



# Connecting devices **at** **cloud-speed**

Submitted: September 2022

**floLIVE**

**Network Events Use Cases**

**Revision A**



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# 1 Network Signaling Events Overview

Cellular connectivity, a highly sophisticated technology, is designed to allow global operation on any supporting network; it provides seamless handover between cells to ensure a continuous connection and experience and the ability to bill customers for their actual usage.

Connecting to any cellular network involves many smaller steps and message exchange between the device and the (core) network, all defined under the SS7 (Signaling System #7) global protocol. This activity ranges from initial authentication and registration with the network, to determining the device's usage profile and then negotiating the actual data session.

Network signaling events tell the story of what your SIM card is actually doing. Beyond knowing how much data the SIM is using., these events give a behind-the-scenes view of your connectivity. Understanding the relationship between these events can help you identify and troubleshoot breakdowns, find unusual activity, protect against potential security breaches and understand how active your device really is.

The network signaling-event types described here are:

- [Registration](#)
- [HLR](#)
- [Calling](#)
- [Messaging](#)
- [Data Sessions](#)

The events described for each of these event types include:

- Brief description of the event
- **Triggers:** the trigger may be another event
- **Associated Events:** other events that commonly occur along with this event

In addition to these event types and their events, this document also contains:

- [Common Issues:](#) Use cases and examples of common issues that may be indicated by the occurrence of signaling events

## 1.1 Signaling Events Attributes

All floLIVE signaling events share common attributes. These attributes are described in the following table:

Attribute	Description
<b>Date &lt;Time Zone&gt;</b>	Timestamp (Date and Time with the local time zone) that the event was generated
<b>ICCID</b>	The ICCID of this SIM
<b>IMSI</b>	The IMSI that generated the event
<b>MSISDN</b>	The MSISDN assigned to the IMSI

Attribute	Description
Action	Event action
Code	Event error code, for example 0=success, ###=error)
Account	The Account that the IMSI belongs to
Location	Location Information (MCC MNC)
IMEI	The IMEI of the device modem
APN	Access Point Name
RAT	Radio Access Technology
Routing Number	Routing Number
SCCP	Signaling Connection Control Part
Direction	Not applicable
Charge ID	Charging ID
Ip	IP address allocated by the PGW
Core Network Name	Core network name
Uplink	Data uplink used
Downlink	Data downlink used
Node	Core network node that generated this event: 1: HLR Registration 2: HLR/HSS 3: VLR 4: SMSC 5: SCP 6: USSD 7: API 8: GGSN/PGW
sgsn	Serving GPRS Support Node address
NSAPI	Network Service Access Point Identifier code
reason	Error reason code
called	Called party number
mme	Mobility Management Entity address
diagnostic	Not applicable

**Note:** The Event attributes may vary with the different Event types.

## 1.2 Terms and Acronyms

The following table lists terms and acronyms used in this document:

Term or Acronym	Description
CAMEL	A protocol that controls the signaling of voice calls
GGSN	Gateway GPRS Support Node
GMSC	Gateway for Mobile Switching Center
HLR	Home Location Register
MCC/MNC	Mobile Country Code/Mobile Network Code
MME	Mobility Management Entity
MO	Mobile Originating
MSC	Mobile Switching Center

Term or Acronym	Description
<b>MSC-VLR</b>	Visitor location register
<b>MSISDN</b>	Mobile Station International Subscriber Directory Number
<b>MSRN</b>	Mobile Subscriber Roaming Number
<b>PGW</b>	Packet data network gateway
<b>Radius Server</b>	Remote authentication dial-in user service
<b>SGSN</b>	Serving GPRS Support Node
<b>SMSC</b>	Short Message Service Center
<b>USSD</b>	Unstructured Supplementary Service Data

## 1.3 Supplementary Information

Additional pertinent information can be found in the latest publication of the document *“floLIVE Data Warehouse API, Ver. 5.000”*.

The system generates floLIVE Data Warehouse (DWH) signaling events for device activities such as Update Location, SMS-MO, etc. The *“floLIVE Data Warehouse API”* document provides a detailed description of all supported DWH signaling events.

## 2 Registration

The Registration event type includes these events:

- [Send Authentication Info](#)
- [Authentication Failure Report](#)
- [Update Location](#)
- [Update GPRS Location](#)
- [Cancel Location](#)
- [Purge MS](#)
- [Insert Subscriber Data](#)
- [Delete Subscriber Data](#)
- [Restore Data](#)

### 2.1 Send Authentication Info

The SIM and the HLR both contain special authentication details, such as security keys; this event sends these details with a special state token.

