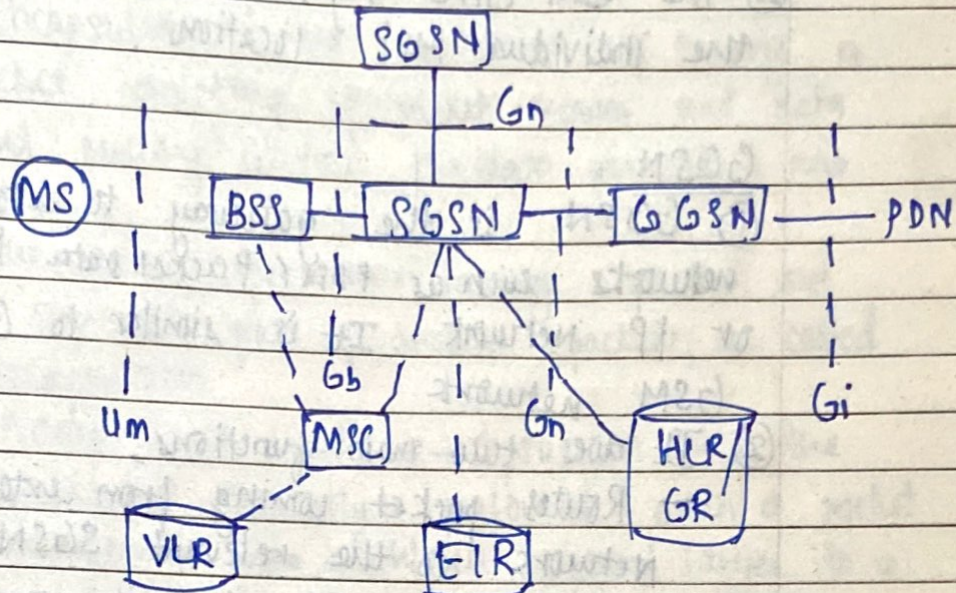Rebecca Dias
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Q2] A] GPRS Architecture

SGSN

① The other new element in the serving GPRS support node is (SGSN) which supports the MS via the Gb interface

② The SGSN, for example requests user address from the GPRS register (GR), keeps track of the individual MS's location, is responsible for collecting billing information eg: counting bytes

③ performs several security functions such as access control

④ Performs data compression which helps to minimize the size of transmitted data units.

⑤ The SGSN is connected to a BSC via frame relay and is basically on the same hierarchy level as an MSC.

⑥ Maintains the statistics of traffic collection.

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GR

① The GR, which is typically a part of the HLR, stores all GPRS-relevant data.

② The GR, GPRS register (GR) keeps track of the individual MS's locations.

GGSN

① GGSN is the gateway to external networks such as PDN (Packet Data Network) or IP Network. It is similar to GMSC of GSM network

② It does two main functions.

– Routes packet coming from external IP Network to the relevant SGSN within the GPRS Network. Here it converts incoming packet to the GSM format and sends the processed packet to SGSN

– Routes packets originated from GPRS user to the respective external IP Network. Here, it performs the conversion of the GRPS packet to the appropriate format of the packet data protocol (PDP) depending upon the destination network.

③ The GGSN is connected to external networks (eg: IP or X.25) via the Gi interface and transfers packets to the SGSN via an IP based GPRS backbone network (Gn interface).