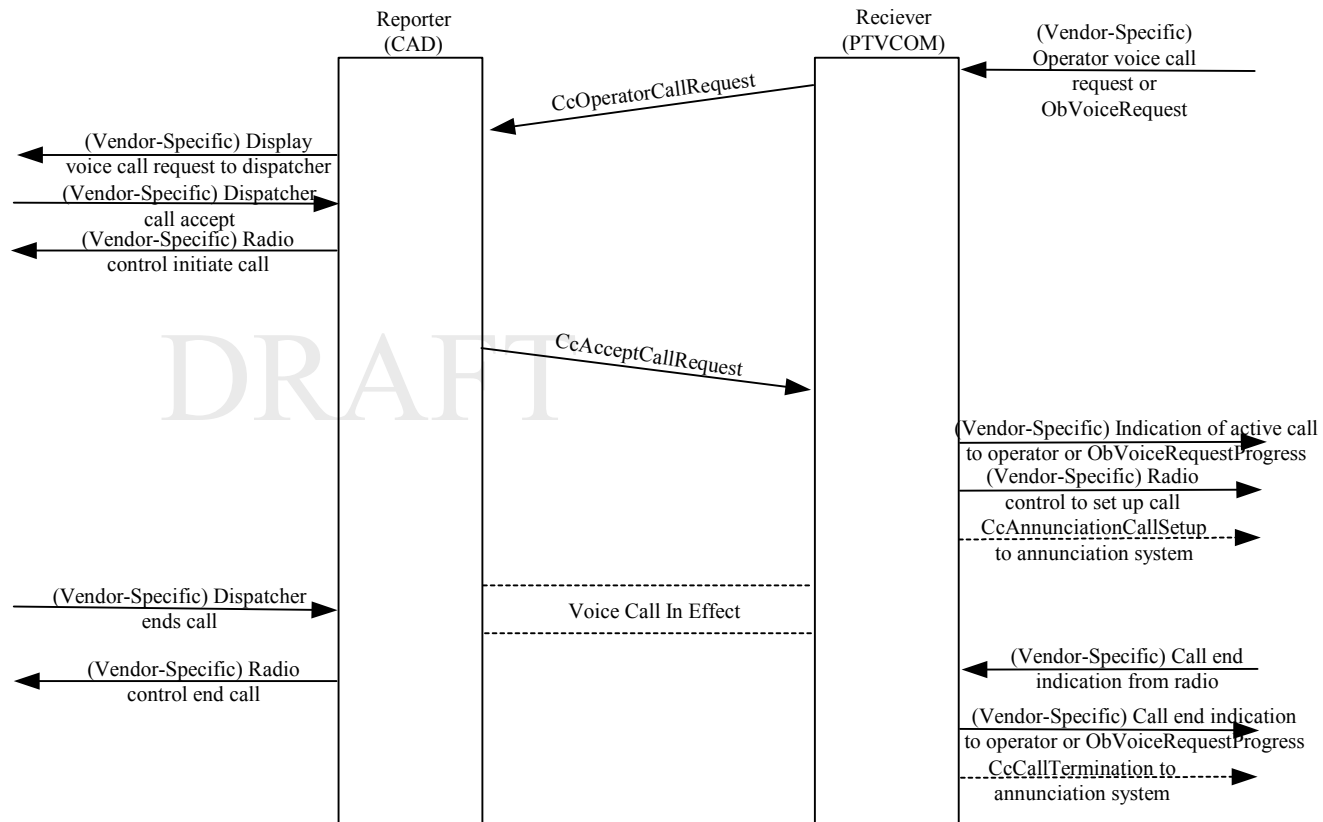
Assumptions:

1. Vehicle may have a single radio or separate voice and data radios
2. Request can be an “emergency” or a “normal” request.
3. Request can be to activate covert microphone, and in that case dialog may be triggered by the same operator action that triggers the silent alarm.
4. If the VLU and MDT are separate components, the messages ObVoiceRequest, and ObVoiceRequestProgress are used to communicate between the MDT and VLU in steps 1,2A &3.
5. All radio controls and indications are radio vendor-specific.
6. The reporter may be a the PTV Communications Manager (PTVCOM).
7. The receiver may be CAD/AVL System (CAD).

Narrative:

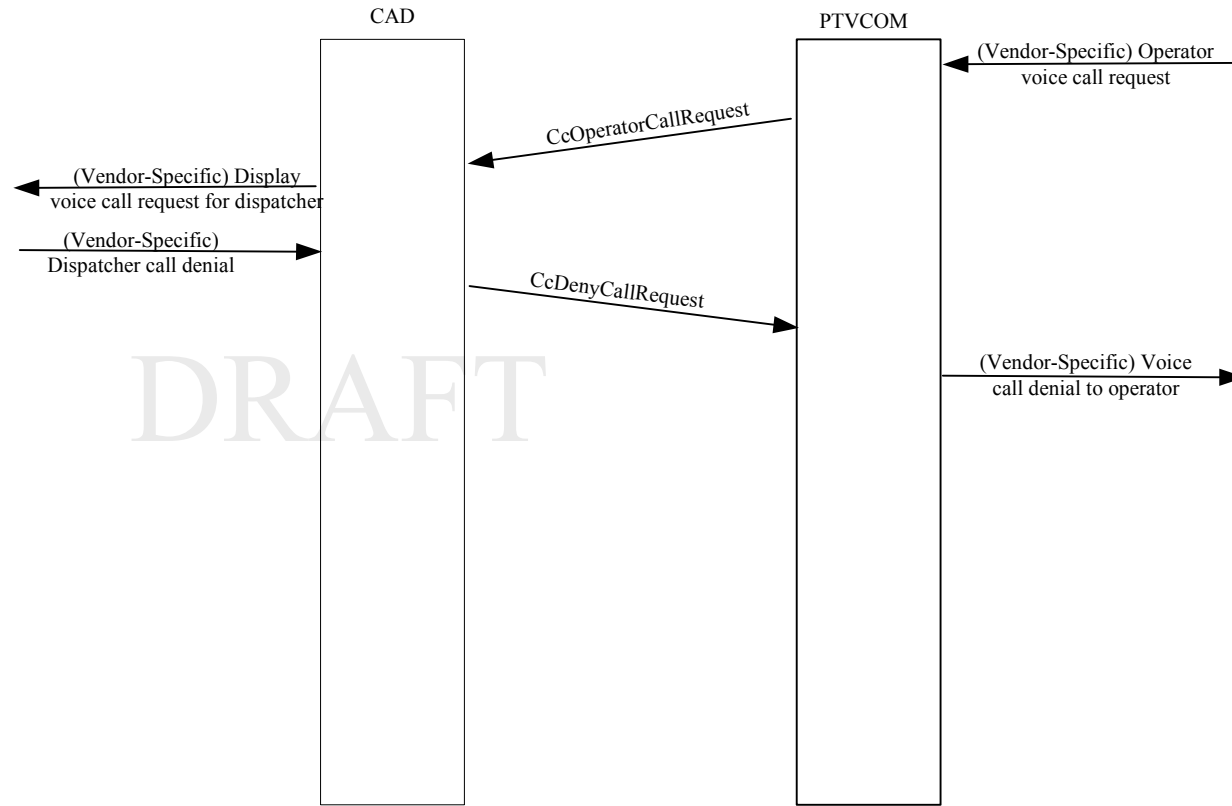
1. Operator requests a voice radio call via vendor-specific mechanism. PTVCOM sends a CcOperatorCallRequest message to CAD.
2. CAD determines from the dispatcher whether to accept the call (vendor-specific).
 - A. If the call is denied, CAD sends a CcDenyCallRequest message to PTVCOM. PTVCOM notifies the operator via vendor specific means of the denial and the dialog ends.
 - B. If the call is accepted, CAD instructs the radio system to set up the call, and sends a CcAcceptCallRequest message to PTVCOM.
3. PTVCOM notifies the operator via vendor-specific mechanism. If the annunciation system is required PTVCOM sends a CcAnnunciatorCallSetup message to PTVANN.
4. The dispatcher ends the call via vendor defined mechanism and the CAD/AVL notifies the radio system to terminate the call.
5. PTVCOM detects (from the radio) that the call ended, and notifies the operator via vendor specific means.
6. If the annunciator was used, the PTVCOM sends a CcCallTermination message to the annunciator and the dialog ends.

Message Sequence Diagram Page 2



A Operator-Initiated Voice Radio Call Pattern (Accepted)

Message Sequence Diagram Page 3



DRAFT

Operator Initiated Voice Radio Call (Denied)

TCIP Dialog Definition Page 3		
Dialog Name: Operator Initiated Voice Radio Call		
Business Area: CC		
Dialog Pattern: Operator Initiated Voice Radio Call		
Message Name	Message Identifier	Role
ObVoiceRequest	Ob 2008	Notify a separate VLU that the operator requested a voice call on the MDT
ObVoiceRequestProgress	Ob 2009	Notify a separate MDT of the status of an operator-initiated voice call.
CcOperatorCallRequest	Cc 2034	Notify the CAD/AVL system that a vehicle operator has requested a voice call
CcDenyCallRequest	Cc 2035	Notify the VLU/MDT that the dispatcher has denied a voice call request.
CcAcceptCallRequest	Cc 2036	Notify the VLU/MDT that the voice call is in effect.
CcAnnunciatorCallSetup	Cc 2039	Notify the annunciator to connect to a voice call (e.g. covert microphone)
CcCallTermination	Cc 2040	Notify the annunciator to disconnect from a voice call.
Notes:		

Dispatcher Initiated Voice Radio Call**TCIP Dialog Definition Page 1**

Dialog Name: Dispatcher Initiated Voice Radio Call

Business Area: CC

Dialog Pattern: Dispatcher Initiated Voice Radio Call

Purpose: Allow a dispatcher to establish a voice radio conversation with a vehicle.

