



# Civic Address in TWAN-Identifier IE

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## 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.



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**Important**

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

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# 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-flt ca-type name
  value ap-group-name
  end

```

**Notes:**

- If previously configured, use the **no samog-s2a-gtpv2 send twan-identifier civic-addr-flt** 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
<b>Samog-S2a-GTPv2:</b>	
<b>TWAN-IDENTIFIER IE:</b>	
SSID Value Type	Indicates if the SSID field in the TWAN Identifier IE will contain SSID or AP group name value.
<b>Civic Address Information:</b>	
CAtype-23 (NAME)	The AP group name value for this Call Control Profile. Options: <ul style="list-style-type: none"> <li>• AP group name</li> <li>• Disabled</li> </ul>
<b>TWAN User Location Information:</b>	
SSID Value Type	Indicates if the SSID field in the TWAN Identifier IE will contain SSID or AP group name value.
<b>Civic Address Information:</b>	
CAtype-23 (NAME)	The AP group name value for this Call Control Profile. Options: <ul style="list-style-type: none"> <li>• AP group name</li> <li>• Disabled</li> </ul>

## 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
<b>TWAN User Location Information</b>	
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.

