

TCS Service Discovery Description



- Match the “best” SLP address a SET can submit SI location requests. Carriers may deploy one or multiple SLP’s that perform different positioning techniques.
- Formalize V-SLP discovery.
- Complete E-SLP discovery.
- Support SLP geo-graphic redundancy for load-balancing and to survive SLP failures.
- Support multiple service discovery servers that may be deployed by carriers or vendors.
- Support H-SLP or V-SLP determination models.



- SLP's would register their presence within the discovery service.
- SLP's would list their:
 - FQDN address
 - Positioning capabilities – Each of the access network technologies (CDMA, W-CDMA, GSM, WiFi, WiMAX etc.)
 - Commercial and Emergency services support
 - Historical measurement support
 - Security models supported
- SLP's would list the access networks they can provide positioning for by:
 - MNC/MCC pairs for GSM, W-CDMA/TD-SCDMA,
 - NID/SID for CDMA
 - WiFi
 - Etc.



Asset ownership permission model

- Given several SUPL 3.0 proposals that break the H-SLP approach, a permissions model is required.
- Assumption is that the owner of the network assets should set the permission model.
- Permission models would allow the owner to:
 - Only allow themselves to perform location based on the network assets. (This is the current H-SLP model)
 - Allow themselves and their partners to perform location determination based on the network assets (Both owner and partners provision the asset information in the service discovery system)
 - Allow anyone to advertise they can perform positioning based on the network asset.



- The SET sends an SLP service discovery request message to the service discovery system:
 - SET passes a record for each of the identifier's within the Location ID and Multiple Location IDs as part of the request.
 - SET passes it's SET Capabilities
 - Set passes it's current IP connection data
 - SET indicates if request is for Emergency Services or Commercial Services
- The service discovery system compares the incoming SET request with all of the SLP's registered within it's datastore and determine the "best" SLP address(es) to be returned.
- SET parses the returned service discovery response
 - Set decides which SLP to submit request to based on returned SLP list and it's security policy.
 - SET continues a normal SUPL call flow



- The SLP will receive either a normal NI or SI call flow request
- SLP determines it does not have the network information to support the information in the Location ID or Multiple Location IDs.
- SLP will broadcast a service discovery request to all of its provisioned service discovery systems.
- The service discovery systems in the network will return an SLP address if it can support the location request as the V-SLP.
- SLP will engage in a normal roaming call flow with the appropriate SLP FQDN returned by the service discovery system.



Service Discovery Request Example

```
<?xml version="1.0" encoding="utf-8" ?>
<ONSL type="Emergency">
  <AccessNetworks>
    <AccessNetwork type="WCDMA">
      <MCC>410</MCC><MNC>310</MNC>
    </AccessNetwork>
    <AccessNetwork type="WLAN">
      <APMACAddress>00:21:5D:E2:7C:EC</APMACAddress>
    </AccessNetwork>
  </AccessNetworks>
  <CurrentIPConnections>
    <IPConnection Adapter="WLAN" IPAddress="123.4.129.10" PrimaryDNSSuffix="mycoffeeshop.com"
      DHCPServer="123.4.129.1" DefaultGateway="123.4.129.1">
    </IPConnection>
    <IPConnection Adapter="GPRS" IPAddress="144.84.11.54" PrimaryDNSSuffix="mywirelesscarrier.com"
      DHCPServer="144.96.3.2" DefaultGateway="144.92.1.1">
    </IPConnection>
  </CurrentIPConnections>
  <SetCapabilities>
    <Capability>agpsSETAssisted</Capability>
    <Capability>eCID</Capability>
    <Capability>WLAN</Capability>
  </SetCapabilities>
</ONSL>
```