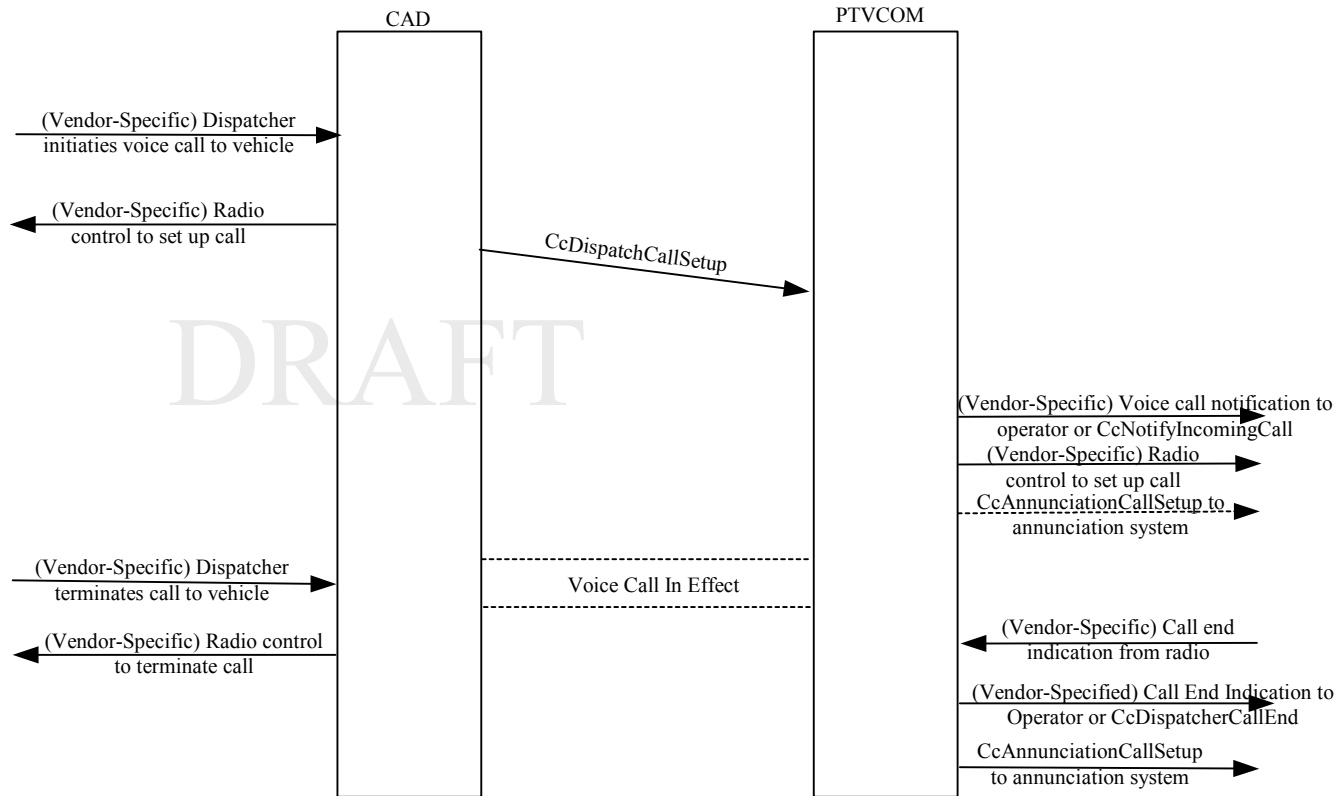
Assumptions:

1. Vehicle may have a single radio, or separate voice and data radios.
2. If the VLU and MDT are separate components, the messages CcNotifyIncomingCall and CcDispatchCallEnd are used in steps 3, and 6 to communicate between the VLU and MDT.
3. All radio controls and indications are radio-vendor specific

Narrative:

1. The dispatcher requests a voice call to a vehicle via vendor-specific mechanism. CAD instructs the radio system to set up the call.
2. CAD sends a CcDispatchCallSetup message to the PTVCOM.
3. PTVCOM notifies the operator via vendor-specific means or via CcNotifyIncomingCall that the call is being established, and instructs the radio to establish the voice call. If the annunciator is required, the PTVCOM sends a CcAnnunciatorCallSetup message to PTVANN.
4. The dispatcher decides to end the call and notifies CAD via vendor-specific means
5. CAD instructs the radio system to terminate the call.
6. PTVCOM detects (from the radio) that the call ended, and notifies the operator via vendor-specific means, or via CcDispatchCallEnd.
7. If the annunciator was used, the VLU/MDT sends a CcCallTermination message to PTVANN and the dialog ends.

Message Sequence Diagram Page 2



Dispatcher-Initiated Voice Radio Call Pattern

TCIP Dialog Definition Page 3		
Dialog Name: Dispatcher Initiated Voice Radio Call		
Business Area: CC		
Dialog Pattern: Dispatcher Initiated Voice Radio Call		
Message Name	Message Identifier	Role
CcDispatchCallSetup	Cc 2037	Notify the VLU/MDT that a dispatcher-initiated voice call is being established
CcNotifyIncomingCall	Cc 2038	Notify a separate MDT that a dispatcher incoming call is being set up.
CcAnnunciatorCallSetup	Cc 2039	Notify the annunciator to connect to a voice call (e.g. remote dispatcher announcement)
CcCallTermination	Cc 2040	Notify the annunciator to disconnect from a voice call
CcDispatchCallEnd	Cc 2041	Notify a separate MDT that a dispatcher initiated call is being terminated.
Notes:		

Report Operator Alarm**TCIP Dialog Definition Page 1**

Dialog Name: Report Operator Alarm

Business Area: CC

Dialog Pattern: Report

Purpose: Allow a vehicle operator to manually trigger a report of an alarm condition, by picking from a list of alarm conditions.

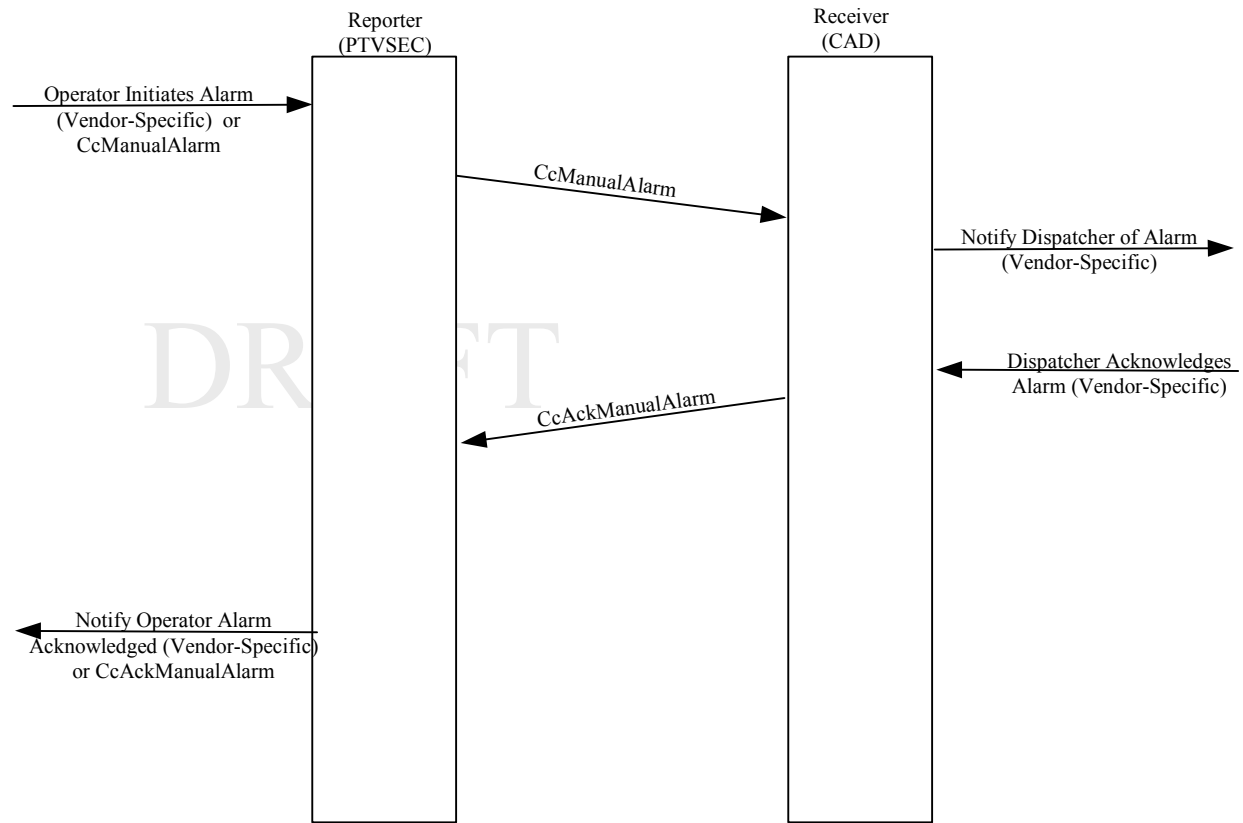
Assumptions:

1. Alarm identifier values and text labels are provided to the VLU/MDT using the "Load PTV Alarm Limits" dialog.
2. The reporter may be PTV Manage Security (PTVSEC).
3. The receiver may be a CAD/AVL System (CAD).

Narrative:

1. The operator of a vehicle uses a vendor-specific mechanism to trigger an alarm. PTVSEC sends a CcManualAlarm message to CAD.
2. CAD uses a vendor-specific mechanism to show the alarm to the dispatcher. When the dispatcher has seen the alarm, CAD sends a CcAckManualAlarm message to PTVSEC.
3. PTVSEC performs vendor-specific housekeeping, and notifies the operator the alarm was acknowledged.

Message Sequence Diagram Page 2



Normal Execution of the "Report Operator Alarm" Dialog

TCIP Dialog Definition Page 3		
Dialog Name: Report Operator Alarm		
Business Area: CC		
Dialog Pattern: Report		
Message Name	Message Identifier	Role
CcManualAlarm	Cc 2042	Notify the CAD/AVL system of a manually initiated alarm condition.
CcAckManualAlarm	Cc 2043	Acknowledge that the dispatcher has seen a manually initiated alarm from the vehicle.
<p>Notes:</p> <ol style="list-style-type: none"> 1. The CAD/AVL System may provide a mechanism to automatically create an incident report based on received alarm. 2. The CcAckManualAlarm, and CcManualAlarm messages may optionally be used between the MDT and VLU to convey information between PTVOPR and PTVSEC. 		

Report Passenger Alarm**TCIP Dialog Definition Page 1**

Dialog Name: Report Passenger Alarm

Business Area: CC

Dialog Pattern: Report

Purpose: Notify the dispatcher of a passenger-initiated alarm condition.