If the authentication details and state token are the same on both the SIM and HLR, then the SIM has been validated and can use the network.

If this event is successful and the SIM is validated:

- 4G networks: the event retrieves a five- or six-digit MCC/MNC
- 3G network: the event retrieves a Global Title

#### Triggers

This event is triggered before any new registration attempt.

In some networks, it is triggered before any device-originated activity, such as starting a call or data session.

#### Associated Events

One or more of the following associated events are expected to occur **after** this event:

- [Authentication Failure Report](#)
- [Update Location](#)
- [Update GPRS Location](#)
- [Create PDP \(Packet Data Protocol\)](#)

### 2.2 Authentication Failure Report

When the SIM tries to authenticate with [Send Authentication Info](#), it requires that the items, namely identity and security keys, in the HLR and the SIM be the same. If not, many networks will send a report from the SIM that says, *“fail to authorize”*.

### Triggers

- Failure from [Send Authentication Info](#)

### Associated Events

- [Send Authentication Info](#)

## 2.3 Update Location

This event occurs when updating the location of the device on 3G and 4G networks, for example, moving between different mobile cell locations.

If this event is successful:

- 4G networks: the event retrieves a five- or six-digit MCC/MNC
- 3G network: the event retrieves a Global Title

The location may be any one of several parameters, such as:

- Cell ID
- Location Area Code (LAC)
- SGSN/SGW address and more

### Triggers

This event is triggered every time:

- There is a new registration
- If the device location has changed

In some networks, this event is sent periodically, usually every 24 hours.

### Associated Events

- **Before** this event: [Send Authentication Info](#)
- **After** this event: [Insert Subscriber Data](#)

## 2.4 Update GPRS Location

This event is identical to that of [Update Location](#), but applies only to 3G carriers.

The event originates from the SGSN.

### Triggers

- [Send Authentication Info](#)

### Associated Events

- [Send Authentication Info](#)
- [Insert Subscriber Data](#)



## 2.5 Cancel Location

When an [Update Location](#) event returns a new location, a new subscriber profile is created within the MSC or MME (4G). At that time, the subscriber profile that was previously active for the previous location is deactivated.

### Triggers

[Update Location](#) triggers this event, which is sent directly from the HLR, if a new location is returned as a result.

The user can also trigger this event manually from the API or portal.

### Associated Events

- [Send Authentication Info](#)
- [Update Location](#)
- [Update GPRS Location](#)

## 2.6 Purge MS

This event occurs when the VLR or MME (4G) notifies the HLR or HSS (4G) that certain subscribers are no longer available.

### Triggers

Triggering this event depends on the network. Most networks conduct periodic checks, usually every 24 hours, and then send this event for all SIMs that have been silent over at least the last 24 hours. Some networks do not use it all.

For 4G, the MME sends this event after an [Update Location](#) event during registration, if the SGW is unable to create a session in the PGW for any reason (wrong APN, wrong DNS, no billing, etc.).

### Associated Events

- [4G] [Send Authentication Info](#)

## 2.7 Insert Subscriber Data

This event occurs whenever the subscriber profile must be changed, and new subscriber data must be inserted. For example, when a SIM has been authenticated and/or a new location has been identified, the subscriber profile must be changed.

The updated subscriber profile, which contains the SIM functionality—APNs, registration details, any restrictions, etc.—, is sent to the MSC or to the SGSN.

### Triggers

- Any change to the current subscriber profile, including a change in location indicated by [Update Location](#) or [Update GPRS Location](#).
- Any change made to the SIM profile through an API (if available) or through a Connectivity Management Platform (CMP) like floNET.

### Associated Events

- [Update Location](#)
- [Update GPRS Location](#)

## 2.8 Delete Subscriber Data

When certain features are removed from a plan or SIM, this event deletes the specific functionality in the profile based on that change.

This event is sent only when editing the current subscriber profile. In cases where a new profile is created, like when an [Update Location](#) event occurs, this event is not sent.

### Triggers

- Any change in the subscriber profile that removes a functionality

## 2.9 Restore Data

This event is rare and could also indicate a security issue where third-party sources are blocked.

This event occurs when the MME or VLR/MSC wants to fetch the subscriber profile without going through the [Update Location](#) event.

