Real-Time Flow

Lesson Objectives

By the end of this lesson you will be able to:

- Explain online processes
- List the components in the online processes
- Describe basic prepaid flows
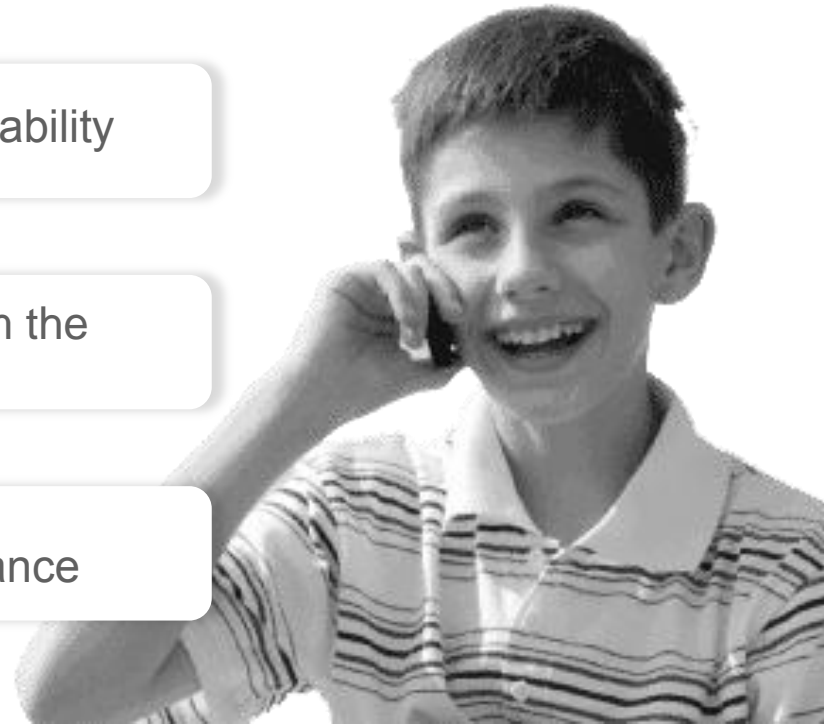
Common Real-Time/Online Billing Flow

- Request is received

- System calculates the cost of the activity

- System checks subscriber's accountability

- System gives authorization to perform the activity

- System updates the subscriber's balance

Comverse ONE Functional Architecture

Open Framework

Operations

Active Cust

- Real-Time Authorization
- Rating
- Balance Management
- Real-Time Promotions
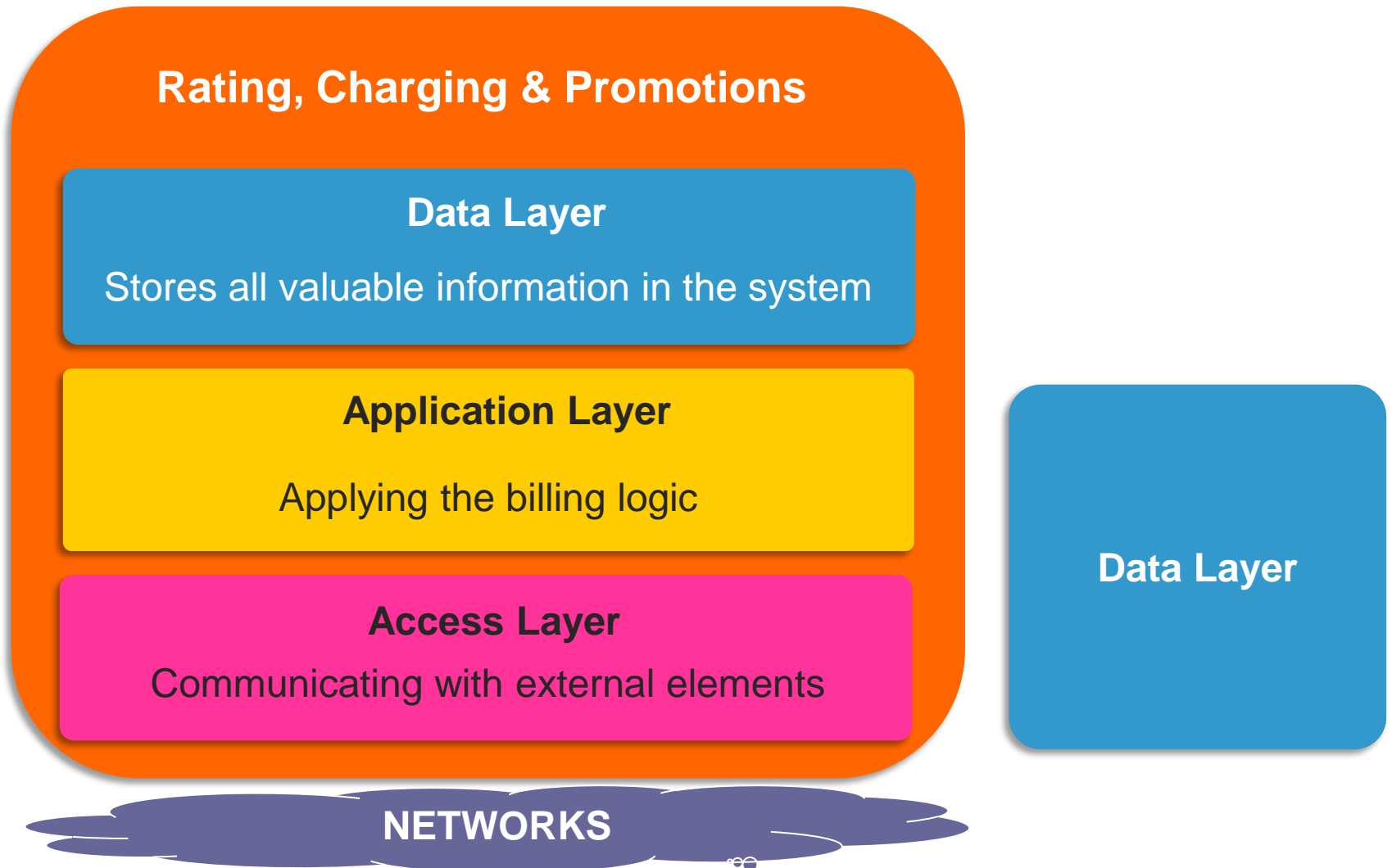- Notifications

Rating, Charging and Promotions

Single Data Model

Billing & Financials

Product Catalog

Mediation & Settlements

Real-Time (Online) Rating

Rating, Charging & Promotions

Data Layer

Stores all valuable information in the system

Application Layer

Applying the billing logic

Access Layer

Communicating with external elements

Data Layer

NETWORKS

Rating, Charging & Promotions

Data Layer

Application Layer

Access Layer

Acts as the gateway

NETWORK

Telephony (Switches, SGSN)

IMS (SMS, MMS, Internet)