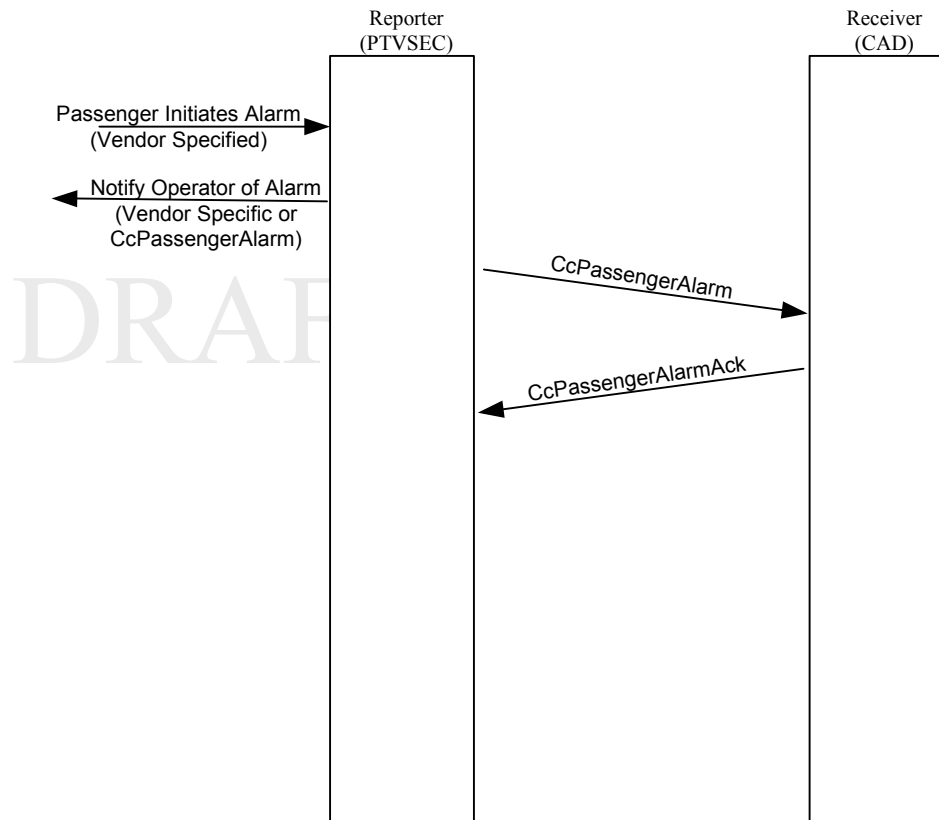
Assumptions:

1. The reporter may be PTV Manage Security (PTVSEC).
2. The receiver may be a CAD/AVL System (CAD).

Narrative:

1. A passenger uses an agency/vendor specified mechanism to trigger an alarm.
2. PTVSEC uses an agency/vendor specified mechanism to alert the driver, and optionally performs other agency-specified activities such as activating an audible tone or a camera.
3. PTVSEC sends a CcPassengerAlarm message to CAD.
4. CAD uses a vendor-specified mechanism to show the alarm to the dispatcher. When the dispatcher has seen the alarm, CAD sends a CcPassengerAlarmAck message to PTVSEC.
5. PTVSEC performs vendor-specific housekeeping, and notifies the operator the alarms was acknowledged.
6. The operator resets the alarm using an agency/vendor specified mechanism.

Message Sequence Diagram Page 2



Normal Execution of the "Report Passenger Alarm" Dialog

TCIP Dialog Definition Page 3		
Dialog Name: Report Passenger Alarm		
Business Area: CC		
Dialog Pattern: Report		
Message Name	Message Identifier	Role
CcPassengerAlarm	Cc 2044	Notify the CAD/AVL System of a passenger-initiated alarm condition.
CcPassengerAlarmAck	Cc 2045	Acknowledge that the dispatcher has seen a passenger initiated alarm from the vehicle.
Notes:		
The CAD/AVL system may provide a mechanism to automatically create an incident report based on the received alarm.		

Subscribe PTV-Polled Parameters**TCIP Dialog Definition Page 1**

Dialog Name: Subscribe PTV-Polled Parameters

Business Area: CC

Dialog Pattern: Subscription-Event

Purpose: This dialog is used by the TCIP Polling Controller to subscribe to information from the CAD/AVL System used in Polling PTVs. The information includes:

1. What parameters should be requested from the PTV(s) on each poll, and
2. What agency-specific information (if any) should be conveyed to the PTV with the poll.

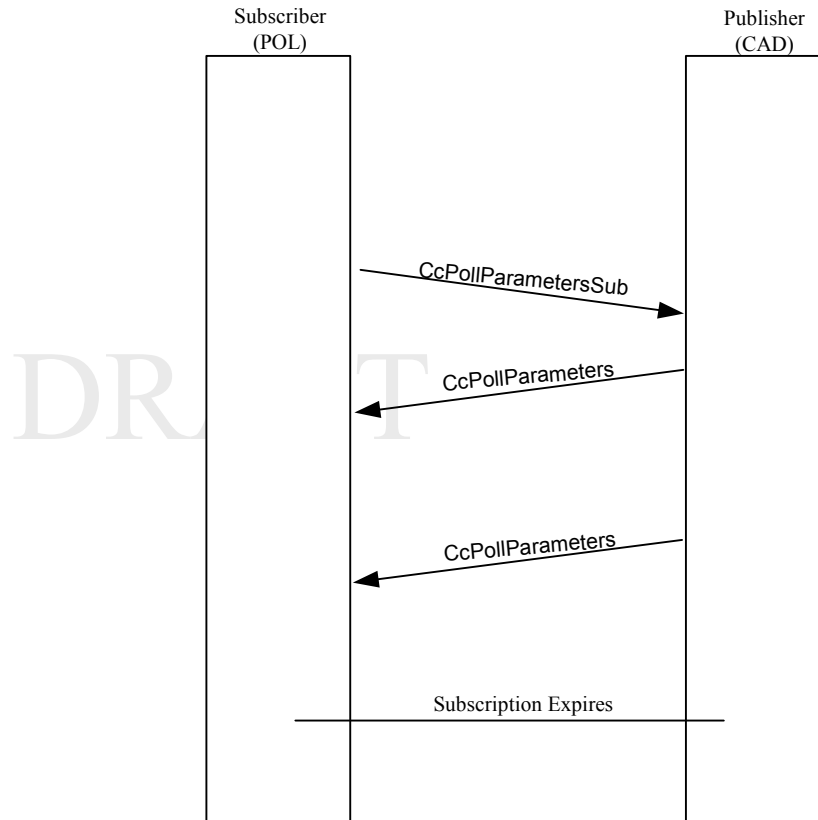
Assumptions:

1. The publisher may be a CAD/AVL System (CAD).
2. The subscriber may be a TCIP Polling Controller (POL).

Narrative:

1. The Polling Controller initializes and requests a subscription to the polled parameters by sending a CcPollParametersSub message to the CAD/AVL System.
2. The CAD/AVL System determines if the subscription can be provided.
 - A. If the subscription cannot be granted, the CAD/AVL System sends a CptSubErrorNotice to the Polling Controller and the dialog ends.
 - B. If the subscription can be granted, the CAD/AVL System sends a CcPollParameters message to the Polling Controller. This initial message contains the setup parameters for the polling controller as well as any PTV-specific information the CAD/AVL System has to offer.
3. Whenever the CAD/AVL System has updates to the polling parameters for any vehicle(s), it sends a new CcPollParameters with the parameters for those vehicle(s).

Message Sequence Diagram Page 2



Normal Execution of the "Subscribe PTV-Polled Parameters" Dialog

TCIP Dialog Definition Page 3		
Dialog Name: Subscribe PTV-Polled Parameters		
Business Area: CC		
Dialog Pattern: Subscription-Event		
Message Name	Message Identifier	Role
CcPollParametersSub	CC 2046	Request polling information from the CAD/AVL System.
CcPollParameters	CC 2047	Provide polling information from the CAD/AVL System to the Polling Controller.
CptSubErrorNotice	CPT 2000	Notify the Polling Controller of an error terminating the subscription.
<p>Notes:</p> <p>The information requested and delivered with each poll has a substantial impact on the performance of the polling protocol. Consequently caution and engineering judgment must be exercised in establishing policies about what information is transferred with each poll.</p>		

Notify PTV Polling Result**TCIP Dialog Definition Page 1**

Dialog Name: Notify PTV Polling Result

Business Area: CC

Dialog Pattern: Blind Notification

Purpose: The TCIP Polling Protocol provides a mechanism for AVL and other operating information to be extracted from each PTV on each poll cycle. This dialog conveys that polling information from the polling controller to the CAD/AVL System.

