

Grid Wide Utility Solutions Smart Metering Services Application Developers Guide

Powered by PolicyNet

Version 5.5



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1 Introduction

This document describes the Grid Wide Smart Metering Services API powered by PolicyNet for Utilities and/or Software Providers systems integration. The Grid Wide Smart Metering Services application suite provides a full suite of utility application services for Advanced Metering.

- **Grid Wide Smart Metering Services:**
 - o Advanced Metering Infrastructure (AMI) service
 - o Advanced deterministic power outage and restoration notifications
 - o Near real-time monitoring and reporting of customer quality of electric supply
 - o Power Quality monitoring and reporting (frequency, voltage, current, and power factor)
 - o Sharing of actionable metering data across divisions (e.g., Metering, Distribution Operations, Customer Service)
 - o Improved metering data collection using remote capability for hard to read meters
 - o Surgical deployment capability to rapidly meet utility needs and customer requirements
 - o Leverages ubiquitous and secure LTE private wireless networks, no last-mile infrastructure build out risk
 - o Remote physical service establishment, control, and disconnect (requires an integrated switch in the meter)

The Grid Wide Smart Metering Services application suite supports integration with other utility applications such as Outage Management Systems (OMS), Distribution Management Systems (DMS), Load Management Systems (LMS), Customer Information Systems (CIS), Workflow Management Systems (WMS), Billing Systems, and Meter Data Management Systems (MDMS).

Integration with utility systems is supported via the following patterns:

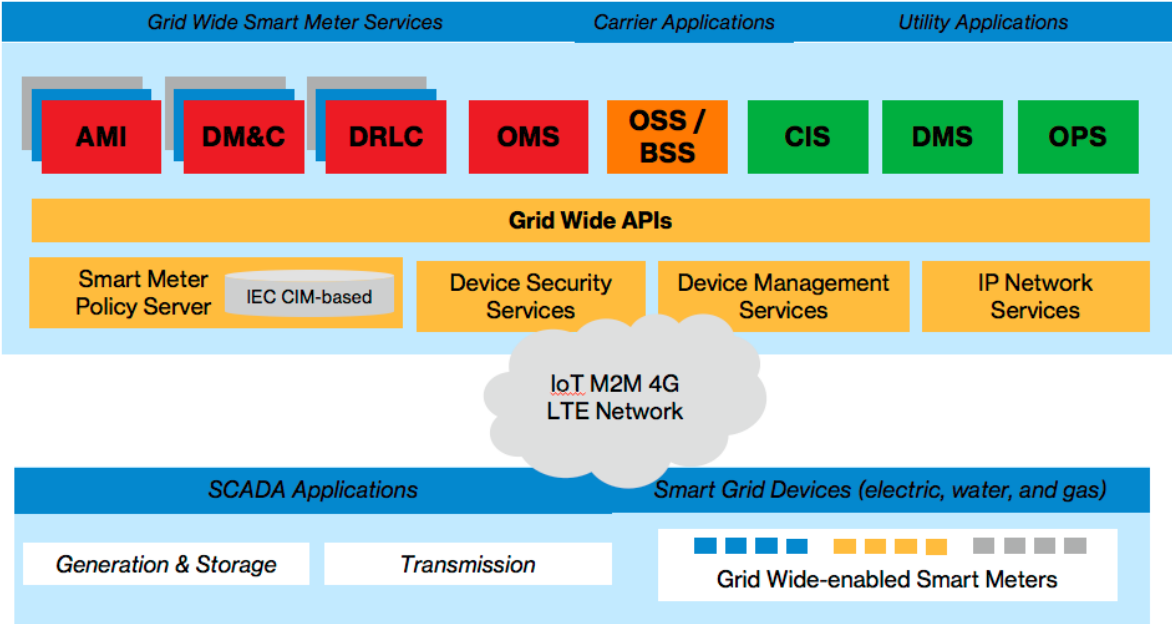
- Grid Wide Smart Metering Services API powered by PolicyNet Interfaces
- IEC 61968-9 based Interfaces
- MultiSpeak Interfaces
- Flat File Exports



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Grid Wide Platform Components



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2 Security Services

2.1 SOAP Client and Server Authentication

Grid Wide Smart Metering Services API powered by PolicyNet SOAP based web services require mutually authenticated TLS via public key certificates. At the application layer, the SOAP web services also enforces Role Based Access Control (RBAC) which requires that each client must login via a username and password to load a permissions context that prior to any service invocation.

2.2 Session Management

To reduce the threat of session hijacking, Grid Wide Smart Metering Services API powered by PolicyNet web services implements Session Management for each application client. After successful Login, a SessionId will be returned to the client. The SessionId is a reference to the client's permissions context and is valid for the duration of their session; the SessionId is updated by the application servers with each request/response. Any change to a client's permission set during a client session will terminate the current session and require another Login to load the modified permission set. The SessionId must be presented in the SOAP header with each service invocation.



3 Grid Wide Smart Metering Services API powered by PolicyNet

3.1 IEC 61968-9 based Interfaces

- Meter Reading
- Meter Control
 - Meter Programming
- Load Control
 - Service Disconnect/Reconnect
 - Demand Response Signals
- Service Point Administration
- Billing Cycle Administration
- Planned Outages
- Notification Topics

3.2 Admin and Device Management Interfaces

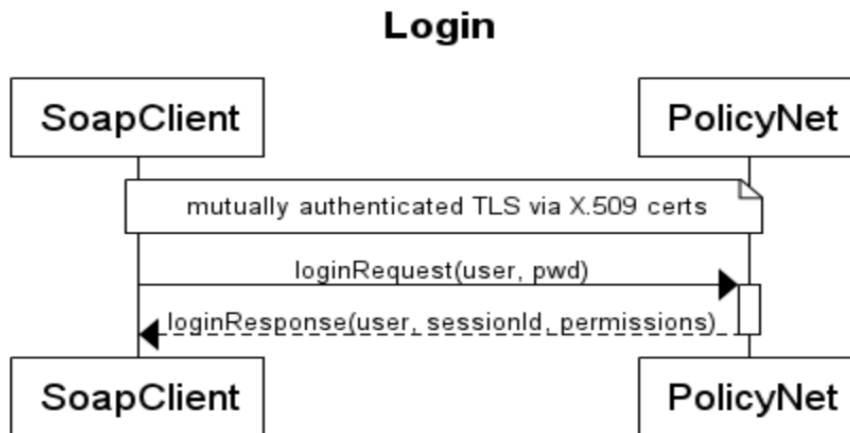
- Session Management
- User Administration
- Role Administration
- Group Administration
- Device Control
 - Firmware Management
 - Operational State Management
- User Interface Reports
- Notification Topics



3.3 Grid Wide Smart Metering Services API powered by PolicyNet Use Cases

3.3.1 Login

Grid Wide Smart Metering Services API powered by PolicyNet clients are required to invoke the *Login* service in order to retrieve a SessionId prior to any subsequent API web service invocation. Following successful *Login*, a SessionId will be returned to the client, and the client's username and SessionId are required in the SOAP header of each subsequent service invocation.



LOGIN REQUEST:

```

POST / HTTP/1.1
Host: policynet-dmz:10000
Connection: Keep-Alive
User-Agent: GN PHP UI
Content-Type: application/soap+xml; charset=utf-8; action="login"
Content-Length: 245
<?xml version="1.0" encoding="utf-8"?>
<env:Envelope xmlns:env="http://www.w3.org/2003/05/soap-envelope" xmlns:ns1="urn:policynet/v5">
  <env:Body>
    <ns1:loginRequest username="*****" password="*****" />
  </env:Body>
</env:Envelope>
  
```



LOGIN RESPONSE:

HTTP/1.1 200 OK Server: gSOAP/2.7 Content-Type: application/soap+xml; charset=utf-8 Content-Length: 3416

Connection: keep-alive

<?xml version="1.0" encoding="utf-8"?>

<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://www.w3.org/2003/05/soap-envelope" xmlns:SOAP-

ENC="http://www.w3.org/2003/05/soap-encoding"

xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"

xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xop="http://www.w3.org/2004/08/xop/include"

xmlns:xmime5="http://www.w3.org/2005/05/xmlmime" xmlns:polycynet="urn:polycynet/v5">

<SOAP-ENV:Body>

<polycynet:loginResponse lastLoginDate="2017-01-24T11:46:32+00:00" sessionId="*****"
userId="1927">

<polycynet:Permissions del="Grant" read="Grant" create="Grant"
objectType="Topic"></polycynet:Permissions>

<polycynet:Permissions read="Grant" objectType="UserInterface"></polycynet:Permissions>

<polycynet:Permissions update="Grant" read="Grant"

objectType="PolicySettings"></polycynet:Permissions>

<polycynet:Permissions read="Grant" objectType="SmartMeter"></polycynet:Permissions>

<polycynet:Permissions approve="Grant" deploy="Grant" update="Grant" del="Grant" read="Grant"
create="Grant"

objectType="EnergyServiceOnPolicy"></polycynet:Permissions>

<polycynet:Permissions subscribe="Grant" deploy="Grant" update="Grant" del="Grant" read="Grant"
create="Grant"

objectType="PowerQualityProfilePolicy"></polycynet:Permissions>

<polycynet:Permissions update="Grant" read="Grant"

objectType="DeviceOperationalState"></polycynet:Permissions>

<polycynet:Permissions update="Grant" del="Grant" read="Grant" create="Grant"

objectType="DynamicDeviceGroup"></polycynet:Permissions>

<polycynet:Permissions update="Grant" del="Grant" read="Grant" create="Grant"

objectType="Consumer"></polycynet:Permissions>

<polycynet:Permissions update="Grant" del="Grant" read="Grant" create="Grant"

objectType="Subscription"></polycynet:Permissions>

<polycynet:Permissions approve="Grant" deploy="Grant" update="Grant" del="Grant" read="Grant"

create="Grant"

objectType="EnergyServiceOffPolicy"></polycynet:Permissions>

<polycynet:Permissions read="Grant" objectType="ReadIntervalsReport"></polycynet:Permissions>

<polycynet:Permissions read="Grant"

objectType="PowerQualityProfileReport"></polycynet:Permissions>

<polycynet:Permissions subscribe="Grant" deploy="Grant" update="Grant" del="Grant" read="Grant"

create="Grant"

objectType="ReadDemandRegistersPolicy"></polycynet:Permissions>

<polycynet:Permissions subscribe="Grant" deploy="Grant" update="Grant" del="Grant" read="Grant"

create="Grant"

objectType="MeterEventsPolicy"></polycynet:Permissions>

<polycynet:Permissions subscribe="Grant" deploy="Grant" update="Grant" del="Grant" read="Grant"

create="Grant"

objectType="BillingReadPolicy"></polycynet:Permissions>

<polycynet:Permissions read="Grant" objectType="DeviceEvent"></polycynet:Permissions>



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```
<polycynet:Permissions read="Grant"
objectType="OpStateRestrictionSettings"></polycynet:Permissions>
  <polycynet:Permissions read="Grant"
objectType="ReadDemandRegistersReport"></polycynet:Permissions>
    <polycynet:Permissions read="Grant" objectType="PanTopology"></polycynet:Permissions>
    <polycynet:Permissions update="Grant" read="Grant"
objectType="DeviceBindState"></polycynet:Permissions>
      <polycynet:Permissions subscribe="Grant" deploy="Grant" update="Grant" del="Grant" read="Grant"
create="Grant"
      objectType="ReadIntervalsPolicy"></polycynet:Permissions>
    </polycynet:loginResponse>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

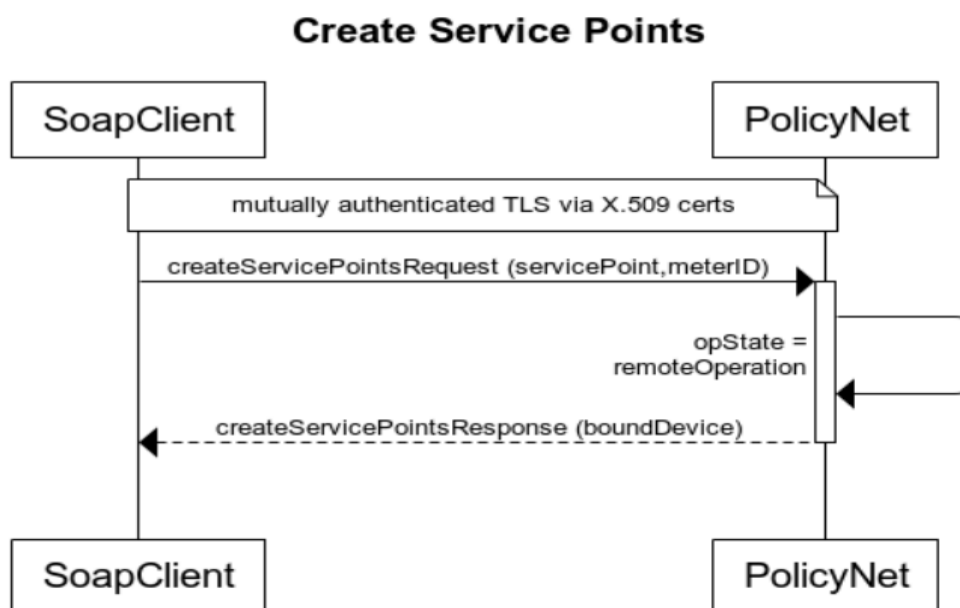


3.3.2 Service Point Assignment

Upon initial network entry, Grid Wide Smart Metering Services API powered by PolicyNet automatically moves meters into the *Discovered* operational state. *Discovered* meters are not yet eligible for meter reading and control policies.

After field installation, assignment of service location information to the meter is required for the meter to become eligible for meter reading and control policies. When a service location is assigned to a *Discovered* meter, then the Grid Wide platform automatically moves the meter into the *Remote Operation* state.

Service point assignment is performed for one or more meters via invocation of the synchronous *createServicePoints* web service.



CREATE SERVICE POINTS REQUEST:

POST / HTTP/1.1

Host: policynet-dmz:10000

Connection: Keep-Alive

User-Agent: GN PHP UI ()

Content-Type: application/soap+xml; charset=utf-8; action="createServicePoints"

Content-Length: 916

```
<?xml version="1.0" encoding="UTF-8"?>
```

```
<env:Envelope xmlns:env="http://www.w3.org/2003/05/soap-envelope" xmlns:ns1="urn:policynet/v5">
```

```
  <env:Header>
```

```
    <ns1:LoginUsername>admin@ci.com</ns1:LoginUsername>
```

```
    <ns1:SessionId>MOTD8BGBJ3OUTO1P22QS7YYB587BTI6Q</ns1:SessionId>
```

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```

</env:Header>
<env:Body>
  <ns1:createServicePointsRequest deviceType="meter">
    <ns1:servicePoints>
      <ns1:servicePoint servicePointId="CI5-SP-102778" utilitySerialNumber="102778"
mediumVoltageFeederId="MV_FEED_100" transformerId="SUB_1234" subTransformerId="LV_XMFR_100"
streetNo="126" streetAddress="South Park" streetType="St" city="San Francisco" stateProv="CA"
postalCode="94941" XCoordinate="-122.3945" YCoordinate="37.78156" ZCoordinate="23.45103"
timeZone="US/Pacific" billingCycleId="3" billingCycleName="MRC03" customerType="CGS+"
customerSize="&lt;25kW" lifeSafety="false"/>
    </ns1:servicePoints>
  </ns1:createServicePointsRequest>
</env:Body>
</env:Envelope>

```

CREATE SERVICE POINTS RESPONSE:

HTTP/1.1 200 OK

Server: gSOAP/2.7

Content-Type: application/soap+xml; charset=utf-8

Content-Length: 1041

Connection: keep-alive

```

<?xml version="1.0" encoding="UTF-8"?>
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://www.w3.org/2003/05/soap-envelope" xmlns:SOAP-
ENC="http://www.w3.org/2003/05/soap-encoding" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:xop="http://www.w3.org/2004/08/xop/include" xmlns:xmime5="http://www.w3.org/2005/05/xmlmime"
xmlns:polycynet="urn:polycynet/v5">
  <SOAP-ENV:Header>
    <polycynet:LoginUsername>admin@ci.com</polycynet:LoginUsername>
    <polycynet:SessionId>O08DS4FFQLCSJY5XCT07JUR4M90DXBEG</polycynet:SessionId>
  </SOAP-ENV:Header>
  <SOAP-ENV:Body>
    <polycynet:createServicePointsResponse>
      <polycynet:boundDevices utilitySerialNumber="102778">
        <polycynet:deviceStatus bindState="Integrated" operationalStatus="RemoteOperation"
serviceSwitchStatus="true" signalStrength="2" linkType="LTE" networkConnectivity="CONNECTED"
energyStatus="ENERGIZED" utilitySerialNumber="102778">
          </polycynet:deviceStatus>
        </polycynet:boundDevices>
      </polycynet:createServicePointsResponse>
    </SOAP-ENV:Body>
  </SOAP-ENV:Envelope>

```



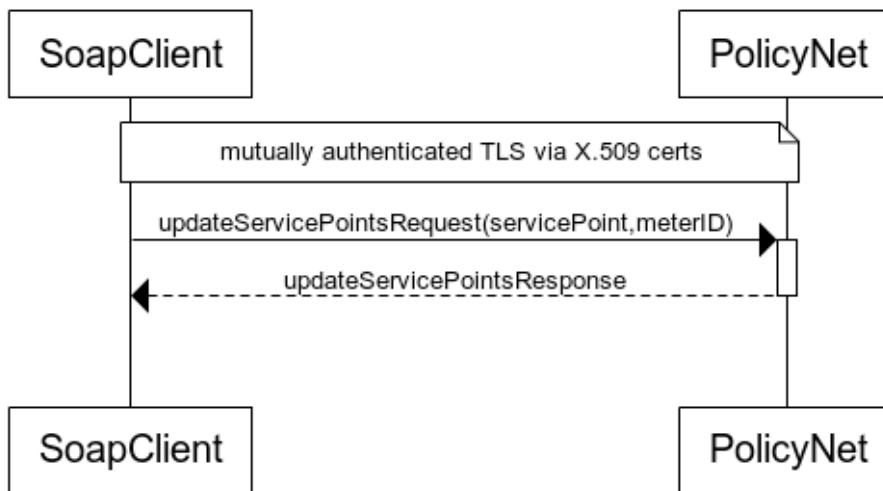
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3.3.3 Service Point Update

The synchronous *updateServicePoints* web service is used to update the values of an existing service location. The call returns void on success and an error object on failure.

Update Service Points



UPDATE SERVICE POINTS REQUEST:

POST / HTTP/1.1

Host: policynet-dmz:10000

Connection: Keep-Alive

User-Agent: GN PHP UI ()

Content-Type: application/soap+xml; charset=utf-8; action="updateServicePoints"

Content-Length: 898

```

<?xml version="1.0" encoding="UTF-8"?>
<env:Envelope xmlns:env="http://www.w3.org/2003/05/soap-envelope" xmlns:ns1="urn:policynet/v5">
  <env:Header>
    <ns1:LoginUsername>admin@ci.com</ns1:LoginUsername>
    <ns1:SessionId>MOTD8BGBJ3OUTO1P22QS7YYB587BTI6Q</ns1:SessionId>
  </env:Header>
  <env:Body>
    <ns1:updateServicePointsRequest>
      <ns1:servicePoints>
        <ns1:servicePoint servicePointId="CI5-SP-102778" utilitySerialNumber="102778"
mediumVoltageFeederId="MV_FEED_100" transformerId="SUB_1234" subTransformerId="LV_XMFR_100"
streetNo="126" streetAddress="South Park" streetType="St" city="San Francisco" stateProv="CA"
postalCode="94941" XCoordinate="-122.3945" YCoordinate="37.78156" ZCoordinate="23.45103"
  
```



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```

timeZone="US/Pacific" billingCycleId="3" billingCycleName="MRC03" customerType="CGS+"
customerSize="&lt;25kW" lifeSafety="false"/>
    </ns1:servicePoints>
</ns1:updateServicePointsRequest>
</env:Body>
</env:Envelope>

```

UPDATE SERVICE POINTS RESPONSE:

HTTP/1.1 200 OK
 Server: gSOAP/2.7
 Content-Type: application/soap+xml; charset=utf-8
 Content-Length: 757
 Connection: keep-alive

```

<?xml version="1.0" encoding="UTF-8"?>
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://www.w3.org/2003/05/soap-envelope" xmlns:SOAP-
ENC="http://www.w3.org/2003/05/soap-encoding" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:xop="http://www.w3.org/2004/08/xop/include" xmlns:xmime5="http://www.w3.org/2005/05/xmlmime"
xmlns:policynet="urn:policynet/v5">
  <SOAP-ENV:Header>
    <policynet:LoginUsername>admin@ci.com</policynet:LoginUsername>
    <policynet:SessionId>O08DS4FFQLCSJY5XCT07JUR4M90DXBEG</policynet:SessionId>
  </SOAP-ENV:Header>
  <SOAP-ENV:Body>
    <policynet:updateServicePointsResponse></policynet:updateServicePointsResponse>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>

```



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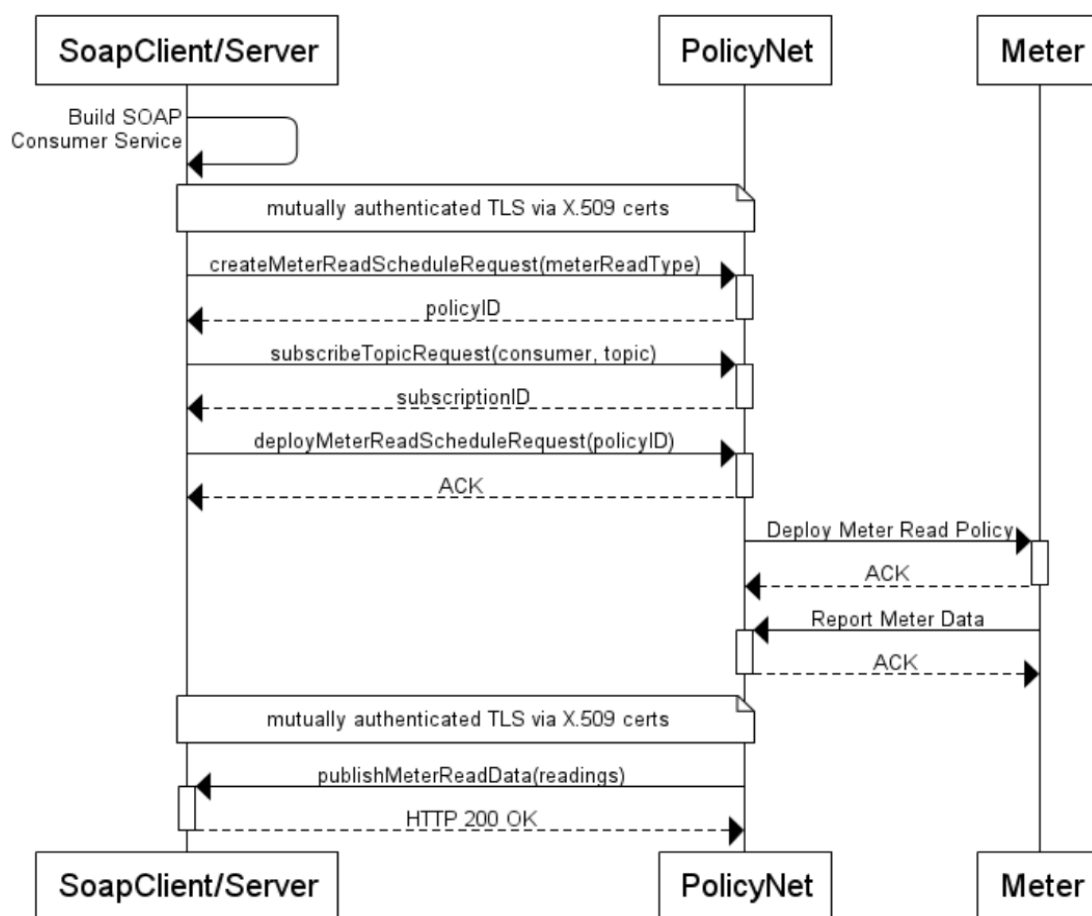
3.3.4 On-Demand and Scheduled Meter Reads

Both On-Demand and Scheduled Meter Reads are invoked via the *createMeterReadSchedule* and *deployMeterReadSchedule* services. To receive meter read data reported by a specific policyId or all policies of a particular topic type, applications perform one of the following:

- Create a SOAP consumer service and subscribe to either a specific policyId or topic type
- Subscribe for a flat file export (CMEP or Billing Data CSV formats) over https or sftp

In accordance with the WS-Notification standard, asynchronous one-way SOAP publications must be acknowledged by the consumer service with an HTTP 200 OK upon successful message transfer.

