Civic Address in TWAN-Identifier IE

The following topics are discussed:

Feature Description

Overview

In earlier releases, SaMOG could send either the AP-Group-Name or the SSID value in the TWAN-Identifier IE in the Create Session Request (CSR) message. From Release 21.1 and later, operators can provision the SaMOG Gateway to forward AP-MAC, SSID, and AP-Group-Name triplet information in the TWAN-Identifier IE received from the access network to P-GW, Lawful Intercept (LI) services.

This feature enables the AP-Group-Name information to be encoded in the Civic-Address-Information IE within the TWAN-Identifier IE as defined in *RFC 4776*. The TWAN-Identifier will contain:

- AP-MAC to be encoded in the BSSID attribute

- SSID to be encoded in the SSID attribute

- AP-Group-Name to be encoded in the civic-addr attribute

On receiving the Civic Address Information IE within the TWAN-Identifier IE, P-GW can forward the IE towards PCRF (Gx) and OCS (Gy).

This feature is currently supported on the S2a GTPv2 protocol for RADIUS Authentication-based session triggers.

☞

Important   When this feature is enabled, the memory utilization of the AAAMgr will increase slightly.

How Civic Address in TWAN-Identifier IE Works

Architecture

SaMOG can receive the AP-Group-Name in the Called-Station-ID (RADIUS) AVP from the WLAN access network in following formats:

- mac<MAC>:grp<AP-Group-Name>
- grp<AP-Group-Name>:<SSID>
- cgi<CGI>:grp<AP-Group-Name>
- cgi<CGI>:mac<MAC>:grp<AP-Group-Name>
- <MAC>:<SSID>:<AP-Group-Name>

The AP group name is encoded in the Civic Address as per RFC 4776. For this feature, the Civic Address Type (CAType) format used is NAM (name).

Encoding

S2a Interface

The SaMOG Gateway encodes the TWAN-Identifier IE with the Civic-Address-Information field as specified in *RFC 4776*, and *3GPP TS: 29.274*. By default, the two digit country code in the civic location option will be encoded as IN.

LI Interface

Encoding for LI interface will be performed by SaMOG and P-GW as specified in *3GPP TS:29.274*, and *3GPP TS: 33.108*.

For more information, refer *Lawful Intercept with the SaMOG Service* chapter in the *Lawful Intercept Configuration* guide.

Gx Interface

The P-GW receives the Civic address IE in TWAN-Identifier IE from SaMOG over the S2a interface, and encodes the Civic address value in TWAN-Identifier attribute in Gx interface. Encoding for this AVP is as specified in *3GPP TS 29.274*. The standard Gx dictionary, **r8-gx-standard** is used.

Gy Interface

A Civic-Addr vendor specific AVP is used in the non-standard custom dictionary, **dcca-custom33** to encode the civic address value in the Gy interface by P-GW.

Important   The **dcca-custom33** dictionary is customer specific. For more information, contact your Cisco account representative.

Gz Interface

P-GW (P-GW records) encodes the AP-Group-Name within the civicAddress attribute in the TWANUserLocationInfo and forwards it over the Gz interface using a non-standard custom dictionary, **custom53**.

☞

Important The **custom53** dictionary is customer specific. For more information, contact your Cisco account representative.

Limitations

- If the maximum length of the AP-Group-Name exceeds 32 bytes, SaMOG will not include the AP group name in the Civic Address Information field of the TWAN-Identifier IE.

- It is recommended to avoid configuring SaMOG to send the AP-Group-Name in both SSID and Civic Address Information fields. If configured, SaMOG will send the AP-Group-Name in the SSID field and the Civic Address Information field.

Standards Compliance

This feature complies with the following standards:

- **RFC 4776**: "Dynamic Host Configuration Protocol (DHCPv4 and DHCPv6) Option for Civic Addresses Configuration Information"

- **3GPP TS: 29.274**: "3GPP Evolved Packet System (EPS); Evolved General Packet Radio Service (GPRS) Tunnelling Protocol for Control plane (GTPv2-C)"

Configuring Civic Address in TWAN-Identifier IE

Enabling Civic Address in TWAN-Identifier on the S2a Interface

Use the following configuration to enable SaMOG to forward the AP-Group-Name value in the Civic Address Information field of the TWAN-Identifier IE over the S2a interface.

```
config
    call-control-profile profile_name
        samog-s2a-gtpv2 send twan-identifier civic-addr-fld ca-type name
value ap-group-name
        end
```

Notes:

- If previously configured, use the **no samog-s2a-gtpv2 send twan-identifier civic-addr-fld** command to remove and restore the configuration to its default value.

- **Default**: Disabled

Monitoring and Troubleshooting

Civic Address in TWAN-Identifier IE 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:
  TWAN-IDENTIFIER IE:
    SSID Value Type              : SSID
    Civic Address Information:
      CAtype-23 (NAME):  AP GROUP NAME
TWAN User Location Information:
  SSID Value Type              : SSID
  Civic Address Information:
    CAtype-23 (NAME):  AP GROUP NAME
```

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

Field	Description
Samog-S2a-GTPv2:	
TWAN-IDENTIFIER IE:	
SSID Value Type	Indicates if the SSID field in the TWAN Identifier IE will contain SSID or AP group name value.
Civic Address Information:	
CAtype-23 (NAME)	The AP group name value for this Call Control Profile. Options: • AP group name • Disabled
TWAN User Location Information:	
SSID Value Type	Indicates if the SSID field in the TWAN Identifier IE will contain SSID or AP group name value.
Civic Address Information:	
CAtype-23 (NAME)	The AP group name value for this Call Control Profile. Options: • AP group name • Disabled

show subscribers

The following fields are available to the output of the **show subscribers { pgw-only | saegw-only } full all** command in support of this feature:

```
TWAN User Location Information:
   SSID  :   anmip
   BSSID :   64:D9:89:43:D4:A0
   CIVIC Address :   IN234grna
```

Table 2: *show subscribers* Command Output Descriptions

Field	Description
TWAN User Location Information	
SSID	SSID value for the subscriber in the TWAN ULI.
BSSID	BSSID value for the subscriber in the TWAN ULI.
Civic Address	The AP-Group-name value for the subscriber in the TWAN ULI.

show subscribers