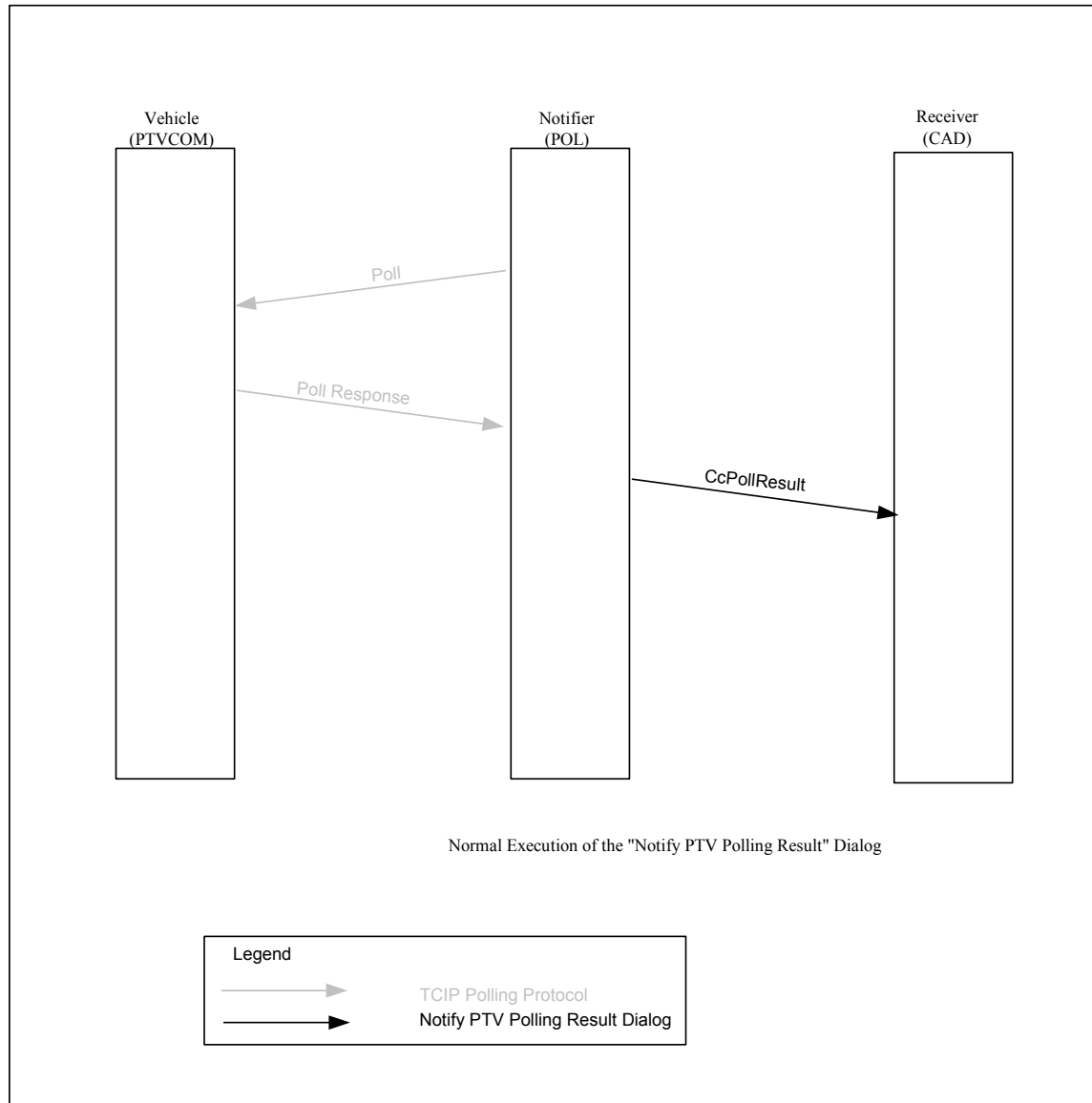
Assumptions:

1. The blind notification pattern does not require acknowledgements from the CAD/AVL System back to the controller. The message rate to the CAD/AVL System can be very high depending on radio system parameters and capacity.
2. TCIP messages exchanged using the TCIP Polling Protocol are not part of this dialog.
3. The notifier may be a TCIP Polling Controller (POL).
4. The receiver may be a CAD/AVL System (CAD).

Narrative:

1. The Polling Controller receives operating information from a PTV via the TCIP Polling Protocol.
2. The Polling Controller sends the operating information to the CAD/AVL System in a CcPollResults message.

Message Sequence Diagram Page 2



TCIP Dialog Definition Page 3		
Dialog Name: Notify PTV Polling Result		
Business Area: CC		
Dialog Pattern: Blind Notification		
Message Name	Message Identifier	Role
CcPollResults	CC 2048	Convey operating information received with a poll to the CAD/AVL System.
DRAFT		
Notes:		

Command Remote PTV Disable**TCIP Dialog Definition Page 1**

Dialog Name: Command Remote PTV Disable

Business Area: CC

Dialog Pattern: Command Response

Purpose: Cause a PTV's engine to shutdown due to a security problem or other incident.

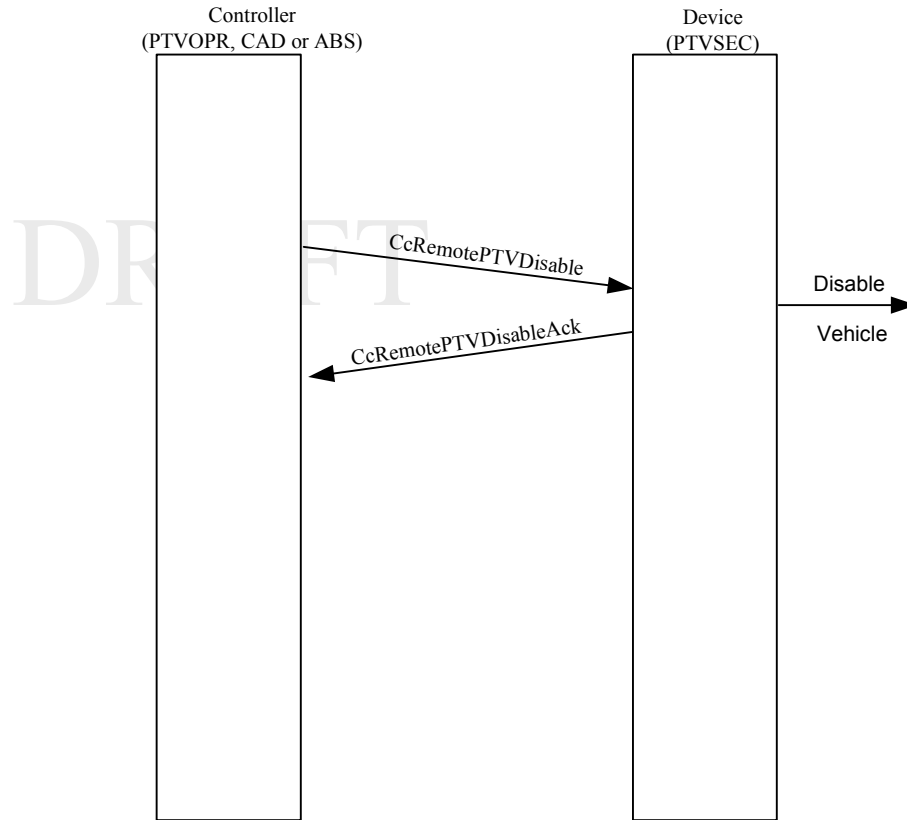
Assumptions:

1. The controller may be PTV Operator Interface (PTVOPR), , CAD/AVL System (CAD), or Authorized Business System (ABS).
2. The controlled device is the PTV Manage Security (PTVSEC) entity on the PTV.

Narrative:

1. The controller (based on human input) determines that a PTV is to be disabled. The controller sends a CcPTVDisable message to the PTV.
2. PTVSEC determines if the command is valid, and if so disables the PTV.
3. PTVSEC may optionally (local agency defined) provide a covert indicator of the disabled status to the PTV operator.
4. PTVSEC sends a CcPTVDisableAck message to the controller indicating whether the command was accepted.

Message Sequence Diagram Page 2



Normal Execution of the "Command Remote PTV Disable" Dialog

TCIP Dialog Definition Page 3**Dialog Name:** Command Remote PTV Disable**Business Area:** CC**Dialog Pattern:** Command Response

Message Name	Message Identifier	Role
CcRemotePTVDisable	Cc 2048	Command a PTV to be disabled.
CcRemotePTVDisableAck	Cc 2049	Report the result of the disable command.

Notes:

Command Remote PTV Enable**TCIP Dialog Definition Page 1**

Dialog Name: Command Remote PTV Enable

Business Area: CC

Dialog Pattern: Command Response

Purpose: Cause a PTV's engine to be enabled after a remote shutdown due to an incident.

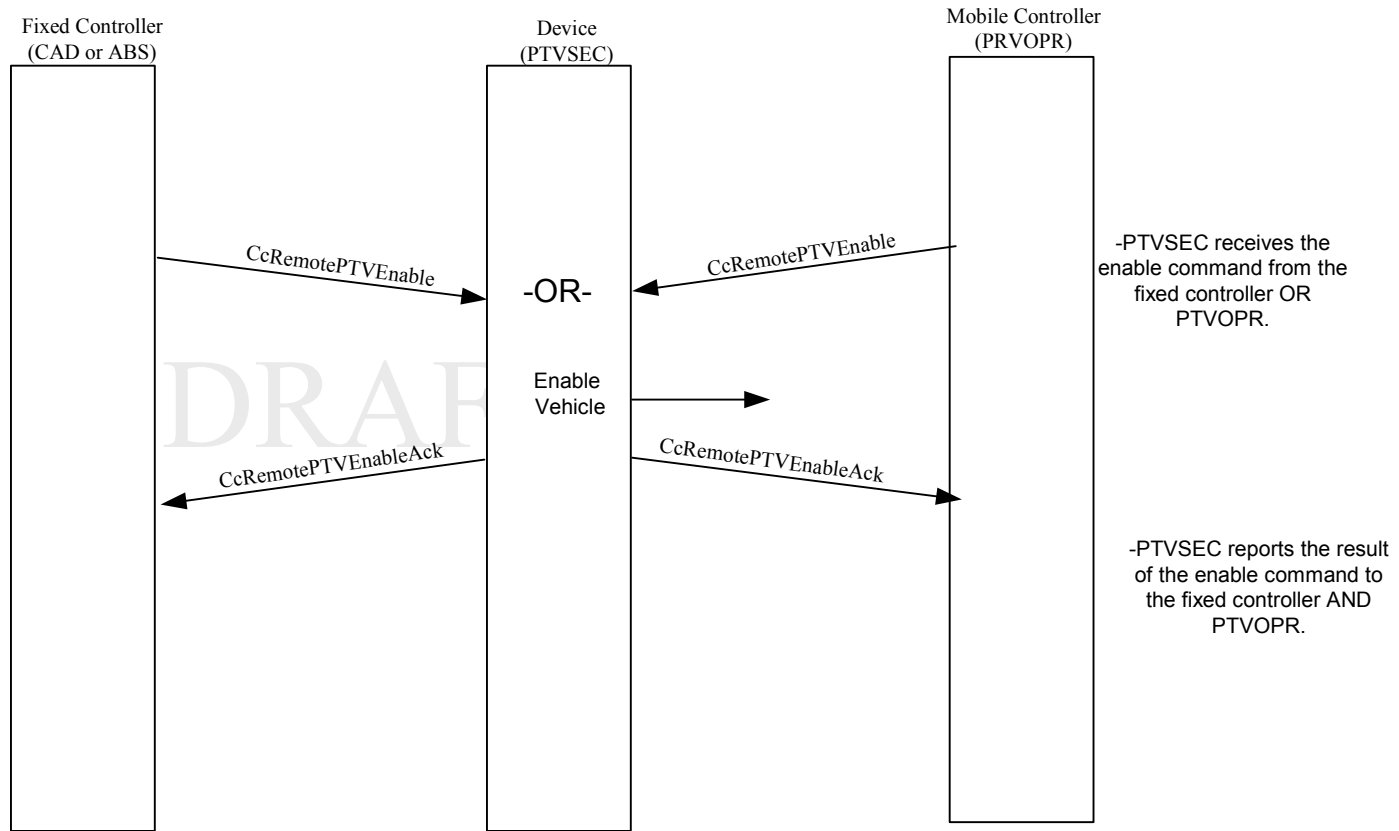
Assumptions:

1. The controller may be PTV Operator Interface (PTVOPR), , CAD/AVL System (CAD), or Authorized Business System (ABS).
2. The device is the PTV Manage Security (PTVSEC) entity on the PTV.