On-Demand and Scheduled Meter Reads



CREATE ON-DEMAND READ REQUEST:

For on-demand reads, the SOAP client must set the following values:

- createMeterReadScheduleRequest.policy.registerRead.onRequest = true
- createMeterReadScheduleRequest.policy.registerRead.reportingWindow = 0 (report immediately)
- createMeterReadScheduleRequest.policy.registerRead.schedule.minutes = 0 (execute one time)

(Note: replace "registerRead" above as appropriate for different types of meter reads: intervalRead, powerQualityProfile, etc.)

POST / HTTP/1.1

Host: policynet-dmz:10000

Connection: Keep-Alive

User-Agent: GN PHP UI

Content-Type: application/soap+xml; charset=utf-8; action="createMeterReadSchedule"

Content-Length: 910

```
<?xml version="1.0" encoding="utf-8"?>
<env:Envelope xmlns:env="http://www.w3.org/2003/05/soap-envelope" xmlns:ns1="urn:policynet/v5">
  <env:Header>
    <ns1:LoginUsername>*****</ns1:LoginUsername>
    <ns1:SessionId>*****</ns1:SessionId>
  </env:Header>
  <env:Body>
    <ns1:createMeterReadScheduleRequest>
      <ns1:policy>
        <ns1:registerRead name="DG64747434 03/13/2017 15:17:16" description="On request register
data (demand or tou) for DG64747434"
        type="readDemandRegisters" onRequest="true" reportingWindow="0"
        deploymentMethod="UnicastCops" summations="true"
        demands="true" resetDemands="false">
          <ns1:schedule>
            <ns1:minutes>0</ns1:minutes>
            <ns1:startTime>2017-03-13T15:17:16</ns1:startTime>
          </ns1:schedule>
          <ns1:targets>
            <ns1:utilitySerialNumber>DG64747434</ns1:utilitySerialNumber>
          </ns1:targets>
        </ns1:registerRead>
      </ns1:policy>
    </ns1:createMeterReadScheduleRequest>
  </env:Body>
</env:Envelope>
```



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CREATE ON-DEMAND READ RESPONSE:

HTTP/1.1 200 OK

Server: gSOAP/2.7

Content-Type: application/soap+xml; charset=utf-8

Content-Length: 745

Connection: keep-alive

```
<?xml version="1.0" encoding="utf-8"?>
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://www.w3.org/2003/05/soap-envelope" xmlns:SOAP-
ENC="http://www.w3.org/2003/05/soap-encoding"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xop="http://www.w3.org/2004/08/xop/include"
xmlns:xmime5="http://www.w3.org/2005/05/xmlmime" xmlns:polycynet="urn:polycynet/v5">
  <SOAP-ENV:Header>
    <polycynet:LoginUsername>*****</polycynet:LoginUsername>
    <polycynet:SessionId>*****</polycynet:SessionId>
  </SOAP-ENV:Header>
  <SOAP-ENV:Body>
    <polycynet:createMeterReadScheduleResponse
policyId="1991"></polycynet:createMeterReadScheduleResponse>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

DEPLOY ON-DEMAND READ REQUEST:

POST / HTTP/1.1

Host: polycynet-dmz:10000

Connection: Keep-Alive

User-Agent: GN PHP UI

Content-Type: application/soap+xml; charset=utf-8; action="deployMeterReadSchedule"

Content-Length: 376

```
<?xml version="1.0" encoding="utf-8"?>
<env:Envelope xmlns:env="http://www.w3.org/2003/05/soap-envelope" xmlns:ns1="urn:polycynet/v5">
  <env:Header>
    <ns1:LoginUsername>*****</ns1:LoginUsername>
    <ns1:SessionId>*****</ns1:SessionId>
  </env:Header>
  <env:Body>
    <ns1:deployMeterReadScheduleRequest policyId="1991" />
  </env:Body>
</env:Envelope>
```



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DEPLOY ON-DEMAND READ RESPONSE:

Note: Policy deployment calls return VOID on Success, or a SOAP:Fault and Error Code upon Failure.

HTTP/1.1 200 OK

Server: gSOAP/2.7

Content-Type: application/soap+xml; charset=utf-8

Content-Length: 729

Connection: keep-alive

```
<?xml version="1.0" encoding="utf-8"?>
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://www.w3.org/2003/05/soap-envelope" xmlns:SOAP-
ENC="http://www.w3.org/2003/05/soap-encoding"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xop="http://www.w3.org/2004/08/xop/include"
xmlns:xmime5="http://www.w3.org/2005/05/xmlmime" xmlns:polycynet="urn:polycynet/v5">
  <SOAP-ENV:Header>
    <polycynet:LoginUsername>*****</polycynet:LoginUsername>
    <polycynet:SessionId>*****</polycynet:SessionId>
  </SOAP-ENV:Header>
  <SOAP-ENV:Body>
    <polycynet:deployMeterReadScheduleResponse></polycynet:deployMeterReadScheduleResponse>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

CREATE SCHEDULED RECURRING READ REQUEST:

For the example recurring read request below the following values are used:

- createMeterReadScheduleRequest.policy.registerRead.onRequest = false
- createMeterReadScheduleRequest.policy.registerRead.reportingWindow = 900
(randomize reports over a 15 minute reporting window)
- createMeterReadScheduleRequest.policy.registerRead.schedule.minutes = 120
(execute reads every 2 hours)

(Note: replace "registerRead" above as appropriate for different types of meter reads: intervalRead, powerQualityProfile, etc.)

POST / HTTP/1.1

Host: polycynet-dmz:10000

Connection: Keep-Alive

User-Agent: GN PHP UI

Content-Type: application/soap+xml; charset=utf-8; action="createMeterReadSchedule"

Content-Length: 895

```
<?xml version="1.0" encoding="utf-8"?>
<env:Envelope xmlns:env="http://www.w3.org/2003/05/soap-envelope" xmlns:ns1="urn:polycynet/v5">
  <env:Header>
```



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```

    <ns1:LoginUsername>*****</ns1:LoginUsername>
    <ns1:SessionId>*****</ns1:SessionId>
  </env:Header>
  <env:Body>
    <ns1:createMeterReadScheduleRequest>
      <ns1:policy>
        <ns1:registerRead name="2-Hour Recurring Register Read Policy" description=""
type="readDemandRegisters" onRequest="false" reportingWindow="900" deploymentMethod="UnicastCops"
deployOnNextConnect="false" summations="true" demands="true" resetDemands="false">
          <ns1:schedule>
            <ns1:minutes>120</ns1:minutes>
            <ns1:startTime>2017-04-10T09:55:32</ns1:startTime>
          </ns1:schedule>
          <ns1:targets>
            <ns1:utilitySerialNumber>DG64747434</ns1:utilitySerialNumber>
          </ns1:targets>
        </ns1:registerRead>
      </ns1:policy>
    </ns1:createMeterReadScheduleRequest>
  </env:Body>
</env:Envelope>

```

CREATE SCHEDULED RECURRING READ RESPONSE:

HTTP/1.1 200 OK

Server: gSOAP/2.7

Content-Type: application/soap+xml; charset=utf-8

Content-Length: 745

Connection: keep-alive

```

<?xml version="1.0" encoding="utf-8"?>
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://www.w3.org/2003/05/soap-envelope" xmlns:SOAP-
ENC="http://www.w3.org/2003/05/soap-encoding"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xop="http://www.w3.org/2004/08/xop/include"
xmlns:xmime5="http://www.w3.org/2005/05/xmlmime" xmlns:policynet="urn:policynet/v5">
  <SOAP-ENV:Header>
    <policynet:LoginUsername>*****</policynet:LoginUsername>
    <policynet:SessionId>*****</policynet:SessionId>
  </SOAP-ENV:Header>
  <SOAP-ENV:Body>
    <policynet:createMeterReadScheduleResponse
policyId="2283"></policynet:createMeterReadScheduleResponse>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>

```



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DEPLOY SCHEDULED RECURRING READ REQUEST:

POST / HTTP/1.1

Host: policynet-dmz:10000

Connection: Keep-Alive

User-Agent: GN PHP UI

Content-Type: application/soap+xml; charset=utf-8; action="deployMeterReadSchedule"

Content-Length: 376

```
<?xml version="1.0" encoding="utf-8"?>
<env:Envelope xmlns:env="http://www.w3.org/2003/05/soap-envelope" xmlns:ns1="urn:policynet/v5">
  <env:Header>
    <ns1:LoginUsername>*****</ns1:LoginUsername>
    <ns1:SessionId>*****</ns1:SessionId>
  </env:Header>
  <env:Body>
    <ns1:deployMeterReadScheduleRequest policyId="2283" />
  </env:Body>
</env:Envelope>
```

DEPLOY SCHEDULED RECURRING READ RESPONSE:

Note: Policy deployment calls return VOID on Success, or a SOAP:Fault and Error Code upon Failure.

HTTP/1.1 200 OK

Server: gSOAP/2.7

Content-Type: application/soap+xml; charset=utf-8

Content-Length: 729

Connection: keep-alive

```
<?xml version="1.0" encoding="utf-8"?>
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://www.w3.org/2003/05/soap-envelope" xmlns:SOAP-ENC="http://www.w3.org/2003/05/soap-encoding"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xop="http://www.w3.org/2004/08/xop/include"
  xmlns:xmime5="http://www.w3.org/2005/05/xmlmime" xmlns:policynet="urn:policynet/v5">
  <SOAP-ENV:Header>
    <policynet:LoginUsername>*****</policynet:LoginUsername>
    <policynet:SessionId>*****</policynet:SessionId>
  </SOAP-ENV:Header>
  <SOAP-ENV:Body>
    <policynet:deployMeterReadScheduleResponse></policynet:deployMeterReadScheduleResponse>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```



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3.3.5 Remote Disconnect/Re-connect

The *createLoadControlSchedule* and *deployLoadControlSchedule* services are used to perform service disconnect or re-connect operations using the *energyServiceOff* and *energyServiceOn* policies, respectively. The *energyServiceOff* and *energyServiceOn* policies are singleton policies, which means that only a single policy instance can be active at a given time; a policy instance must be deployed and reported (success or failure) by a particular target meter before another policy instance may be created.

Notifications of service disconnect/re-connect are published asynchronously back to applications via the *publishCustomEventTopic* for the following event codes:

Event Code	Event Description
39	Energy Service Switch open
40	Energy Service Switch close
1019	RCDC switch open failure (policy ID)
1020	RCDC switch close failure (policy ID)
2022	Policy Enforcement success (policy ID)

A callback reference handle (policyID) to the original policy (e.g. Service ON/OFF) that created the event notification can be found in the *event.eventArguments* field of the *publishCustomEventTopic* notification, and the structure is *eventArguments="policy name (policy ID)"*.

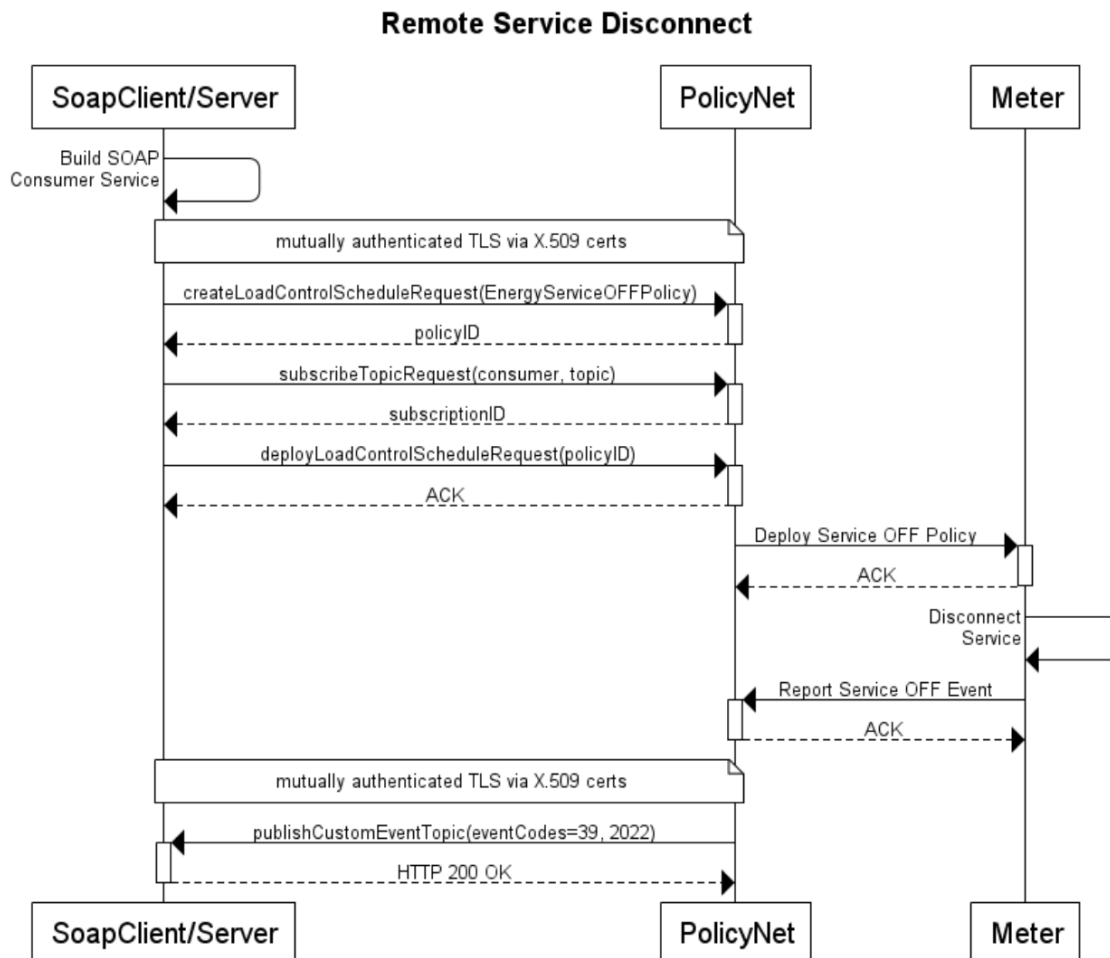
In the example below, a Service OFF policy called "Recurring Power OFF/ON Test2" was created and deployed with a policyID = 2675. In parsing the *eventArguments* field of the *publishCustomEventTopic* notification, the concatenated string of "policy name (policyID)" may be extracted by the original caller as a callback reference (in this example "Recurring Power OFF/ON Test2 (2675)").

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://www.w3.org/2003/05/soap-envelope" xmlns:SOAP-ENC="http://www.w3.org/2003/05/soap-encoding" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:xop="http://www.w3.org/2004/08/xop/include" xmlns:xmime5="http://www.w3.org/2005/05/xmlmime"
xmlns:policynet="urn:policynet/v5">
<SOAP-ENV:Body>
<policynet:publishCustomEventTopic>
<policynet:customEventTopics>
<policynet:event eventArguments="Recurring Power OFF/ON Test2 (2675)" eventDesc="Policy Enforcement
success" eventCode="2022" eventType="ConfigControl" eventCategory="GridNet" eventSeverity="Info"
eventTime="2017-05-12T15:51:21"><policynet:eventSource>
<policynet:deviceSource servicePointId="Int_7434" utilitySerialNumber="DG64747434"
macAddress="352819070014581">
</policynet:deviceSource>
</policynet:eventSource>
</policynet:event>
```



In accordance with the WS-Notification standard, asynchronous one-way SOAP publications must be acknowledged by the consumer service with an HTTP 200 OK upon successful message transfer.

Note: to receive event codes 39, 40 from Aclara electric meters, the meters must be programmed to record those events, and a Meter Events policy must be deployed to the meters.



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CREATE LOAD CONTROL SCHEDULE REQUEST (Service Disconnect):

POST / HTTP/1.1

Host: policynet-dmz:10000

Connection: Keep-Alive

User-Agent: GN PHP UI

Content-Type: application/soap+xml; charset=utf-8; action="createLoadControlSchedule"

Content-Length: 987

```

<?xml version="1.0" encoding="utf-8"?>
<env:Envelope xmlns:env="http://www.w3.org/2003/05/soap-envelope" xmlns:ns1="urn:policynet/v5">
  <env:Header>
    <ns1:LoginUsername>*****</ns1:LoginUsername>
    <ns1:SessionId>*****</ns1:SessionId>
  </env:Header>
  <env:Body>
    <ns1:createLoadControlScheduleRequest>
      <ns1:policy>
        <ns1:energyServiceOff name="Turn service OFF for DG64747434 on 04/07/2017 07:58:15"
description="Disconnect service switch for DG64747434" type="energyServiceOff" onRequest="true"
reportingWindow="0" deploymentMethod="UnicastCops" actionStartTime="2017-04-07T07:58:15">
          <ns1:schedule>
            <ns1:minutes>0</ns1:minutes>
            <ns1:startTime>2017-04-07T07:58:15</ns1:startTime>
          </ns1:schedule>
          <ns1:targets>
            <ns1:utilitySerialNumber>DG64747434</ns1:utilitySerialNumber>
          </ns1:targets>
          <ns1:notify>
            <ns1:notifyHanDevices>>false</ns1:notifyHanDevices>
          </ns1:notify>
        </ns1:energyServiceOff>
      </ns1:policy>
    </ns1:createLoadControlScheduleRequest>
  </env:Body>
</env:Envelope>

```

CREATE LOAD CONTROL SCHEDULE RESPONSE (Service Disconnect):

HTTP/1.1 200 OK

Server: gSOAP/2.7

Content-Type: application/soap+xml; charset=utf-8

Content-Length: 749

Connection: keep-alive

```

<?xml version="1.0" encoding="utf-8"?>
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://www.w3.org/2003/05/soap-envelope" xmlns:SOAP-
ENC="http://www.w3.org/2003/05/soap-encoding"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xop="http://www.w3.org/2004/08/xop/include"

```



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```

xmlns:xmime5="http://www.w3.org/2005/05/xmlmime" xmlns:polycynet="urn:polycynet/v5">
  <SOAP-ENV:Header>
    <polycynet:LoginUsername>*****</polycynet:LoginUsername>
    <polycynet:SessionId>*****</polycynet:SessionId>
  </SOAP-ENV:Header>
  <SOAP-ENV:Body>
    <polycynet:createLoadControlScheduleResponse
policyId="2261"></polycynet:createLoadControlScheduleResponse>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>

```

DEPLOY LOAD CONTROL SCHEDULE REQUEST (Service Disconnect):

POST / HTTP/1.1

Host: polycynet-dmz:10000

Connection: Keep-Alive

User-Agent: GN PHP UI

Content-Type: application/soap+xml; charset=utf-8; action="deployLoadControlSchedule"

Content-Length: 371 bytes - Size: 371 bytes

```

<?xml version="1.0" encoding="utf-8"?>
<env:Envelope xmlns:env="http://www.w3.org/2003/05/soap-envelope" xmlns:ns1="urn:polycynet/v5">
  <env:Header>
    <ns1:LoginUsername>*****</ns1:LoginUsername>
    <ns1:SessionId>*****</ns1:SessionId>
  </env:Header>
  <env:Body>
    <ns1:deployLoadControlScheduleRequest policyId="2261" />
  </env:Body>
</env:Envelope>

```

DEPLOY LOAD CONTROL SCHEDULE RESPONSE (Service Disconnect):

