
ESS Test Procedure



Session Name *General*

Trial Name Set-Up

Step	Action	Background
1	Record the values used for the following: a b c d	a - the number of a valid row in the essTemperatureTable not greater than the value of the essNumTemperatureSensors Object. b - the number of a valid row in the essPavementSensorTable not greater than the value of the numEssPavementSensors Object. c - the number of a valid row in the essSubSurfaceSensorTable not greater than the value of the numEssSubSurfaceSensors Object. d - the number of a valid row in the essPavementTreatmentTable not greater than the value of the numEssTreatments Object.
2	Prepare the test environment.	Familiarize yourself with NTCIP 1204 Ensure that the device is properly powered, is properly connected to the Exerciser via a valid communications port, and ensure that the Drop # and community name are set appropriately.
3	Prepare the initialization files.	Ensure that the proper MIBs are in the Exerciser directory, that the MIBI file references the proper MIBs, that the Nexerciser.ini file is configured properly and that the TreeCfg.ini file is configured properly.
4	Start the Exerciser in central mode	
5	Send unnumbered polls until no response is received or an empty frame is received.	

Session Name *ESS Configuration*

Trial Name ESS Configuration Conformance

Step	Action	Background
1	Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following objects: essNtcipCategory.0 essNtcipSiteDescription.0	This object is located under iso / organization / dod / internet / private / enterprises / nema / transportation / devices / ess / essNtcip / essNtcipIdentification
2	Verify that the values received is adequate for the type and description of ess that is being tested.	
3	Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following object: essTypeofStation.0	This object is located under iso / organization / dod / internet / private / enterprises / nema / transportation / devices / ess / essBuf / essBufInstrumentation
4	Verify that the value received is adequate for the type of ess that is being tested.	



Session Name *ESS Location*

Trial Name Location

Step	Action	Background
1	Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following objects: essLatitude.0 essLongitude.0	These objects are located under iso / organization / dod / internet / private / enterprises / nema / transportation / devices / ess / essNtcip / essNtcipLocation
2	Verify that the values received are adequate for the location of the ess that is being tested.	
3	Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following object: essReferenceHeight.0	This object is located under iso / organization / dod / internet / private / enterprises / nema / transportation / devices / ess / essNtcip / essNtcipHeight
4	Verify that the value received are adequate for the location of the ess that is being tested.	

Session Name *Pressure*

Trial Name Get Pressure Height and Atmospheric Pressure

Step	Action	Background
1	Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following object: essPressureHeight.0	This object is located under iso / organization / dod / internet / private / enterprises / nema / transportation / devices / ess / essNtcip / essNtcipHeight
2	Verify that the value received are adequate for the location of the pressure sensor that is being tested.	
3	Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following object: essAtmosphericPressure.0	This object is located under iso / organization / dod / internet / private / enterprises / nema / transportation / devices / ess / essBufR / essBufRLocationVertical
4	Verify that the value received are adequate for the pressure at the specific location of the sensor.	

Session Name *Wind Data*

Trial Name Get Wind Sensor Height and Wind Data

Step	Action	Background
1	Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following object: essWindSensorHeight.0	This object is located under iso / organization / dod / internet / private / enterprises / nema / transportation / devices / ess / essNtcip / essNtcipHeight
2	Verify that the value received are adequate for the location of the wind sensor that is being tested.	
3	Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following objects: essAvgWindDirection.0 essAvgWindSpeed.0	These objects are located under iso / organization / dod / internet / private / enterprises / nema / transportation / devices / ess / essBufR / essBufRWind



essMaxWindGustSpeed.0
essMaxWindGustDirection.0

- 4 Verify that the values received are adequate for the wind parameters at the specific location of the sensor.