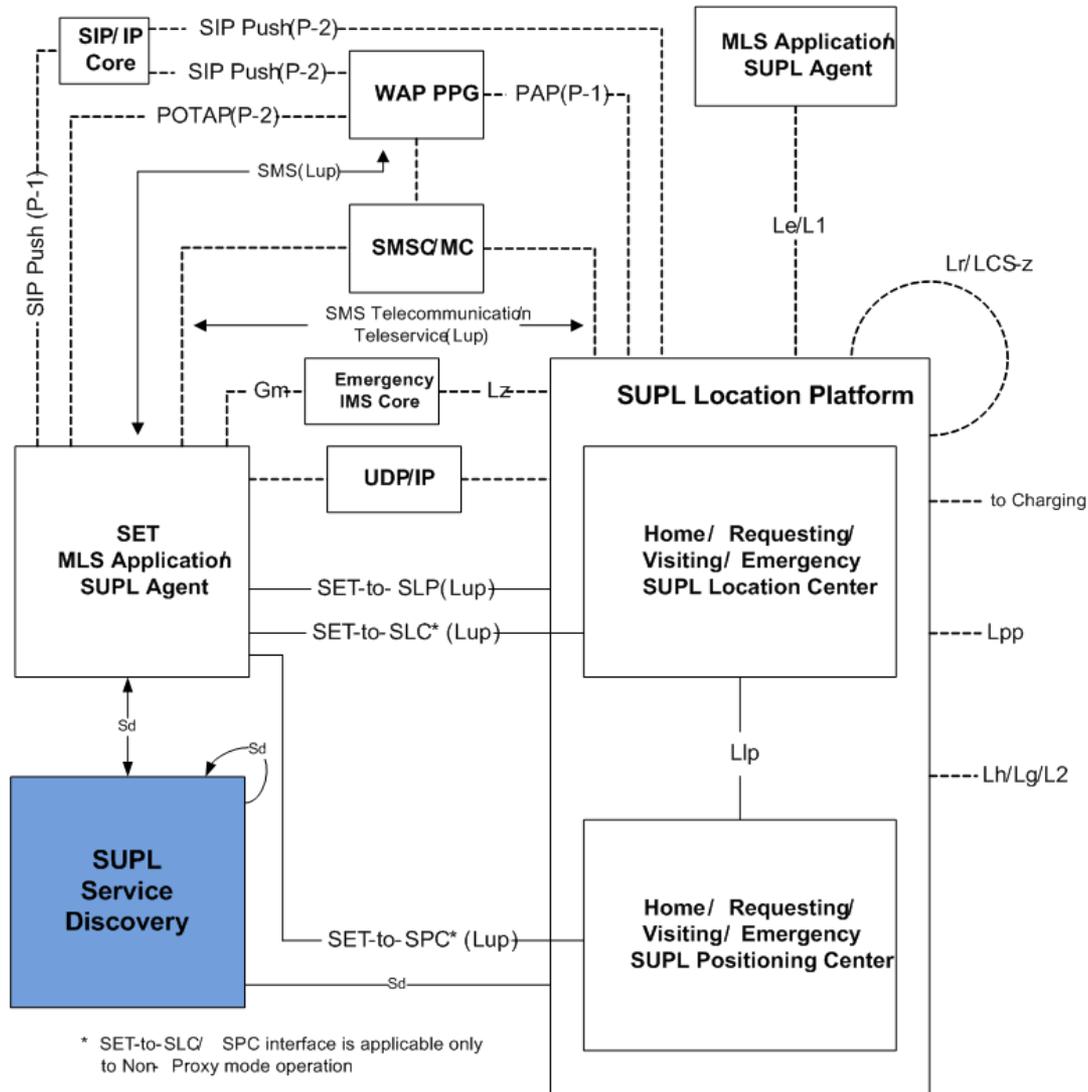


Service Discovery Response Example

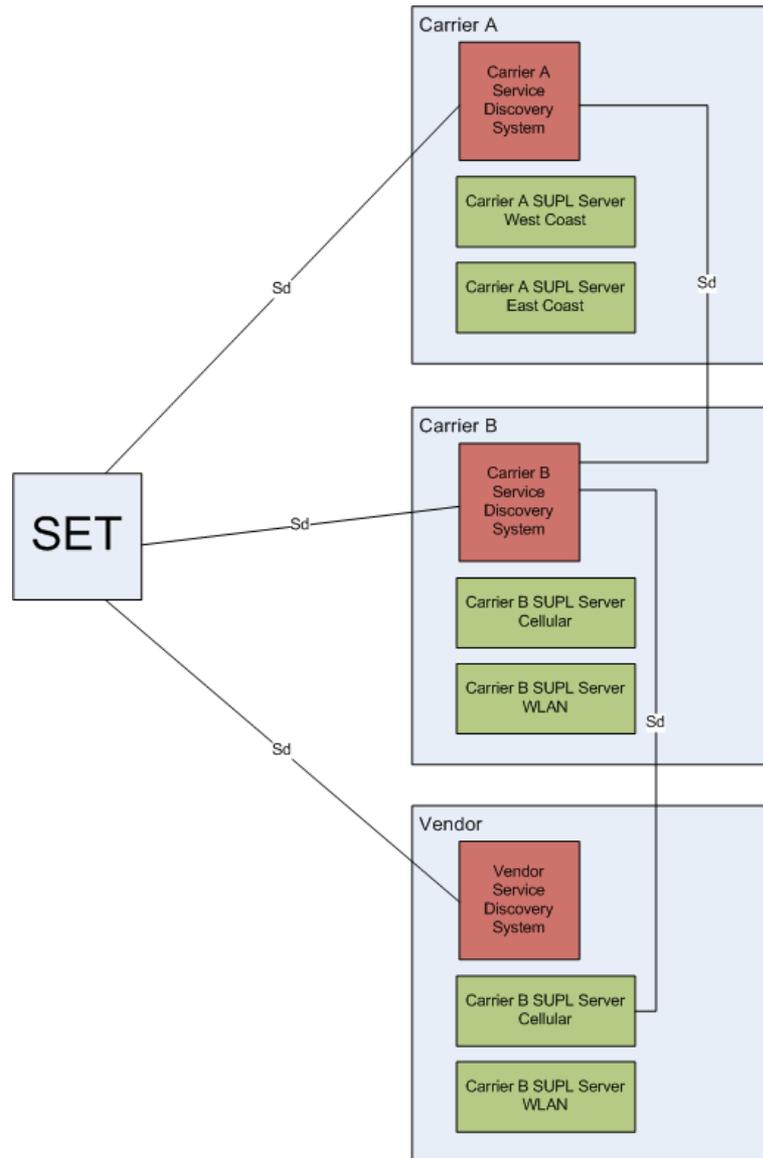
```
<?xml version="1.0" encoding="utf-8" ?>
<ONSR>
  <SLPList>
    <SLP type="Emergency" fqdn="eslp.mywirelesscarrier.com" ipaddress="144.9.4.2">
      <SLPCapabilities>
        <Capability>agpsSETassisted</Capability>
        <Capabiltiy>eCID</Capabiltiy>
        <Capabiltiy>WLAN</Capabiltiy>
      </SLPCapabilities>
      <SLPSecurityModels>
        <SLPSecurityModel>ServerCertificate - ACABased</SLPSecurityModel>
      </SLPSecurityModels>
    </SLP>
  </SLPList>
</ONSR>
```



Architecture Update for Service Discovery



Service Discovery Deployment



- Should the Quality of Position be considered in the SLP discovery algorithm?