HTTP/1.1 200 OK Server: gSOAP/2.7

Content-Type: application/soap+xml; charset=utf-8

Content-Length: 725

Connection: keep-alive - Size: 725 bytes

```

<?xml version="1.0" encoding="utf-8"?>
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://www.w3.org/2003/05/soap-envelope" xmlns:SOAP-
ENC="http://www.w3.org/2003/05/soap-encoding"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xop="http://www.w3.org/2004/08/xop/include"
xmlns:xmime5="http://www.w3.org/2005/05/xmlmime" xmlns:polycynet="urn:polycynet/v5">
  <SOAP-ENV:Header>
    <polycynet:LoginUsername>*****</polycynet:LoginUsername>
    <polycynet:SessionId>*****</polycynet:SessionId>
  </SOAP-ENV:Header>
  <SOAP-ENV:Body>
    <polycynet:deployLoadControlScheduleResponse></polycynet:deployLoadControlScheduleResponse>

```

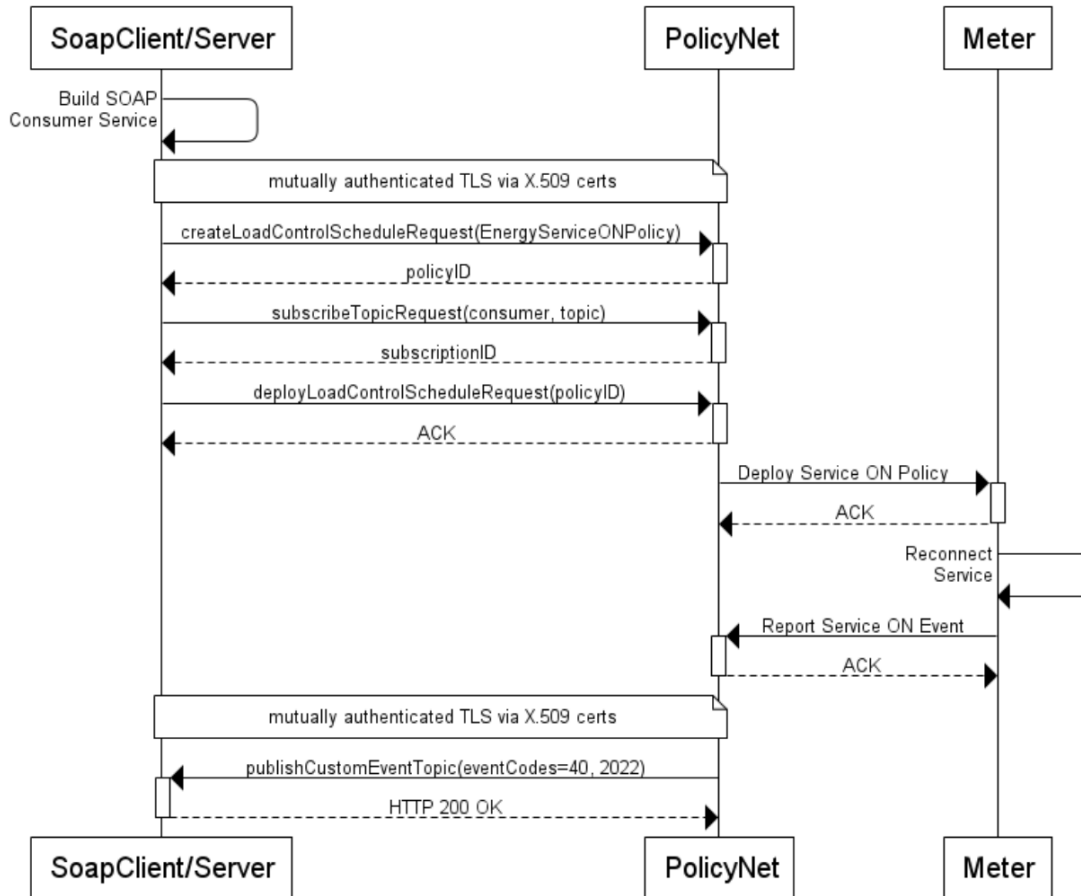


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```
</SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

Remote Service Reconnect



CREATE LOAD CONTROL SCHEDULE REQUEST (Service Reconnect):

POST / HTTP/1.1

Host: policynet-dmz:10000

Connection: Keep-Alive

User-Agent: GN PHP UI

Content-Type: application/soap+xml; charset=utf-8; action="createLoadControlSchedule"

Content-Length: 981 bytes - Size: 981 bytes

```
<?xml version="1.0" encoding="utf-8"?>
```

```
<env:Envelope xmlns:env="http://www.w3.org/2003/05/soap-envelope" xmlns:ns1="urn:policynet/v5">
```

```
<env:Header>
```

```
<ns1:LoginUsername>*****</ns1:LoginUsername>
```

```
<ns1:SessionId>*****</ns1:SessionId>
```



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```

</env:Header>
<env:Body>
  <ns1:createLoadControlScheduleRequest>
    <ns1:policy>
      <ns1:energyServiceOn name="Service Reconnect Test" description="" type="energyServiceOn"
onRequest="true" reportingWindow="0"
      deploymentMethod="UnicastCops" deployOnNextConnect="false" actionStartTime="2017-01-
23T18:22:43" armSwitchOnly="false"
      enableAutoDisconnect="false">
        <ns1:schedule>
          <ns1:minutes>0</ns1:minutes>
          <ns1:startTime>2017-01-23T18:22:43</ns1:startTime>
        </ns1:schedule>
        <ns1:targets>
          <ns1:utilitySerialNumber>00102772</ns1:utilitySerialNumber>
        </ns1:targets>
        <ns1:notify>
          <ns1:notifyHanDevices>>false</ns1:notifyHanDevices>
        </ns1:notify>
      </ns1:energyServiceOn>
    </ns1:policy>
  </ns1:createLoadControlScheduleRequest>
</env:Body>
</env:Envelope>

```

CREATE LOAD CONTROL SCHEDULE RESPONSE (Service Reconnect):

HTTP/1.1 200 OK

Server: gSOAP/2.7 Content-Type: application/soap+xml; charset=utf-8

Content-Length: 742

Connection: keep-alive - Size: 742 bytes

```

<?xml version="1.0" encoding="utf-8"?>
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://www.w3.org/2003/05/soap-envelope" xmlns:SOAP-
ENC="http://www.w3.org/2003/05/soap-encoding"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xop="http://www.w3.org/2004/08/xop/include"
xmlns:xmime5="http://www.w3.org/2005/05/xmlmime" xmlns:polycynet="urn:polycynet/v5">
  <SOAP-ENV:Header>
    <polycynet:LoginUsername>*****</polycynet:LoginUsername>
    <polycynet:SessionId>*****</polycynet:SessionId>
  </SOAP-ENV:Header>
  <SOAP-ENV:Body>
    <polycynet:createLoadControlScheduleResponse
policyId="52240"></polycynet:createLoadControlScheduleResponse>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>

```



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DEPLOY LOAD CONTROL SCHEDULE REQUEST (Service Reconnect):

POST / HTTP/1.1

Host: policynet-dmz:10000

Connection: Keep-Alive

User-Agent: GN PHP UI

Content-Type: application/soap+xml; charset=utf-8; action="deployLoadControlSchedule"

Content-Length: 371 bytes - Size: 371 bytes

```
<?xml version="1.0" encoding="utf-8"?>
<env:Envelope xmlns:env="http://www.w3.org/2003/05/soap-envelope" xmlns:ns1="urn:policynet/v5">
  <env:Header>
    <ns1:LoginUsername>*****</ns1:LoginUsername>
    <ns1:SessionId>*****</ns1:SessionId>
  </env:Header>
  <env:Body>
    <ns1:deployLoadControlScheduleRequest policyId="52240" />
  </env:Body>
</env:Envelope>
```

DEPLOY LOAD CONTROL SCHEDULE RESPONSE (Service Reconnect):

HTTP/1.1 200 OK

Server: gSOAP/2.7

Content-Type: application/soap+xml; charset=utf-8

Content-Length: 725

Connection: keep-alive - Size: 725 bytes

```
<?xml version="1.0" encoding="utf-8"?>
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://www.w3.org/2003/05/soap-envelope" xmlns:SOAP-
ENC="http://www.w3.org/2003/05/soap-encoding"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xop="http://www.w3.org/2004/08/xop/include"
xmlns:xmime5="http://www.w3.org/2005/05/xmlmime" xmlns:policynet="urn:policynet/v5">
  <SOAP-ENV:Header>
    <policynet:LoginUsername>*****</policynet:LoginUsername>
    <policynet:SessionId>*****</policynet:SessionId>
  </SOAP-ENV:Header>
  <SOAP-ENV:Body>
    <policynet:deployLoadControlScheduleResponse></policynet:deployLoadControlScheduleResponse>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```



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3.3.6 Topic Subscription Creation

Grid Wide Smart Metering Services API powered by PolicyNet provides reliable message brokering and one-way publish/subscribe capabilities based on WS-Notification standards for a variety of data and event topics described in the *Publishing.wsdl* interface specification.

Subscriptions may be at the Topic Level (e.g., all Power Quality data) or at the Policy Level (data reported by a specific policy).

Publishing is performed independently for each subscriber and topic; if a consumer service is temporarily unavailable, the Grid Wide platform retains all unpublished data for that specific consumer/topic, and all unpublished data is transferred once a consumer service connection is re-established.

Each subscription provides independent user-definable policy control:

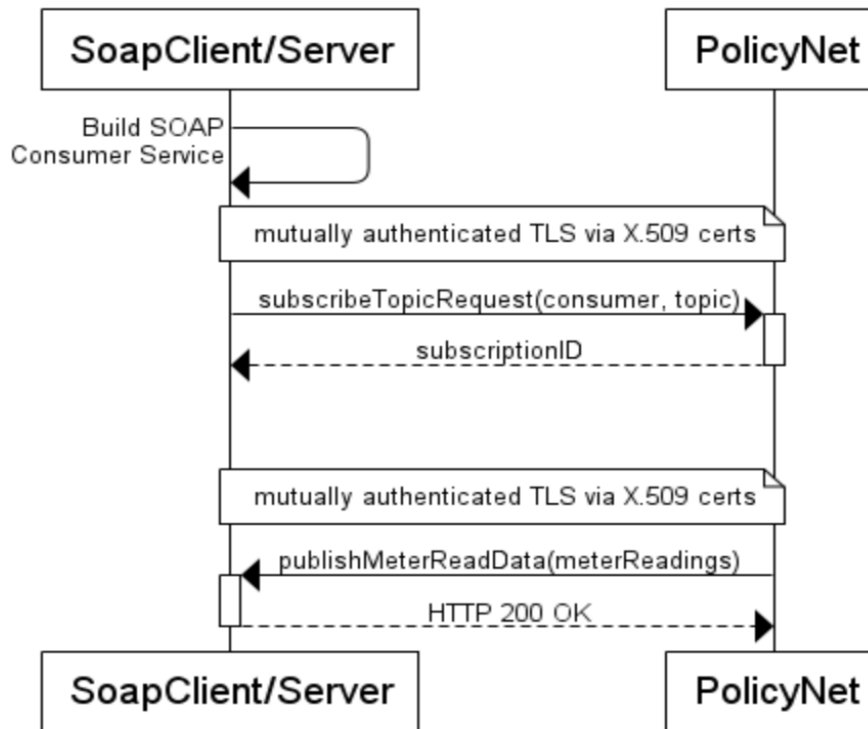
- Publishing frequency
- Message size
- Message filtering
 - o Suppression of outage notifications for planned outages, sub-metered locations, etc.

After developing a SOAP consumer service compliant with *Publishing.wsdl* to receive notification topic publications, the topic may be subscribed to programmatically via the *subscribeTopic* interface.

In accordance with the WS-I Basic Profile 1.1 standard, asynchronous one-way SOAP publications must be acknowledged by the consumer service with an HTTP 200 OK upon successful message transfer.



Subscribe to Meter Read Topics



SUBSCRIBE TOPIC REQUEST:

In the following *subscribeTopic* example, the SOAP client subscribes at the *topic level* to registerData (all register read data reported by any policy):

POST / HTTP/1.1

Host: policynet-dmz:10000

Connection: Keep-Alive

User-Agent: GN PHP UI

Content-Type: application/soap+xml; charset=utf-8; action="subscribeTopic"

Content-Length: 603

```

<?xml version="1.0" encoding="utf-8"?>
<env:Envelope xmlns:env="http://www.w3.org/2003/05/soap-envelope" xmlns:ns1="urn:policynet/v5">
  <env:Header>
    <ns1:LoginUsername>*****</ns1:LoginUsername>
    <ns1:SessionId>*****</ns1:SessionId>
  </env:Header>
  <env:Body>
    <ns1:subscribeTopicRequest publishInterval="10" batchSize="100">
      <ns1:client>
        <ns1:consumer wsdlUrl="https://myTestDomain.com" serviceName="mySoapService"
consumerTypeid="1" />
      </ns1:client>
    </ns1:subscribeTopicRequest>
  </env:Body>
</env:Envelope>
  
```



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```

    </ns1:client>
    <ns1:topic>
      <ns1:topicType>registerData</ns1:topicType>
    </ns1:topic>
  </ns1:subscribeTopicRequest>
</env:Body>
</env:Envelope>

```

SUBSCRIBE TOPIC RESPONSE:

HTTP/1.1 200 OK

Server: gSOAP/2.7

Content-Type: application/soap+xml; charset=utf-8

Content-Length: 722

Connection: keep-alive

```

<?xml version="1.0" encoding="utf-8"?>
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://www.w3.org/2003/05/soap-envelope" xmlns:SOAP-
ENC="http://www.w3.org/2003/05/soap-encoding"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xop="http://www.w3.org/2004/08/xop/include"
xmlns:xmime5="http://www.w3.org/2005/05/xmlmime" xmlns:polycynet="urn:polycynet/v5">
  <SOAP-ENV:Header>
    <polycynet:LoginUsername>*****</polycynet:LoginUsername>
    <polycynet:SessionId>*****</polycynet:SessionId>
  </SOAP-ENV:Header>
  <SOAP-ENV:Body>
    <polycynet:subscribeTopicResponse mrid="281"></polycynet:subscribeTopicResponse>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>

```



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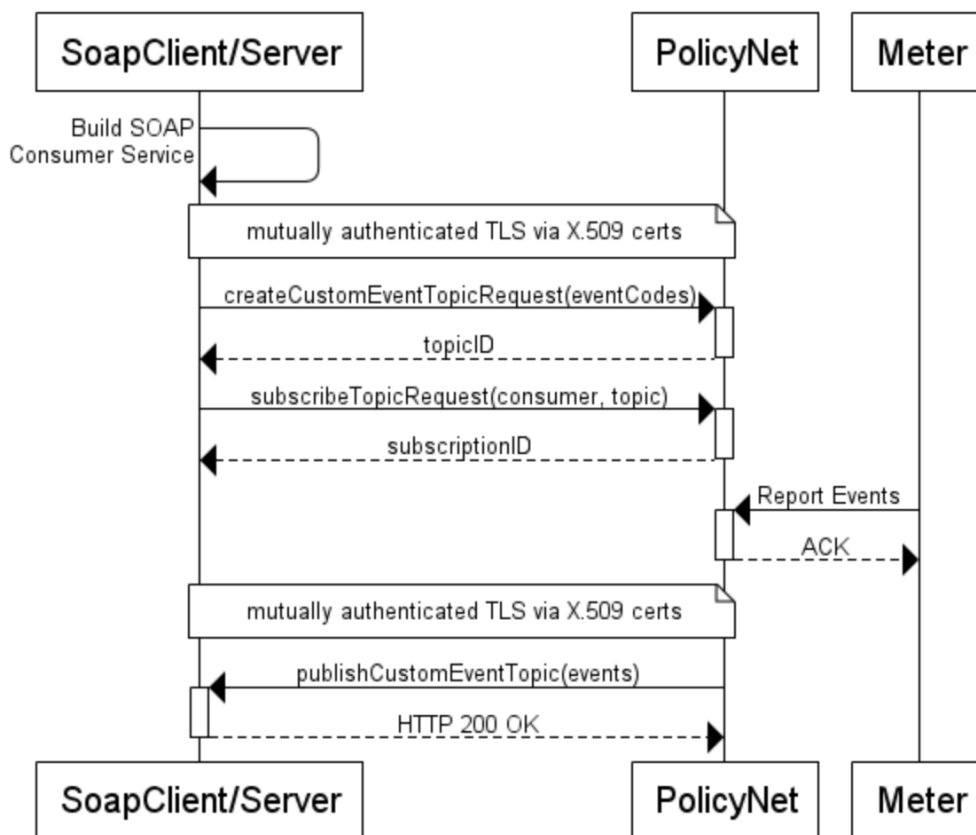
3.3.7 Custom Event Publications

Grid Wide Smart Metering Services API powered by PolicyNet managed devices asynchronously report events to the Grid Wide platform servers. The platform servers also generate many events available to subscribed applications. Receiving a custom event publication from the Grid Wide platform involves a three-step process:

1. Develop a SOAP consumer service compliant with *Publishing.wsdl* to receive custom event topic publications via the *publishCustomEventTopic*.
2. Create a custom event topic via the *createCustomEventTopicRequest* interface.
3. Subscribe programmatically via the *subscribeTopic* interface.

In accordance with the WS-I Basic Profile 1.1 standard, asynchronous one-way SOAP publications must be acknowledged by the consumer service with an HTTP 200 OK upon successful message transfer.

Subscribe to Custom Event Topics



SUBSCRIBE CUSTOM EVENT TOPICS REQUEST:

POST / HTTP/1.1

Host: policynet-dmz:10000

User-Agent: gSOAP/2.7

Connection: Keep-Alive

Content-Type: application/soap+xml; charset=utf-8; action="publishCustomEventTopic"

Content-Length: 603

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://www.w3.org/2003/05/soap-envelope" xmlns:SOAP-
ENC="http://www.w3.org/2003/05/soap-encoding" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:xop="http://www.w3.org/2004/08/xop/include" xmlns:xmime5="http://www.w3.org/2005/05/xmlmime"
xmlns:policynet="urn:policynet/v5">
<SOAP-ENV:Body>
<policynet:publishCustomEventTopic>
<policynet:customEventTopics>
<policynet:event eventArguments="Recurring Power OFF/ON Test2 (2675)" eventDesc="Policy Enforcement
success" eventCode="2022" eventType="ConfigControl" eventCategory="GridNet" eventSeverity="Info"
eventTime="2017-05-12T15:51:21"><policynet:eventSource>
<policynet:deviceSource servicePointId="Int_7434" utilitySerialNumber="DG64747434"
macAddress="352819070014581">
</policynet:deviceSource>
</policynet:eventSource>
</policynet:event>
```



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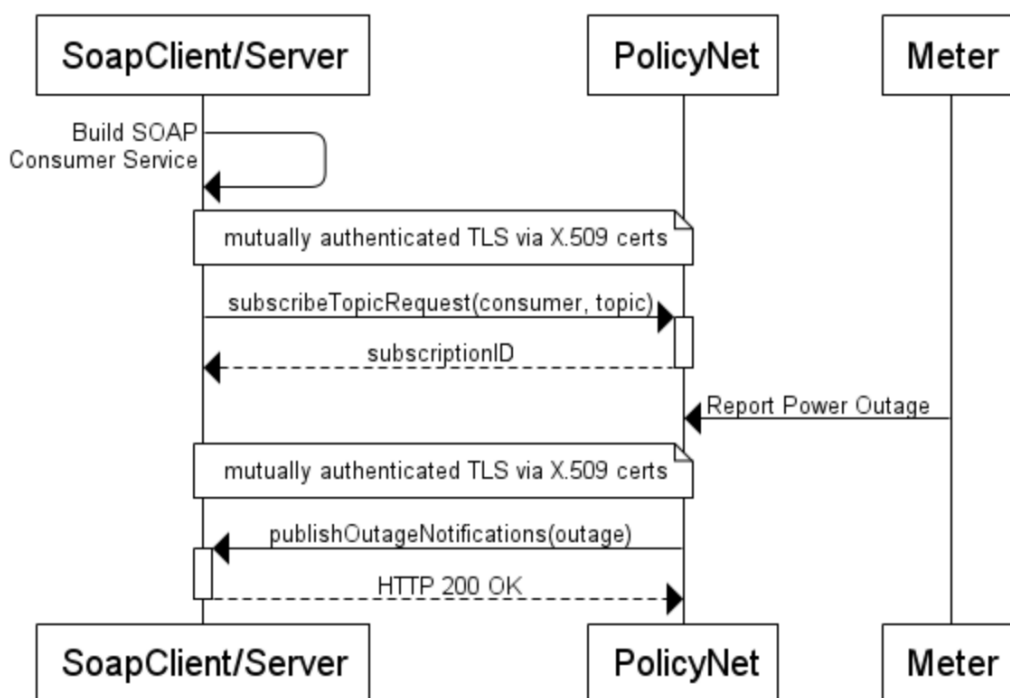
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3.3.8 Outage Notifications

Grid Wide Smart Metering Services API powered by PolicyNet managed electric meters asynchronously report a loss of power to the Grid Wide platform. After developing a SOAP consumer service compliant with *Publishing.wsdl* to receive outage notification topic publications via the *publishOutageNotification* topic, that topic may be subscribed to programmatically via the *subscribeTopic* interface.

In accordance with the WS-I Basic Profile 1.1 standard, asynchronous one-way SOAP publications must be acknowledged by the consumer service with an HTTP 200 OK upon successful message transfer.