Narrative:

1. The controller sends a CcPTVEnable message to PTVSEC.
2. PTVSEC determines if the command is valid, and if the command is valid, re-enables the PTV's engine.
3. PTVSEC sends a CcPTVEnableAck message to PTVOPR and to the original source of the disable command.

Message Sequence Diagram Page 2



Normal Execution of the "Command Remote PTV Enable" Dialog

TCIP Dialog Definition Page 3**Dialog Name:** Command Remote PTV Enable**Business Area:** CC**Dialog Pattern:** Command Response

Message Name	Message Identifier	Role
CcRemotePTVEnable	CC 2050	command the PTV to be reenabled after a previous disable command.
CcRemotePTVEnableAck	CC 2051	Report the result of an enable command.

Notes:

Report Traveler Alarm**TCIP Dialog Definition Page 1**

Dialog Name: Report Traveler Alarm

Business Area: CC

Dialog Pattern: Report

Purpose: Notify the dispatcher of a traveler-initiated alarm condition in a PTSF.

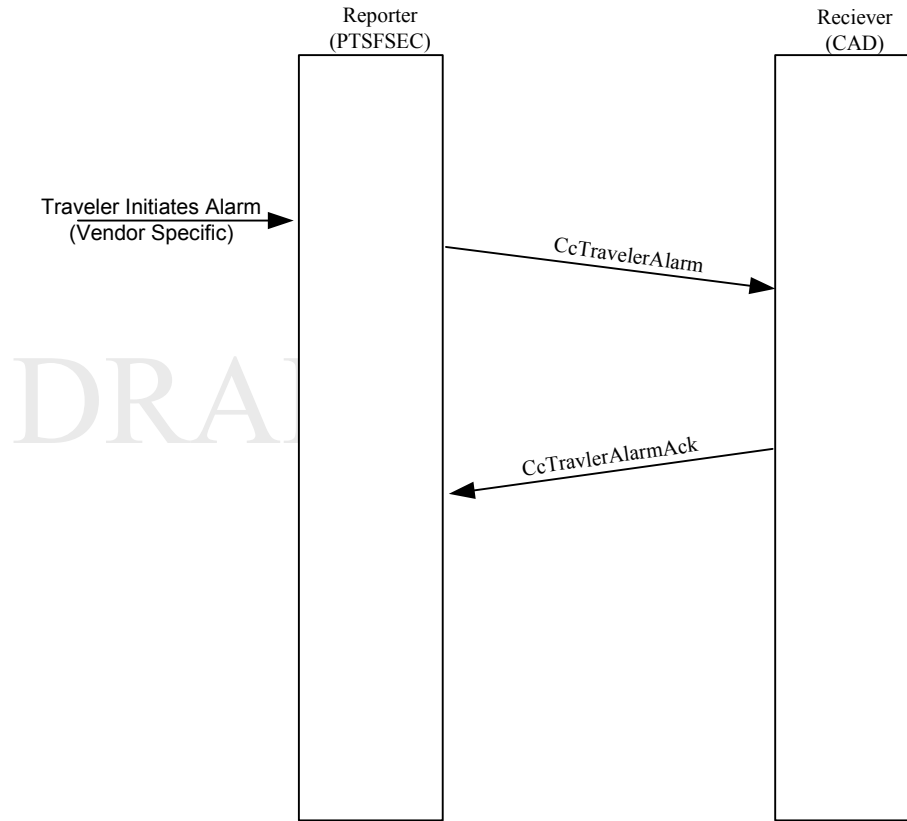
Assumptions:

1. The reporter may be PTSF Manage Security (PTSFSEC).
2. The receiver may be CAD/AVL System (CAD).

Narrative:

1. A traveler in a PTSF uses an agency/vendor specified mechanism to trigger an alarm.
2. The Station Equipment sends a CcTravelerAlarm message to the CAD/AVL System.
3. The CAD/AVL System uses a vendor-specified mechanism to show the alarm to the dispatcher. When the dispatcher has seen the alarm, the CAD/AVL system sends a CcTravlerAlarm message to the station equipment.
4. The Station Equipment performs vendor-specified housekeeping.

Message Sequence Diagram Page 2



Normal Execution of the "Report Traveler Alarm" Dialog

TCIP Dialog Definition Page 3**Dialog Name:** Report Traveler Alarm**Business Area:** CC**Dialog Pattern:** Report

Message Name	Message Identifier	Role
CcTravelerAlarm	CC 2053	Notify the CAD/AVL System of a traveler-initiated alarm condition in a PTSF.
CcTravelerAlarmAck	CC 2052	Acknowledge that the dispatcher has seen a traveler initiated alarm from the PTSF.

Notes:

The CAD/AVL System may provide a mechanism to automatically create an incident report based on the received alarm.

Subscribe Video Images**TCIP Dialog Definition Page 1**

Dialog Name: Subscribe Video Images

Business Area: CC

Dialog Pattern: Subscription Query

Purpose: Allows a business system to query images from a data store that originated from a PTV or PTSF.

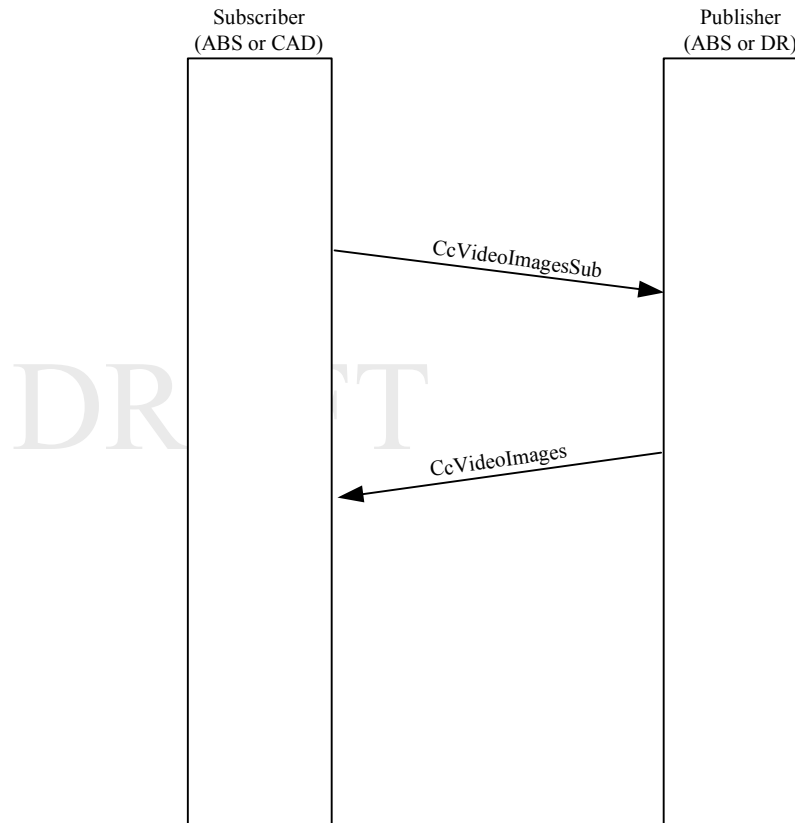
Assumptions:

1. The publisher may be a Data Repository (DR) or an Authorized Business System (ABS).
2. The subscriber may be a CAD/AVL System (CAD) or an Authorized Business System (ABS).

Narrative:

1. The subscriber determines the vehicle(s) and stoppoint(s) and dates/times of interest and creates a CcVideoImagesSub message and sends it to the publisher.
2. The publisher determines if the request is valid and the subscriber is authorized.
 - a. If the request is invalid or the subscriber is unauthorized, the publisher sends a CptSubErrorNotice to the subscriber and the dialog ends.
 - b. If the request is valid, the publisher sends a CcVideoImages message to the subscriber and the dialog ends.

Message Sequence Diagram Page 2



Normal Execution of the "Subscribe Video Images" Dialog

TCIP Dialog Definition Page 3**Dialog Name:** Subscribe Video Images**Business Area:** CC**Dialog Pattern:** Subscription Query

Message Name	Message Identifier	Role
CcVideoImagesSub	CC 2058	Query for video camera images previously unloaded to a data store from a PTV or PTSF.
CcVideoImages	CC 2057	Provide requested video camera images from a data store.
CptSubErrorNotice	Cpt 2000	Notify the subscriber of an error in the subscription request.

Notes:

Subscribe Daily Operating Data**TCIP Dialog Definition Page 1**

Dialog Name: Subscribe Daily Operating Data

Business Area: CC

Dialog Pattern: Subscription Query

Purpose: Allow a business system to query data from a data store that originated from a PTV.

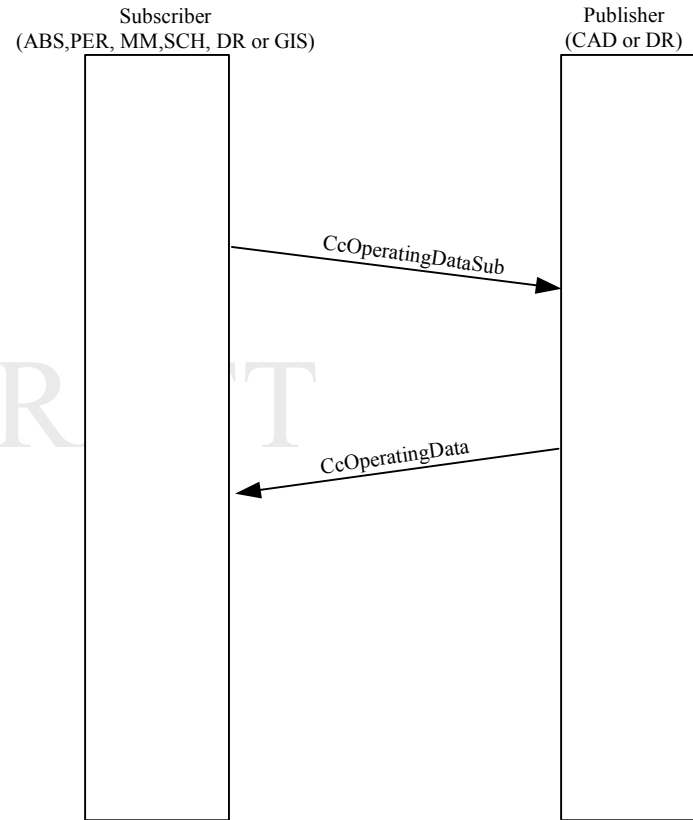
Assumptions:

1. The publisher may be a Data Repository (DR) or a CAD/AVL System (CAD).
2. The subscriber may be a Personnel Management System (PER), Authorized Business System (ABS), Maintenance Management System (MM), Geographical Information System (GIS) or a Data Repository (DR).