Session Name Mobile Wind Data

Trial Name Get Mobile Wind Data Objects

Step	Action	Background
1	Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following objects: essWindSituation.0 essSpotWindDirection.0 essSpotWindSpeed.0	These objects are located under iso / organization / dod / internet / private / enterprises / nema / transportation / devices / ess / essNtcip / essNtcipWind
2	Verify that the values received are adequate for the type of wind condition observed by a staffed station. Further verify that the wind direction and speed are appropriate for the wind sensor that is being tested.	

Session Name Basic Temperature Data

Trial Name Get Temperature Data

Step	Action	Background
1	Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following object: essNumTemperatureSensors.0 This object is located under iso / organization / dod / internet / private / enterprises / nema / transportation / devices / ess / essNtcip / essNtcipTemperature	
2	Verify that the value received is correct. Record the value received.	
3	Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following objects: essTemperatureSensorIndex.a essTemperatureSensorHeight.a essAirTemperature.a	These objects are located under iso / organization / dod / internet / private / enterprises / nema / transportation / devices / ess / essNtcip / essNtcipTemperature / essTemperatureSensorTable / essTemperatureSensorEntry
4	Verify that the values received are appropriate. Record the values that were received.	
5	Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following objects: essMaxTemp.0 essMinTemp.0	This object is located under iso / organization / dod / internet / private / enterprises / nema / transportation / devices / ess / essNtcip / essNtcipTemperature
6	Verify that the values received are appropriate. Record the values that were received.	

Session Name Enhanced Temperature Data

Trial Name Get Enhanced Temperature Data

Step	Action	Background
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- 1 Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following object:
essNumTemperatureSensors.0
- 2 Verify that the value received is correct. Record the value received.
- 3 Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following objects:
essTemperatureSensorIndex.a
essTemperatureSensorHeight.a
essAirTemperature.a
- 4 Verify that the values received are appropriate. Record the values that were received.
- 5 Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following objects:
essMaxTemp.0
essMinTemp.0
- 6 Verify that the values received are appropriate. Record the values that were received.
- 7 Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following object:
essRelativeHumidity.0
- 8 Verify that the data received is appropriate.
- 9 Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following object:
essWetbulbTemp.0
essDewpointTemp.0
- 10 Verify that the values received are appropriate. Record the values that were received.

This object is located under iso / organization / dod / internet / private / enterprises / nema / transportation / devices / ess / essNtcip / essNtcipTemperature

These objects are located under iso / organization / dod / internet / private / enterprises / nema / transportation / devices / ess / essNtcip / essNtcipTemperature / essTemperatureSensorTable / essTemperatureSensorEntry

This object is located under iso / organization / dod / internet / private / enterprises / nema / transportation / devices / ess / essNtcip / essNtcipTemperature

This object is located under iso / organization / dod / internet / private / enterprises / nema / transportation / devices / ess / essBufp / essBufpPrecip

This object is located under iso / organization / dod / internet / private / enterprises / nema / transportation / devices / ess / essNtcip / essNtcipTemperature

Session Name Basic Precipitation Data

Trial Name Get Precipitation Yes/No Object

Step Action

Background

- 1 Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following object:
essPrecipYesNo.0
- 2 Verify that the data received is appropriate.

This object is located under iso / organization / dod / internet / private / enterprises / nema / transportation / devices / ess / essNtcip / essNtcipPrecip

Session Name Standard Precipitation Data

Trial Name Get Standard Precipitation Data

Step Action

Background

- 1 Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following object:
essPrecipRate.0
- 2 Verify that the data received is appropriate.
- 3 Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following object:

This object is located under iso / organization / dod / internet / private / enterprises / nema / transportation / devices / ess / essBufp / essBufpPrecip