### Triggers

- IMS program that only wants to read a subscriber profile to check some billing element

### Associated Events

- [Insert Subscriber Data](#)

## 3 HLR

The HLR event type includes these events:

- [Any Time Interrogation](#)
- [PSI \(Provide Subscriber Info\)](#)

### 3.1 Any Time Interrogation

This event is exceedingly rare and is usually considered a security threat; floLIVE, therefore, blocks this.

This event retrieves all the information about a subscriber.

### 3.2 PSI (Provide Subscriber Info)

This event is exceedingly rare and is usually considered a security threat; most networks, therefore, block this.

This event retrieves all the information about a subscriber.

## 4 Calling

The Calling event type includes these events:

- [SRI \(Send Routing Info\)](#)
- [PRN \(Provide Roaming Number\)](#)
- [IDP \(Initial Detection Point\)](#)

### 4.1 SRI (Send Routing Info)

When an incoming call comes to a subscriber, the MSC-GMC sends an SRI event to the HLR or HSS (4G) to get the MSRN (Mobile Subscriber Roaming Number).

The expected result is the MSRN, but see also this event's Associated Events.

#### Triggers

- Incoming calls

#### Associated Events

- [PRN \(Provide Roaming Number\)](#)

### 4.2 PRN (Provide Roaming Number)

This event is the request from the HLR to the destination MSC (see [SRI \(Send Routing Info, above\)](#), for the first part of this exchange). It tells the MSC to provide the MSRN to the requester (that is, the incoming call) and can also return information about Call Forward, Terminating Triggers, and errors.

#### Triggers

- [SRI \(Send Routing Info\)](#)

#### Associated Events

- [SRI \(Send Routing Info\)](#)

### 4.3 IDP (Initial Detection Point)

Many times, whenever an incoming or outgoing call is made, there is a need to understand the details of the call, such as:

- Who called
- Call origin
- Destination number
- Call duration
- How the call ended

This is even more necessary when there is some kind of usage limitation on the plan, such as if it is prepaid, expired or if there is a usage cutoff point. For these types of plans, the network first needs to know if the SIM has already reached its limits before the network allows a call to start. It therefore first sends this event to get prior usage details.

The order of events will generally be:

1. [SRI \(Send Routing Info\)](#)
2. [IDP \(Initial Detection Point\)](#)
3. [SRI \(Send Routing Info\)](#) with CAMEL (protocol) suppression
4. [PRN \(Provide Roaming Number\)](#)

### **Triggers**

- When a subscriber tries to set up a call

### **Associated Events**

- [SRI \(Send Routing Info\)](#)
- [PRN \(Provide Roaming Number\)](#)

## 5 Messaging

The Messaging event type includes these events:

- [SRI for SM \(Send Routing Info for Short Message\)](#)
- [Report SM Delivery Status](#)
- [Ready for SM](#)
- [Alert SC \(Alert Service Center\)](#)
- [MO SMS \(Mobile Originating SMS\)](#)
- [MT SMS \(Mobile Terminating SMS\)](#)
- [USSD \(Unstructured Short Data\)](#)

### 5.1 SRI for SM (Send Routing Info for Short Message)

This event is the same as the [SRI \(Send Routing Info\)](#) event described above, but for SMS.

The event asks for the location of MSISDN and gets the location and the IMSI in return.

If the SMS request comes from a device, the event is usually preceded by the [MO SMS \(Mobile Originating SMS\)](#) event.

If the SMS request comes from a different source, like an API or through a CMP like floNET, it will not be associated with a [MT SMS \(Mobile Terminating SMS\)](#) event.

#### Triggers

- Incoming SMS

If there were any temporary errors when trying to reach the SIM, there will be a waiting period where it waits until the device is available again. This occurrence is made known with the [Alert SC \(Alert Service Center\)](#) event; this event triggers another SRI for SM event occurrence to confirm.

#### Associated Events

- [Alert SC \(Alert Service Center\)](#)
- [MO SMS \(Mobile Originating SMS\)](#)
- [MT SMS \(Mobile Terminating SMS\)](#)

### 5.2 Report SM Delivery Status

This event occurs only when there is a temporary error when trying to send an SMS. The sequence is as follows:

1. An incoming SMS completes the [SRI for SM \(Send Routing Info for Short Message\)](#) stage.
2. The [MT SMS \(Mobile Terminating SMS\)](#) event is sent; this event is the actual sending of the SMS.
3. A temporary error occurs; this generates the Report SM Delivery Status event.