Subscribe to Outage Notification Topic



POWER OUTAGE Notification:

POST / HTTP/1.1

Host: policynet-dmz:10700

User-Agent: gSOAP/2.7

Content-Type: application/soap+xml; charset=utf-8

Content-Length: 1054

Connection: close

Accept-Encoding: gzip, deflate

SOAPAction: "publishOutageNotification"



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```
<?xml version="1.0" encoding="UTF-8"?>
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://www.w3.org/2003/05/soap-envelope" xmlns:SOAP-
ENC="http://www.w3.org/2003/05/soap-encoding" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xop="http://www.w3.org/2004/08/xop/include"
xmlns:xmime5="http://www.w3.org/2005/05/xmlmime" xmlns:polycynet="urn:polycynet/v5">
<SOAP-ENV:Body><polycynet:publishOutageNotification>
  <polycynet:outages consumerUrl="https://myTestConsumer/omsservices/OA_ServerSoap_4_1">
    <polycynet:o callTime="2016-06-22T08:38:58-07:00" energyStatus="DEENERGIZED"
servicePointId="SVC001" utilitySerialNumber="00102701"><polycynet:UnplannedOutage>true</polycynet:Unpla
nnedOutage></polycynet:o>
  </polycynet:outages>
</polycynet:publishOutageNotification>
</SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

POWER RESTORATION Notification:

POST / HTTP/1.1

Host: polycynet-dmz:10700

User-Agent: gSOAP/2.7

Content-Type: application/soap+xml; charset=utf-8

Content-Length: 1054

Connection: close

Accept-Encoding: gzip, deflate

SOAPAction: "publishOutageNotification"

```
<?xml version="1.0" encoding="UTF-8"?>
```

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://www.w3.org/2003/05/soap-envelope" xmlns:SOAP-
ENC="http://www.w3.org/2003/05/soap-encoding" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:xop="http://www.w3.org/2004/08/xop/include" xmlns:xmime5="http://www.w3.org/2005/05/xmlmime"
xmlns:polycynet="urn:polycynet/v5">
<SOAP-ENV:Body><polycynet:publishOutageNotification>
  <polycynet:outages consumerUrl="https://myTestConsumer/omsservices/OA_ServerSoap_4_1">
    <polycynet:o callTime="2016-06-17T15:25:58-07:00" energyStatus="ENERGIZED"
servicePointId="SVC001"
utilitySerialNumber="00102701"><polycynet:UnplannedOutage>true</polycynet:UnplannedOutage></polycynet:o
>
  </polycynet:outages>
</polycynet:publishOutageNotification>
</SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```



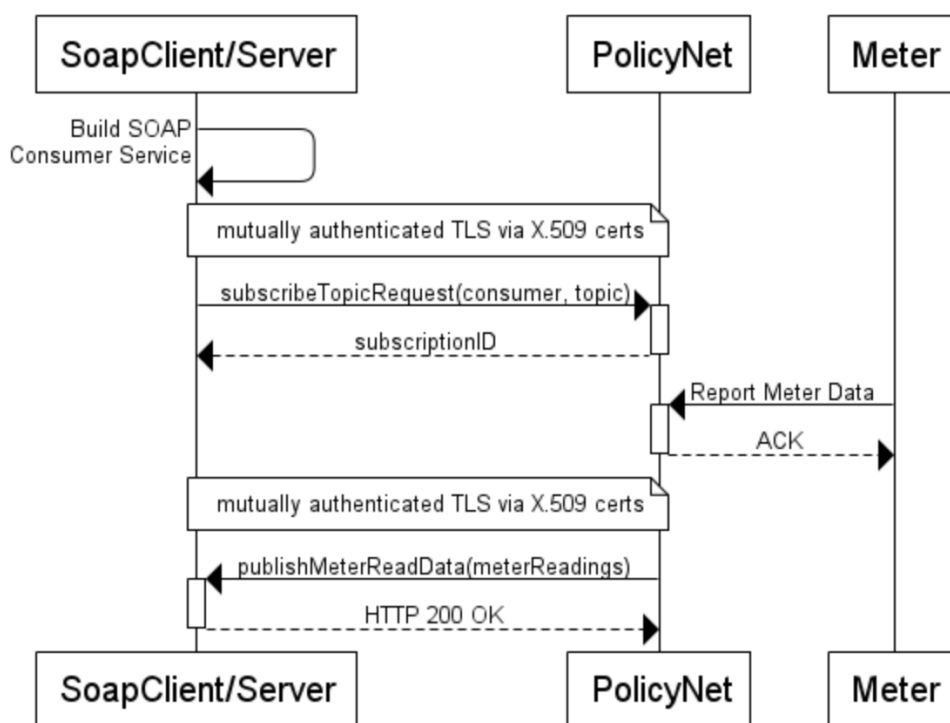
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3.3.9 Meter Data Publication

Grid Wide Smart Metering Services API powered by PolicyNet managed electric meters asynchronously report meter read data to the Grid Wide platform. After developing a SOAP consumer service compliant with *Publishing.wsdl* to meter read notification topic publications via the *publishMeterReadData* topic, that topic may be subscribed to programmatically via the *subscribeTopic* interface. Subscriptions for meter read data may be either for data reported by a specific policyId or all data for a particular topic type. In accordance with the WS-I Basic Profile 1.1 standard, asynchronous one-way SOAP publications must be acknowledged by the consumer service with an HTTP 200 OK upon successful message transfer.

Subscribe to Meter Read Topics



REGISTER READ DATA:

POST / HTTP/1.1

Host: localhost:8081

User-Agent: gSOAP/2.7

Content-Type: application/soap+xml; charset=utf-8

Content-Length: 995

Connection: close

Accept-Encoding: gzip, deflate

SOAPAction: "publishMeterReadData"



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```
<?xml version="1.0" encoding="UTF-8"?>
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://www.w3.org/2003/05/soap-envelope" xmlns:SOAP-
ENC="http://www.w3.org/2003/05/soap-encoding" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:xop="http://www.w3.org/2004/08/xop/include" xmlns:xmime5="http://www.w3.org/2005/05/xmlmime"
xmlns:policynet="urn:policynet/v5">
  <SOAP-ENV:Body>
    <policynet:publishMeterReadData>
      <policynet:meterReadings>
        <policynet:MR meterProgramId="4321" servicePointId="TEST1" utilitySerialNumber="00102762"
wanMacAddress="352819070003493">
          <policynet:R>
            <policynet:TOU dis="notSupported" dR="false" ct="2016-12-28T04:15:15+00:00" t="2016-12-27T20:15:05">
              <policynet:Tr n="0">
                <policynet:R n="0">
                  <policynet:S u="kWh Delivered Fund+Harmonics" v="41.940275"></policynet:S>
                <policynet:MD u="kW Delivered Fund+Harmonics" v="0.05533" t="2016-02-23T18:45:00"></policynet:MD>
                <policynet:CD u="kW Delivered Fund+Harmonics" v="0"></policynet:CD>
              </policynet:R>
            </policynet:Tr>
          </policynet:TOU>
        </policynet:R>
      </policynet:MR>
    </policynet:meterReadings>
  </policynet:publishMeterReadData>
</SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

INTERVAL READ DATA:

```
POST / HTTP/1.1
Host: localhost:8081
User-Agent: gSOAP/2.7
Content-Type: application/soap+xml; charset=utf-8
Content-Length: 995
Connection: close
Accept-Encoding: gzip, deflate
SOAPAction: "publishMeterReadData"
```

```
<?xml version="1.0" encoding="UTF-8"?>
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://www.w3.org/2003/05/soap-envelope" xmlns:SOAP-
ENC="http://www.w3.org/2003/05/soap-encoding" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:policynet="urn:policynet">
  <SOAP-ENV:Body>
    <policynet:publishMeterReadData>
      <policynet:meterReadings>
        <policynet:MR id="00:1d:ed:80:02:cd">
          <policynet:R>
            <policynet:ls>
              <policynet:l t="2016-02-20T00:00:00">
```



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```
<polycynet:c v="1.234" u="kWh" n="1" s="longInterval" />
<polycynet:c v="5.678" u="kVAh" n="2" s="longInterval" />
<polycynet:s dst="true" pf="true" />
</polycynet:l>
<polycynet:l t="2016-02-20T00:30:00">
  <polycynet:c v="1.234" u="kWh" n="1" />
  <polycynet:c v="5.678" u="kVAh" n="2" />
  <polycynet:s dst="true" />
</polycynet:l>
</polycynet:ls>
</polycynet:R>
</polycynet:MR>
</polycynet:meterReadings>
</polycynet:publishMeterReadData>
</SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```



3.3.10 Meter Programming

Remote meter programming is composed of a three-step process:

1. Create a meter program file in the meter manufacturer program creation tool (*Aclara MeterMate, Landis+Gyr 1132Prog*).
2. Upload the meter program file into the Grid Wide platform.
3. Deploy the meter program to the meter by invoking the *createMeterControlSchedule* and *deployMeterControlSchedule* web services.

Note: meter programs are manufacturer and meter model specific.

To receive asynchronous notification of successful/failed meter programming, applications create a SOAP consumer service and subscribe to a custom event topic for the following event codes:

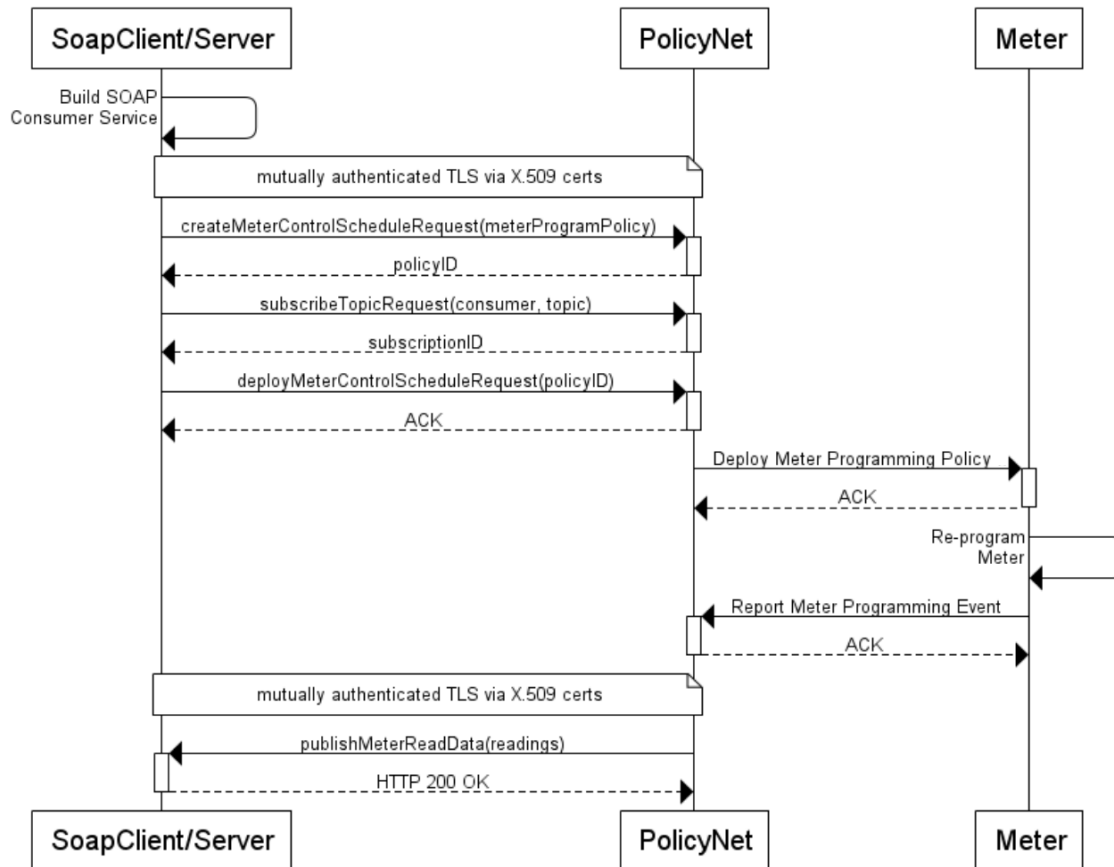
Event Code	Event Description
11	End device programmed
1011	End device programming failure

In accordance with the WS-I Basic Profile 1.1 standard, asynchronous one-way SOAP publications must be acknowledged by the consumer service with an HTTP 200 OK upon successful message transfer.

Note: to receive the ANSI C12.19 standard event code 11 from electric meters, the meters must be programmed to record that event, and a Meter Events policy must be deployed to the meters.



Remote Meter Programming

**CREATE METER PROGRAMMING POLICY REQUEST:**

POST / HTTP/1.1

Host: policynet-dmz:10000

Connection: Keep-Alive

User-Agent: GN PHP UI

Content-Type: application/soap+xml; charset=utf-8; action="createMeterControlSchedule"

Content-Length: 863

```

<?xml version="1.0" encoding="utf-8"?>
<env:Envelope xmlns:env="http://www.w3.org/2003/05/soap-envelope" xmlns:ns1="urn:policynet/v5">
  <env:Header>
    <ns1:LoginUsername>*****</ns1:LoginUsername>
    <ns1:SessionId>*****</ns1:SessionId>
  </env:Header>
  <env:Body>
    <ns1:createMeterControlScheduleRequest>
      <ns1:policy>

```



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```

    <ns1:meterProgram name="Re-Program Meter 434" description="" type="programMeter"
onRequest="true" reportingWindow="0"
    deploymentMethod="UnicastCops" deployOnNextConnect="false" meterProgramId="6509"
clearRegisters="false">
    <ns1:schedule>
        <ns1:minutes>0</ns1:minutes>
        <ns1:startTime>2017-04-10T11:23:09</ns1:startTime>
    </ns1:schedule>
    <ns1:targets>
        <ns1:utilitySerialNumber>DG64747434</ns1:utilitySerialNumber>
    </ns1:targets>
</ns1:meterProgram>
</ns1:policy>
</ns1:createMeterControlScheduleRequest>
</env:Body>
</env:Envelope>

```

CREATE METER PROGRAMMING POLICY RESPONSE:

HTTP/1.1 200 OK
 Server: gSOAP/2.7
 Content-Type: application/soap+xml; charset=utf-8
 Content-Length: 751
 Connection: keep-alive

```

<?xml version="1.0" encoding="utf-8"?>
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://www.w3.org/2003/05/soap-envelope" xmlns:SOAP-
ENC="http://www.w3.org/2003/05/soap-encoding"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xop="http://www.w3.org/2004/08/xop/include"
xmlns:xmime5="http://www.w3.org/2005/05/xmlmime" xmlns:policynet="urn:policynet/v5">
  <SOAP-ENV:Header>
    <policynet:LoginUsername>*****</policynet:LoginUsername>
    <policynet:SessionId>*****</policynet:SessionId>
  </SOAP-ENV:Header>
  <SOAP-ENV:Body>
    <policynet:createMeterControlScheduleResponse
policyId="2286"></policynet:createMeterControlScheduleResponse>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>

```

DEPLOY METER PROGRAMMING POLICY REQUEST:

POST / HTTP/1.1
 Host: policynet-dmz:10000
 Connection: Keep-Alive
 User-Agent: GN PHP UI
 Content-Type: application/soap+xml; charset=utf-8; action="deployMeterControlSchedule"
 Content-Length: 379



```
<?xml version="1.0" encoding="utf-8"?>
<env:Envelope xmlns:env="http://www.w3.org/2003/05/soap-envelope" xmlns:ns1="urn:policy/v5">
  <env:Header>
    <ns1:LoginUsername>*****</ns1:LoginUsername>
    <ns1:SessionId>*****</ns1:SessionId>
  </env:Header>
  <env:Body>
    <ns1:deployMeterControlScheduleRequest policyId="2286" />
  </env:Body>
</env:Envelope>
```

DEPLOY METER PROGRAMMING POLICY RESPONSE:

HTTP/1.1 200 OK

Server: gSOAP/2.7

Content-Type: application/soap+xml; charset=utf-8

Content-Length: 735

Connection: keep-alive

```
<?xml version="1.0" encoding="utf-8"?>
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://www.w3.org/2003/05/soap-envelope" xmlns:SOAP-
ENC="http://www.w3.org/2003/05/soap-encoding"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xop="http://www.w3.org/2004/08/xop/include"
xmlns:xmime5="http://www.w3.org/2005/05/xmlmime" xmlns:policy="urn:policy/v5">
  <SOAP-ENV:Header>
    <policy:LoginUsername>*****</policy:LoginUsername>
    <policy:SessionId>*****</policy:SessionId>
  </SOAP-ENV:Header>
  <SOAP-ENV:Body>
    <policy:deployMeterControlScheduleResponse></policy:deployMeterControlScheduleResponse>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```



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3.3.11 Meter Events Policy

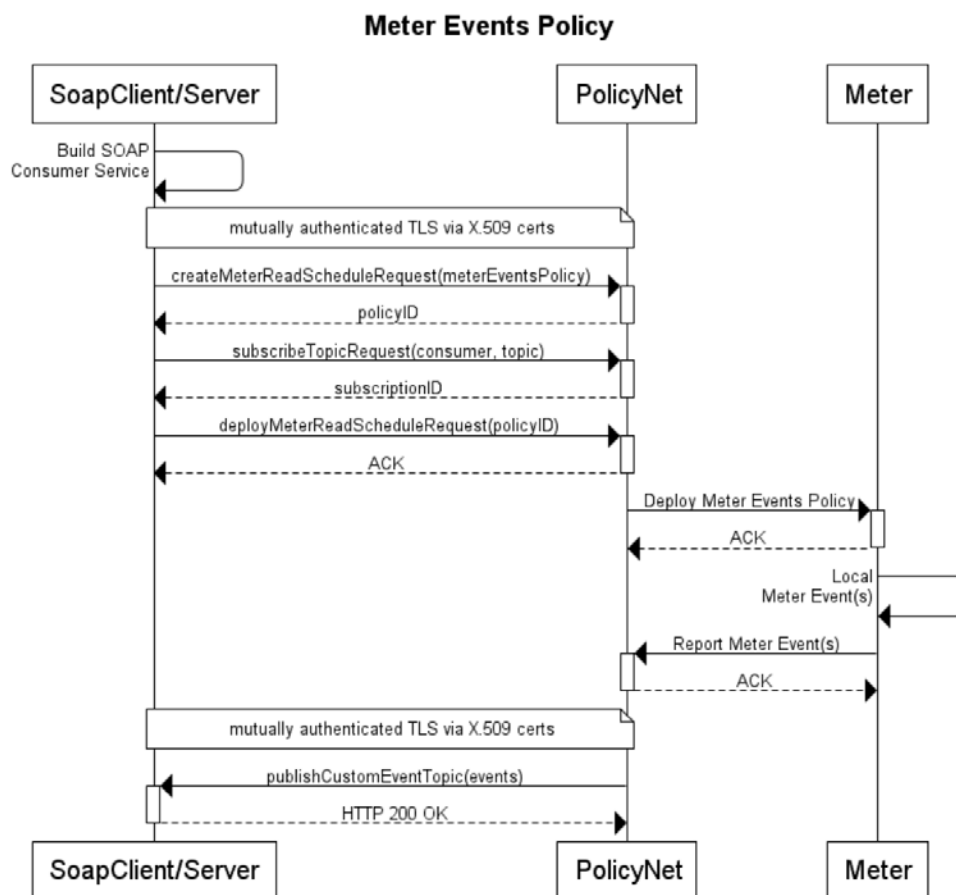
The Meter Events Policy is deployed to electric meters in order to asynchronously report any C12.19 Standard or Manufacturer-specific events recorded by the meter as they occur.

Note: The meter program configuration will determine the specific events recorded by the meter. Refer to the meter manufacturer program creation tool (Aclara MeterMate, Landis+Gyr 1132Prog) for additional information on event recording.

The Meter Events Policy is deployed to electric meters by invoking the `createMeterReadSchedule` and `deployMeterReadSchedule` web services.

To receive asynchronous notification of events reported by the meter events policy, applications create a SOAP consumer service and subscribe to a custom event topic for the desired event code(s).

In accordance with the WS-I Basic Profile 1.1 standard, asynchronous one-way SOAP publications must be acknowledged by the consumer service with an HTTP 200 OK upon successful message transfer.