These objects are located under iso / organization / dod / internet / private / enterprises / nema / transportation /



essPrecipitationStartTime.0
essPrecipitationEndTime.0

devices / ess / essNtcip / essNtcipPrecip

4 Verify that the data received is appropriate.

Session Name Enhanced Precipitation Data

Trial Name Get Enhanced Precipitation Data

Step	Action	Background
1	Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following object: essPrecipRate.0	This object is located under iso / organization / dod / internet / private / enterprises / nema / transportation / devices / ess / essBuftr / essBuftrPrecip
2	Verify that the data received is appropriate.	
3	Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following object: essPrecipitationStartTime.0 essPrecipitationEndTime.0	These objects are located under iso / organization / dod / internet / private / enterprises / nema / transportation / devices / ess / essNtcip / essNtcipPrecip
4	Verify that the data received for each object is appropriate.	
5	Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following objects: essPrecipitationOneHour.0 essPrecipitationThreeHours.0 essPrecipitationSixHours.0 essPrecipitationTwelveHours.0 essPrecipitation24Hours.0	These objects are located under iso / organization / dod / internet / private / enterprises / nema / transportation / devices / ess / essBuftr / essBuftrPrecip
6	Verify that the data received for each object is appropriate.	
7	Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following object: essPrecipSituation.0	This object is located under iso / organization / dod / internet / private / enterprises / nema / transportation / devices / ess / essNtcip / essNtcipPrecip
8	Verify that the data received is appropriate.	

Session Name Emerging Precipitation Data

Trial Name Get Emerging Precipitation Data

Step	Action	Background
1	Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following object: essPrecipRate.0	This object is located under iso / organization / dod / internet / private / enterprises / nema / transportation / devices / ess / essBuftr / essBuftrPrecip
2	Verify that the data received is appropriate.	
3	Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following object: essPrecipitationStartTime.0 essPrecipitationEndTime.0	These objects are located under iso / organization / dod / internet / private / enterprises / nema / transportation / devices / ess / essNtcip / essNtcipPrecip
4	Verify that the data received for each object is appropriate.	
5	Using an appropriate communications stack and an appropriate Community Name,	These objects are located under iso / organization / dod /



send an SNMP 'get-request' for the following objects:
 essPrecipitationOneHour.0
 essPrecipitationThreeHours.0
 essPrecipitationSixHours.0
 essPrecipitationTwelveHours.0
 essPrecipitation24Hours.0

internet / private / enterprises / nema / transportation /
 devices / ess / essBufr / essBufrPrecip

6 Verify that the data received for each object is appropriate.

7 Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following objects:

essWaterDepth.0
 essAdjacentSnowDepth.0
 essRoadwaySnowDepth.0
 essRoadwaySnowPackDepth.0
 essIceThickness.0

These objects are located under iso / organization / dod /
 internet / private / enterprises / nema / transportation /
 devices / ess / essNtcip / essNtcipPrecip

8 Verify that the data received is appropriate.

9 Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following object:

essPrecipSituation.0

This object is located under iso / organization / dod /
 internet / private / enterprises / nema / transportation /
 devices / ess / essNtcip / essNtcipPrecip

10 Verify that the data received is appropriate.

11 Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following object:

essWaterDepth.0
 essRoadwaySnowDepth.0
 essRoadwaySnowPackDepth.0
 essIceThickness.0
 essAdjacentSnowDepth.0
 essSnowfallAccumRate.0

This object is located under iso / organization / dod /
 internet / private / enterprises / nema / transportation /
 devices / ess / essNtcip / essNtcipPrecip

These objects are located under iso / organization / dod / internet / private /
 enterprises / ne

12 Verify that the data received is appropriate.

Session Name *Solar Radiation*

Trial Name Get Solar Radiation Objects

Step **Action**

Background

1 Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following objects:

essSolarRadiation.0
 essTotalSun.0

These objects are located under iso / organization / dod /
 internet / private / enterprises / nema / transportation /
 devices / ess / essBufr / essBufrRadiation

2 Verify that the data received for each Object is appropriate.

Session Name *Visibility Data*

Trial Name Get Visibility Data

Step **Action**

Background

1 Using an appropriate communications stack and an appropriate Community Name,

These objects are located under iso / organization / dod /



send an SNMP 'get-request' for the following object:
essVisibility.0
essVisibilitySituation.0

internet / private / enterprises / nema / transportation /
devices / ess / essNtcip / essNtcipVisibility