Narrative:

1. The subscriber determines the vehicles and dates of interest and creates a CcOperatingDataSub message and sends it to the publisher.
2. The publisher determines if the request is valid and the subscriber is authorized.
 - a. If the request is invalid or the subscriber is not authorized, the publisher sends a CptSubErrorNotice to the subscriber and the dialog ends.
 - b. If the request is valid, the publisher sends a CcOperatingData message to the subscriber and the dialog ends.

Message Sequence Diagram Page 2



Normal Execution of the "Subscribe Daily Operating Data" Dialog

TCIP Dialog Definition Page 3**Dialog Name:** Subscribe Daily Operating Data**Business Area:** CC**Dialog Pattern:** Subscription Query

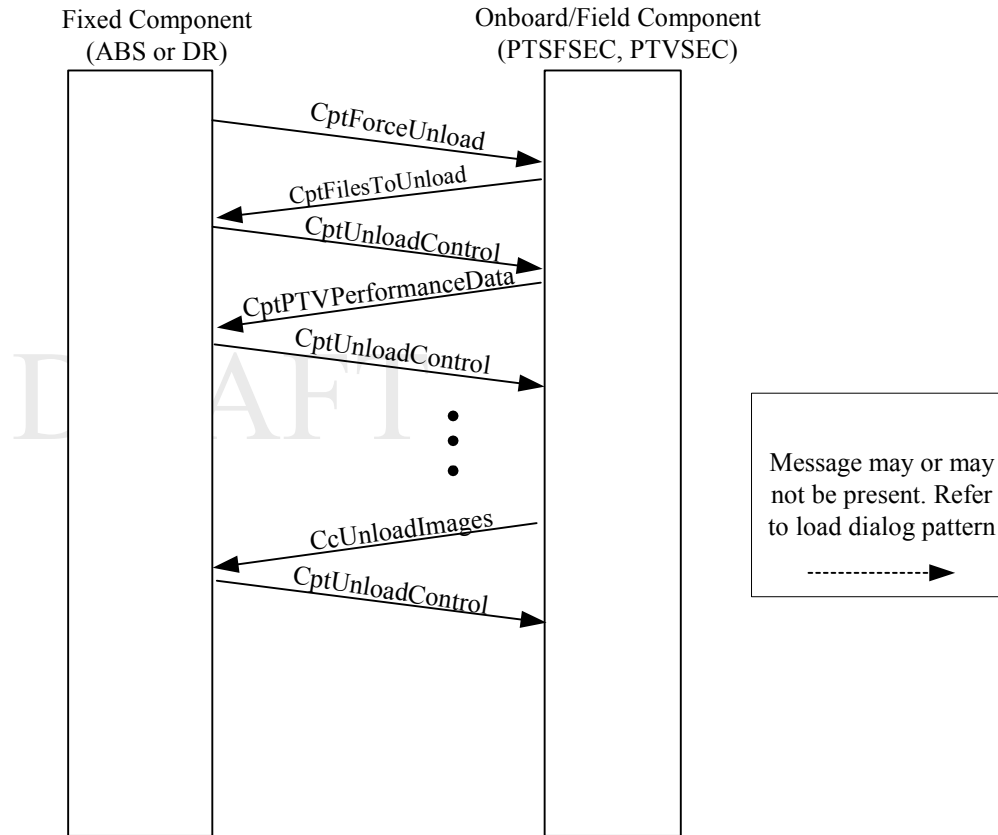
Message Name	Message Identifier	Role
CcOperatingDataSub	CC 2056	Query for operating data previously unloaded to a data store from a PTV.
CcOperatingData	CC 2055	Provide requested operating data, from a data store.
CptSubErrorNotice	Cpt 2000	Notify the subscribe of an error in the subscription request.

Notes:

Unload Video Images

TCIP Dialog Definition Page 1
<p>Dialog Name: Unload Video Images</p> <p>Business Area: CC</p> <p>Dialog Pattern: Unload</p>
<p>Purpose: Unload video camera images from the onboard/field component to the fixed component which may be a Data Repository (DR), or an Authorized Business System (ABS).</p>
<p>Assumptions:</p> <ol style="list-style-type: none"> 1. The fixed entity may be a Data Repository (DR) or an Authorized Business System (ABS). 2. The onboard/field entity may be PTVSEC, or PTSFSEC.
<p>Narrative:</p> <ol style="list-style-type: none"> 1. The onboard/field component initiates the dialog based on a CptForceUnload message, or available files to unload combined with WLAN availability, and sends a CptFilesToUnload message. 2. The fixed component determines what files are available, needed, or eligible for deletion and sends a CptUnloadControl message to the onboard/field component. 3. The onboard/field component deletes any files specified for deletion. 4. If there is no file specified to unload the dialog ends. If the specified file is not available, the onboard/field component sends a CptUnloadRequestError message and the dialog ends. If there is a file specified and it is available, the onboard/field component sends the specified CcUnloadImages message (file) to the fixed component. 5. The fixed component receives and validates the FcUnloadData message and goes to step 2 above.

Message Sequence Diagram Page 2



Normal Execution of the "Unload Video Images" Dialog

TCIP Dialog Definition Page 3		
Dialog Name: Unload Video Images		
Business Area: CC		
Dialog Pattern: Unload		
Message Name	Message Identifier	Role
CptForceUnload	Cpt 2017	Trigger onboard/field component to initiate an unload process. Primary use is to unload via a laptop instead of a wireless LAN.
CptUnloadControl	Cpt 2014	Used by the fixed component to control the unload process.
CptUnloadRequestError	Cpt 2015	Used by the onboard/field component to notify the fixed component of a file request error.
CcUnloadImages	CC 2054	Conveys video camera images from the onboard/field component to the fixed component.
CptFilesToUnload	Cpt 2013	Identifies files stored in an onboard/field component that are ready for unload to the corresponding fixed component.
Notes:		

Subscribe Video Feed**TCIP Dialog Definition Page 1**

Dialog Name: Subscribe Video Feed

Business Area: CC

Dialog Pattern: Subscription-Periodic

Purpose: Allows a subscriber to obtain one or more video feed(s) from a security camera or cameras. Feed may be live, or may be requested to start at a designated time.

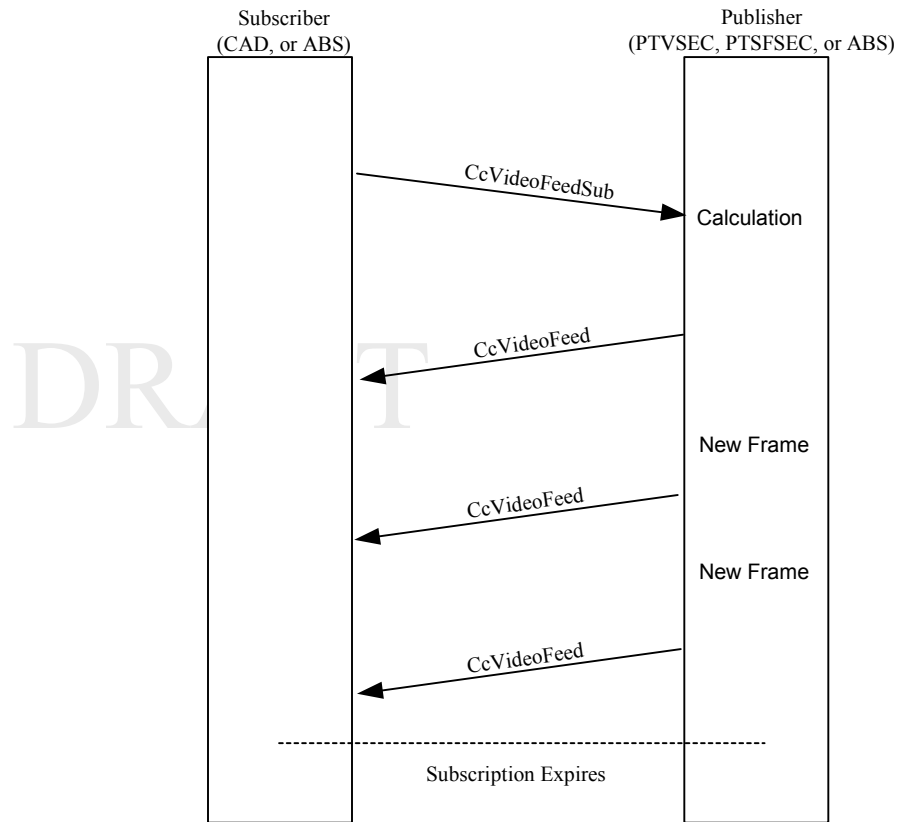
Assumptions:

1. Since the feed is a series of images-the subscription must be periodic.
2. The subscriber may be a CAD/AVL System (CAD) or Authorized Business System (ABS).
3. The publisher may be a PTVSEC, or PTFSSSEC, or an Authorized Business System (ABS).

Narrative:

1. The subscriber determines the cameras and time interval of interest. The subscriber sends a CcVideoFeedSub message to the publisher with the subscription type indicating periodic.
2. The publisher validates the request and determines:
 - a. The request is invalid, unauthorized or cannot be serviced. The publisher then generates a CptSubErrorNotice to the subscriber and the dialog ends.
 - b. The request can be serviced. The publisher prepares a CcVideoFeed message in response to the subscription request.
 - c. The publisher provides updates as the frame rate and network capacity allow.
3. The dialog ends after the publisher generates a CptSubErrorNotice, or the subscription expires, or the subscriber sends a cancellation request.