CREATE METER EVENTS POLICY REQUEST:

POST / HTTP/1.1

Host: policynet-dmz:10000

Connection: Keep-Alive

User-Agent: GN PHP UI

Content-Type: application/soap+xml; charset=utf-8; action="createMeterReadSchedule"

Content-Length: 940

```
<?xml version="1.0" encoding="utf-8"?>
<env:Envelope xmlns:env="http://www.w3.org/2003/05/soap-envelope" xmlns:ns1="urn:policynet/v5">
  <env:Header>
    <ns1:LoginUsername>*****</ns1:LoginUsername>
    <ns1:SessionId>*****</ns1:SessionId>
  </env:Header>
  <env:Body>
    <ns1:createMeterReadScheduleRequest>
      <ns1:policy>
        <ns1:meterEvents name="Meter Events Policy" description="" type="allMeterEvents"
onRequest="false" reportingWindow="0"
        deploymentMethod="UnicastCops" deployOnNextConnect="false" configAndControl="true"
health="true" service="true"
        tamper="true">
          <ns1:schedule>
            <ns1:minutes>0</ns1:minutes>
            <ns1:startTime>2017-04-10T11:10:11</ns1:startTime>
          </ns1:schedule>
          <ns1:targets> <ns1:utilitySerialNumber>DG59836303</ns1:utilitySerialNumber>
<ns1:utilitySerialNumber>DG64747434</ns1:utilitySerialNumber>
          </ns1:targets>
        </ns1:meterEvents>
      </ns1:policy>
    </ns1:createMeterReadScheduleRequest>
  </env:Body>
</env:Envelope>
```

CREATE METER EVENTS POLICY RESPONSE:

HTTP/1.1 200 OK

Server: gSOAP/2.7

Content-Type: application/soap+xml; charset=utf-8

Content-Length: 745

Connection: keep-alive

```
<?xml version="1.0" encoding="utf-8"?>
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://www.w3.org/2003/05/soap-envelope" xmlns:SOAP-
ENC="http://www.w3.org/2003/05/soap-encoding"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xop="http://www.w3.org/2004/08/xop/include">
```



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```

xmlns:xmime5="http://www.w3.org/2005/05/xmlmime" xmlns:policynet="urn:policynet/v5">
  <SOAP-ENV:Header>
    <policynet:LoginUsername>*****</policynet:LoginUsername>
    <policynet:SessionId>*****</policynet:SessionId>
  </SOAP-ENV:Header>
  <SOAP-ENV:Body>
    <policynet:createMeterReadScheduleResponse
policyId="2285"></policynet:createMeterReadScheduleResponse>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>

```

DEPLOY METER EVENTS POLICY REQUEST:

POST / HTTP/1.1

Host: policynet-dmz:10000

Connection: Keep-Alive

User-Agent: GN PHP UI

Content-Type: application/soap+xml; charset=utf-8; action="deployMeterReadSchedule"

Content-Length: 376

```

<?xml version="1.0" encoding="utf-8"?>
<env:Envelope xmlns:env="http://www.w3.org/2003/05/soap-envelope" xmlns:ns1="urn:policynet/v5">
  <env:Header>
    <ns1:LoginUsername>*****</ns1:LoginUsername>
    <ns1:SessionId>*****</ns1:SessionId>
  </env:Header>
  <env:Body>
    <ns1:deployMeterReadScheduleRequest policyId="2285" />
  </env:Body>
</env:Envelope>

```

DEPLOY METER EVENTS POLICY RESPONSE:

Note: Policy deployment calls return VOID on Success, or a SOAP:Fault and Error Code upon Failure.

HTTP/1.1 200 OK

Server: gSOAP/2.7

Content-Type: application/soap+xml; charset=utf-8

Content-Length: 729

Connection: keep-alive

```

<?xml version="1.0" encoding="utf-8"?>
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://www.w3.org/2003/05/soap-envelope" xmlns:SOAP-
ENC="http://www.w3.org/2003/05/soap-encoding"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xop="http://www.w3.org/2004/08/xop/include"
xmlns:xmime5="http://www.w3.org/2005/05/xmlmime" xmlns:policynet="urn:policynet/v5">
  <SOAP-ENV:Header>

```



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```
<policynet:LoginUsername>*****</policynet:LoginUsername>
<policynet:SessionId>*****</policynet:SessionId>
</SOAP-ENV:Header>
<SOAP-ENV:Body>
  <policynet:deployMeterReadScheduleResponse></policynet:deployMeterReadScheduleResponse>
</SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```



4 MultiSpeak

4.1 MultiSpeak Interfaces

The Grid Wide Smart Metering Services API powered by PolicyNet supports the following MultiSpeak interfaces as described in *PolicyNet MultiSpeak v.3.0 and v.4.1 Interoperability Assertion* documents with various third-party MultiSpeak vendors. Consult <http://www.multispeak.org> for the latest MultiSpeak WSDLs.

Use Case	API	Type	Version
Service Availability	PingURL	service	3.0, 4.1
Service Discovery	GetMethods	service	3.0, 4.1
Service Discovery	GetPublishMethods	service	3.0, 4.1
Outage Detection	InitiateOutageDetectionEventRequest	service	3.0, 4.1
Outage Detection	ODEventNotification	client	3.0, 4.1
Remote Disconnect	InitiateConnectDisconnect	service	3.0, 4.1
Remote Disconnect	CDStateChangedNotification	client	3.0, 4.1
Remote Disconnect	CDStatesChangedNotification	client	3.0, 4.1
On-Demand Read	InitiateMeterReadingsByMeterID	service	4.1
On-Demand Read	InitiateMeterReadByMeterNumber	service	3.0
On-Demand Read	ReadingChangedNotification	client	3.0, 4.1
Event Publishing	MeterEventNotification	client	4.1
Meter Data Report	GetLatestReadingByMeterID	service	4.1
Meter Data Report	GetLatestReadingByMeterNo	service	3.0
Meter Discovery	GetAMRSupportedMeters	service	3.0, 4.1
Meter Discovery	GetCDSupportedMeters	service	3.0, 4.1
Meter Status	GetCDMeterState	service	3.0, 4.1
Service Location Create	InitiateMeterInstallation	service	4.1
Service Location Update	ServiceLocationChangedNotification	service	4.1
Service Location Update	GetAllServiceLocations	client	4.1
Meter Swap	InitiateMeterExchange	service	4.1
Meter Add	MeterAddNotification	service	3.0
Meter Update	MeterChangedNotification	service	3.0, 4.1
Meter Removed from Field	MeterRemoveNotification	service	3.0, 4.1
Meter RMA	MeterRetireNotification	service	3.0, 4.1
Zero Usage Monitoring	InitiateUsageMonitoring	service	3.0
Zero Usage Monitoring	CancelUsageMonitoring	service	3.0
Transformer Disconnect	InitiateDisconnectedStatus	service	3.0
Transformer Disconnect	CancelDisconnectedStatus	service	3.0



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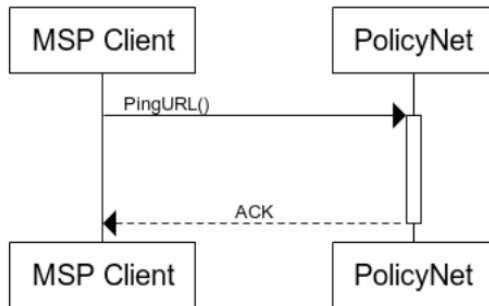
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4.2 MultiSpeak Use Cases

4.2.1 Service Availability

- Service: PingURL

MultiSpeak Service Availability



PingURL REQUEST:

POST / HTTP/1.1

Host: localhost4:20701

Connection: close

Content-Length: 473

Content-Type: text/xml; charset=utf-8

Accept: text/xml

SOAPAction: "http://www.multispeak.org/Version_4.1_Release/PingURL"

```

<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:msp="http://www.multispeak.org/Version_4.1_Release">
  <soapenv:Header>
    <ns1:MultiSpeakMsgHeader
      soapenv:mustUnderstand="0"
      AppName="PolicyNet"
      Company="GridNet"
      Pwd="*****"
      UserID="*****"
      xmlns:ns1="http://www.multispeak.org/Version_4.1_Release"/>
    </ns1:MultiSpeakMsgHeader>
  </soapenv:Header>
  <soapenv:Body>
    <PingURL xmlns="http://www.multispeak.org/Version_4.1_Release"/>
  </soapenv:Body>
</soapenv:Envelope>
  
```

PingURL RESPONSE:

HTTP/1.1 200 OK

Server: GridNet/3

Content-Type: text/xml; charset=utf-8

Content-Length: 520

```

<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:msp="http://www.multispeak.org/Version_4.1_Release">
  <SOAP-ENV:Header>
    <MultiSpeakMsgHeader
      AppName="PolicyNet"
      xmlns="http://www.multispeak.org/Version_4.1_Release"
      AppVersion="4.1"
      Branch="0"
      Build="0"
      BuildString="Release"
      Company="GRIDNET"
      MajorVersion="4"
      MinorVersion="1"
      ObjectsRemaining="0" />
    </MultiSpeakMsgHeader>
  </SOAP-ENV:Header>
  <SOAP-ENV:Body>
    <msp:PingURLResponse>
      <msp:PingURLResult/>
    </msp:PingURLResponse>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
  
```



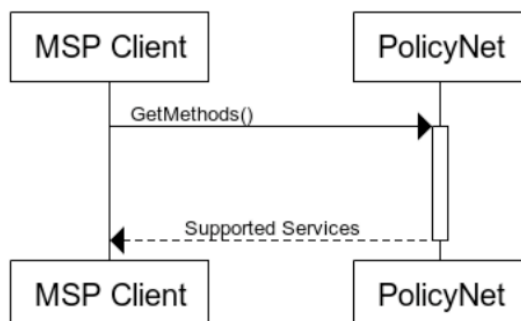
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4.2.2 Service Discovery

- Service: GetMethods

MultiSpeak Service Discovery



GetMethods REQUEST:

POST / HTTP/1.1

Host: localhost4:20701

Connection: close

Content-Length: 476

Content-Type: text/xml; charset=utf-8

SOAPAction: "http://www.multispeak.org/Version_4.1_Release/GetMethods"

```

<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:msp="http://www.multispeak.org/Version_4.1_Release">
  <soapenv:Header>
    <ns1:MultiSpeakMsgHeader
      soapenv:mustUnderstand="0"
      AppName="PolicyNet"
      Company="GridNet"
      Pwd="*****"
      UserID="*****"
      xmlns:ns1="http://www.multispeak.org/Version_4.1_Release"/>
  </soapenv:Header>
  <soapenv:Body>
    <GetMethods xmlns="http://www.multispeak.org/Version_4.1_Release"/>
  </soapenv:Body>
</soapenv:Envelope>
  
```

GetMethods RESPONSE:

HTTP/1.1 200 OK

Server: GridNet/3

Content-Type: text/xml; charset=utf-8

Content-Length: 1308

```

<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:msp="http://www.multispeak.org/Version_4.1_Release">
  <SOAP-ENV:Header>
    <MultiSpeakMsgHeader
      AppName="PolicyNet"
      xmlns="http://www.multispeak.org/Version_4.1_Release"
      AppVersion="4.1"
      Branch="0"
      Build="0"
      BuildString="Release"
      Company="GRIDNET"
      MajorVersion="4"
      MinorVersion="1"
      ObjectsRemaining="0" />
  </SOAP-ENV:Header>
  <SOAP-ENV:Body>
    <msp:GetMethodsResponse>
      <msp:GetMethodsResult>
        <msp:string>MeterRetireNotification</msp:string>
        <msp:string>PingURL</msp:string>
        <msp:string>MeterRemoveNotification</msp:string>
      </msp:GetMethodsResult>
    </msp:GetMethodsResponse>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
  
```



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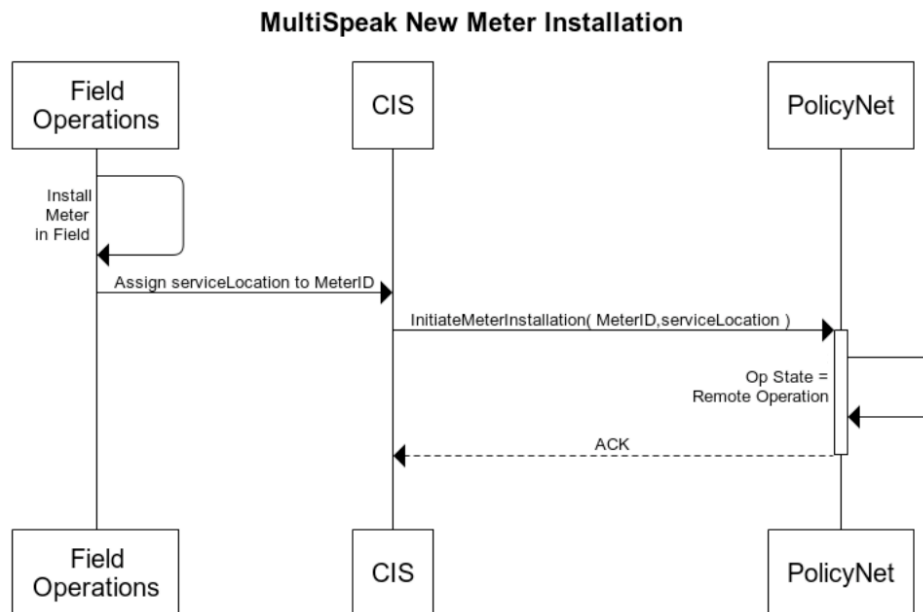
Use, disclosure or distribution of this material is not permitted by any unauthorized persons or third parties except by written permission.

```
<msp:string>MeterChangedNotification</msp:string>
<msp:string>InitiateOutageDetectionEventRequest</msp:string>
<msp:string>InitiateMeterReadingsByMeterID</msp:string>
<msp:string>InitiateConnectDisconnect</msp:string>
<msp:string>GetPublishMethods</msp:string>
<msp:string>InitiateMeterInstallation</msp:string>
<msp:string>GetMethods</msp:string>
<msp:string>GetLatestReadingByMeterID</msp:string>
<msp:string>ServiceLocationChangedNotification</msp:string>
<msp:string>GetCDMeterState</msp:string>
<msp:string>InitiateMeterExchange</msp:string>
<msp:string>GetAMRSupportedMeters</msp:string>
</msp:GetMethodsResult>
</msp:GetMethodsResponse>
</SOAP-ENV:Body></SOAP-ENV:Envelope>
```



4.2.3 New Meter Installation

- Service: InitiateMeterInstallation



InitiateMeterInstallation REQUEST:

POST / HTTP/1.1

Host: localhost4:20701

Connection: close

Content-Length: 3435

Content-Type: text/xml; charset=utf-8

Accept: application/soap+xml, application/dime, multipart/related, text/*

User-Agent: Axis/1.3

Cache-Control: no-cache

Pragma: no-cache

SOAPAction: "http://www.multispeak.org/Version_4.1_Release/InitiateMeterInstallation"

```

<?xml version="1.0" encoding="UTF-8"?><soapenv:Envelope
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance"><soapenv:Header><ns1:MultiSpeakMsgHeader soapenv:mustUnderstand="0" AppName="MSP"
Build="1" Company="TEST" MajorVersion="4" MinorVersion="1" Pwd="*****" SessionID="1497385057892"
TimeStamp="2017-06-13T20:17:43.183Z" UserID="*****"/>
xmlns:ns1="http://www.multispeak.org/Version_4.1_Release"/>
</soapenv:Header><soapenv:Body>
<InitiateMeterInstallation xmlns="http://www.multispeak.org/Version_4.1_Release">
<installLocations>
<serviceLocation
objectID="31942"><comments>Home</comments><extensionsList><extensionsItem><extName>motorHP1</ex
tName><extValue>0</extValue></extensionsItem><extensionsItem><extName>tempLocationCd</extName><e
xtValue>P</extValue></extensionsItem><extensionsItem><extName>outPriCd</extName><extValue>1</extVal
  
```



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```

ue></extensionsItem><extensionsItem><extName>breakerNbr</extName><extValue>EP0264</extValue></ex
tensionsItem></extensionsList><gpsPoint><latitude>89.41654</latitude><longitude>90.1234</longitude></gps
Point><gridLocation>346-79-897</gridLocation><timeZone DSTEnabled="true" UTCOffset="-6.0"
name="Pacific Standard
Time">CT</timeZone><customerID>44221</customerID><description>Home</description><serviceAddress><
address1>123 Main St</address1><city>Tahoe
City</city><state>CA</state><postalCode>95730</postalCode></serviceAddress><network><district>BOD</
district><county>C</county><cityCode>C</cityCode><section>0</section></network>
<electricServiceList><electricService objectID="31942+1">
<extensionsList><extensionsItem><extName>amrType</extName><extValue>VERIZ</extValue></extensionsIt
em><extensionsItem><extName>AMRVendor</extName><extValue>Verizon</extValue></extensionsItem></ex
tensionsList><customerID>44221</customerID><accountNumber>140137</accountNumber><serviceLocationI
D>31942</serviceLocationID><meterBaseID>31942+1</meterBaseID><electricMeterID>64747388</electricM
eterID><electricLocationFields><substationCode>3</substationCode><feederCode>1</feederCode><transfor
merBankID>001-17730</transformerBankID>
</electricLocationFields><specialNeeds>DIALYSIS</specialNeeds><loadMgmt>N</loadMgmt>
<isCogenerationSite>false</isCogenerationSite><revenueClass>NUE+22</revenueClass><serviceStatus>7</s
erviceStatus><billingCycle>2</billingCycle><route>1</route><meterBase objectID="31942+1"><meterID
objectID="64747388" serviceType="Electric">.Electric.64747388</meterID><electricMeter
objectID="64747388"><extensionsList><extensionsItem><extName>nomVolts1</extName><extValue>240</ex
tValue></extensionsItem></extensionsList><meterStatusList><meterStatus>Active</meterStatus><meterStatu
s>Installed</meterStatus></meterStatusList><moduleList><module
objectID="64747388"><deviceClass>communication</deviceClass><description>transponder</description></
module></moduleList></electricMeter></meterBase></electricService></electricServiceList><contactInfo><ph
oneList><phoneNumber><phone><areaCode>317</areaCode><localNumber>5090908</localNumber></phon
e><phoneType>Home</phoneType></phoneNumber><phoneNumber><phone><areaCode>317</areaCode><lo
calNumber>5090908</localNumber></phone><phoneType>Mobile</phoneType></phoneNumber></phoneLis
t></contactInfo></serviceLocation></installLocations><transactionID>16537748</transactionID></InitiateMete
rInstallation></soapenv:Body></soapenv:Envelope>

```

MANDATORY REQUEST ATTRIBUTES: (all other attribute values are optional)

ATTRIBUTE NAME	DESCRIPTION
extName.amrType	This configurable site-specific value is required to process the request. Value must be set to "VERIZ" for Verizon Grid Wide.
gridLocation	This value forms the prefix of the servicePointId string in Grid Wide. For sub meters, the position will be indicated by appending a "-" followed by the meterPosition to the gridLocation value.
electricMeterID	MeterID from the faceplate of the meter and from ANSI C12.19 STD5.METER_ID.
meterBaseID	Used to indicate (sub) meter position at a premise. Format [0-9]\+[0-9]. The numeric prefix before the "+" must match the mspObjectId value. The numeric suffix after the "+" is used to indicate the meter position. Any meter position greater than 1 will be appended using a dash "-" to the gridLocation value.
specialNeeds	Required only if the premise has special needs that prevent electric service interruption. ****NOTE: If this value is not included in the request, the service location will become eligible for service disconnect.****
substationCode	Zone Substation ID. Required for outage detection, outage map filtering, and distribution topology display.
transformerBankID	Distribution Transformer ID. Required for outage detection, outage map filtering, and distribution topology display.
feederCode	Distribution Feeder ID. Required for outage detection, outage map filtering, and distribution topology display.



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billingCycle	Required only if the Billing Cycle Name attribute will be used to create meter groups in Grid Wide.
extName.rateSchedule	Required only if the Rate Schedule (tariff) attribute will be used to create meter groups in Grid Wide.

InitiateMeterInstallation RESPONSE:

HTTP/1.1 200 OK

Server: GridNet/3

Content-Type: text/xml; charset=utf-8

Content-Length: 574

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:mzp="http://www.multispeak.org/Version_4.1_Release"><SOAP-ENV:Header><MultiSpeakMsgHeader
AppName="PolicyNet" xmlns="http://www.multispeak.org/Version_4.1_Release" AppVersion="4.1" Branch="0"
Build="0" BuildString="Release" Company="GRIDNET" MajorVersion="4" MinorVersion="1"
ObjectsRemaining="0" /></SOAP-ENV:Header><SOAP-ENV:Body>
<mzp:InitiateMeterInstallationResponse>
  <mzp:InitiateMeterInstallationResult/>
</mzp:InitiateMeterInstallationResponse>
</SOAP-ENV:Body></SOAP-ENV:Envelope>
```

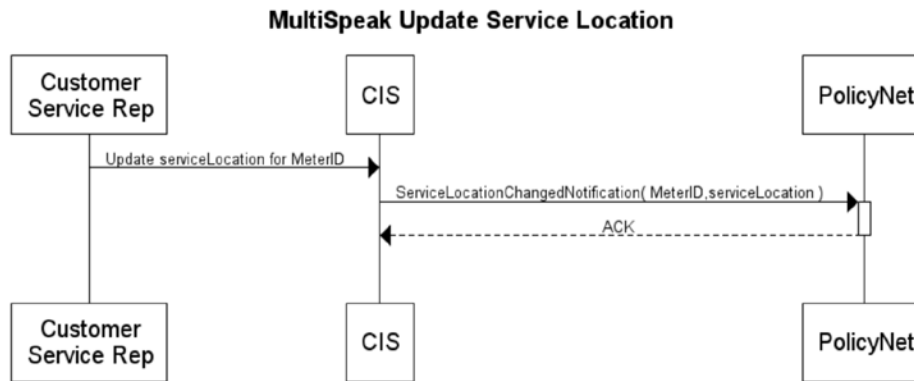


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4.2.4 Service Location Update

- Service: ServiceLocationChangedNotification



ServiceLocationChangedNotification REQUEST:

POST / HTTP/1.1

Host: localhost4:20701

Connection: close

Content-Length: 3438

Content-Type: text/xml; charset=utf-8

Accept: application/soap+xml, application/dime, multipart/related, text/*

User-Agent: Axis/1.3

Cache-Control: no-cache

Pragma: no-cache

SOAPAction: "http://www.multispeak.org/Version_4.1_Release/ServiceLocationChangedNotification"

```

<?xml version="1.0" encoding="UTF-8"?><soapenv:Envelope
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance"><soapenv:Header><ns1:MultiSpeakMsgHeader soapenv:mustUnderstand="0" AppName="MSP"
Build="1" Company="TEST" MajorVersion="4" MinorVersion="1" Pwd="*****" TimeStamp="2017-08-
02T17:07:44.858Z" UserID="*****" SessionID="1501693663276"
xmlns:ns1="http://www.multispeak.org/Version_4.1_Release"/>
</soapenv:Header><soapenv:Body>
<ServiceLocationChangedNotification xmlns="http://www.multispeak.org/Version_4.1_Release">
<changedServiceLocations>
<serviceLocation
objectID="31947"><extensionsList><extensionsItem><extName>motorHP1</extName><extValue>0</extValue>
</extensionsItem><extensionsItem><extName>tempLocationCd</extName><extValue>P</extValue></extensi
onsItem><extensionsItem><extName>outPriCd</extName><extValue>2</extValue></extensionsItem><extensi
onsItem><extName>breakerNbr</extName><extValue>EP0264</extValue></extensionsItem></extensionsList
><gpsPoint><latitude>84.164674</latitude><longitude>90.1214</longitude></gpsPoint><gridLocation>987-89-
789</gridLocation><timeZone DSTEnabled="true" UTCOffset="-6.0" name="Pacific Standard
Time">CT</timeZone><customerID>44221</customerID><serviceAddress><address1>04 WATERVIEW
STREET</address1><address2>SUITE
  
```



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```

2123456</address2><city>GREENFIELD</city><state>IN</state><postalCode>46140</postalCode></service
Address><network><section>0</section></network><electricServiceList><electricService
objectID="31947+1"><extensionsList><extensionsItem><extName>amrType</extName><extValue>GRID</extV
alue></extensionsItem><extensionsItem><extName>AMRVendor</extName><extValue>GridNet</extValue></
extensionsItem></extensionsList><customerID>44221</customerID><accountNumber>140142</accountNumb
er><serviceLocationID>31947</serviceLocationID><meterBaseID>31947+1</meterBaseID><electricMeterID>6
4747388</electricMeterID><electricLocationFields><substationCode>3</substationCode><substationName>E
AST_NEWPORT</substationName><feederCode>3</feederCode><transformerBankID>00115920</transform
erBankID></electricLocationFields><specialNeeds></specialNeeds><loadMgmt>N</loadMgmt><isCogeneratio
nSite>true</isCogenerationSite><revenueClass>NUE+22</revenueClass><serviceStatus>18</serviceStatus><
billingCycle>1</billingCycle><route>1</route><connectDate>2017-07-
31T05:00:00.000Z</connectDate><meterBase objectID="31947+1"><meterID objectID="64747388"
serviceType="Electric">.Electric.64747388</meterID><electricMeter
objectID="64747388"><extensionsList><extensionsItem><extName>nomVolts1</extName><extValue>240</ex
tValue></extensionsItem></extensionsList><meterStatusList><meterStatus>Active</meterStatus><meterStatu
s>Installed</meterStatus></meterStatusList><moduleList><module
objectID="64747388"><deviceClass>communication</deviceClass><description>transponder</description></
module></moduleList></electricMeter></meterBase></electricService></electricServiceList><contactInfo><ph
oneList><phoneNumber><phone><areaCode>317</areaCode><localNumber>5090908</localNumber></phon
e><phoneType>Home</phoneType></phone><phoneNumber><phone><areaCode>317</areaCode><lo
calNumber>5090908</localNumber></phone><phoneType>Mobile</phoneType></phone></phoneList
t></contactInfo></serviceLocation></changedServiceLocations></ServiceLocationChangedNotification></soa
penv:Body></soapenv:Envelope>

```

MANDATORY REQUEST ATTRIBUTES: (all other attribute values are optional)

ATTRIBUTE NAME	DESCRIPTION
extName.amrType	This configurable site-specific value is required to process the request. Value must be set to "VERIZ" for Verizon Grid Wide.
gridLocation	This value forms the prefix of the servicePointId string in Grid Wide. For sub meters, the position will be indicated by appending a "-" followed by the meterPosition to the gridLocation value.
electricMeterID	MeterID from the faceplate of the meter and from ANSI C12.19 STD5.METER_ID.
meterBaseID	Used to indicate (sub) meter position at a premise. Format [0-9]\+[0-9]. The numeric prefix before the "+" must match the mspObjectID value. The numeric suffix after the "+" is used to indicate the meter position. Any meter position greater than 1 will be appended using a dash "-" to the gridLocation value.
specialNeeds	Required only if the premise has special needs that prevent electric service interruption. ****NOTE: If this value is not included in the request, the service location will become eligible for service disconnect. ****
substationCode	Zone Substation ID. Required for outage detection, outage map filtering, and distribution topology display.
transformerBankID	Distribution Transformer ID. Required for outage detection, outage map filtering, and distribution topology display.
feederCode	Distribution Feeder ID. Required for outage detection, outage map filtering, and distribution topology display.
billingCycle	Required only if the Billing Cycle Name attribute will be used to create meter groups in Grid Wide.
extName.rateSchedule	Required only if the Rate Schedule (tariff) attribute will be used to create meter groups in Grid Wide.