Internet Third Parties

Access

SGU   **Translates signaling protocols**

MSC

Telephony
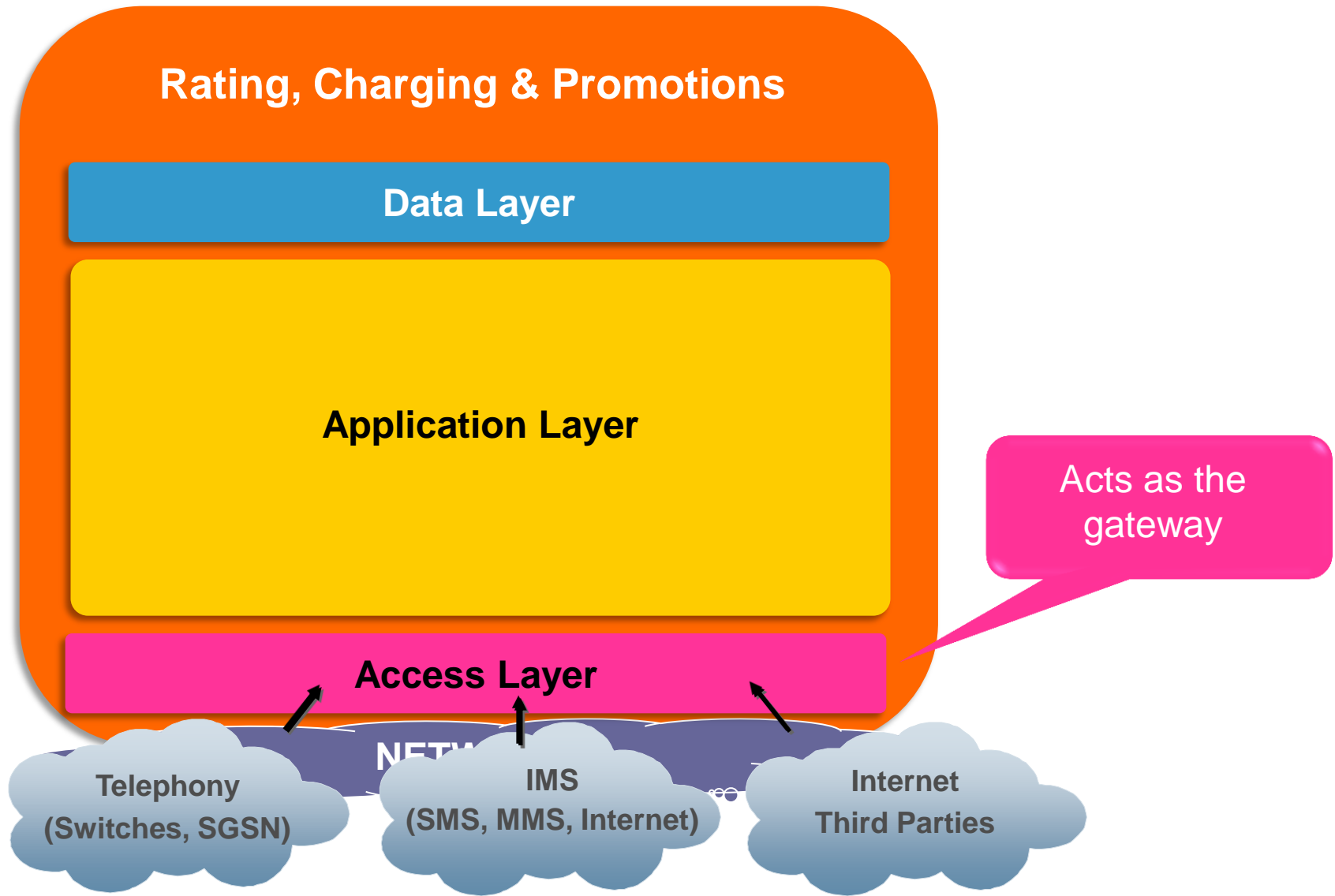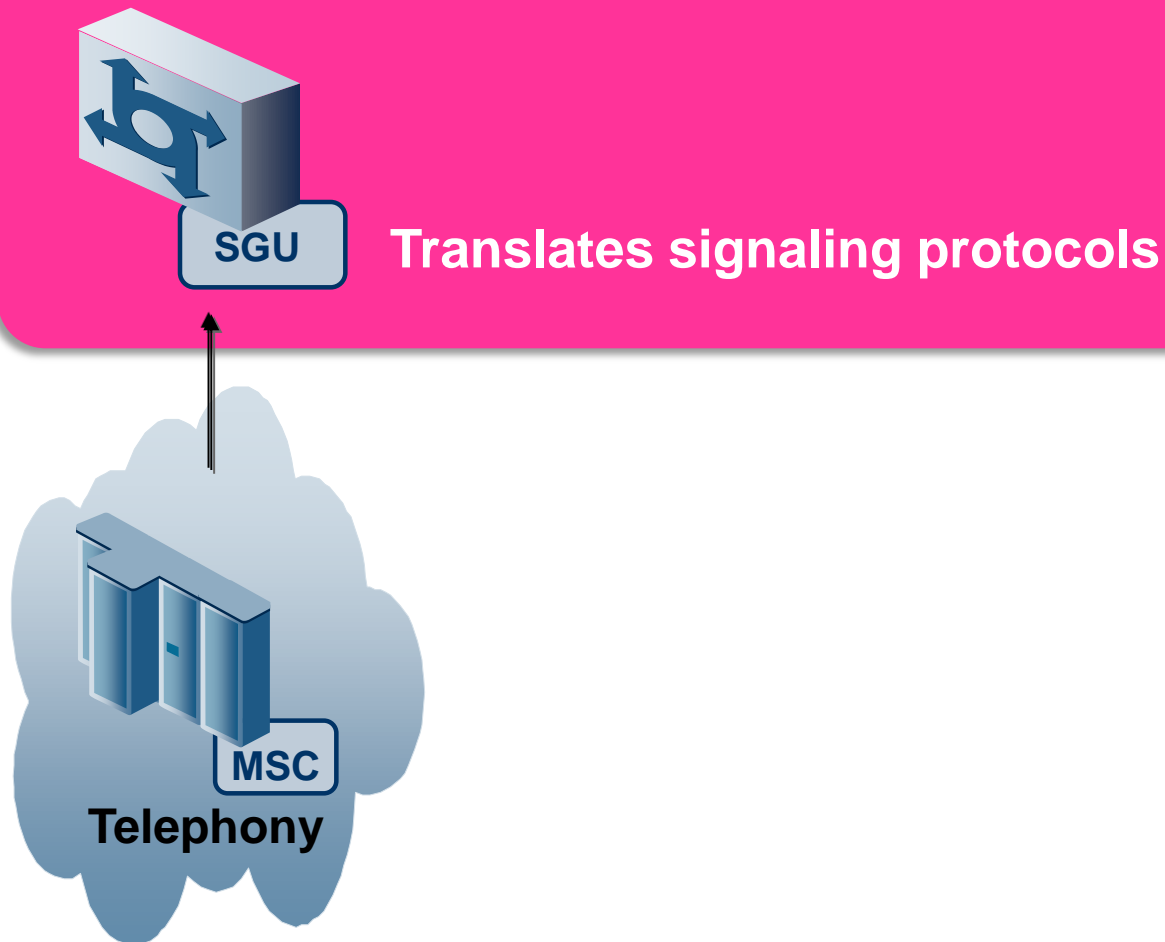
The Access Layer – the Diameter Path

