# Secondary Node Addition

Secondary Node Addition is define how to add SN to existing MN(LTE Cell). Signalling flow is illustrated below. The procedure is initialized by the MN. This procedure is also used to configure an SN terminated MCG bearer.



## SgNB Addition Request:

MN provides following informations to SN:

* + E-RAB Characteristics (E-RAB Parameters, TNL adress information)
  + The requested SCG configuration information with entire UE capabilities and UE capabilities coordination result.
  + The latest measurement result for SN to choose and configure the SCG cell(s).
  + Security informations to SRB
  + In case of bearer option that requires X2-U between MN and SN
* X2-U TNS Adress information
  + In case of SN terminated split bearers
    - The maximum supportable QoS level.

The SN may reject the request.

## SgNB Addition Request Acknowledge:

If SN decided to accept the request, it response *SgBN Additional Request Acknowledge*:

* + Allocate the necessary radio resources transport newwork resources
  + The SN decides the PSCell and other SCG SCells and provides the new SCG radio resource configuration to the MN in a *NR RRC configuration* message contained in the *SgNB Addition Request Acknowledge* message.
  + For SN terminated bearers, the bearers, X2-U DL TNL adress information for the respective E-RAB and security algorithm.
  + In case of bearer options that requires X2-U between MN and SN
    - Provides X2-U TNS adress informations for MN terminated bearers.
  + In case of SCG radio resources being requested
    - Provide SCG radio resources configuration.

## RRC Connection Reconfiguration:

If SN accept the SN addition request and provides all the necessary information to MN, the MN generate and send *RRC Connection Reconfiguation* message to UE including the *NR RRC configuration* message, without modifying it.

## RRC Connection Reconfiguration Complete:

After UE received RRCConnectionReconfiguration, it checks if all the configurations in the message is doable in UE side, it sends *RRCConnectionReconfigurationComplete* message including the *NR RRC response* message. This message includes NR RRC Response as well.

## SgNB Reconfiguration Complete:

Once MN received *RRCConnectionReconfigurationComplete* from UE, the MN informs SN that UE has completed the reconfiguration procedure including the encoded NR RRC response message, if received from the UE.

## Random Access Procedure:

If configured with bearers requiring SCG radio resources, the UE performs synchronisation towards the PSCell of the SN. The order the UE sends the *RRCConnectionReconfigurationComplete* message and performs the Random Access procedure towards the SCG is not defined. The successful RA procedure towards the SCG is not required for a successful completion of the RRC Connection Reconfiguration procedure.

## SN Status Transfer:

In case of SN terminated bearers using RLC AM, the MN sends SN Status Transfer.

## Data Forwarding:

In case of SN terminated bearers using RLC AM, and dependent on the bearer characteristics of the respective E-RAB, the MN may take actions to minimise service interruption due to activation of EN-DC (Data forwarding).

## 9-12 E-RAB Modification:

For SN terminated bearers, the update of the UP path towards the EPC is performed.