4. A two-stage process is initiated:
  - Stage 1: the SMSC requests an update from the HLR/HSS as to when the device is ready; the HLR/HSS, in turn, requests this information from the MSC
  - Stage 2: Letting the SMSC know that the device is ready

#### Triggers

- The SMSC receives a temporary error message when trying to send an SMS, that is, the device is temporarily unavailable

#### Associated Events

- [Alert SC \(Alert Service Center\)](#)
- [MT SMS \(Mobile Terminating SMS\)](#)

### 5.3 Ready for SM

The sequence for generating this event is:

1. The SMSC sends the [Report SM Delivery Status](#) event.
2. This triggers the MSC to search and determine when the device is ready.
3. When the device is ready, the MSC sends the Ready for SM event to the HLR; the HLR can now notify the SMSC that the device is ready.
4. The HLR sends that notification through the [Alert SC \(Alert Service Center\)](#) event.

#### Triggers

- Device signal found

#### Associated Events

- [Report SM Delivery Status](#)
- [Alert SC \(Alert Service Center\)](#)

### 5.4 Alert SC (Alert Service Center)

This event sends to the SMSC an alert that the device/subscriber is ready to receive the SMS. This then triggers another [SRI for SM \(Send Routing Info for Short Message\)](#) event; if successful, the [MT SMS \(Mobile Terminating SMS\)](#) event occurs.

#### Triggers

- The HLR receives notification from MSC that the device is ready to receive the SMS

#### Associated Events

- [SRI for SM \(Send Routing Info for Short Message\)](#)
- [MT SMS \(Mobile Terminating SMS\)](#)

## 5.5 MO SMS (Mobile Originating SMS)

This event is the one of the originating events that sets into motion all the other events involved in sending an SMS from a device.

### Triggers

- The device trying to send an SMS

### Associated Events

- [SRI for SM \(Send Routing Info for Short Message\)](#)
- [MT SMS \(Mobile Terminating SMS\)](#)

## 5.6 MT SMS (Mobile Terminating SMS)

This event is at the end of the send-SMS sequence; it is the actual sending of the SMS.

### Triggers

- When the target device returns an active record using the [SRI for SM \(Send Routing Info for Short Message\)](#) event that indicates that the device can be contacted and does not return any temporary or permanent errors

### Associated Events

- [SRI for SM \(Send Routing Info for Short Message\)](#)
- [Report SM Delivery Status](#)
- [Alert SC \(Alert Service Center\)](#)

## 5.7 USSD (Unstructured Short Data)

This is not a common event and is another way to send information between a device and the HLR.



## 6 Data Sessions

The Data Sessions event type includes these events:

- [Create PDP \(Packet Data Protocol\)](#)
- [AAA Access Request \(Accounting Access Authorization\)](#)
- [AAA Accounting](#)
- [Close PDP \(Packet Data Protocol\)](#)
- [GGSN Keep Alive \(Interim\)](#)
- [GGSN Modify Bearer](#)

### 6.1 Create PDP (Packet Data Protocol)

This event indicates the start of a new data session.

#### Triggers

- When device starts a new data session

#### Associated Events

- [Send Authentication Info](#)
- [Update Location](#)
- [AAA Access Request \(Accounting Access Authorization\)](#) [Sometimes]
- [Close PDP \(Packet Data Protocol\)](#)

### 6.2 AAA Access Request (Accounting Access Authorization)

Depending on the APN, sometimes this event asks the rating server for a rate request to determine the SIM balance. The request is accepted when the data quota has not been used up, and a data session is created. The request is denied when the data quota has been reached.

#### Triggers

- [Create PDP \(Packet Data Protocol\)](#)

#### Associated Events

- [Create PDP \(Packet Data Protocol\)](#)

### 6.3 AAA Accounting

This event allocates an IP address. Sometimes the IP is allocated between the PGW and Radius server; this depends on the APN.

#### Triggers

- [AAA Access Request \(Accounting Access Authorization\)](#)

### Associated Events

- [AAA Access Request \(Accounting Access Authorization\)](#)

## 6.4 Close PDP (Packet Data Protocol)

This event indicates the end of a data session.

### Triggers

- When the device stops transmitting data

### Associated Events

- [Create PDP \(Packet Data Protocol\)](#)

## 6.5 GGSN Keep Alive (Interim)

This event updates the session details. Most data sessions are short, but for long data sessions, like those coming from devices that need to stream data for hours at a time, the session details need to be updated. This usually happens to check data usage against SIM plan limits.