Access

SGU

DGU

Peer connection to the Application Layer

MSC

Telephony

MMSC

IMS
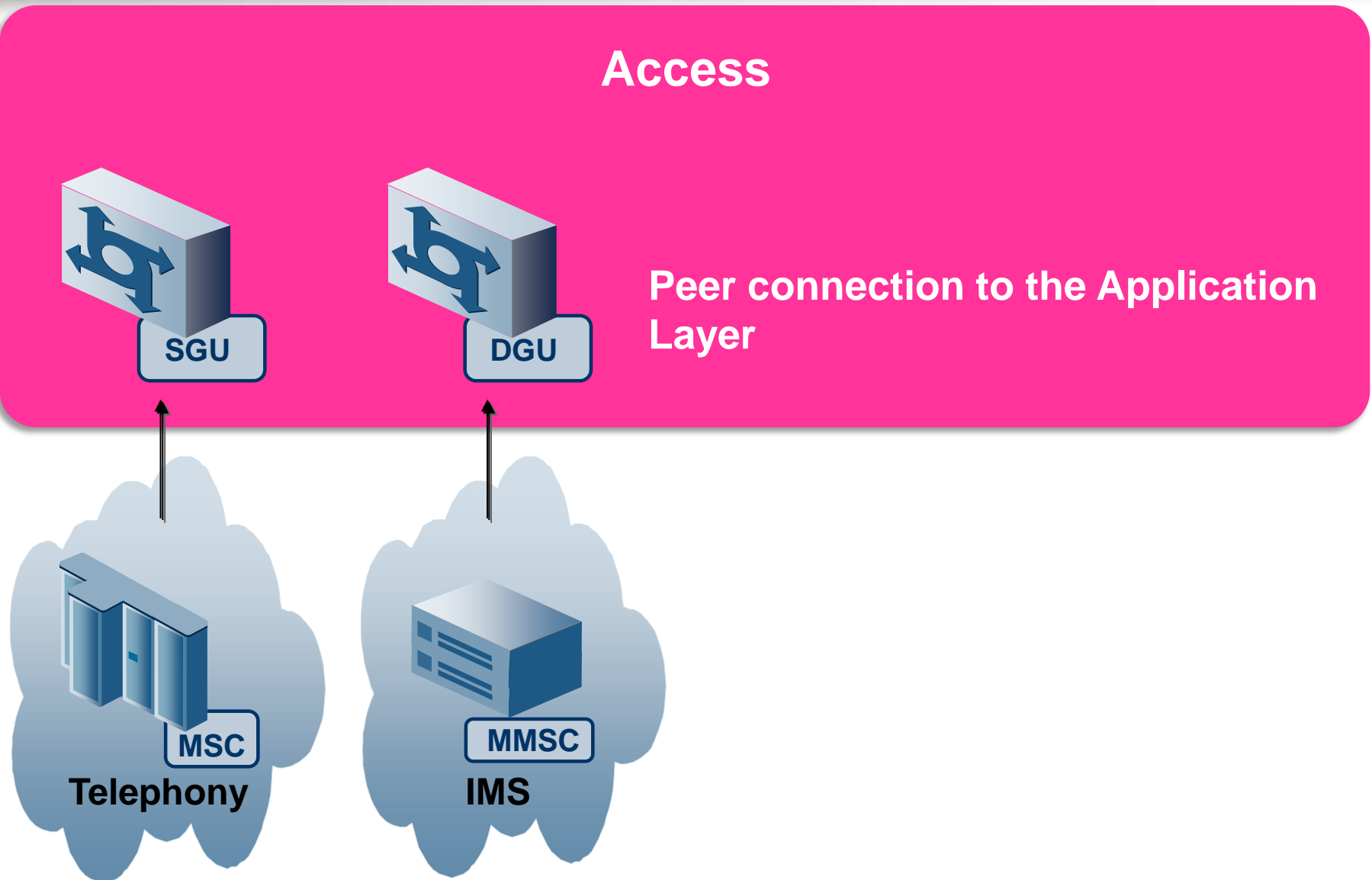
The Access Layer – the OSA/Parlay Path

Access

SGU

DGU

LBA

Load-sharing mechanism

MSC

Telephony

MMSC

IMS

WWW

Third Parties
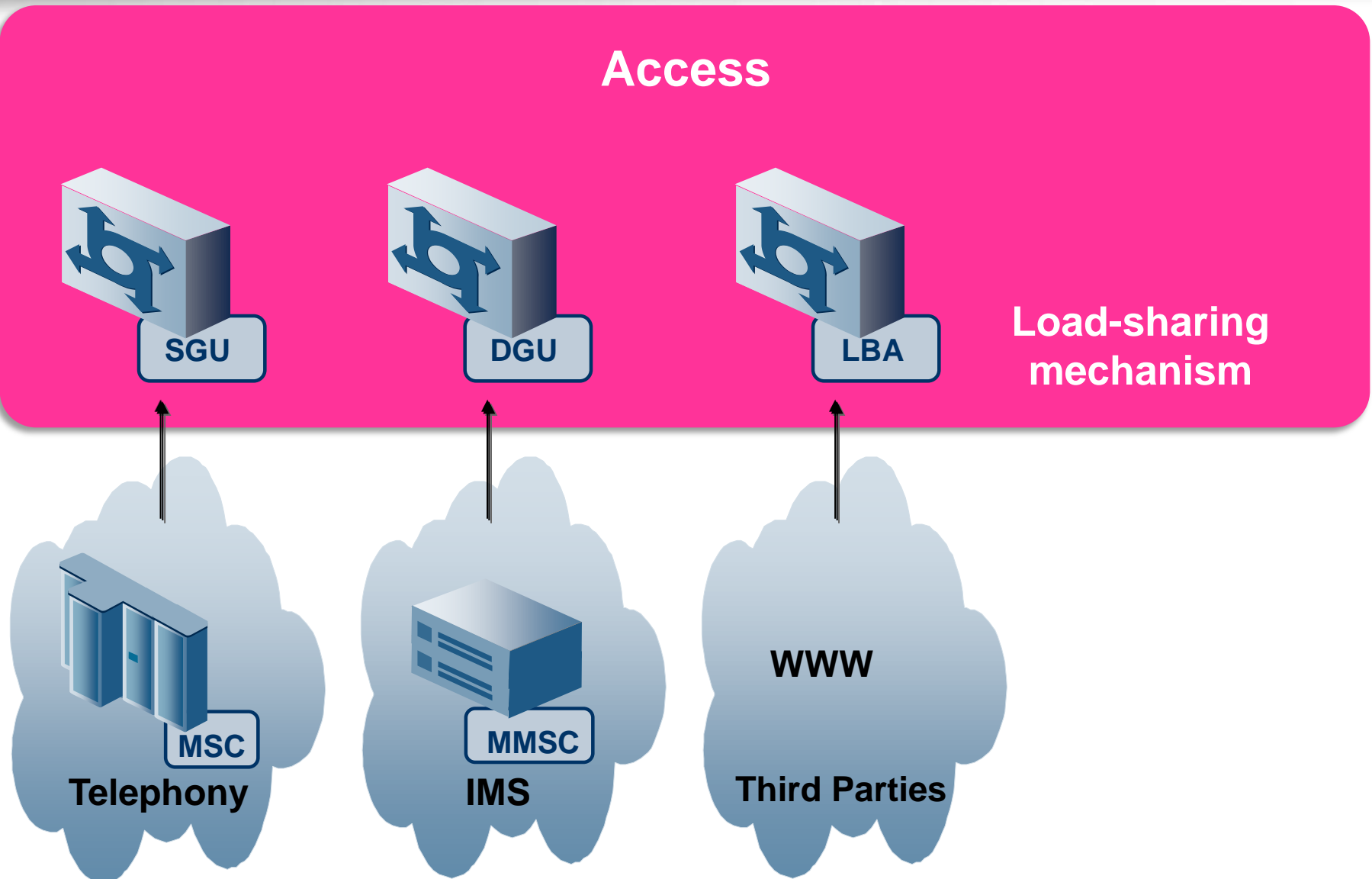
The Event-Charging Interface (ECI)

