

# N1N2 Message Transfer


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# Feature Summary and Revision History

## Summary Data

***Table 1: Summary Data***

| | |
|---|---|
| Applicable Product(s) or Functional Area | AMF |
| Applicable Platform(s) | SMI |
| Feature Default Setting | Enabled - Always-on<br>SMS over the Non-Access Stratum Procedures: Enabled - Configuration required to disable |
| Related Documentation | Not Applicable |

## Revision History

***Table 2: Revision History***

| Revision Details | Release |
|---|---|
| Introduced ability to send SMS over the NAS procedure | 2022.01.0 |
| First introduced. | 2021.04.0 |

# Feature Description

The NF service consumer uses the N1N2MessageTransfer service operation to transfer N1 or N2 information, or both to the UE or 5G-AN, or both.

AMF now supports the following procedures:

- Network triggered Service Request
- PDU Session Establishment
- PDU Session Modification
- PDU Session Release
- Session continuity, service continuity, and UP path management
- Inter NG-RAN node N2 based handover
- SMS over NAS
- UE assisted and UE-based positioning
- Network assisted positioning
- UE Configuration Update for transparent UE policy delivery



**Note** AMF only supports SM messages.

# How it Works

This section describes how this feature works.

## Call Flows

This section describes the key call flows for this feature.

### N1N2 Message Transfer Request Call Flow

This section describes the N1N2 Message Transfer Request call flow.

*Figure 1: N1N2 Message Transfer Request Call Flow*

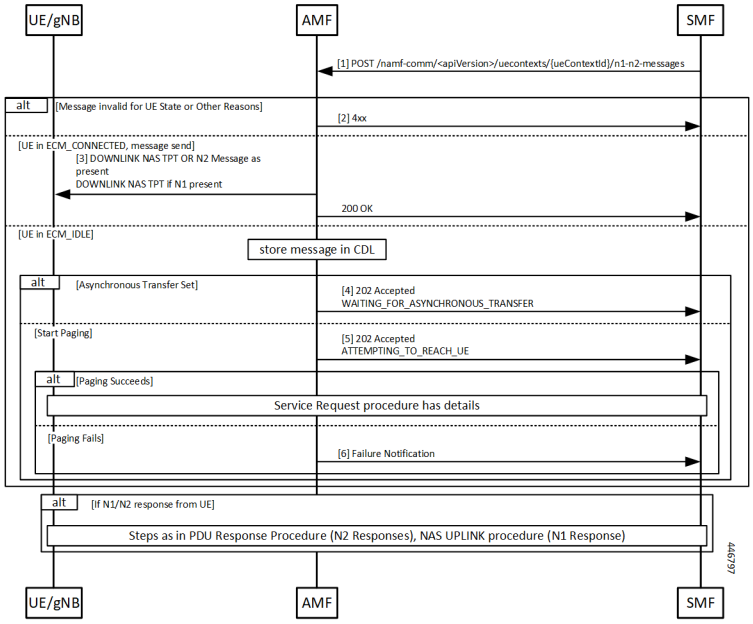



*Table 3: N1N2 Message Transfer Call Flow Description*

| Step | Description |
|---|---|
| 1 | The peer node sends an N1N2MessageTransfer Request Call Flow message to the AMF. |
| 2 | AMF checks if the message is acceptable. If there's an exception, the AMF rejects the message with an appropriate cause code. |
| 3 | If the UE is in ECM_CONNECTED state, AMF forwards the message to the UE or gNB. The N2 message received from the peer node determines the N2 message type. If there's a N1 message, it's sent as a payload to the N2 message. AMF then responds with a 200 OK to the peer node. |
| 4 | If the UE is in ECM_IDLE state and the Asynchronous Transfer flag is set, AMF stores the message in a known location in CDL. AMF adds the location header to the response and a 202 response is sent with WAITING_FOR_ASYNCHRONOUS_TRANSFER as a diagnostic. The saved message is sent to the UE as the UE transitions to ECM_CONNECTED. The AMF doesn't page the UE in this case. |
| 5 | If the UE is in ECM_IDLE state and the SkipInd flag is set in the received N1N2TransferReq message, AMF skips sending the N1 message to UE. AMF sends a 200 OK response with N1_MSG_NOT_TRANSFERRED as a diagnostic. The message isn't sent to the UE as the UE transitions to ECM_CONNECTED and paging isn't done in this scenario. |
| 6 | If the UE is in ECM_IDLE and the Asynchronous Transfer flag isn't set, AMF stores the message in a known location. AMF adds the location header to the response and a 202 response is sent with ATTEMPTING_TO_REACH_UE as a diagnostic. The saved message is sent to the UE as the UE transitions to ECM_CONNECTED.<br>If paging fails, AMF sends a Failure Notification to the peer node. |