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ServiceLocationChangedNotification RESPONSE:

HTTP/1.1 200 OK

Server: GridWide/3

Content-Type: text/xml; charset=utf-8

Content-Length: 601

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:msp="http://www.multispeak.org/Version_4.1_Release"><SOAP-ENV:Header><MultiSpeakMsgHeader
AppName="PolicyNet" xmlns="http://www.multispeak.org/Version_4.1_Release" AppVersion="4.1" Branch="0"
Build="0" BuildString="Release" Company="GRIDNET" MajorVersion="4" MinorVersion="1"
ObjectsRemaining="0" /></SOAP-ENV:Header><SOAP-ENV:Body>
<msp:ServiceLocationChangedNotificationResponse>
  <msp:ServiceLocationChangedNotificationResult/>
</msp:ServiceLocationChangedNotificationResponse>
</SOAP-ENV:Body></SOAP-ENV:Envelope>
```

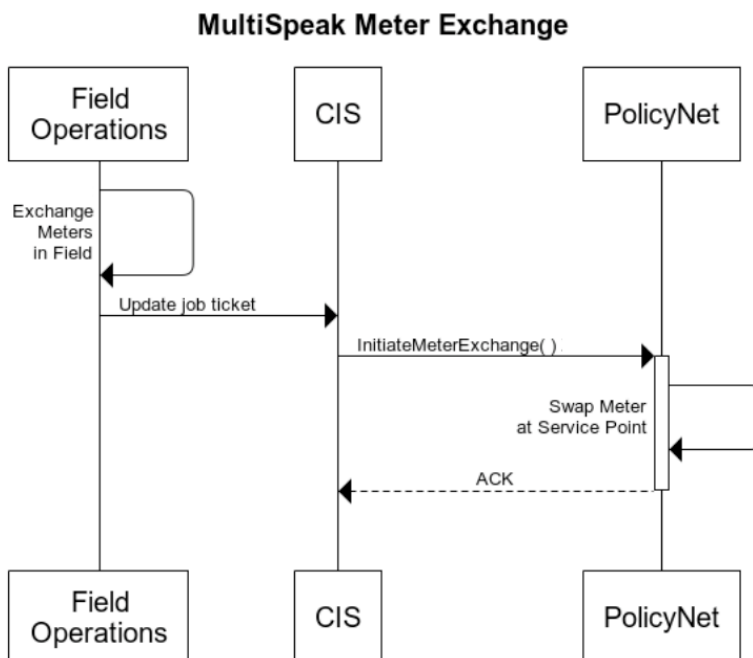


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4.2.5 Meter Exchange

- Service: InitiateMeterExchange



InitiateMeterExchange REQUEST:

POST / HTTP/1.1

Host: localhost4:20701

Connection: close

Content-Length: 1431

Content-Type: text/xml; charset=utf-8

Accept: application/soap+xml, application/dime, multipart/related, text/*

User-Agent: Axis/1.3

Cache-Control: no-cache

Pragma: no-cache

SOAPAction: "http://www.multispeak.org/Version_4.1_Release/InitiateMeterExchange"

```

<?xml version="1.0" encoding="UTF-8"?><soapenv:Envelope
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance"><soapenv:Header><ns1:MultiSpeakMsgHeader soapenv:mustUnderstand="0" AppName="MSP"
Build="1" Company="TEST" MajorVersion="4" MinorVersion="1" Pwd="*****" SessionID="1497643457821"
TimeStamp="2017-06-16T20:04:18.855Z" UserID="*****"
xmlns:ns1="http://www.multispeak.org/Version_4.1_Release"/>
</soapenv:Header><soapenv:Body>
<InitiateMeterExchange xmlns="http://www.multispeak.org/Version_4.1_Release">
<exchanges objectID="16537924"><electricMeterExchanges><electricMeterExchange
objectID="64747388"><serviceLocationID>31942</serviceLocationID><electricServiceID>31942+1</electricSe
rviceID><outMeterReading><meterID meterNo="64747388" objectID="64747388"
serviceType="Electric">.Electric.64747388</meterID><readingValues><readingValue><units>kWh</units><valu

```



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```
e>0</value></readingValue></readingValues></outMeterReading><inMeterReading><meterID
meterNo="GN002002" objectID="GN002002"
serviceType="Electric">.Electric.GN002002</meterID><readingValues><readingValue><units>kWh</units><val
ue>0</value></readingValue></readingValues></inMeterReading></electricMeterExchange></electricMeterEx
changes></exchanges><transactionID>16537924</transactionID></InitiateMeterExchange></soapenv:Body><
/soapenv:Envelope>
```

MANDATORY REQUEST ATTRIBUTES: (all other attribute values are optional)

ATTRIBUTE NAME	DESCRIPTION
electricServiceID	This value must equal the meterBaseID from InitiateMeterInstallation (e.g., 31942+1).
outMeterReading.meterID.meterNo	This value must equal the OLD MeterID (electricMeterID from InitiateMeterInstallation).
inMeterReading.meterID.meterNo	This value must equal the NEW MeterID.

InitiateMeterExchange RESPONSE

HTTP/1.1 200 OK

Server: GridWide/3

Content-Type: text/xml; charset=utf-8

Content-Length: 562

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:msp="http://www.multispeak.org/Version_4.1_Release"><SOAP-ENV:Header><MultiSpeakMsgHeader
AppName="PolicyNet" xmlns="http://www.multispeak.org/Version_4.1_Release" AppVersion="4.1" Branch="0"
Build="0" BuildString="Release" Company="GRIDNET" MajorVersion="4" MinorVersion="1"
ObjectsRemaining="0" /></SOAP-ENV:Header><SOAP-ENV:Body>
<msp:InitiateMeterExchangeResponse>
  <msp:InitiateMeterExchangeResult/>
</msp:InitiateMeterExchangeResponse>
</SOAP-ENV:Body></SOAP-ENV:Envelope>
```

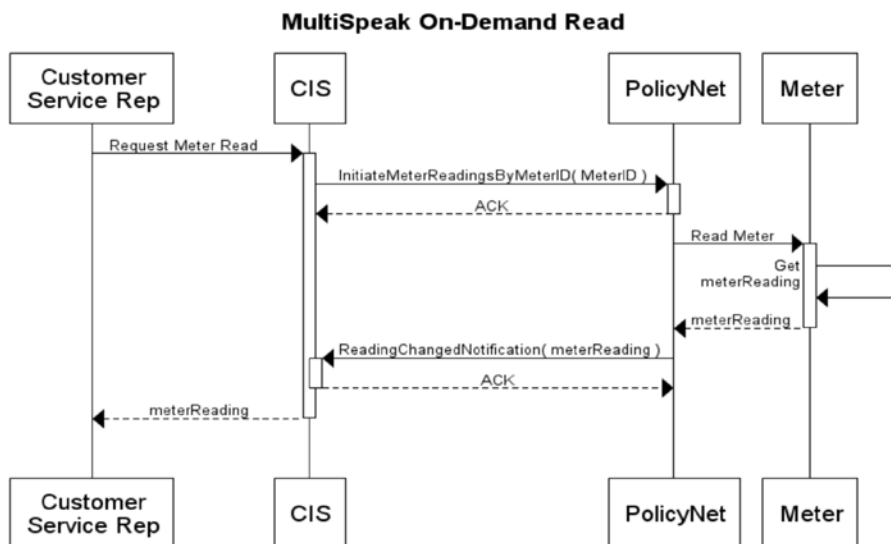


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4.2.6 On-Demand Meter Read

- Service: InitiateMeterReadingsByMeterID
 - Async Callback: ReadingChangedNotification



InitiateMeterReadingsByMeterID RESPONSE:

POST / HTTP/1.1

Host: localhost4:20701

Connection: close

Content-Length: 946

Content-Type: text/xml; charset=utf-8

Accept: application/soap+xml, application/dime, multipart/related, text/*

User-Agent: Axis/1.3

Cache-Control: no-cache

Pragma: no-cache

SOAPAction: "http://www.multispeak.org/Version_4.1_Release/InitiateMeterReadingsByMeterID"

```

<?xml version="1.0" encoding="UTF-8"?><soapenv:Envelope
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance"><soapenv:Header><ns1:MultiSpeakMsgHeader soapenv:mustUnderstand="0" CSUnits="feet"
AppName="MSP" Build="6" Company="TEST" MajorVersion="4" MinorVersion="1" Pwd="*****"
TimeStamp="2017-06-16T19:47:02.480Z" UserID="*****"
xmlns:ns1="http://www.multispeak.org/Version_4.1_Release"/>
</soapenv:Header><soapenv:Body>
<InitiateMeterReadingsByMeterID xmlns="http://www.multispeak.org/Version_4.1_Release">
<meterIDs><meterID meterNo="64747449" objectID="64747449"
serviceType="Electric">.Electric.64747449</meterID></meterIDs><responseURL>https://mspapitesting.abcd.c
oop/multispeak/CB_ServerSoap41</responseURL><transactionID>1497642422</transactionID>
  
```



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```
</InitiateMeterReadingsByMeterID>
</soapenv:Body></soapenv:Envelope>
```

InitiateMeterReadingsByMeterID RESPONSE:

HTTP/1.1 200 OK
 Server: GridWide/3
 Content-Type: text/xml; charset=utf-8
 Content-Length: 589

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:msp="http://www.multispeak.org/Version_4.1_Release"><SOAP-ENV:Header><MultiSpeakMsgHeader
AppName="PolicyNet" xmlns="http://www.multispeak.org/Version_4.1_Release" AppVersion="4.1" Branch="0"
Build="0" BuildString="Release" Company="GRIDNET" MajorVersion="4" MinorVersion="1"
ObjectsRemaining="0" /></SOAP-ENV:Header><SOAP-ENV:Body>
<msp:InitiateMeterReadingsByMeterIDResponse>
  <msp:InitiateMeterReadingsByMeterIDResult/>
</msp:InitiateMeterReadingsByMeterIDResponse>
</SOAP-ENV:Body></SOAP-ENV:Envelope>
```

ReadingChangedNotification CALLBACK REQUEST:

POST /multispeak/CB_ServerSoap41 HTTP/1.1
 Host: mspapitesting.abcd.coop:443
 Connection: Keep-Alive
 User-Agent: Grid Net MSP
 Content-Length: 1819
 Content-Type: text/xml; charset=utf-8
 SOAPAction: "http://www.multispeak.org/Version_4.1_Release/ReadingChangedNotification"

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:msp="http://www.multispeak.org/Version_4.1_Release"><SOAP-ENV:Header><MultiSpeakMsgHeader
AppName="PolicyNet" xmlns="http://www.multispeak.org/Version_4.1_Release" AppVersion="4.1" Branch="0"
Build="0" BuildString="Release" Company="GRIDNET" MajorVersion="4" MinorVersion="1"
ObjectsRemaining="0" UserID="*****" Pwd="*****"/></SOAP-ENV:Header><SOAP-ENV:Body>
<msp:ReadingChangedNotification>
  <msp:changedMeterReads>
    <msp:meterReading errorStr="" objectID="64747449">
      <msp:meterID utility="policynet.com" objectID="64747449" serviceType="Electric"
meterNo="64747449">policynet.com.Electric.64747449</msp:meterID>
      <msp:deviceId>64747449</msp:deviceId>
      <msp:readingValues>
        <msp:readingValue>
          <msp:units>kWh</msp:units>
          <msp:value>42</msp:value>
          <msp:timeStamp>2019-06-24T19:31:00+00:00</msp:timeStamp>
          <msp:readingTypeCode displayableUOM="72" unitsMultiplier="3"
phaseIndex="0" measurementCategory="0.0" UOMCategory="0.12" flowDirection="1" accumulationBehavior="1"
dataQualifier="0" timeAttribute="15">15.0.1.1.0.12.0.0.0.3.72</msp:readingTypeCode>
        </msp:readingValue>
        <msp:readingValue>
```



```

        <msp:units>kW</msp:units>
        <msp:value>0.018620</msp:value>
        <msp:timeStamp>2019-06-24T19:31:00+00:00</msp:timeStamp>
        <msp:readingTypeCode displayableUOM="38" unitsMultiplier="3"
phaseIndex="0" measurementCategory="0.0" UOMCategory="0.8" flowDirection="1" accumulationBehavior="6"
dataQualifier="8" timeAttribute="0">0.8.6.1.0.8.0.0.0.3.38</msp:readingTypeCode>
    </msp:readingValue>
  </msp:readingValues>
</msp:meterReading>
</msp:changedMeterReads>
  <msp:transactionID>1497642422482</msp:transactionID>
</msp:ReadingChangedNotification>
</SOAP-ENV:Body></SOAP-ENV:Envelope>

```

ReadingChangedNotification CALLBACK RESPONSE:

HTTP/1.1 200 OK

Server: GridNet/3

Content-Type: text/xml; charset=utf-8

Content-Length: 577

```

<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:msp="http://www.multispeak.org/Version_4.1_Release"><SOAP-ENV:Header><MultiSpeakMsgHeader
AppName="PolicyNet" xmlns="http://www.multispeak.org/Version_4.1_Release" AppVersion="4.1" Branch="0"
Build="0" BuildString="Release" Company="GRIDNET" MajorVersion="4" MinorVersion="1"
ObjectsRemaining="0" /></SOAP-ENV:Header><SOAP-ENV:Body>
  <msp:ReadingChangedNotificationResponse>
    <msp:ReadingChangedNotificationResult/>
  </msp:ReadingChangedNotificationResponse>
</SOAP-ENV:Body></SOAP-ENV:Envelope>

```

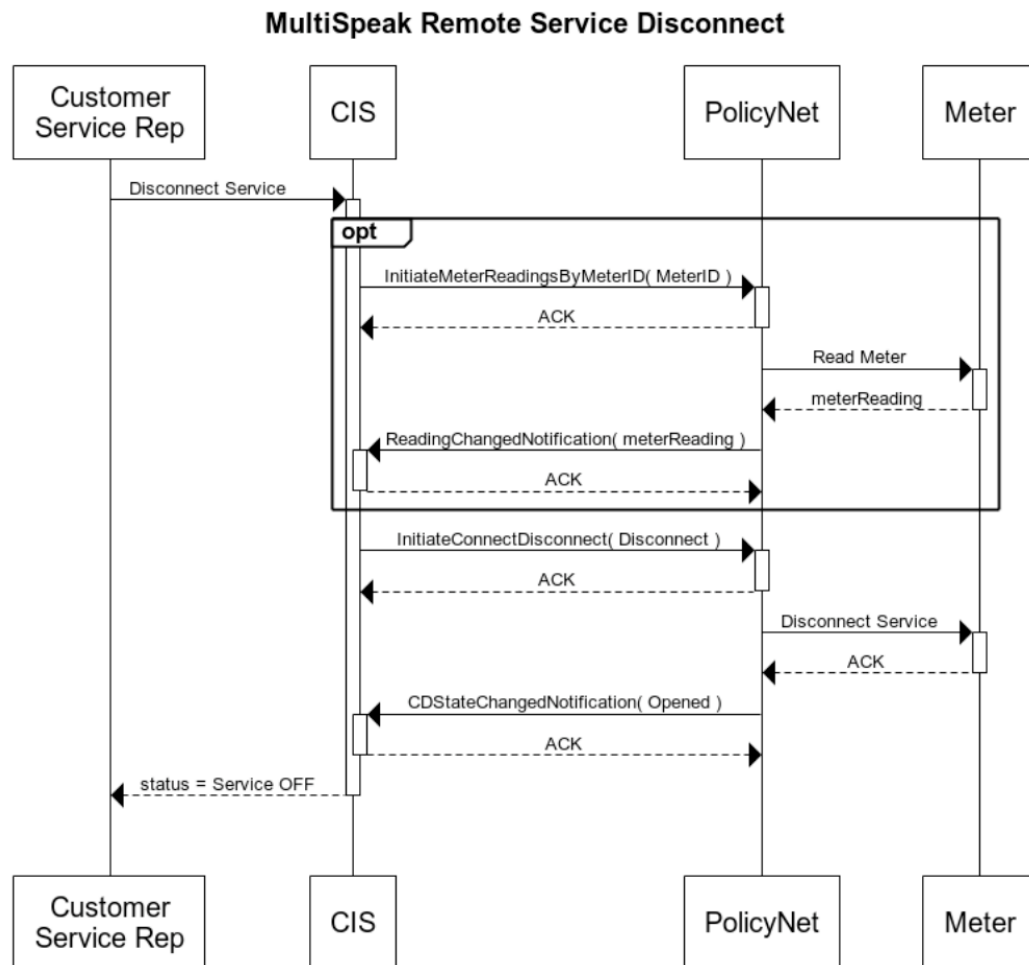


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4.2.7 Remote Service Disconnect (and reConnect)

- (optional last read) Service: InitiateMeterReadingsByMeterID
 - (optional last read) Async Callback: ReadingChangedNotification
- Service: InitiateConnectDisconnect
 - Async Callback: CDStateChangedNotification



InitiateConnectDisconnect REQUEST (Disconnect):

POST / HTTP/1.1

Host: localhost4:20701

Connection: close

Content-Length: 1377

Content-Type: text/xml; charset=utf-8

Accept: application/soap+xml, application/dime, multipart/related, text/*

User-Agent: Axis/1.3

Cache-Control: no-cache



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Pragma: no-cache

SOAPAction: "http://www.multispeak.org/Version_4.1_Release/InitiateConnectDisconnect"

```
<?xml version="1.0" encoding="UTF-8"?><soapenv:Envelope
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance"><soapenv:Header><ns1:MultiSpeakMsgHeader soapenv:mustUnderstand="0" AppName="MSP"
Build="1" Company="TEST" MajorVersion="4" MinorVersion="1" Pwd="*****" TimeStamp="2017-07-
31T15:14:59.478Z" UserID="*****" xmlns:ns1="http://www.multispeak.org/Version_4.1_Release"/>
</soapenv:Header><soapenv:Body>
<InitiateConnectDisconnect xmlns="http://www.multispeak.org/Version_4.1_Release">
<cdEvents>
<connectDisconnectEvent objectID="64747449+1501514099412">
<serviceLocationID>8722</serviceLocationID><customerID>5</customerID>
<gridLocation>3364-006-SE 02</gridLocation><accountNumber>1100</accountNumber>
<meterID meterNo="64747449" objectID="64747449"
serviceType="Electric">.Electric.64747449</meterID><loadActionCode>Disconnect</loadActionCode><power
LimitationValue>0.0</powerLimitationValue><CDReasonCode>ServiceInactive</CDReasonCode><amountDue
>0.0</amountDue><serviceType>Electric</serviceType></connectDisconnectEvent>
</cdEvents><responseURL>https://mspapitesting.abcd.coop/multispeak/CB_ServerSoap41</responseURL><tr
ansactionID>12345</transactionID><expTime units="Seconds">900.0</expTime>
</InitiateConnectDisconnect>
</soapenv:Body></soapenv:Envelope>
```

InitiateConnectDisconnect RESPONSE:

HTTP/1.1 200 OK

Server: GridNet/3

Content-Type: text/xml; charset=utf-8

Content-Length: 574

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:msp="http://www.multispeak.org/Version_4.1_Release"><SOAP-ENV:Header><MultiSpeakMsgHeader
AppName="PolicyNet" xmlns="http://www.multispeak.org/Version_4.1_Release" AppVersion="4.1" Branch="0"
Build="0" BuildString="Release" Company="GRIDNET" MajorVersion="4" MinorVersion="1"
ObjectsRemaining="0" /></SOAP-ENV:Header><SOAP-ENV:Body>
<msp:InitiateConnectDisconnectResponse>
<msp:InitiateConnectDisconnectResult/>
</msp:InitiateConnectDisconnectResponse>
</SOAP-ENV:Body></SOAP-ENV:Envelope>
```

CDStatesChangedNotification CALLBACK REQUEST:

POST /multispeak/CB_ServerSoap41 HTTP/1.1

Host: mspapitesting.abcd.coop:443

Connection: Keep-Alive

User-Agent: Grid Net MSP

Content-Length: 877

Content-Type: text/xml; charset=utf-8

SOAPAction: "http://www.multispeak.org/Version_4.1_Release/CDStatesChangedNotification"



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```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:msp="http://www.multispeak.org/Version_4.1_Release"><SOAP-ENV:Header><MultiSpeakMsgHeader
AppName="PolicyNet" xmlns="http://www.multispeak.org/Version_4.1_Release" AppVersion="4.1" Branch="0"
Build="0" BuildString="Release" Company="GRIDNET" MajorVersion="4" MinorVersion="1"
ObjectsRemaining="0" UserID="*****" Pwd="*****"/></SOAP-ENV:Header><SOAP-ENV:Body>
<msp:CDStatesChangedNotification>
  <msp:stateChanges>
    <msp:CDStateChange>
      <msp:meterID objectID="64747449" meterNo="64747449" serviceType="Electric"
utility="policynet.com">policynet.com.Electric.64747449</msp:meterID>
      <msp:stateChange>Disconnect</msp:stateChange>
    </msp:CDStateChange>
  </msp:stateChanges>
  <msp:transactionID>12345</msp:transactionID>
</msp:CDStatesChangedNotification>
</SOAP-ENV:Body></SOAP-ENV:Envelope>
```

CDStatesChangedNotification CALLBACK RESPONSE:

HTTP/1.1 200 OK

Server: GridNet/3

Content-Type: text/xml; charset=utf-8

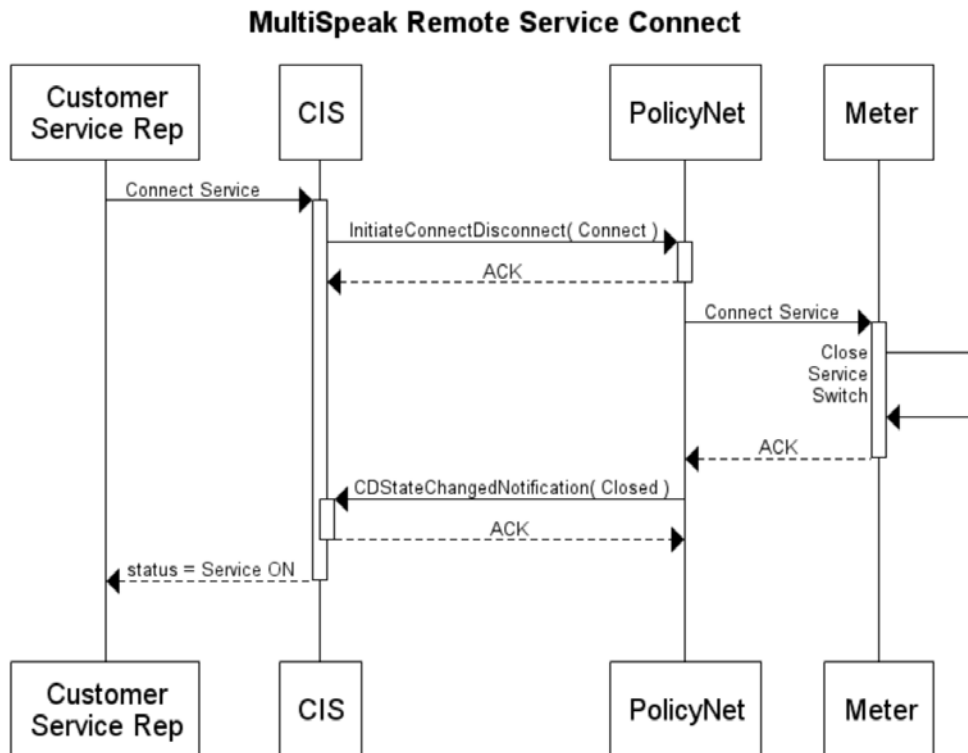
Content-Length: 580

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:msp="http://www.multispeak.org/Version_4.1_Release"><SOAP-ENV:Header><MultiSpeakMsgHeader
AppName="PolicyNet" xmlns="http://www.multispeak.org/Version_4.1_Release" AppVersion="4.1" Branch="0"
Build="0" BuildString="Release" Company="GRIDNET" MajorVersion="4" MinorVersion="1"
ObjectsRemaining="0" /></SOAP-ENV:Header><SOAP-ENV:Body>
<msp:CDStatesChangedNotificationResponse>
  <msp:CDStatesChangedNotificationResult/>
</msp:CDStatesChangedNotificationResponse>
</SOAP-ENV:Body></SOAP-ENV:Envelope>
```



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InitiateConnectDisconnect REQUEST (Connect):

POST / HTTP/1.1

Host: localhost4:20701

Connection: close

Content-Length: 1372

Content-Type: text/xml; charset=utf-8

Accept: application/soap+xml, application/dime, multipart/related, text/*

User-Agent: Axis/1.3

SOAPAction: "http://www.multispeak.org/Version_4.1_Release/InitiateConnectDisconnect"

```

<?xml version="1.0" encoding="UTF-8"?><soapenv:Envelope
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance"><soapenv:Header><ns1:MultiSpeakMsgHeader soapenv:mustUnderstand="0" AppName="MSP"
Build="1" Company="TEST" MajorVersion="4" MinorVersion="1" Pwd="*****" TimeStamp="2017-07-
31T15:14:59.478Z" UserID="*****" xmlns:ns1="http://www.multispeak.org/Version_4.1_Release"/>
</soapenv:Header><soapenv:Body>
<InitiateConnectDisconnect xmlns="http://www.multispeak.org/Version_4.1_Release">
<cdEvents>
<connectDisconnectEvent objectID="64747449+1530555460186">
<serviceLocationID>8722</serviceLocationID><customerID>5</customerID><gridLocation>3364-006-SE
02</gridLocation><accountNumber>1100</accountNumber><meterID meterNo="64747449"
objectID="64747449"
serviceType="Electric">.Electric.64747449</meterID><loadActionCode>Connect</loadActionCode><powerLi
  
```



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```

mitationValue>0.0</powerLimitationValue><CDReasonCode>ServiceActive</CDReasonCode><amountDue>0.
0</amountDue><serviceType>Electric</serviceType></connectDisconnectEvent></cdEvents><responseURL>
https://mspapitesting.abcd.coop/multispeak/CB_ServerSoap41</responseURL><transactionID>54321</transa
ctionID><expTime units="Seconds">900.0</expTime>
</InitiateConnectDisconnect>
</soapenv:Body></soapenv:Envelope>

```

InitiateConnectDisconnect RESPONSE:

HTTP/1.1 200 OK
 Server: GridNet/3
 Content-Type: text/xml; charset=utf-8
 Content-Length: 574

```

<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:msp="http://www.multispeak.org/Version_4.1_Release"><SOAP-ENV:Header><MultiSpeakMsgHeader
AppName="PolicyNet" xmlns="http://www.multispeak.org/Version_4.1_Release" AppVersion="4.1" Branch="0"
Build="0" BuildString="Release" Company="GRIDNET" MajorVersion="4" MinorVersion="1"
ObjectsRemaining="0" /></SOAP-ENV:Header><SOAP-ENV:Body>
<msp:InitiateConnectDisconnectResponse>
  <msp:InitiateConnectDisconnectResult/>
</msp:InitiateConnectDisconnectResponse>
</SOAP-ENV:Body></SOAP-ENV:Envelope>

```

CDStatesChangedNotification CALLBACK REQUEST:

POST /multispeak/CB_ServerSoap41 HTTP/1.1
 Host: mspapitesting.abcd.coop:443
 Connection: Keep-Alive
 User-Agent: Grid Net MSP
 Content-Length: 865
 Content-Type: text/xml; charset=utf-8
 SOAPAction: "http://www.multispeak.org/Version_4.1_Release/CDStatesChangedNotification"

```

<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:msp="http://www.multispeak.org/Version_4.1_Release"><SOAP-ENV:Header><MultiSpeakMsgHeader
AppName="PolicyNet" xmlns="http://www.multispeak.org/Version_4.1_Release" AppVersion="4.1" Branch="0"
Build="0" BuildString="Release" Company="GRIDNET" MajorVersion="4" MinorVersion="1"
ObjectsRemaining="0" UserID="admin" Pwd="" /></SOAP-ENV:Header><SOAP-ENV:Body>
<msp:CDStatesChangedNotification>
  <msp:stateChanges>
    <msp:CDStateChange>
      <msp:meterID objectID="64747449" meterNo="64747449" serviceType="Electric"
utility="policynet.com">policynet.com.Electric.64747449</msp:meterID>
      <msp:stateChange>Connect</msp:stateChange>
    </msp:CDStateChange>
  </msp:stateChanges>

```



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```

    <msp:transactionID>54321</msp:transactionID>
  </msp:CDStatesChangedNotification>
</SOAP-ENV:Body></SOAP-ENV:Envelope>

```

CDStatesChangedNotification CALLBACK RESPONSE:

HTTP/1.1 200 OK

Server: GridNet/3

Content-Type: text/xml; charset=utf-8

Content-Length: 580

```

<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:msp="http://www.multispeak.org/Version_4.1_Release"><SOAP-ENV:Header><MultiSpeakMsgHeader
  AppName="PolicyNet" xmlns="http://www.multispeak.org/Version_4.1_Release" AppVersion="4.1" Branch="0"
  Build="0" BuildString="Release" Company="GRIDNET" MajorVersion="4" MinorVersion="1"
  ObjectsRemaining="0" /></SOAP-ENV:Header><SOAP-ENV:Body>
  <msp:CDStatesChangedNotificationResponse>
    <msp:CDStatesChangedNotificationResult/>
  </msp:CDStatesChangedNotificationResponse>
</SOAP-ENV:Body></SOAP-ENV:Envelope>

```



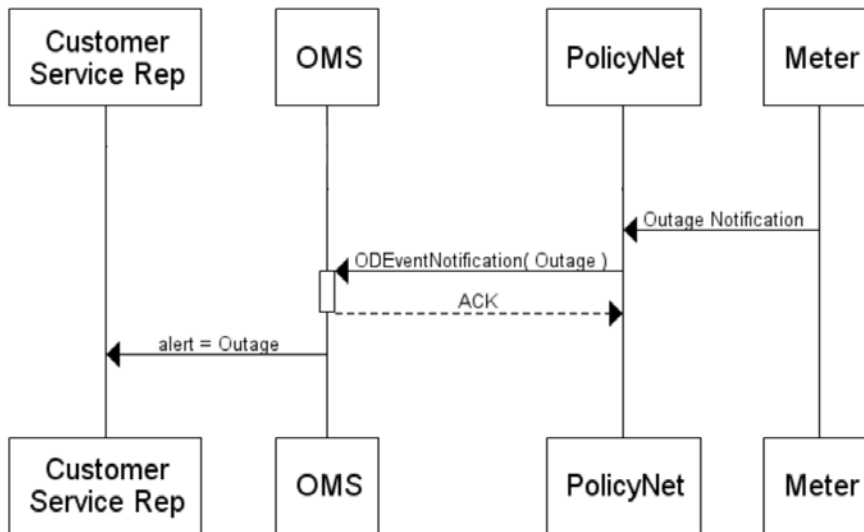
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4.2.8 Meter-Initiated Outage & Restoration Notification

- Async Publication: ODEventNotification

Meter-Initiated MultiSpeak Outage Notification



ODEventNotification REQUEST (Outage):

POST /omsservices/OA_ServerSoap_4_1 HTTP/1.1

Host: abcelectric.coop:443

Connection: Keep-Alive

User-Agent: Grid Net MSP

Content-Length: 1120

Content-Type: text/xml; charset=utf-8

SOAPAction: "http://www.multispeak.org/Version_4.1_Release/ODEventNotification"

```

<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:msp="http://www.multispeak.org/Version_4.1_Release">
  <SOAP-ENV:Header>
    <MultiSpeakMsgHeader
      AppName="PolicyNet" xmlns="http://www.multispeak.org/Version_4.1_Release"
      AppVersion="4.1" Branch="0" Build="0" BuildString="Release"
      Company="GRIDNET" MajorVersion="4" MinorVersion="1"
      ObjectsRemaining="0" UserID="****" Pwd="*****"/>
  </SOAP-ENV:Header>
  <SOAP-ENV:Body>
    <msp:ODEventNotification>
      <msp:ODEvents>
        <msp:outageDetectionEvent>
          <msp:eventTime>2019-06-25T13:20:40-07:00</msp:eventTime>
          <msp:outageEventType>Outage</msp:outageEventType>
          <msp:outageDetectionDeviceID>64747449</msp:outageDetectionDeviceID>
          <msp:outageDetectionDeviceType>Meter</msp:outageDetectionDeviceType>
          <msp:outageLocation>
            <msp:meterID meterNo="64747449" serviceType="Electric" objectID="64747449"
              utility="abcelectric.coop"/>
          </msp:outageLocation>
        </msp:outageDetectionEvent>
      </msp:ODEvents>
    </msp:ODEventNotification>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
  
```



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```

    </msp:outageDetectionEvent>
  </msp:ODEvents>
  <msp:transactionID>0c4c0c40-558a-47d2-ad1c-2cc07cbd71ad</msp:transactionID>
</msp:ODEventNotification>
</SOAP-ENV:Body></SOAP-ENV:Envelope>

```

ODEventNotification RESPONSE (Outage):

HTTP/1.1 200 OK

Server: WildFly/9

X-Powered-By: Undertow/1

Content-Type: text/xml;charset=utf-8

Keep-Alive: timeout=5, max=100

Connection: Keep-Alive

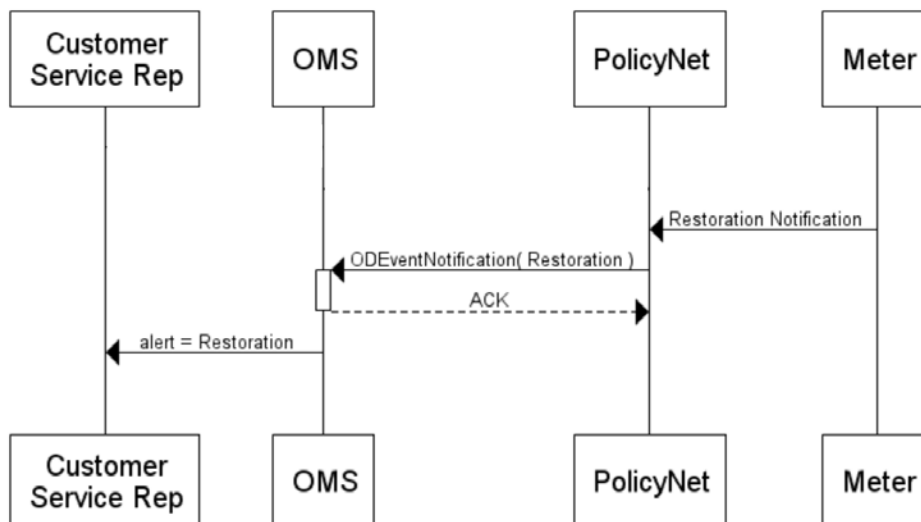
Transfer-Encoding: chunked

```

<?xml version="1.0" encoding="UTF-8"?><soapenv:Envelope
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance"><soapenv:Header><ns1:MultiSpeakMsgHeader
soapenv:actor="http://schemas.xmlsoap.org/soap/actor/next" soapenv:mustUnderstand="0" AppName="Test"
Build="6" Company="ABCD" MajorVersion="4" MinorVersion="1" TimeStamp="2019-06-25T20:25:03.181Z"
xmlns:ns1="http://www.multispeak.org/Version_4.1_Release"/>
</soapenv:Header><soapenv:Body>
<ODEventNotificationResponse xmlns="http://www.multispeak.org/Version_4.1_Release">
<ODEventNotificationResult/>
</ODEventNotificationResponse>
</soapenv:Body></soapenv:Envelope>

```

Meter-Initiated MultiSpeak Restoration Notification



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ODEventNotification REQUEST (Restoration):

POST /omsservices/OA_ServerSoap_4_1 HTTP/1.1
 Host: abcelectric.coop:443
 Connection: Keep-Alive
 User-Agent: Grid Net MSP
 Content-Length: 1120
 Content-Type: text/xml; charset=utf-8
 SOAPAction: "http://www.multispeak.org/Version_4.1_Release/ODEventNotification"

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:msp="http://www.multispeak.org/Version_4.1_Release"><SOAP-ENV:Header><MultiSpeakMsgHeader
AppName="PolicyNet" xmlns="http://www.multispeak.org/Version_4.1_Release" AppVersion="4.1" Branch="0"
Build="0" BuildString="Release" Company="GRIDNET" MajorVersion="4" MinorVersion="1"
ObjectsRemaining="0" UserID="****" Pwd="****"/></SOAP-ENV:Header><SOAP-ENV:Body>
<msp:ODEventNotification>
  <msp:ODEvents>
    <msp:outageDetectionEvent>
      <msp:eventTime>2019-06-25T13:24:12-07:00</msp:eventTime>
      <msp:outageEventType>Restoration</msp:outageEventType>
      <msp:outageDetectionDeviceID>64747449</msp:outageDetectionDeviceID>
      <msp:outageDetectionDeviceType>Meter</msp:outageDetectionDeviceType>
      <msp:outageLocation>
        <msp:meterID meterNo="64747449" serviceType="Electric" objectID="64747449"
utility="abcelectric.coop"/>
      </msp:outageLocation>
    </msp:outageDetectionEvent>
  </msp:ODEvents>
  <msp:transactionID>8bec3915-98a3-4e84-991e-06bb0f054088</msp:transactionID>
</msp:ODEventNotification>
```

ODEventNotification RESPONSE (Restoration):

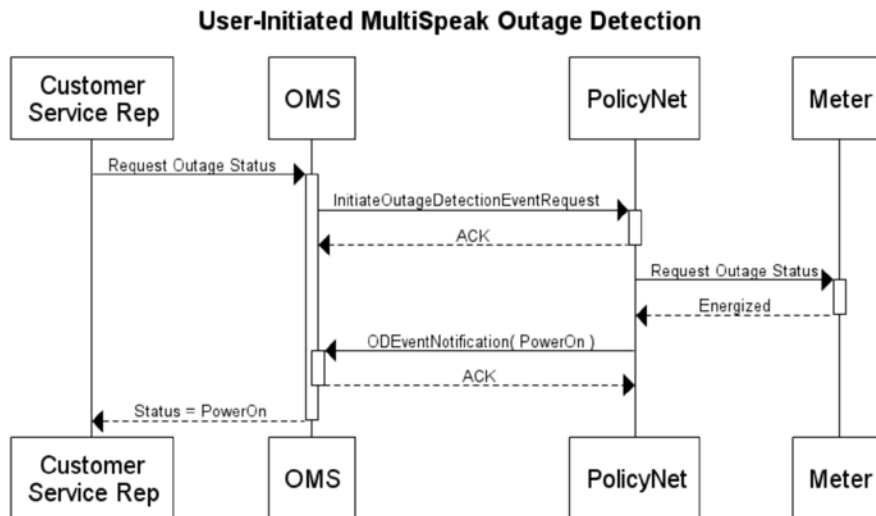
HTTP/1.1 200 OK
 Server: WildFly/9
 X-Powered-By: Undertow/1
 Content-Type: text/xml; charset=utf-8
 Keep-Alive: timeout=5, max=100
 Connection: Keep-Alive
 Transfer-Encoding: chunked

```
<?xml version="1.0" encoding="UTF-8"?><soapenv:Envelope
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance"><soapenv:Header><ns1:MultiSpeakMsgHeader
soapenv:actor="http://schemas.xmlsoap.org/soap/actor/next" soapenv:mustUnderstand="0" AppName="Test"
Build="6" Company="ABCD" MajorVersion="4" MinorVersion="1" TimeStamp="2019-06-25T20:25:03.181Z"
xmlns:ns1="http://www.multispeak.org/Version_4.1_Release"/>
</soapenv:Header><soapenv:Body>
<ODEventNotificationResponse xmlns="http://www.multispeak.org/Version_4.1_Release">
<ODEventNotificationResult/>
</ODEventNotificationResponse>
</soapenv:Body></soapenv:Envelope>
```



4.2.9 User-Initiated Outage Detection

- Service: InitiateOutageDetectionEventRequest
 - Async Callback: ODEventNotification



InitiateOutageDetectionEventRequest REQUEST:

POST / HTTP/1.1

Host: localhost4:20701

Connection: close

Content-Length: 1018

Content-Type: text/xml; charset=utf-8

Accept: application/soap+xml, application/dime, multipart/related, text/*

User-Agent: Axis/1.3

SOAPAction: "http://www.multispeak.org/Version_4.1_Release/InitiateOutageDetectionEventRequest"