Access

SGU

DGU

LBA

LBA

MSC
Telephony

MMSC
IMS

WWW
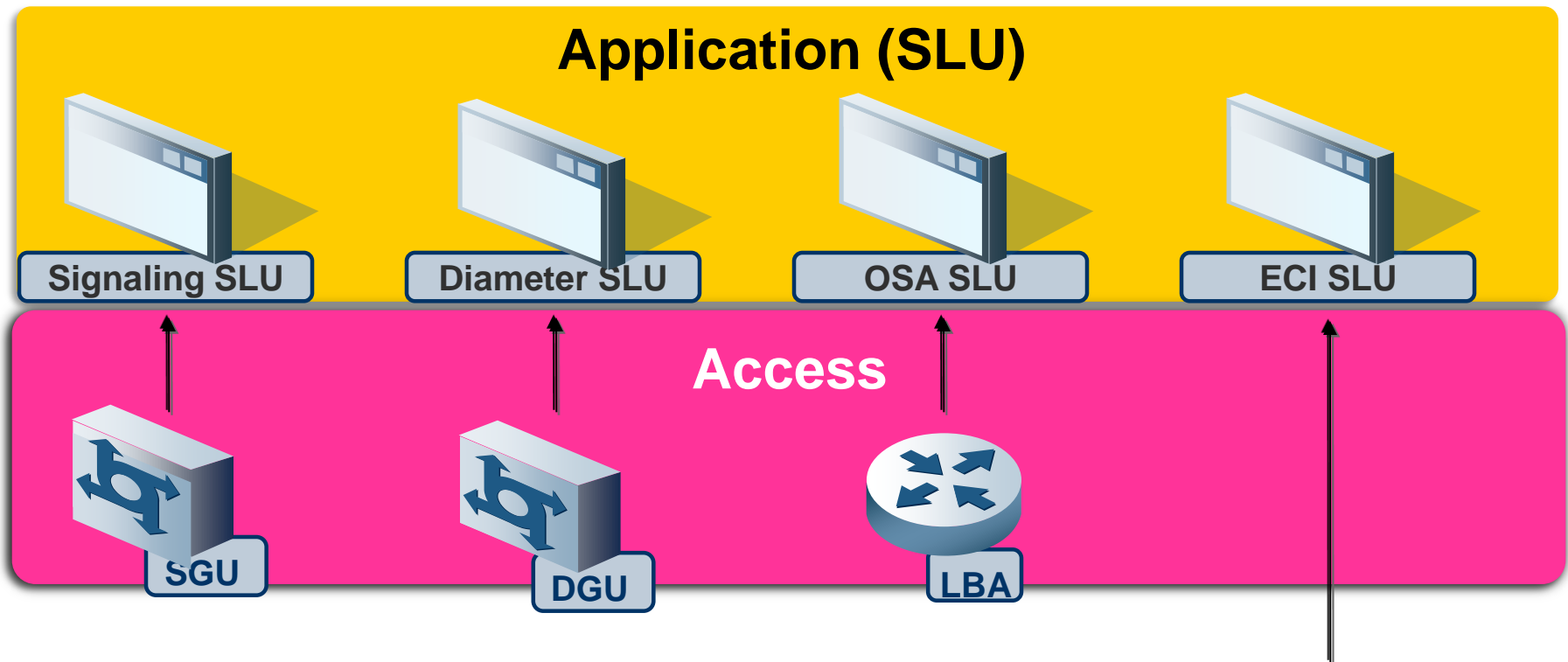**Third Parties**

MMSC

SMSC
External Services
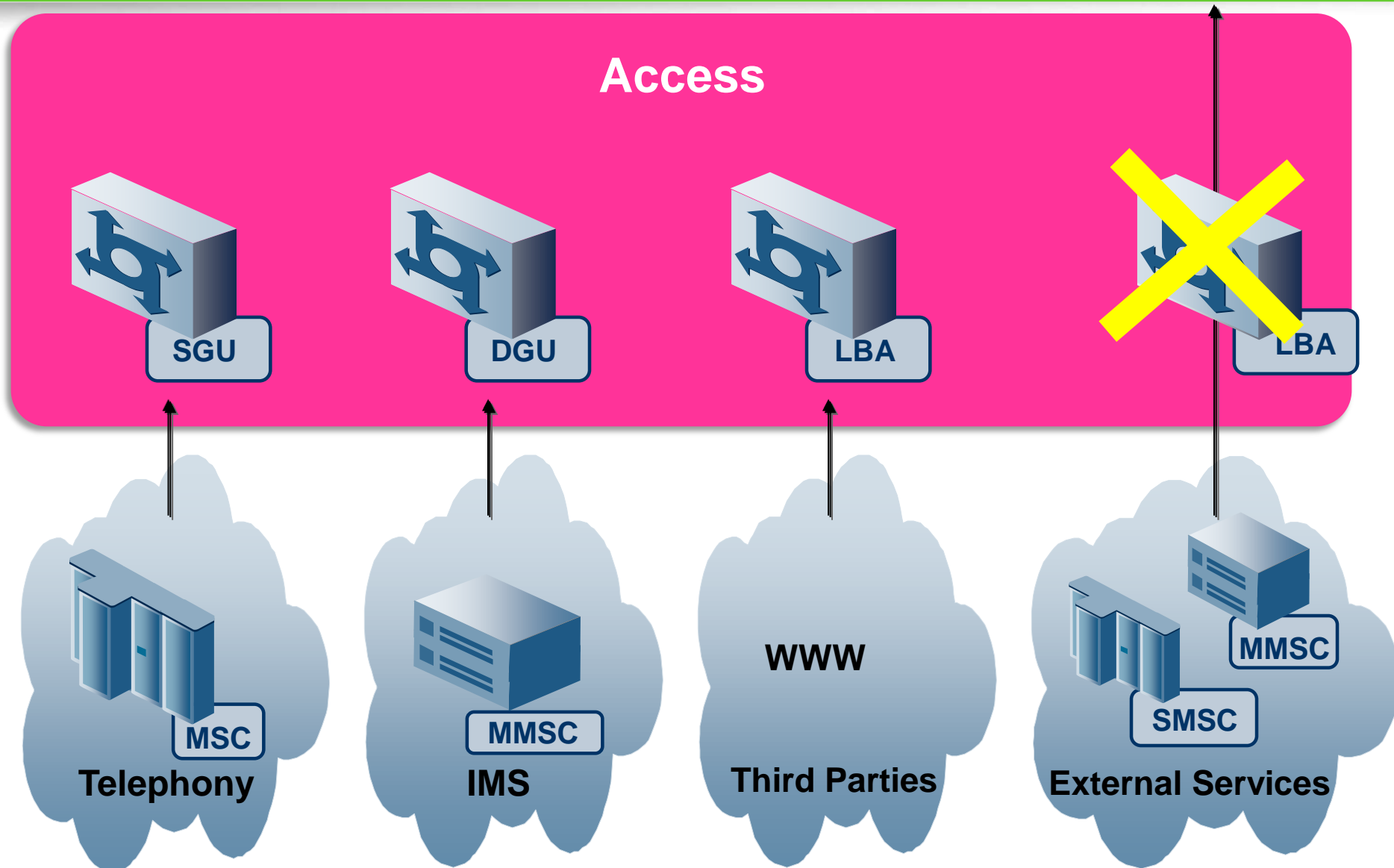
Review Questions

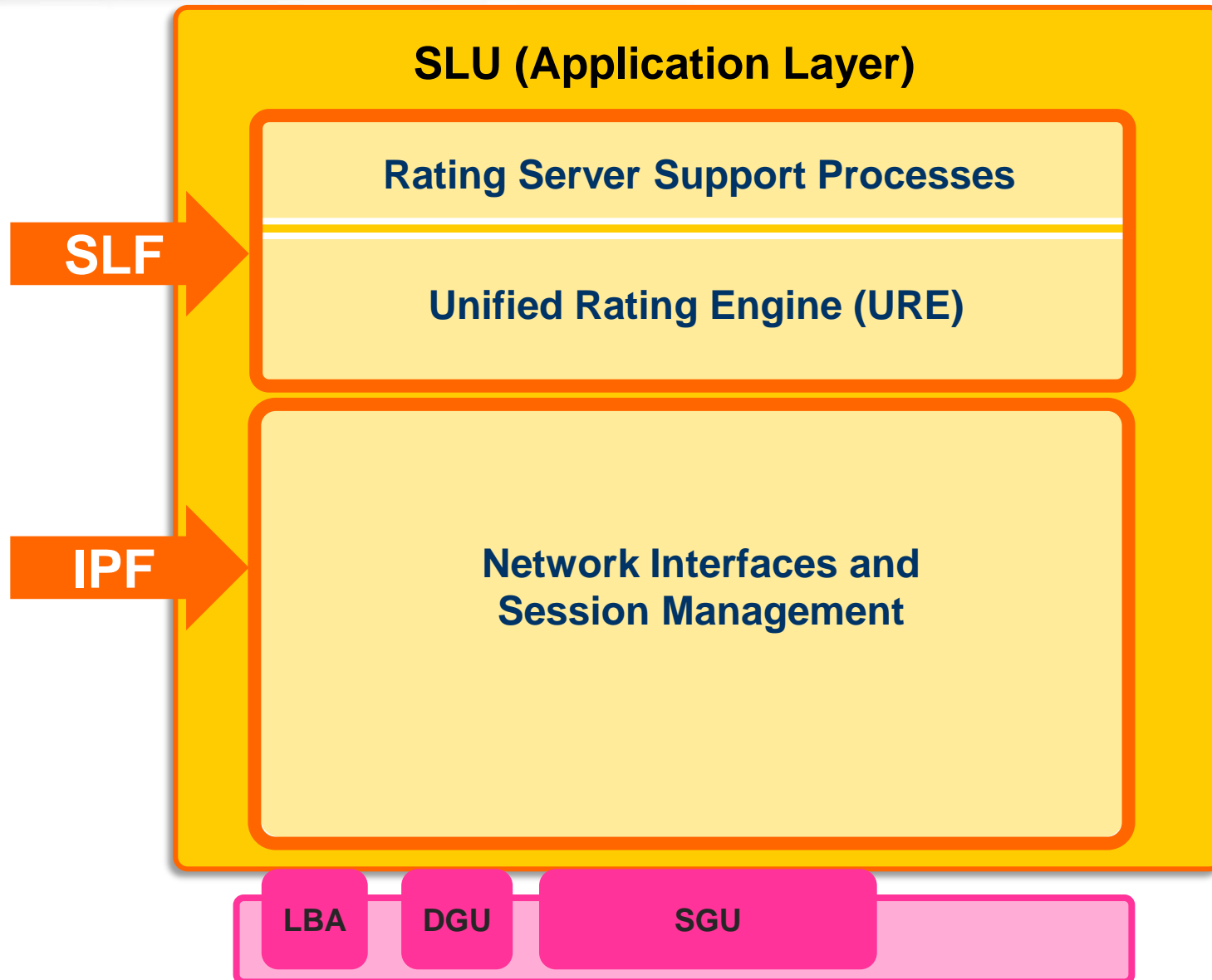1. Which of the following access layer components is in charge of establishing voice calls and translating signaling protocols?
   a. SGU
   b. DGU
   c. LBA
   d. ECI

2. Which of the services allows an external system to validate and debit the accounts of subscribers
   a. SGU
   b. DGU
   c. OSA/Parlay
   d. ECI

3. Which of the following access layer components is in charge of supporting the Diameter protocol that is used to rate a variety of value-added IMS services.
   a. SGU
   b. DGU
   c. OSA/Parlay
   d. ECI

The Application Layer

- Implements the actual charging logic

- Unique billing logic for dedicated SLUs

Application (SLU)

| Signaling SLU | Diameter SLU | OSA SLU | ECI SLU |

Access

SGU   DGU   LBA

Service Logic Unit (SLU)

SLU (Application Layer)

Rating Server Support Processes

Unified Rating Engine (URE)

SLF

IPF

**Network Interfaces and
Session Management**

LBA **DGU** **SGU**

Signaling SLU

Signaling SLU

SLU (Application Layer)

Rating Server Support Processes

Unified Rating Engine (URE)