Message Sequence Diagram Page 2



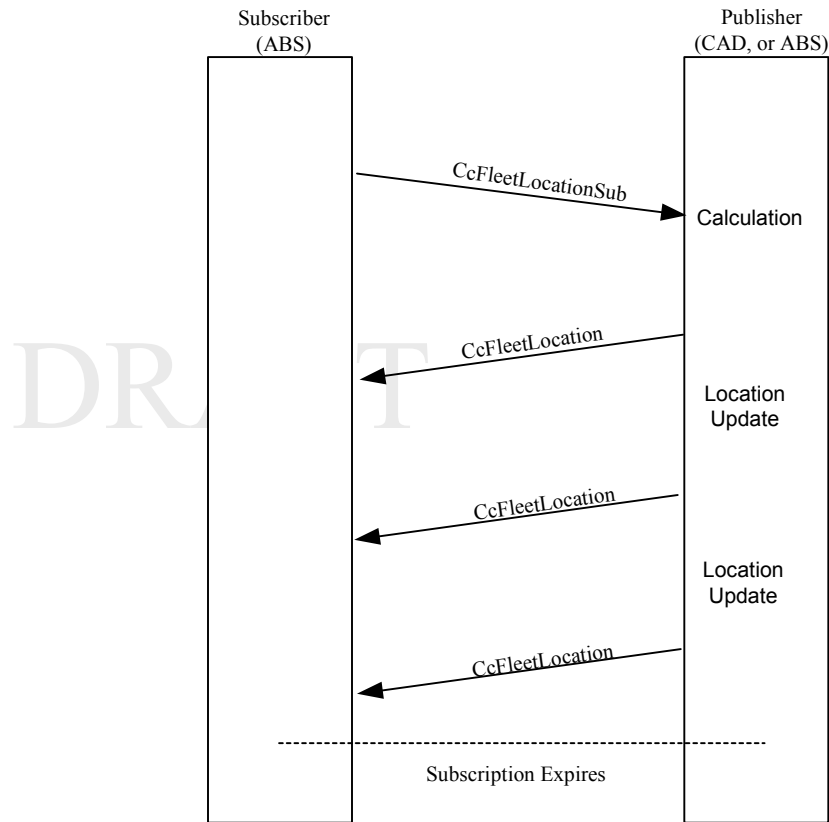
Normal Execution of Event Driven "Subscribe Video Feed" Subscription Dialog.

TCIP Dialog Definition Page 3		
Dialog Name: Subscribe Video Feed		
Business Area: CC		
Dialog Pattern: Subscription		
Message Name	Message Identifier	Role
CcVideoFeed Sub	CC 2057	Request a video feed from the subscriber to the publisher.
CcVideoFeed	CC 2058	Provide a requested video feed(s) from the publisher to the subscriber.
CptSubErrorNotice	Cpt 2000	End the dialog with an error notification from the publisher to the subscriber.
<p>Notes:</p> <p>This dialog does not provide camera control. NTCIP 1205 provides a CCTV camera control standard.</p>		

Subscribe Fleet Locations

TCIP Dialog Definition Page 1
Dialog Name: Subscribe Fleet Locations
Business Area: CC
Dialog Pattern: Subscription-Event
Purpose: Allows a subscriber to obtain PTV locations by subscribing through a single business system (e.g. CAD/AVL) rather than subscribing to each PTV individually.
<p>Assumptions:</p> <ol style="list-style-type: none"> 1. The subscriber may be any agency Authorized Business System (ABS). 2. The publisher may be a CAD/AVL System or any Authorized Business System (ABS). 3. The definition of an “event” that triggers a report may be locally defined, and may include a minimum duration between reports.
<p>Narrative:</p> <ol style="list-style-type: none"> 1. The subscriber determines the PTVs of interest (or all). The subscriber sends a CcFleetLocationSub message to the publisher with the subscription type indicating event-driven. 2. The publisher validates the request and determines: <ol style="list-style-type: none"> a. The request is invalid, unauthorized or cannot be serviced. The publisher then generates a CptSubErrorNotice to the subscriber and the dialog ends. b. The request can be serviced. The publisher prepares a CcFleetLocation message in response to the subscription request containing the last reported location of all subscriber PTV. c. The publisher provides updates as PTV location updates are received. 3. The dialog ends after the publisher generates a CptSubErrorNotice, or the subscription expires, or the subscriber sends a cancellation request.

Message Sequence Diagram Page 2



Normal Execution of Event Driven "Subscribe Fleet Location" Subscription Dialog.

TCIP Dialog Definition Page 3**Dialog Name:** Subscribe Fleet Location**Business Area:** CC**Dialog Pattern:** Subscription-Event

Message Name	Message Identifier	Role
CcFleetLocationSub	CC 2063	Request a fleet location subscription, from the subscriber to the publisher.
CcFleetLocation	CC 2064	Provide requested fleet location information from the publisher to the subscriber.
CptSubErrorNotice	Cpt 2000	End the dialog with an error notification from the publisher to the subscriber.

Notes:

Subscribe Fleet Health Alarms**TCIP Dialog Definition Page 1**

Dialog Name: Subscribe Fleet Health Alarms

Business Area: CC

Dialog Pattern: Subscription-Event

Purpose: Allows a subscriber to obtain health alarms from PTVs by subscribing through a single business system (e.g. CAD/AVL) rather than subscribing to each PTV individually.

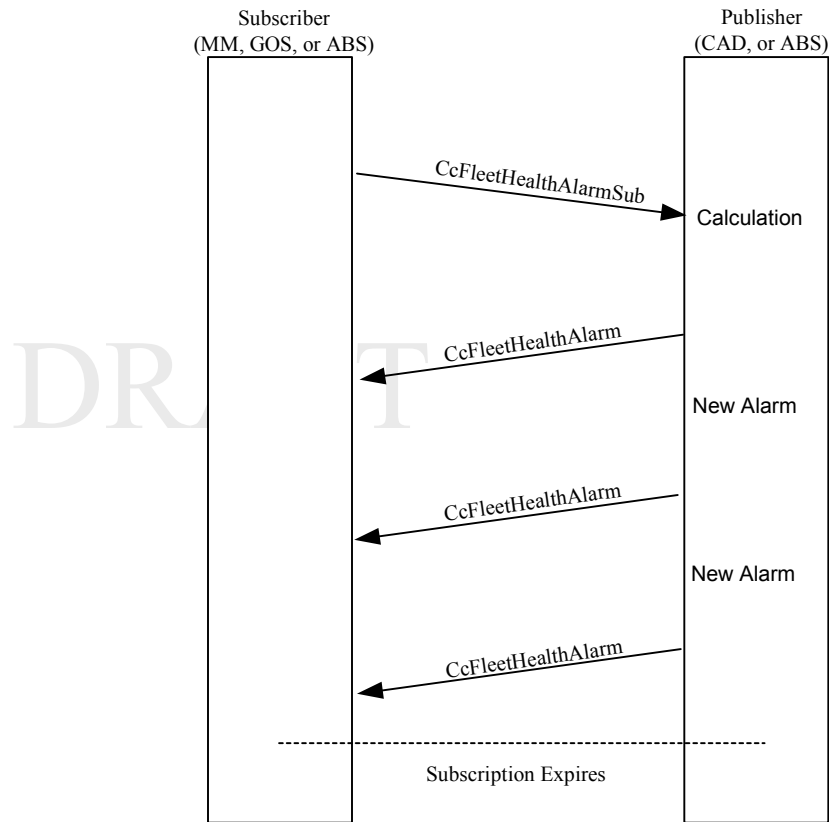
Assumptions:

1. The subscriber may be a Maintenance Management System (MM), Garage Operations System (GOS), or other Authorized Business System (ABS).
2. The publisher may be a CAD/AVL System (CAD), or other Authorized Business System (ABS).

Narrative:

1. The subscriber determines the PTVs of interest, (or all). The subscriber sends a CcFleetHealthAlarmSub message to the publisher with the subscription type indicating event-driven.
2. The publisher validates the request and determines:
 - a. The request is invalid, unauthorized or cannot be serviced. The publisher then generates a CptSubErrorNotice to the subscriber and the dialog ends.
 - b. The request can be serviced. The publisher prepares a CcFleetHealthAlarm message in response to the subscription request, containing any presently active alarms.
 - c. The publisher provides updates as new alarms or alarm closures are received from the fleet.
3. The dialog ends after the publisher generates a CptSubErrorNotice, or the subscription expires, or the subscriber sends a cancellation request.

Message Sequence Diagram Page 2



Normal Execution of Event Driven "Subscribe Fleet Health Alarms"
Subscription Dialog.

TCIP Dialog Definition Page 3		
Dialog Name: Subscribe Fleet Health Alarms		
Business Area: Cc		
Dialog Pattern: Subscription		
Message Name	Message Identifier	Role
CcFleetHealthAlarmSub	CC 2065	Request a PTV Health Alarm subscription from the subscriber to the publisher.
CcFleetHealthAlarm	CC 2064	Provide requested Health Alarm information from the publisher to the subscriber.
CptSubErrorNotice	Cpt 2000	End the dialog with an error notification from the publisher to the subscriber.
<p>Notes:</p> <p>The publisher may save up alarms over an interval (e.g. 1-2 minutes) and then forward all received alarms for the interval in a single message.</p>		

Report Pull Ins**TCIP Dialog Definition Page 1**

Dialog Name: Report Pull Ins

Business Area: CC

Dialog Pattern: Report

Purpose: The garage supervisor reports to the CAD/AVL System (CAD), Garage Operations System (GOS), or other Authorized Business System (ABS) that one or more pull-ins occurred.