```

<?xml version="1.0" encoding="UTF-8"?><soapenv:Envelope
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance"><soapenv:Header><ns1:MultiSpeakMsgHeader
soapenv:actor="http://schemas.xmlsoap.org/soap/actor/next" soapenv:mustUnderstand="0" CSUnits="feet"
AppName="OMS" Company="TEST" Pwd="*****" UserID="*****"
xmlns:ns1="http://www.multispeak.org/Version_4.1_Release"/>
</soapenv:Header><soapenv:Body>
<InitiateOutageDetectionEventRequest xmlns="http://www.multispeak.org/Version_4.1_Release">
<meterIDs>
<meterID meterNo="64747449" objectID="64747449" serviceType="Electric">64747449</meterID>
</meterIDs>
<requestDate xsi:type="xsd:dateTime">2016-06-30T13:36:11.896Z</requestDate>
<responseURL>https://abcelectric.coop/omsservices/OA_ServerSoap_4_1</responseURL>
<transactionID>123456</transactionID>
<expTime>0.0</expTime>
</InitiateOutageDetectionEventRequest>
</soapenv:Body></soapenv:Envelope>
  
```



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InitiateOutageDetectionEventRequest RESPONSE:

HTTP/1.1 200 OK
 Server: GridWide/3
 Content-Type: text/xml; charset=utf-8
 Content-Length: 604

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:msp="http://www.multispeak.org/Version_4.1_Release"><SOAP-ENV:Header><MultiSpeakMsgHeader
  AppName="PolicyNet" xmlns="http://www.multispeak.org/Version_4.1_Release" AppVersion="4.1" Branch="0"
  Build="0" BuildString="Release" Company="GRIDNET" MajorVersion="4" MinorVersion="1"
  ObjectsRemaining="0" /></SOAP-ENV:Header><SOAP-ENV:Body>
  <msp:InitiateOutageDetectionEventRequestResponse>
    <msp:InitiateOutageDetectionEventRequestResult/>
  </msp:InitiateOutageDetectionEventRequestResponse>
</SOAP-ENV:Body></SOAP-ENV:Envelope>
```

ODEventNotification CALLBACK REQUEST (Restoration):

POST /omsservices/OA_ServerSoap_4_1 HTTP/1.1
 Host: abcelectric.coop:443
 Connection: Keep-Alive
 User-Agent: Grid Net MSP
 Content-Length: 1088
 Content-Type: text/xml; charset=utf-8
 SOAPAction: "http://www.multispeak.org/Version_4.1_Release/ODEventNotification"

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:msp="http://www.multispeak.org/Version_4.1_Release">
  <SOAP-ENV:Header><MultiSpeakMsgHeader AppName="PolicyNet"
  xmlns="http://www.multispeak.org/Version_4.1_Release" AppVersion="4.1" Branch="0" Build="0"
  BuildString="Release" Company="GRIDNET" MajorVersion="4" MinorVersion="1" ObjectsRemaining="0"
  UserID="*****" Pwd="*****"/></SOAP-ENV:Header>
  <SOAP-ENV:Body>
  <msp:ODEventNotification>
    <msp:ODEvents>
      <msp:outageDetectionEvent>
        <msp:eventTime>2019-06-25T15:33:03-07:00</msp:eventTime>
        <msp:outageEventType>Restoration</msp:outageEventType>
        <msp:outageDetectionDeviceID>64747449</msp:outageDetectionDeviceID>
        <msp:outageDetectionDeviceType>Meter</msp:outageDetectionDeviceType>
        <msp:outageLocation>
          <msp:meterID meterNo="64747449" serviceType="Electric" objectID="64747449"
  utility="abcelectric.coop"/>
        </msp:outageLocation>
      </msp:outageDetectionEvent>
    </msp:ODEvents>
    <msp:transactionID>123456</msp:transactionID>
  </msp:ODEventNotification>
</SOAP-ENV:Body></SOAP-ENV:Envelope>
```



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ODEventNotification CALLBACK RESPONSE (Restoration):

HTTP/1.1 200 OK
Server: WildFly/9
X-Powered-By: Undertow/1
Content-Type: text/xml;charset=utf-8
Keep-Alive: timeout=5, max=100
Connection: Keep-Alive
Transfer-Encoding: chunked

```
<?xml version="1.0" encoding="UTF-8"?><soapenv:Envelope
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance"><soapenv:Header><ns1:MultiSpeakMsgHeader
soapenv:actor="http://schemas.xmlsoap.org/soap/actor/next" soapenv:mustUnderstand="0" AppName="Test"
Build="6" Company="OMS" MajorVersion="4" MinorVersion="1" TimeStamp="2019-06-25T22:33:19.385Z"
xmlns:ns1="http://www.multispeak.org/Version_4.1_Release"/></soapenv:Header>
<soapenv:Body>
<ODEventNotificationResponse xmlns="http://www.multispeak.org/Version_4.1_Release">
<ODEventNotificationResult/>
</ODEventNotificationResponse>
</soapenv:Body></soapenv:Envelope>
```



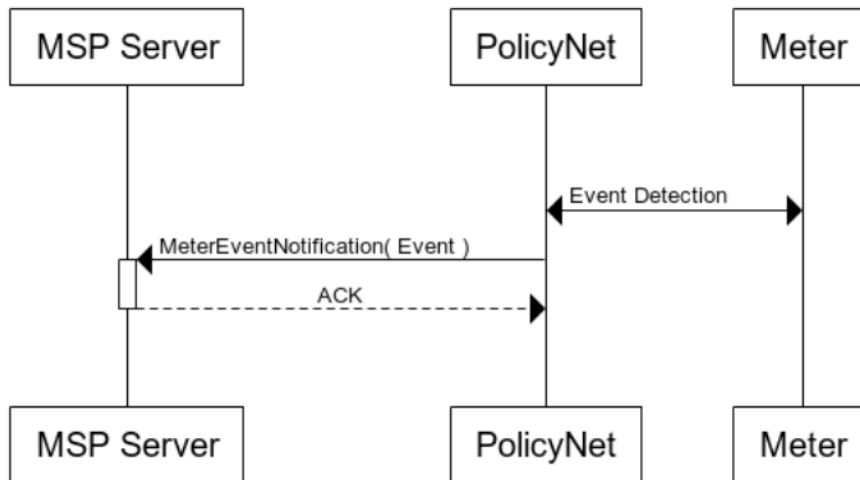
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4.2.10 Meter Event Publishing

- Service: MeterEventNotification

Meter Event Publishing



MeterEventNotification REQUEST:

POST /ms41not/NOT_Server.asmx HTTP/1.1

Host: dev.webcvr.smartgrid.abcd.com:443

Connection: Keep-Alive

User-Agent: Grid Net MSP

Content-Length: 1201

Content-Type: text/xml; charset=utf-8

SOAPAction: "http://www.multispeak.org/Version_4.1_Release/MeterEventNotification"

```

<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:msp="http://www.multispeak.org/Version_4.1_Release">
  <SOAP-ENV:Header><MultiSpeakMsgHeader AppName="PolicyNet"
    xmlns="http://www.multispeak.org/Version_4.1_Release" AppVersion="4.1" Branch="0" Build="0"
    BuildString="Release" Company="GRIDNET" MajorVersion="4" MinorVersion="1" ObjectsRemaining="0"
    UserID="*****" Pwd="*****"/></SOAP-ENV:Header><SOAP-ENV:Body>
    <msp:MeterEventNotification>
      <msp:events utility="abc.com">
        <msp:eventInstances>
          <msp:eventInstance>
            <msp:extensions>
              <msp:extensionsItem>
                <msp:extName>eventArguments</msp:extName>
                <msp:extValue>volage bands(12345):oldBandId=2, newBandId=3</msp:extValue>
              </msp:extensionsItem>
            </msp:extensions>
            <msp:meterID objectID="AP12345" meterNo=" AP12345" serviceType="Electric">unspecified.Electric.
              AP12345</msp:meterID>
          </msp:eventInstance>
        </msp:eventInstances>
      </msp:events>
    </msp:MeterEventNotification>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
  
```



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```

<msp:meterEvent type="Warning" value="Meter Voltage Band Changed" codeString="2301"/>
<msp:timeStamp>2019-04-09T15:55:00+00:00</msp:timeStamp>
</msp:eventInstance>
</msp:eventInstances>
</msp:events>
<msp:transactionID>403a49cf-64ca-4771-b0ad-aabdaf0478e1</msp:transactionID>
</msp:MeterEventNotification>
</SOAP-ENV:Body></SOAP-ENV:Envelope>

```

MeterEventNotification RESPONSE:

```

HTTP/1.1 200 OK
Cache-Control: private, max-age=0
Content-Type: text/xml; charset=utf-8
Server: Microsoft-IIS/7.5
X-AspNet-Version: 4.0.30319
X-Powered-By: ASP.NET
Content-Length: 662

```

```

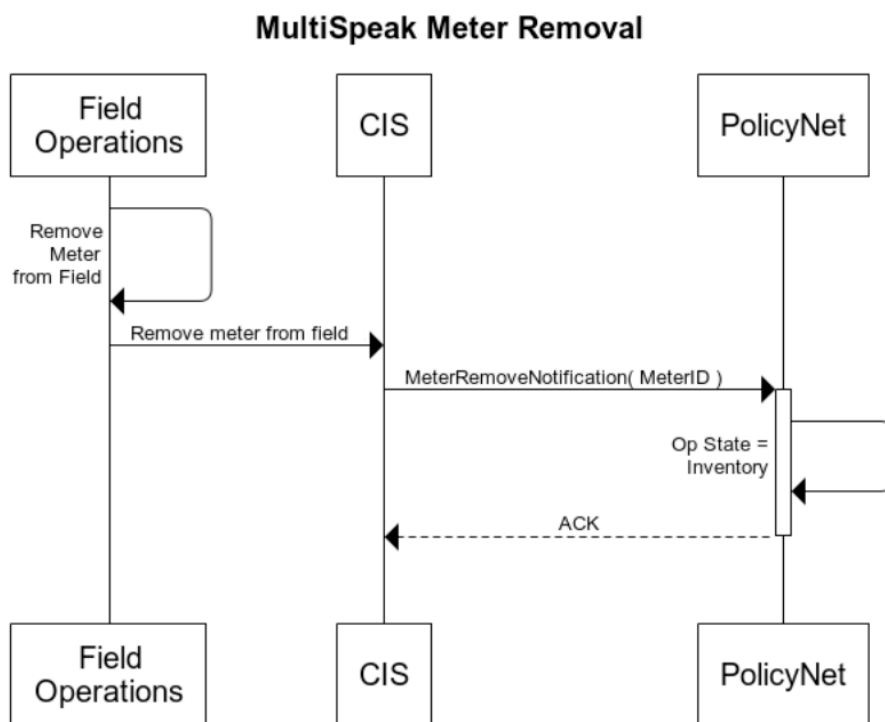
<?xml version="1.0" encoding="utf-8"?>
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema">
<soap:Header><MultiSpeakMsgHeader MajorVersion="4" MinorVersion="1" Build="0" Branch="0"
BuildString="Release" AppName="PolicyNet" AppVersion="4.1" Company="GRIDNET" ObjectsRemaining="0"
xmlns="http://www.multispeak.org/Version_4.1_Release" />
</soap:Header><soap:Body>
<MeterEventNotificationResponse xmlns="http://www.multispeak.org/Version_4.1_Release">
<MeterEventNotificationResult />
</MeterEventNotificationResponse>
</soap:Body></soap:Envelope>

```



4.2.11 Meter Removal

- Service: MeterRemoveNotification



MeterRemoveNotification REQUEST:

POST / HTTP/1.1

Host: localhost4:20701

Connection: close

Content-Length: 1753

Content-Type: text/xml; charset=utf-8

Accept: application/soap+xml, application/dime, multipart/related, text/*

User-Agent: Axis/1.3

SOAPAction: "http://www.multispeak.org/Version_4.1_Release/MeterRemoveNotification"

```

<?xml version="1.0" encoding="UTF-8"?><soapenv:Envelope
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance"><soapenv:Header><ns1:MultiSpeakMsgHeader soapenv:mustUnderstand="0" AppName="MSP"
Build="1" Company="TEST" MajorVersion="4" MinorVersion="1" Pwd="*****" SessionID="1497545807428"
TimeStamp="2017-06-15T16:56:48.412Z" UserID="*****">
xmlns:ns1="http://www.multispeak.org/Version_4.1_Release"/>
</soapenv:Header><soapenv:Body>
<MeterRemoveNotification xmlns="http://www.multispeak.org/Version_4.1_Release">
<removedMeters>

```



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```

<electricMeters>
<electricMeter objectID="64747388">
<extensionsList><extensionsItem><extName>amrType</extName><extValue>GRIDNET</extValue></extensio
nsltem><extensionsItem><extName>niscMtrType</extName><extValue>6</extValue></extensionsItem><exte
nsionsItem><extName>InternalCD</extName><extValue>true</extValue><extType>boolean</extType></exten
sionsItem></extensionsList><meterNo>64747388</meterNo><serialNumber>64747388</serialNumber><met
erType>REX</meterType><AMRDeviceType>MCT</AMRDeviceType><AMRVendor>GridNet</AMRVendor><m
eterStatusList><meterStatus>InInventory</meterStatus></meterStatusList><moduleList><module
objectID="64747388"><deviceClass>communication</deviceClass><description>transponder</description></
module></moduleList><electricNameplate><frequency>0.0</frequency><testAmperage>20.0</testAmperage>
<wires>3</wires><dials>5</dials><form>2S</form></electricNameplate><electricLocationFields/><configured
ReadingTypes/><meterCommAddress>0</meterCommAddress><billingStatusInformation/></electricMeter>
</electricMeters>
</removedMeters>
</MeterRemoveNotification>
</soapenv:Body></soapenv:Envelope>

```

MANDATORY REQUEST ATTRIBUTES: (all other attribute values are optional)

ATTRIBUTE NAME	DESCRIPTION
electricMeter.objectID	This value must equal the MeterID to be removed (electricMeterID from InitiateMeterInstallation). This call will place the meterID in the <i>Inventory</i> operational state. The serviceLocation reference will be deleted and any existing policies will be removed from the device.

MeterRemoveNotification RESPONSE:

HTTP/1.1 200 OK

Server: GridNet/3

Content-Type: text/xml; charset=utf-8

Content-Length: 568

```

<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:msp="http://www.multispeak.org/Version_4.1_Release"><SOAP-ENV:Header><MultiSpeakMsgHeader
AppName="PolicyNet" xmlns="http://www.multispeak.org/Version_4.1_Release" AppVersion="4.1" Branch="0"
Build="0" BuildString="Release" Company="GRIDNET" MajorVersion="4" MinorVersion="1"
ObjectsRemaining="0" /></SOAP-ENV:Header><SOAP-ENV:Body>
<msp:MeterRemoveNotificationResponse>
  <msp:MeterRemoveNotificationResult/>
</msp:MeterRemoveNotificationResponse>
</SOAP-ENV:Body></SOAP-ENV:Envelope>

```

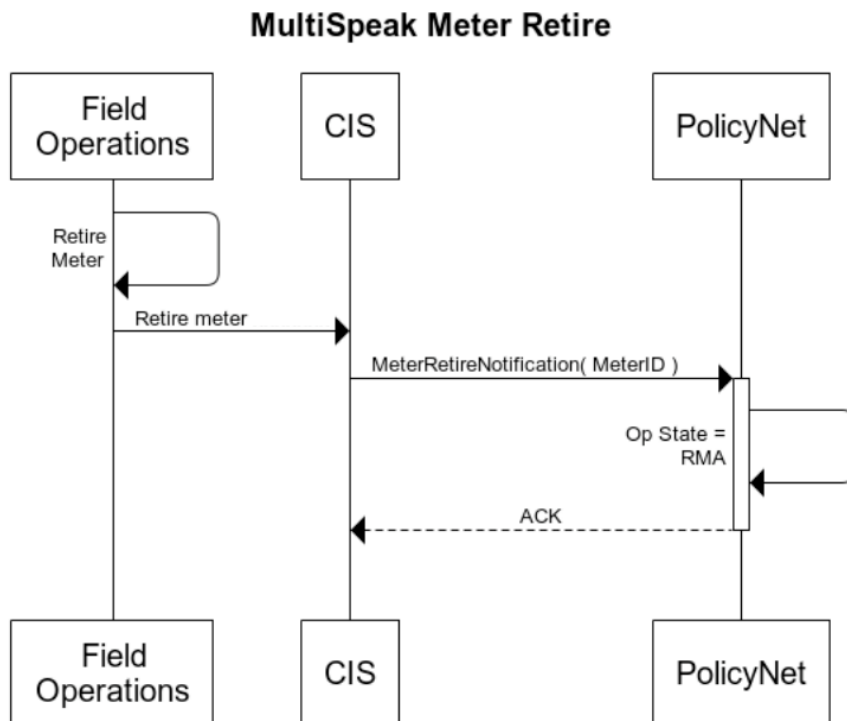


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4.2.12 Meter Retire

- Service: MeterRetireNotification



MeterRetireNotification REQUEST:

POST / HTTP/1.1

Host: localhost4:20701

Connection: close

Content-Length: 1723

Content-Type: text/xml; charset=utf-8

Accept: application/soap+xml, application/dime, multipart/related, text/*

User-Agent: Axis/1.3

SOAPAction: "http://www.multispeak.org/Version_4.1_Release/MeterRetireNotification"

```

<?xml version="1.0" encoding="UTF-8"?><soapenv:Envelope
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance"><soapenv:Header><ns1:MultiSpeakMsgHeader soapenv:mustUnderstand="0" AppName="MSP"
Build="1" Company="TEST" MajorVersion="4" MinorVersion="1" Pwd="*****" TimeStamp="2017-06-
16T20:23:12.304Z" UserID="*****" xmlns:ns1="http://www.multispeak.org/Version_4.1_Release"/>
</soapenv:Header><soapenv:Body>
<MeterRetireNotification xmlns="http://www.multispeak.org/Version_4.1_Release">
<retiredMeters><electricMeters>
<electricMeter objectID="64747388">

```



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```

<extensionsList><extensionsItem><extName>amrType</extName><extValue>GRID</extValue></extensionsItem><extensionsItem><extName>niscMtrType</extName><extValue>6</extValue></extensionsItem><extensionsItem><extName>InternalCD</extName><extValue>true</extValue><extType>boolean</extType></extensionsItem></extensionsList><meterNo>64747388</meterNo><serialNumber>64747388</serialNumber><meterType>REX</meterType><AMRDeviceType>64747388</AMRDeviceType><AMRVendor>GridNet</AMRVendor><meterStatusList><meterStatus>Retired</meterStatus></meterStatusList><moduleList><module objectID="64747388"><deviceClass>communication</deviceClass><description>transponder</description></module></moduleList><electricNameplate><frequency>0.0</frequency><testAmperage>20.0</testAmperage><wires>5</wires><dials>5</dials><form>2S</form></electricNameplate><electricLocationFields/><configuredReadingTypes/><meterCommAddress>0</meterCommAddress><billingStatusInformation/></electricMeter></retiredMeters></MeterRetireNotification></soapenv:Body></soapenv:Envelope>

```

MANDATORY REQUEST ATTRIBUTES: (all other attribute values are optional)

ATTRIBUTE NAME	DESCRIPTION
electricMeter.objectID	This value must equal the MeterID to be retired (electricMeterID from InitiateMeterInstallation). This call will place the meterID in the <i>RMA</i> operational state.

MeterRetireNotification RESPONSE:

HTTP/1.1 200 OK

Server: GridNet/3

Content-Type: text/xml; charset=utf-8

Content-Length: 568

```

<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:mzp="http://www.multispeak.org/Version_4.1_Release"><SOAP-ENV:Header><MultiSpeakMsgHeader
AppName="PolicyNet" xmlns="http://www.multispeak.org/Version_4.1_Release" AppVersion="4.1" Branch="0"
Build="0" BuildString="Release" Company="GRIDNET" MajorVersion="4" MinorVersion="1"
ObjectsRemaining="0" /></SOAP-ENV:Header><SOAP-ENV:Body>
<mzp:MeterRetireNotificationResponse>
  <mzp:MeterRetireNotificationResult/>
</mzp:MeterRetireNotificationResponse>
</SOAP-ENV:Body></SOAP-ENV:Envelope>

```



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5 Flat File Exports

The Grid Wide Smart Metering Services powered by PolicyNet application suite supports the following data exports:

- File Formats
 - o California Metering Exchange Protocol (CMEP)
 - o Itron vendor-specific California Metering Exchange Protocol (MV90CMEP)
 - o NISC vendor-specific Daily Shift Read CSV
 - o Custom user-defined file formats
- Transports
 - o HTTPS
 - o SFTP

6 References

6.1 Normative References

- [1] MultiSpeak v.4.1
- [2] MultiSpeak v.3.0
- [3] SOAP v.1.2
- [4] IETF RFC 5246 – The TLS Protocol Version 1.2
- [5] California Metering Exchange Protocol (CMEP)
- [6] *PolicyNet.wsdl* targetNamespace="urn:policynet/v5"
- [7] *Publishing.wsdl* targetNamespace="urn:policynet/v5"
- [8] <http://www.w3.org/2004/08/xop/include>
- [9] <http://www.w3.org/2005/05/xmlmime>
- [10] <http://www.w3.org/2003/05/soap-encoding>

6.2 Informative References

- [i.1] IEC 61968-9 Meter Reading and Control
- [i.2] WS-Notification
- [i.3] WS-Interoperability Basic Profile 1.1



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7 Definitions and Abbreviations

AMI	Advanced Metering Infrastructure
CIM	Common Information Model
CIS	Customer Information System
CMEP	California Metering Exchange Protocol
DM&C	Distribution Monitoring & Control
DMS	Distribution Management System
DRLC	Demand Response Load Control
HAN	Home Area Network
IEC	International Electrotechnical Commission
LMS	Load Management Systems
MDMS	Meter Data Management System
OMS	Outage Management System
LTE	3GPP Long Term Evolution
RBAC	Role Based Access Control
REST	REpresentational State Transfer
SOAP	Simple Object Access Protocol
TLS	Transport Layer Security
WMS	Workflow Management System
XML	eXtensible Markup Language
XSD	XML Schema Definition

8 Conventions

The keywords “SHALL”, “SHALL NOT”, “MAY”, “MAY NOT”, “SHOULD”, “SHOULD NOT” in the present document are to be interpreted as described in IETF RFC 2119.



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