Call Processor

SMS

GPRS

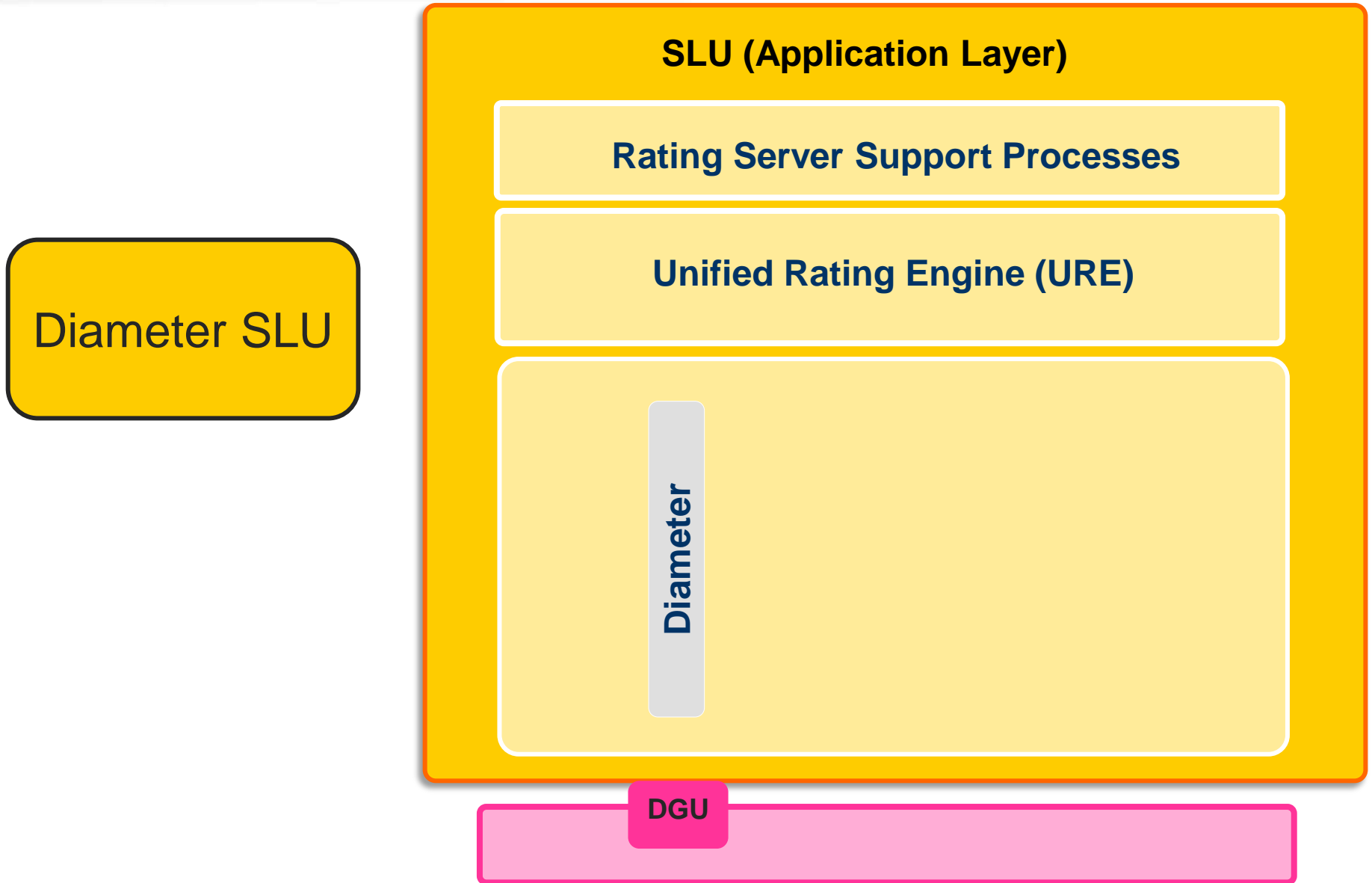USSD

SGU

Diameter SLU

Diameter SLU

SLU (Application Layer)
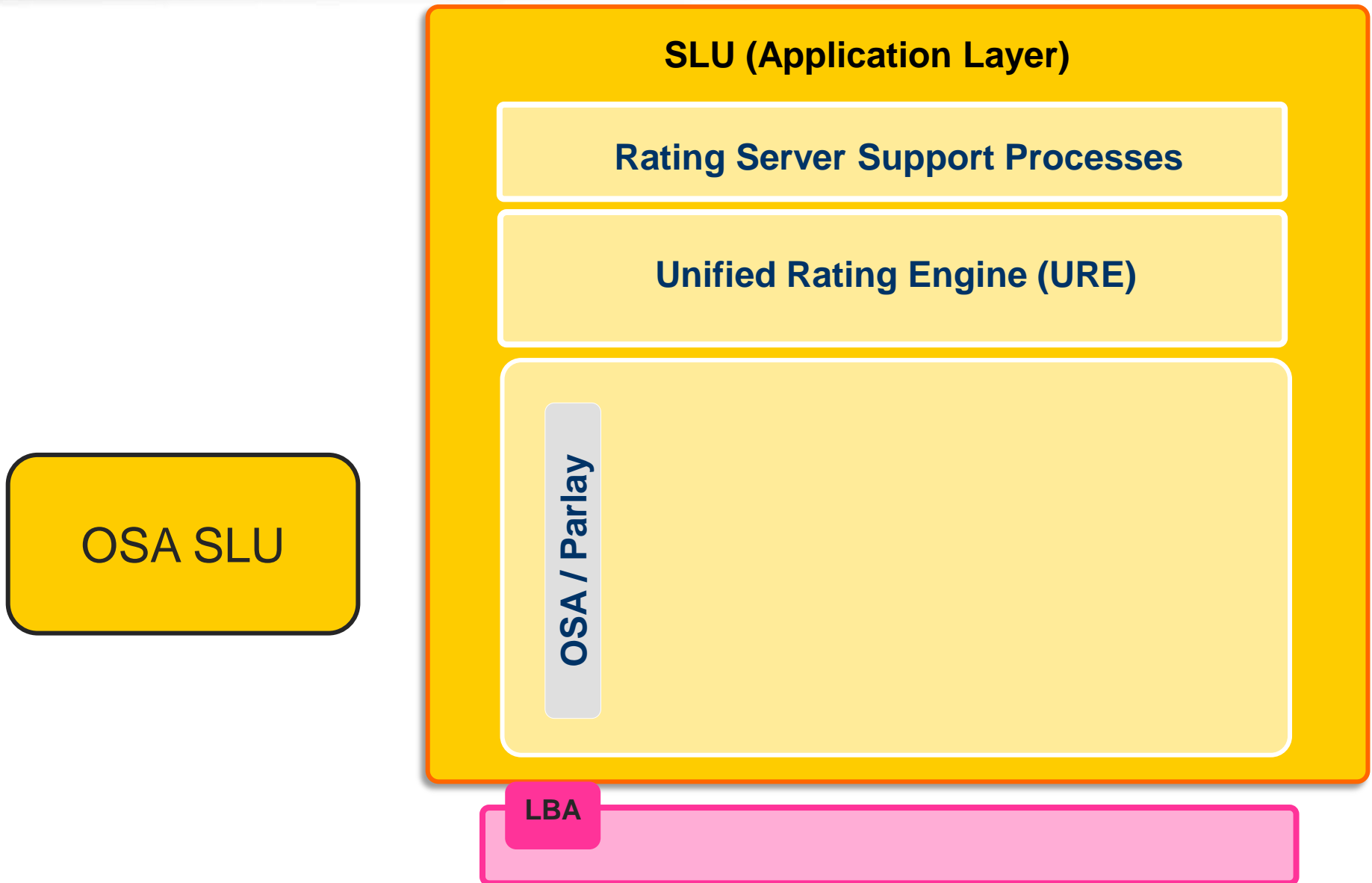
Rating Server Support Processes
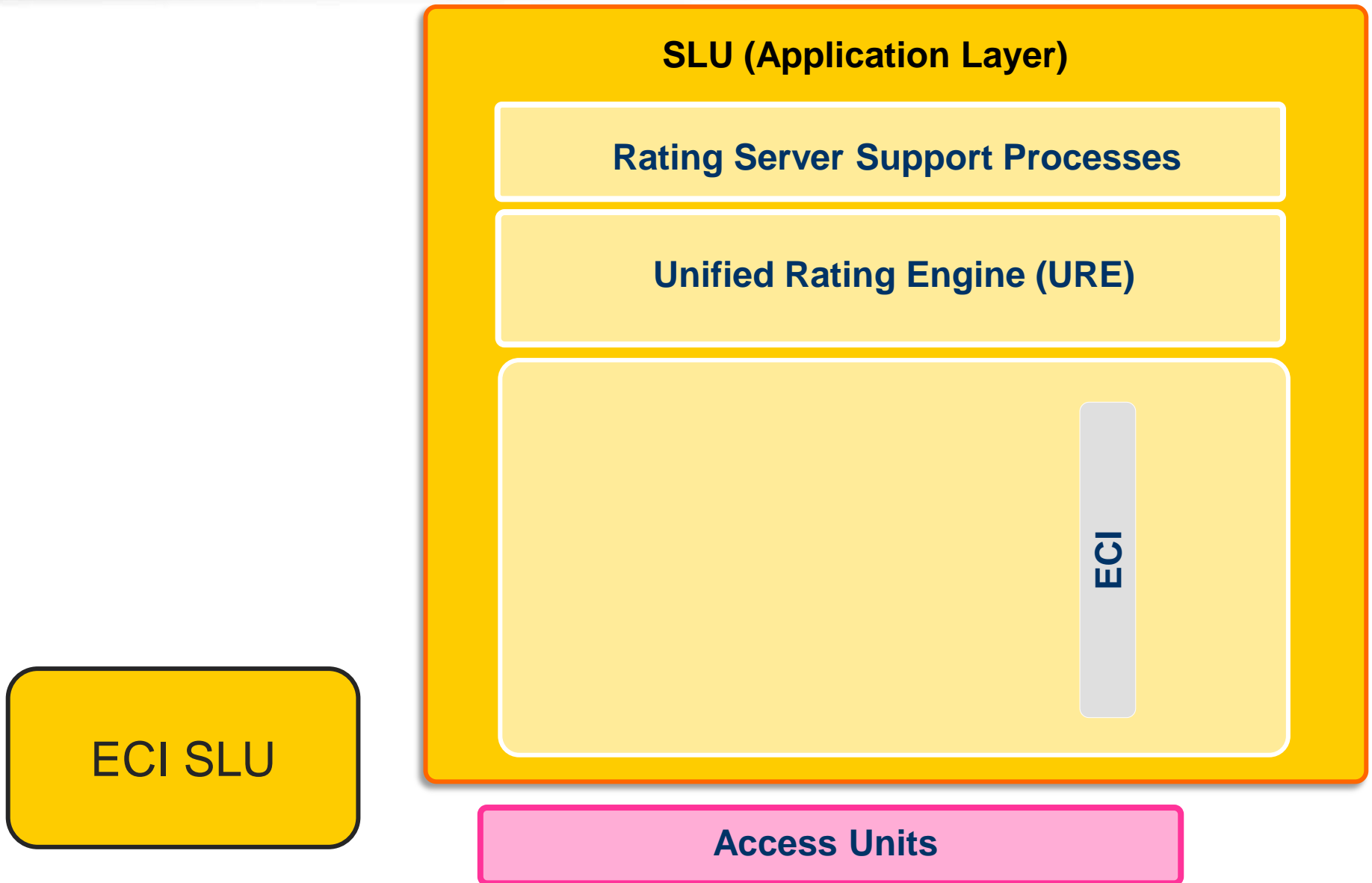
Unified Rating Engine (URE)