2 Verify that the data received for each Object is appropriate.

Session Name Standard Pavement Sensor Data

Trial Name Get Standard Pavement Sensor Data

Step Action	Background
1 Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following object: NumEssPavementSensors.0	This object is located under iso / organization / dod / internet / private / enterprises / nema / transportation / devices / ess / essNtcip / essNtcipPavement
2 Verify that the value received is correct.	
3 Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following objects: essPavementSensorIndex.b essPavementSensorLocation.b essPavementType.b essPavementElevation.b essPavementExposure.b essPavementSensorType.b essSurfaceStatus.b essSurfaceTemperature.b essPavementSensorError.b	This object is located under iso / organization / dod / internet / private / enterprises / nema / transportation / devices / ess / essNtcip / essNtcipPavement / essPavementSensorTable / essPavementSensorEntry
4 Verify that the values received are appropriate. Record the value indicated for essPavementExposure.b.	
5 Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'set-request' for the following object: set essPavementExposure.b to a Decimal value other than what was recorded in the previous step.	This object is located under iso / organization / dod / internet / private / enterprises / nema / transportation / devices / ess / essNtcip / essNtcipPavement / essPavementSensorTable / essPavementSensorEntry
6 Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following objects: essPavementExposure.x This object is located under iso / organization / dod / internet / private / enterprises / nema / transportation / devices / ess / essNtcip / essNtcipPavement / essPavementSensorTable / essPavementSensorEntry	
7 Verify that the value received is the value that was set in Step 5.	
8 Return the essPavementExposure.b Object to the original value.	

Session Name Enhanced Pavement Sensor Data

Trial Name Get Enhanced Pavement Sensor Data

Step Action	Background
3 Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following objects: essPavementSensorIndex.b	These objects are located under iso / organization / dod / internet / private / enterprises / nema / transportation / devices / ess / essNtcip / essNtcipPavement /



essPavementSensorLocation.b
 essPavementType.b
 essPavementElevation.b
 essPavementExposure.b
 essPavementSensorType.b
 essSurfaceStatus.b
 essSurfaceTemperature.b
 essPavementSensorError.b
 essPavementTemperature.b
 essSurfaceWaterDepth.b
 essSurfaceFreezePoint.b
 essSurfaceBlackIceSignal.b

essPavementSensorTable / essPavementSensorEntry

4 Verify that the values received are appropriate.

Session Name Standard Sub-Surface Sensor Data

Trial Name Get Standard Sub-Surface Sensor Data

Step	Action	Background
1	Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following object: numEssSubSurfaceSensors.0	This object is located under iso / organization / dod / internet / private / enterprises / nema / transportation / devices / ess / essNtcip / essNtcipPavement
2	Verify that the value received is correct.	
3	Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following objects: essSubSurfaceSensorIndex.c essSubSurfaceSensorLocation.c essSubSurfaceType.c essSubSurfaceSensorDepth.c essSubSurfaceTemperature.c essSubSurfaceSensorError.c	These objects are located under iso / organization / dod / internet / private / enterprises / nema / transportation / devices / ess / essNtcip / essNtcipPavement / essSubSurfaceSensorTable / essSubSurfaceSensorEntry
4	Verify that the values received are appropriate.	

