Assignment 2

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Assignment 2: SDAP Services and Functions

Objective: Analyse the services provided by and expected from the SDAP layer. **Tasks**:

1. List and explain the services SDAP provides to upper layers.
   Ans: Services that the SDAP provides to the Upper layers in a 5G network are:

i. **QoS flow Management:**
   ->SDAP ensures that each type of data (QoS flow) gets the treatment it needs based on its performance requirements.
   -> It manages QoS flows by assigning them to appropriate Data Radio Bearers (DRBs) to meet their specific needs.

ii. **Mapping Qis Flow to DRBs:-**
   -> SDAP maps QoS flows to dedicated radio bearers (DRBs), enabling the gNB to prioritize and manage data transmission based on QoS requirements.

iii. **QoS Flow Identifier Handling:**
   -> It processes and maintains the unique identifiers for each QoS flow.
   ->This helps in correctly managing data packets according to their QoS requirements.

   These services enable reliable, efficient, and secure communication between the upper layer and the network, allowing applications to function properly.

2. Describe the services SDAP expects from lower layers.
   Ans: SDAP excepts from lower layers are:-

- **Deliver Data Correctly:** Lower layers should make sure the data SDAP sends is delivered accurately.
- **Fix Errors:** If there are any mistakes or lost data, lower layers should fix them and resend if needed.
- **Control Data Flow:** Lower layers should manage how much data is sent at a time to keep things running smoothly and avoid congestion.

   *By expecting these services from lower layers, SDAP can focus on providing its own services to the upper layer, enabling efficient and reliable communication.

3. Outline the main functions of the SDAP layer.
   Ans: Outline the main function of the SDAP layer:

- **Assign Data to Channels:** SDAP decides which channel (DRB) each type of data should use.
- **Manage Identifiers:** SDAP keeps track of unique tags for each type of data to handle them correctly.
- **Ensure Quality:** SDAP makes sure data meets its performance requirements from start to finish.
- **Coordinate with Other Layers:** SDAP works with both upper and lower network layers to manage data effectively.

   *SDAP's main function is to "prepare and package" data for transmission over the network, making sure it's delivered correctly and efficiently.