### Triggers

- Long data sessions, usually once an hour

### Associated Events

- [Create PDP \(Packet Data Protocol\)](#)
- [Close PDP \(Packet Data Protocol\)](#)

## 6.6 GGSN Modify Bearer

Sometimes fundamental changes occur during a data session, like when the device changes location, switches carrier or migrates from a 4G band to a 3G band. Usually this would require an [Send Authentication Info](#) or [Update Location](#) event to update the MSC.

The GGSN Modify Bearer event is sent to keep the active MSC alive while still receiving the new information so that the data session is not disrupted.

### Triggers

- A change in the server node during a data session

### Associated Events

- [Create PDP \(Packet Data Protocol\)](#)
- [Close PDP \(Packet Data Protocol\)](#)

## 7 Common Issues

This section provides examples of some common issues that may be indicated by signaling events.

### 7.1 Registration Issues

**Use Case: When a SIM card cannot register to the network, and we can see the following:**

▼	01/Jul/2022 12:10:06	8935711001074	0012011111	9991134211	Update Location	0
▼	01/Jul/2022 12:09:55	8935711001074	0012011111	9991134211	Update Location	0
▼	01/Jul/2022 12:09:43	8935711001074	0012011111	9991134211	Update Location	0
▼	01/Jul/2022 12:09:22	8935711001074	0012011111	9991134211	Update Location	0

Or

▼	01/Jul/2022 11:48:43	89357110010	0012011111	9991134211	Send Authentication Info	0
▼	01/Jul/2022 11:48:42	89357110010	0012011111	9991134211	Send Authentication Info	0
▼	01/Jul/2022 11:48:42	89357110010	0012011111	9991134211	Send Authentication Info	0
▼	01/Jul/2022 11:48:41	89357110010	0012011111	9991134211	Send Authentication Info	0
▼	01/Jul/2022 11:48:40	89357110010	0012011111	9991134211	Send Authentication Info	0
▼	01/Jul/2022 11:48:34	89357110010	0012011111	9991134211	Send Authentication Info	0
▼	01/Jul/2022 11:48:34	89357110010	0012011111	9991134211	Send Authentication Info	0
▼	01/Jul/2022 11:48:34	89357110010	0012011111	9991134211	Send Authentication Info	0

#### ● Indications

Events in that order indicate that there is a problem in the registration procedure in 2G/3G/4G.

#### ● Possible Reasons (not limited to this list)

- This network is blocked by steering created from floLIVE side
- This visited network is not a part of the roaming agreement
- Registration was failed due to authentication issues on the SIM card side
- ...

**Use Case: When a SIM card cannot register to the network, and we can see the following:**

### 2G/3G registration

26/Jul/2022 03:55:56	89357110010	001201111	+9991134	Update Location	0
26/Jul/2022 03:55:56	89357110010	001201111	-	Send Authentication Info	0

Or

### 4G/CAT-M/NB

26/Jul/2022 03:54:49	89357110010	001201111	-	Cancel Location	0
26/Jul/2022 03:54:48	89357110010	001201111	+999113421	Update Location	0
26/Jul/2022 03:54:47	89357110010	001201111	-	Send Authentication Info	0

- Possible Reasons (not limited to this list)
  - This visited network is not a part of the roaming agreement
  - Wrong APN on device level or *HSS* level
  - Problem with the SIM card's billing (4G registrations)
  - The visited MNO is rejecting the APN for some reason (4G registrations)
  - ...

## 7.2 Data session issues:

**Use Case: When a SIM card managed to create a session, but there is no Data traffic:**

26/Jul/2022 03:56:02		895571100107		311588100		999588100		Create PDP		0	
ACCOUNT	LOCATION	IMEI	APN	RAT	ROUTING NUMBER	SCCP	DIRECTION	MME	DATA		
	311588	868050	floive.net	6	-	-	0	-	-		
CORE NETWORK NAME	UPLINK	DOWNLINK	NODE	SGSN	NSAPI	REASON	CALLED	DIAGNOSTIC	STATUS TYPE	CHARGE ID	IP
USCC	0	0	8	198.230.240.45	5	-	-	-	-	2538375922	100.64.219.193

- Possible Reasons (not limited to this list)
  - The device is not configured to transmit data to the server
  - The APN configured on the device side should be checked (the APN is key sensitive)
  - Issue on visited network side
  - ...