Session Name Enhanced Sub-Surface Sensor Data

Trial Name Get Enhanced Sub-Surface Sensor Data

Step	Action	Background
1	Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following object: numEssSubSurfaceSensors.0	This object is located under iso / organization / dod / internet / private / enterprises / nema / transportation / devices / ess / essNtcip / essNtcipPavement
2	Verify that the value received is correct.	
3	Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following objects: essSubSurfaceSensorIndex.c essSubSurfaceSensorLocation.c essSubSurfaceType.c essSubSurfaceSensorDepth.c essSubSurfaceTemperature.c essSubSurfaceMoisture.c essSubSurfaceSensorError.c	These objects are located under iso / organization / dod / internet / private / enterprises / nema / transportation / devices / ess / essNtcip / essNtcipPavement / essSubSurfaceSensorTable / essSubSurfaceSensorEntry



4 Verify that the values received are appropriate.

Session Name *Emerging Mobile Platform*

Trial Name Get Emerging Mobile Platform Data

Step	Action	Background
1	Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following objects: essVehicleSpeed.0 essVehicleBearing.0 essVehicleOdometer.0	These objects are located under iso / organization / dod / internet / private / enterprises / nema / transportation / devices / ess / essNtcip / essNtcipLocation
2	Verify that the values received are correct.	
3	Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following object: essMobileFriction.0	This object is located under iso / organization / dod / internet / private / enterprises / nema / transportation / devices / ess / essNtcip / essNtcipMobile
4	Verify that the value received is correct.	
5	Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following objects: essSpotWindSpeed.0 essSpotWindDirection.0	These objects are located under iso / organization / dod / internet / private / enterprises / nema / transportation / devices / ess / essNtcip / essNtcipWind
6	Verify that the values received are correct.	

Session Name *Pavement Treatment*

Trial Name Get Pavement Treatment Data

Step	Action	Background
1	Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following object: numEssTreatments.0	This object is located under iso / organization / dod / internet / private / enterprises / nema / transportation / devices / ess / essNtcip / essNtcipPavement
2	Verify that the value received is correct.	
3	Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following objects: essPavementTreatmentIndex.d essPaveTreatProductType.d essPaveTreatProductForm.d essPercentProductMix.d	These objects are located under iso / organization / dod / internet / private / enterprises / nema / transportation / devices / ess / essNtcip / essNtcipTreatment / essPavementTreatmentTable / essPavementTreatmentEntry
4	Verify that the values received are correct.	

Session Name *Air Quality*

Trial Name Get Air Quality Data

Step	Action	Background
1	Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following objects:	These objects are located under iso / organization / dod / internet / private / enterprises / nema / transportation /



essCO.0
essCO2.0
essNO.0
essNO2.0
essSO2.0
essO3.0
essPM10.0

devices / ess / essNtcip / essNtcipAirQuality

2 Verify that the values received for each Object are appropriate.

Session Name *Staffed Station*

Trial Name Get Staffed Station Data

Step	Action	Background
1	Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following object: essWindSituation.0	This object is located under iso / organization / dod / internet / private / enterprises / nema / transportation / devices / ess / essNtcip / essNtcipWind
2	Verify that the value received is appropriate.	
3	Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following objects: essWaterDepth.0 essAdjacentSnowDepth.0 essRoadwaySnowDepth.0 essRoadwaySnowPackDepth.0 essPrecipSituation.0 essIceThickness.0	
	These objects are located under iso / organization / dod / internet / private / enterprises / nema / transportation / devices / ess / essNtcip / essNtcipPrecip	
4	Verify that the values received for each Object are appropriate.	
5	Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following object: essCloudSituation.0	
	This object is located under iso / organization / dod / internet / private / enterprises / nema / transportation / devices / ess / essNtcip / essNtcipRadiation	
6	Verify that the values received for each Object are appropriate.	
6	Verify that the value received is appropriate.	
7	Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following object: essVisibilitySituation.0	
	This object is located under iso / organization / dod / internet / private / enterprises / nema / transportation / devices / ess / essNtcip / essNtcipVisibility	
8	Verify that the value received is appropriate.	
9	Using an appropriate communications stack and an appropriate Community Name, send an SNMP 'get-request' for the following objects: essMobileObservationGroundState.0 essMobileObservationPavement.0	



These objects are located under iso / organization / dod / internet / private / enterprises / nema / transportation / devices / ess / essNtcip / essNtcipMobile