Diameter

DGU

OSA SLU

OSA SLU

SLU (Application Layer)

Rating Server Support Processes

Unified Rating Engine (URE)

OSA / Parlay

LBA

ECI SLU

SLU (Application Layer)

Rating Server Support Processes

Unified Rating Engine (URE)

ECI

ECI SLU

Access Units

Where We Are

SLU (Application Layer)

Rating Server Support Processes

Unified Rating Engine (URE)

SLF

Network Interfaces and Session Management

IPF

Access Units

Unified Rating Engine (URE)

Application (SLU)

Rating Server Support Processes

URE

| Guiding | Pricing | Charging | Balance Mgmt |

Data Access

Rates usage events activities

Network Interfaces and Session Management

Access Units

Rating Server Support Processes

Application (SLU)

| Recharge | TSP | Notification Agent | Life Cycle Mgmt | Info Server |

Additional business logic

Unified Rating Engine (URE)

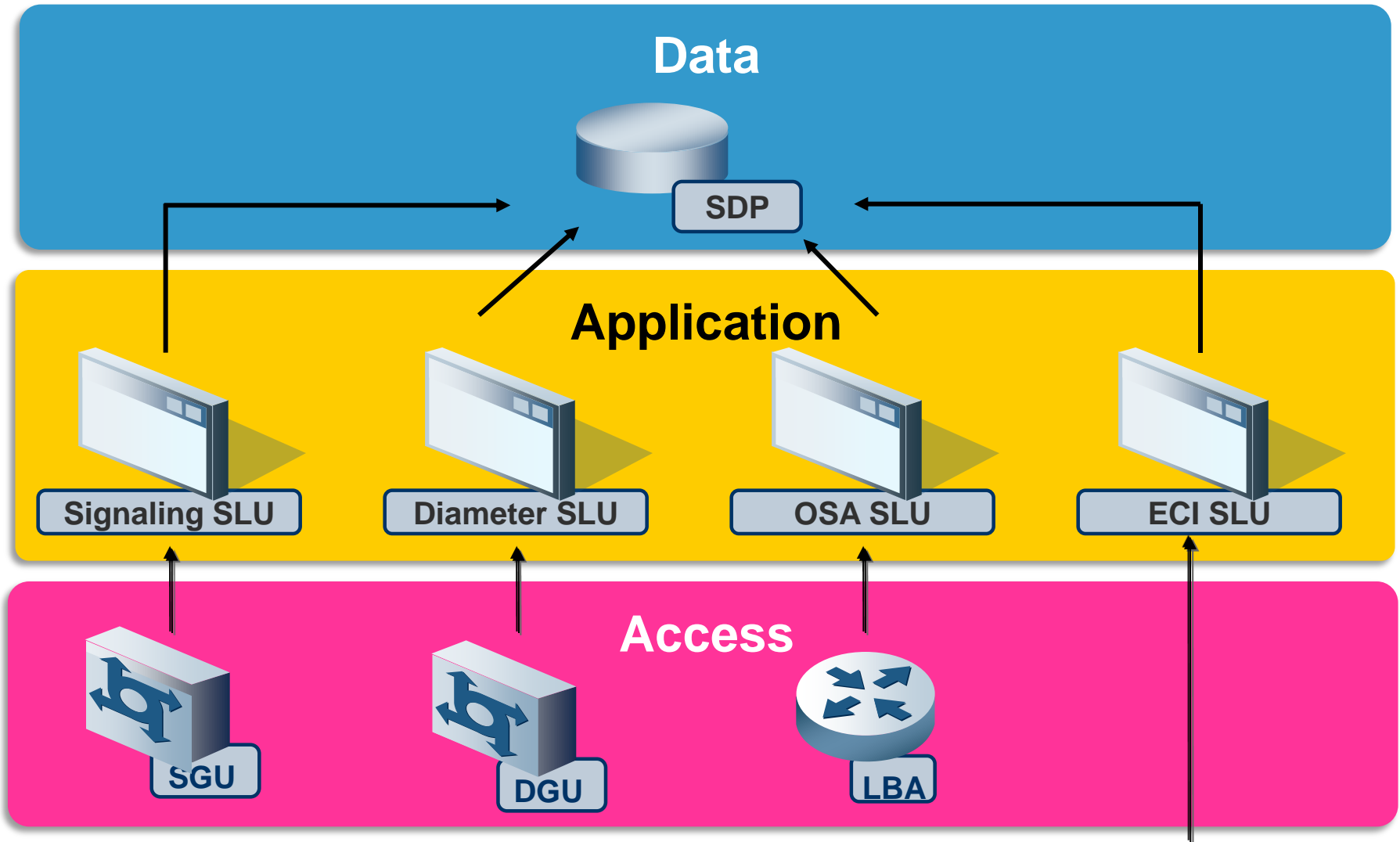**Network Interfaces and Session Management**