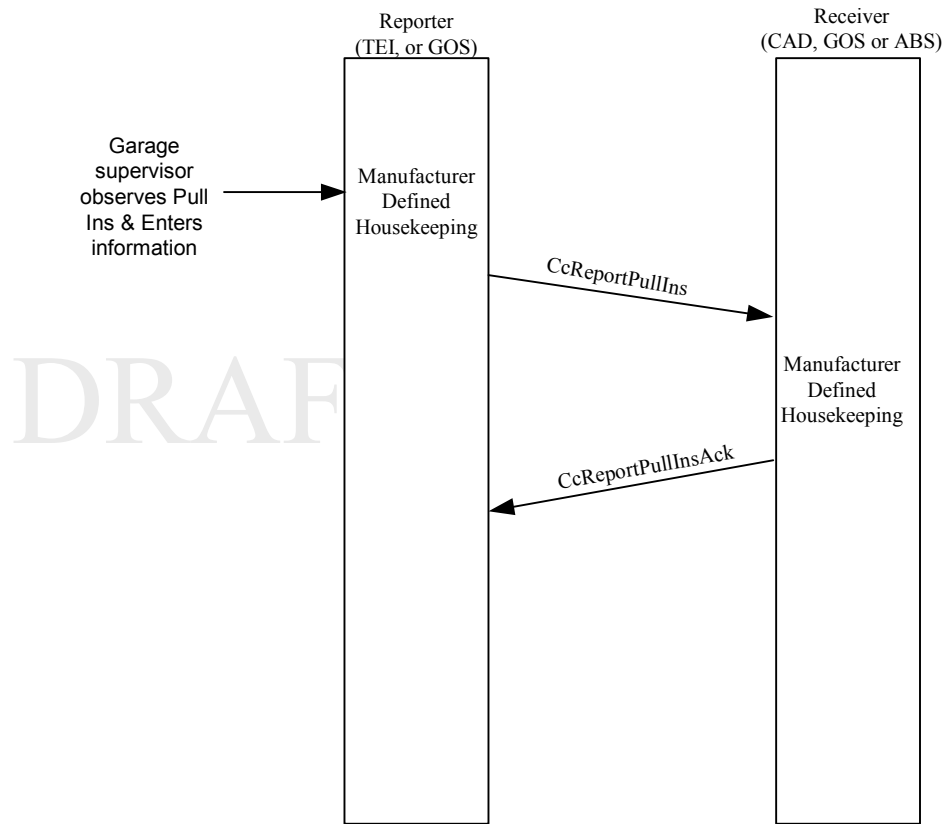
Assumptions:

1. The reporter may be the Transit Employee Interface (TEI), or Garage Operations System (GOS).
2. The receiver may be the CAD/AVL System (CAD), Garage Operations System (GOS), or other Authorized Business System (ABS).

Narrative:

1. The garage supervisor determines that one or more PTV's pulled in from service, and enters the information into the TEI or GOS which generates a CcReportPullIns message to CAD, GOS, or ABS (receiver).
2. The receiver sends a CcReportPullInsAck message to the reporter and the dialog ends.

Message Sequence Diagram Page 2



Normal Execution of the "Report Pull Ins" Dialog

TCIP Dialog Definition Page 3		
Dialog Name: Report Pull Ins		
Business Area: CC		
Dialog Pattern: Report		
Message Name	Message Identifier	Role
CcReportPullIns	CC 2059	Notify the receiver that one or more PTVs pulled in from service.
CcReportPullInsAck	CC 2060	Acknowledge the CcReportPullIns message.
Notes:		

Report Pull Outs**TCIP Dialog Definition Page 1**

Dialog Name: Report Pull Outs

Business Area: CC

Dialog Pattern: Report

Purpose: The garage supervisor reports to the CAD/AVL System (CAD), Garage Operations System (GOS), or other Authorized Business System (ABS) that one or more pull-outs occurred.

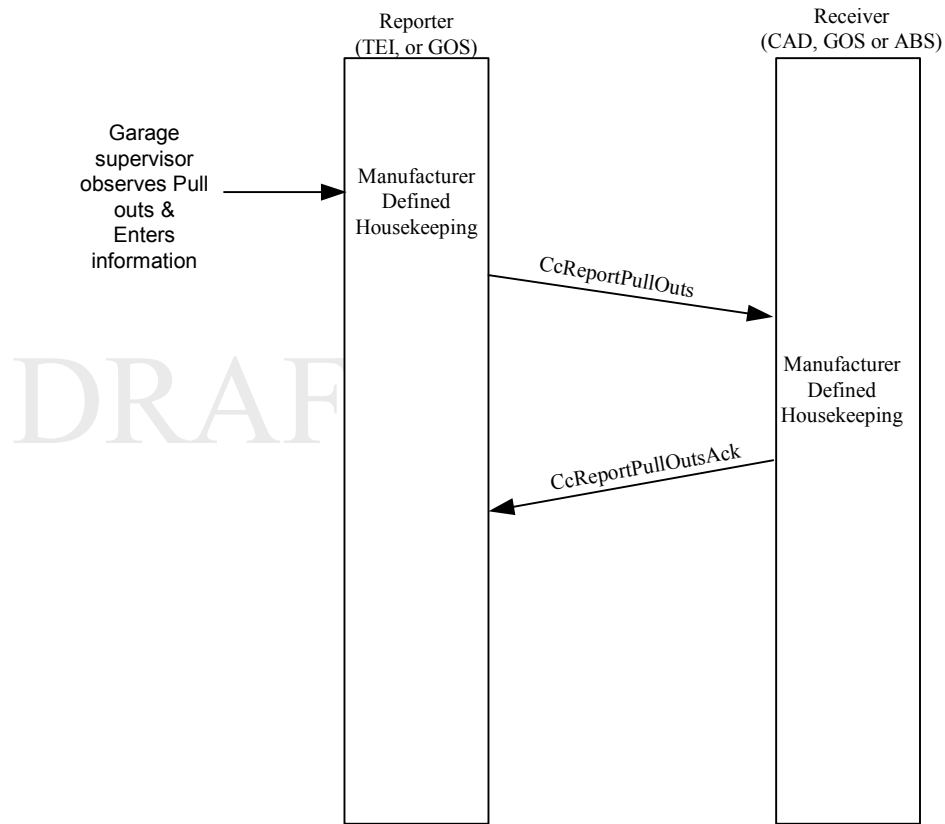
Assumptions:

1. The reporter may be the Transit Employee Interface (TEI), or Garage Operations System (GOS).
2. The receiver may be the CAD/AVL System (CAD), Garage Operations System (GOS), or other Authorized Business System (ABS).

Narrative:

1. The garage supervisor determines that one or more PTV's pulled out for service, and enters the information into the TEI or GOS which generates a CcReportPullOuts message to CAD, GOS, or ABS (receiver).
2. The receiver sends a CcReportPullOutsAck message to the reporter and the dialog ends.

Message Sequence Diagram Page 2



Normal Execution of the "Report Pull Outs" Dialog

TCIP Dialog Definition Page 3		
Dialog Name: Report Pull Outs		
Business Area: CC		
Dialog Pattern: Report		
Message Name	Message Identifier	Role
CcReportPullOuts	CC 2061	Notify the receiver that one or more PTVs pulled out for service.
CcReportPullOutsAck	CC 2062	Acknowledge the CcReportPullOuts message.
Notes:		

Report PTV Not Service Ready**TCIP Dialog Definition Page 1**

Dialog Name: Report PTV Not Service Ready

Business Area: CC

Dialog Pattern: Report

Purpose: The PTV Operator, garage supervisor or Dispatcher reports to the designated business systems that a PTV assigned to service is not service ready.

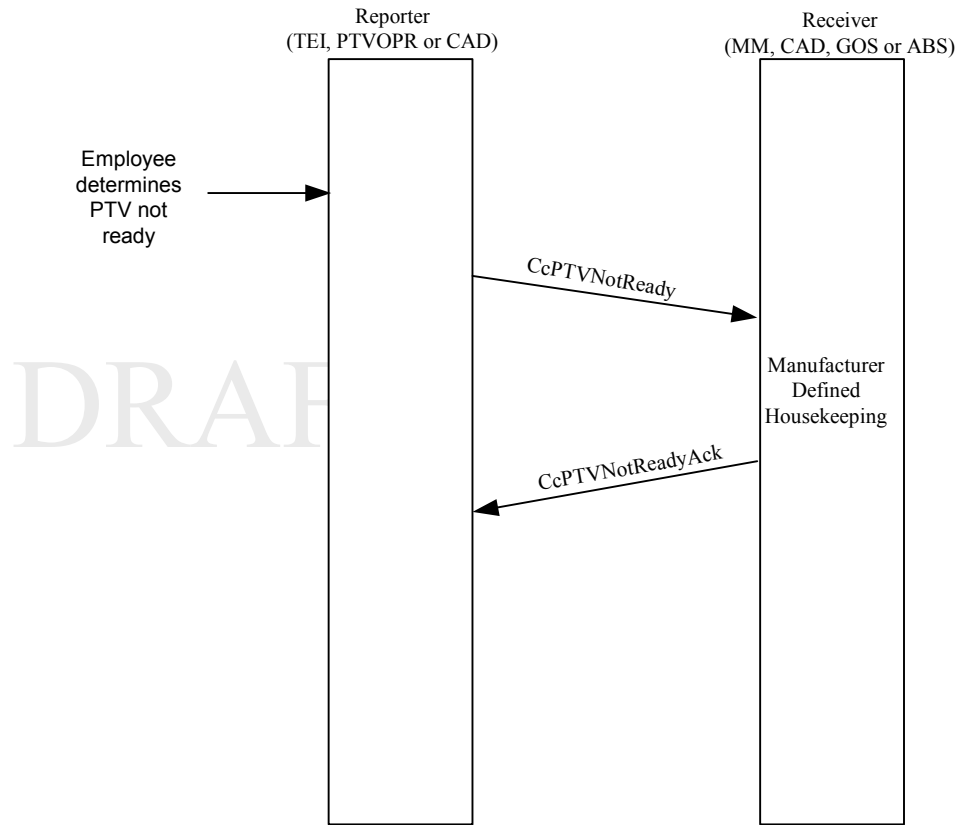
Assumptions:

1. The reporter may be the Transit Employee Interface (TEI), PTV Operator Display (PTVOPR) or CAD/AVL System (CAD).
2. The receiver may be the Maintenance Management System (MM), CAD/AVL System (CAD), Garage Operations System (GOS), or other Authorized Business System (ABS).

Narrative:

1. The PTV Operator, garage supervisor, or Dispatcher determines that a PTV is not service ready, and enters the information into the PTVOPR, TEI or CAD which generates a CcPTVNotReady message to MM, CAD, GOS, or ABS.
2. The receiver sends a CcPTVNotReadyAck message to the reporter and the dialog ends.

Message Sequence Diagram Page 2



Normal Execution of the "Report PTV Not Service Ready" Dialog

TCIP Dialog Definition Page 3		
Dialog Name: Report PTV Not Service Ready		
Business Area: CC		
Dialog Pattern: Report		
Message Name	Message Identifier	Role
CcPTVNotReady	CC 2067	Notify the receiver that a PTV assigned to service is not service ready.
CcPTVNotReadyAck	CC 2068	Acknowledge the PTV not ready report.
Notes:		