



# AAA Server-provided 3GPP-User-Location-Information Support

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## Feature Description

### Overview

This feature enables the SaMOG Gateway to receive the last known LTE location of the subscriber in the 3GPP-User-Location-Info AVP from the Diameter-based AAA server over the STa interface. This information is then used by SaMOG in the Create Session Request (CSR) messages over the S2a interface. The 3GPP-User-Location-Info AVP is received by SaMOG when the **aaa-custom23** dictionary is available.

With the 3GPP-User-Location-Info AVP, SaMOG can then:

- Use the PLMN values (MCC/MNC) in the Serving-Network IE in the CSR messages.
- Populate the User-Location-Information (ULI) IE in the CSR messages.



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#### Important

The **aaa-custom23** dictionary is customer specific. For more information, contact your Cisco account representative.

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## Relationship to Other Features

### Lawful Intercept

The PLMN values received in the 3GPP-User-Location-Information AVP will be used for lawful intercept purposes.

## Offline Charging

The PLMN values received in the 3GPP-User-Location-Information AVP will be used for offline charging (CDR interface).

# How AAA Server-provided 3GPP-User-Location-Information Works

## Architecture

The AAA Server shares the last known LTE location of the subscriber through the Geographic Location Type field in the 3GPP-User-Location-Information AVP as specified in *3GPP TS 29.061*:

- **TAI** – When the value of the Geographic Location Type field is 128, the Geographic Location field will contain the PLMN and Tracking Area Code (TAC) values.
- **ECGI** – When the value of the Geographic Location Type field is 129, the Geographic Location field will contain the PLMN and E-UTRAN Cell Identifier (ECI) values.
- **TAI-ECGI** – Value of the Geographic Location Type field is 130.

On receiving the 3GPP-User-Location-Info AVP from the AAA Server, SaMOG can do one or both of the following:

- When the **samog-s2a-gtpv2 send uli** command under the Call Control Profile Configuration mode is enabled, SaMOG populates the ULI IE in the Create Session Request message over the S2a interface.
- When the **samog-s2a-gtpv2 send serving-network value uli** command under the Call Control Profile Configuration Mode is enabled, SaMOG forwards the Serving-Network Information Element (IE) in the Create Session Request message over the S2a interface.

The structure of the ULI IE, and ECGI and TAI values are as specified in *3GPP TS 29.274*.

The 3GPP-User-Location-Info AVP is non-standard over the STa interface, and ULI IE is non-standard over the S2a interface.

## Standards Compliance

This feature complies with the following standards:

- **3GPP TS: 29.061** - “Interworking between the Public Land Mobile Network (PLMN) supporting packet based services and Packet Data Networks (PDN)”
- **3GPP TS: 29.274** - “3GPP Evolved Packet System (EPS); Evolved General Packet Radio Service (GPRS) Tunnelling Protocol for Control plane (GTPv2-C); Stage 3”

# Configuring AAA Server-provided 3GPP-User-Location-Information

## Configuring SaMOG to Forward the ULI IE

Use the following configuration to configure SaMOG to forward the User-Location-Information (ULI) Information Element (IE) in the CSR message over the S2a interface.

```
config
  call-control-profile profile_name
    samog-s2a-gtpv2 send uli
  end
```

### Notes:

- **Default:** Disabled
- If previously configured, use the **no samog-s2a-gtpv2 send uli** command to disable the configuration.

## Configuring SaMOG to Forward the Serving-Network IE

Use the following configuration to configure SaMOG to forward the Serving-Network Information Element (IE) in the CSR message over the S2a interface.

```
config
  call-control-profile profile_name
    [ no ] samog-s2a-gtpv2 send serving-network value uli
  end
```

### Notes:

- **Default:** Disabled
- If previously configured, use the **no samog-s2a-gtpv2 send serving-network value uli** command to disable the configuration.

# Monitoring and Troubleshooting

## Show Command(s) and/or Outputs

### show call-control-profile full name

The following fields are available to the output of the **show call-control-profile full name *profile\_name*** command in support of this feature:

```
Samog-S2a-GTPv2:
Sending ULI IE           : Enabled
```

**show subscribers samog-only full**

```

ULI IE Content           : 3gpp-user-location-info
Serving-network IE content : ULI

```

**Table 1: show call-control-profile full name Command Output Descriptions**

Field	Description
<b>Samog-S2a-GTPv2:</b>	
Sending ULI IE	Indicates if SaMOG is configured to forward the value received from the 3GPP-User-Location-Info AVP. Values: <ul style="list-style-type: none"> <li>• Enabled</li> <li>• Disabled</li> </ul>
ULI IE Content	Indicates if SaMOG is configured to forward the ULI IE. Values: <ul style="list-style-type: none"> <li>• 3gpp-user-location-info</li> <li>• None</li> </ul>
Serving-network IE content	Indicates if SaMOG is configured to forward the Serving-Network IE. Values: <ul style="list-style-type: none"> <li>• ULI</li> <li>• None</li> </ul>

**show subscribers samog-only full**

The following fields are available to the output of the **show subscribers samog-only full** command in support of this feature:

```

MRME Subscriber Info:
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uli: tai-ecgi
mcc: 412  mnc: 01  tac: 0001  eci: 0001

```

**Table 2: show subscribers samog-only full Command Output Descriptions**

Field	Description
<b>MRME Subscriber Info:</b>	
uli	The Geographic Location Type received in the 3GPP-User-Location-Info AVP for the subscriber.
mcc	Mobile Country Code (MCC) of the subscriber.
mnc	Mobile Network Code (MNC) of the subscriber.

Field	Description
tac	Tracking Area Code (TAC) of the subscriber.
eci	E-UTRAN Cell Identifier (ECI) of the subscriber.

show subscribers samog-only full