



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.



Important

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

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 |
|----------------------------|--|
| Samog-S2a-GTPv2: | |
| 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"> • Enabled • Disabled |
| ULI IE Content | Indicates if SaMOG is configured to forward the ULI IE. Values: <ul style="list-style-type: none"> • 3gpp-user-location-info • None |
| Serving-network IE content | Indicates if SaMOG is configured to forward the Serving-Network IE. Values: <ul style="list-style-type: none"> • ULI • None |

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

```

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

| Field | Description |
|------------------------------|--|
| MRME Subscriber Info: | |
| 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