Access Units

Review Questions

1. Which of the following statements is NOT true regarding the SLU?
   a. The SLU is the brain of the system, implementing the actual rating and charging logic.
   b. The SLU identifies the user, the activity, and the payment type
   c. The same SLU is used for all protocol types.
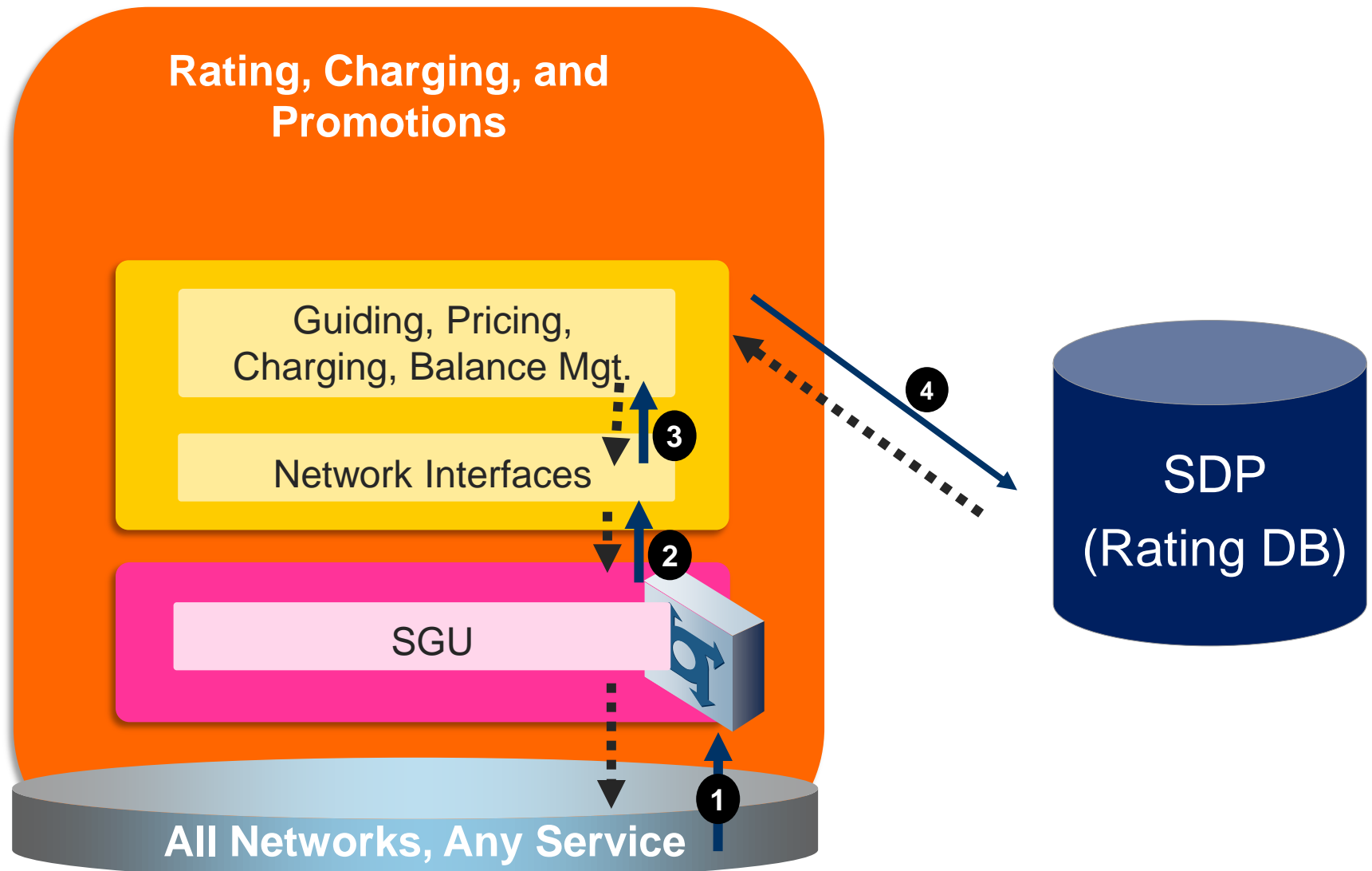   d. The SLU queries and updates the Rating database

2. What is name of the SLU part that connects and communicates with the Access layer units such as the SGU and DGU?
   a. Service Logic Function (SLF)
   b. Intelligent Periphery Function (IPF)
   c. Unified Rating Engine (URE)
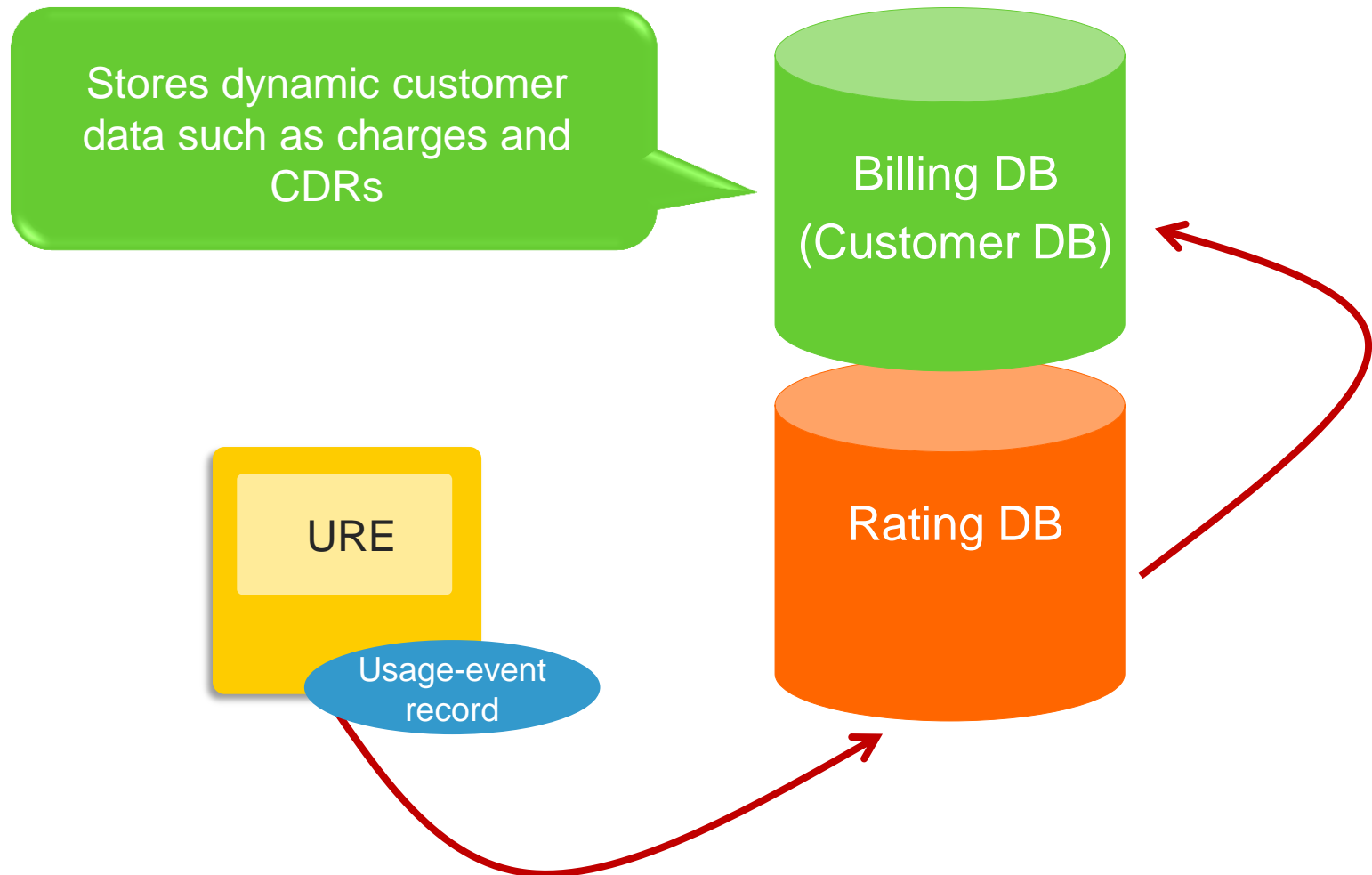   d. Rating Server Support Processes

The Data Layer

Stores all information that is required for rating operations

Basic Real-Time Prepaid Flow

Rating DB and Billing DB

Stores dynamic customer data such as charges and CDRs

Billing DB (Customer DB)

Rating DB

URE

Usage-event record

Summary

This lesson has covered:

- Online process components:
    - Access Layer
    - Application Layer
    - Data Layer
- Basic online prepaid flow