**Use Case: A specific SIM that, due to code 93, unsuccessfully tried to create a data session; this means the SIM cannot be charged by floLIVE billing:**

DATE	ICCID	IMSI	MSISDN	ACTION	CODE
01/Jul/2022 12:16:40	89357110010	0012011111	9991134211	Close PDP	93
01/Jul/2022 12:16:40	89357110010	0012011111	9991134211	Create PDP	0

- Possible Reasons (not limited to this list)
  - No balance on the card
  - No billing plan attached
  - Issue with the current billing plan
  - Issue with connectivity rates on the floLIVE side
  - ...

## 7.3 SMS issues

### Example 1

26/Jul/2022 14:18:59		8935711005200		0012011111		9991134211		MO SMS		0	
ACCOUNT	LOCATION	IMEI	APN	RAT	ROUTING NUMBER	SCCP	DIRECTION	MME	DATA		
	-	-	-	-	-	-	0	-	-		
CORE NETWORK NAME	UPLINK	DOWNLINK	NODE	SQSN	NSAPI	REASON	CALLED	DIAGNOSTIC	STATUS TYPE	CHARGE ID	IP
TIS2SMSC	-	-	4	-	-	36	+99911	scn-21 BB-2 ss7 error (1 unknownSubscriber)	-	-	-

- Possible Reasons (not limited to this list)
  - SMS fails because the B number is not in active state (suspended)
  - ...

### Example 2

ACCOUNT	LOCATION	IMEI	APN	RAT	ROUTING NUMBER	SCCP	DIRECTION	MME	DATA		
-	64004	-	-	-	-	+255751	1	-	-		
CORE NETWORK NAME	UPLINK	DOWNLINK	NODE	SQSN	NSAPI	REASON	CALLED	DIAGNOSTIC	STATUS TYPE	CHARGE ID	IP
TIS2SMSC	-	-	4	-	-	27	-	scn-21 BB-2 ss7 error (27 absentSubscriber)	-	-	-
26/Jul/2022 11:58:04 8935711001 00120111 999113 MO SMS 0											

- Possible Reasons (not limited to this list)
  - SMS fails because the B number is not registered to the network
  - ...

### Example 3

ACCOUNT	LOCATION	IMEI	APN	RAT	ROUTING NUMBER	SCCP	DIRECTION	MME	DATA		
FloLive	--	--	--	--	--	--	0	--	--		
CORE NETWORK NAME	UPLINK	DOWNLINK	NODE	SQSN	NSAPI	REASON	CALLED	DIAGNOSTIC	STATUS TYPE	CHARGE ID	IP
MELITASMSC	--	--	4	--	--	34	+140843	scn-21 BB-2 ss7 error (34 systemFailure)	--	--	--

- Possible Reasons (not limited to this list)
  - General error requiring further investigation
  - ...

### Example 4

14/Jul/2022 16:29:53		89357110010		22201305		99901309		MT SMS		0	
ACCOUNT	LOCATION	IMEI	APN	RAT	ROUTING NUMBER	SCCP	DIRECTION	MME	DATA		
-	-	-	-	-	-	-	1	-	-		
CORE NETWORK NAME	UPLINK	DOWNLINK	NODE	SQSN	NSAPI	REASON	CALLED	DIAGNOSTIC	STATUS TYPE	CHARGE ID	IP
-	-	-	3	-	-	5	+99901309	scn-21 BB-3 ss7 error (5 unidentifiedSubscriber)	-	-	-

- Possible Reasons (not limited to this list)
  - The SMS fails because the B number is not provisioned in HSS
  - ...

### Example 5

08/Jul/2022 11:10:26		89357110010		001201111		99911342		MO SMS		0	
ACCOUNT	LOCATION	IMEI	APN	RAT	ROUTING NUMBER	SCCP	DIRECTION	MME	DATA		
	-	-	-	-	-	-	0	-	-		
CORE NETWORK NAME	UPLINK	DOWNLINK	NODE	SGSN	NSAPI	REASON	CALLED	DIAGNOSTIC	STATUS TYPE	CHARGE ID	IP
TIS2SMSC	-	-	4	-	-	31	+9991134	scn-21 BB-3 ss7 error (31 _subscriberBusyForMT_SMS)	-	-	-

- Possible Reasons (not limited to this list)
  - The B number is not able to receive the message (modem is not accepting the SMS)
  - ...