A new world of service offerings with 4G LTE data access

For operators, Long Term Evolution (LTE) is critical to delivering lower cost per bit, high-performance connectivity, and the subscriber experience needed to address the challenges of mobile broadband, such as growth in devices, data-intensive services, and the introduction of new machine to machine (M2M) applications.

LTE service providers need dynamic standards-based network and policy control capabilities that can be easily deployed in the evolved packet core to manage subscriber and device access to the LTE network and enable new dynamic services.

AMDOCS LTE DATA ACCESS MARKET OFFER

As LTE networks are deployed, smartphones and tablets will be equipped with 3G and 4G access capabilities. The policy and charging model, therefore, takes into account the different access types and guaranteed bit-rate bearer services for policy control, metering, and charging. The key differentiation of LTE access compared to UMTS is the role of Amdocs Home Subscriber Server (HSS) within the Data Experience Solution. The HSS is a mandatory component in an LTE network that provides authentication and authorization of the default bearer and access point names. Policy control is also required to support differentiated and guaranteed QoS control.

The Amdocs Data Experience Solution — which pre-integrates real-time policy control with online charging — includes a pre-integrated LTE Data Access market offer that fast tracks the process of supporting services in the LTE network. This market offer features an onboard HSS and an integrated policy and charging engine to support management of high bandwidth LTE services. It also provides support for best-effort and guaranteed QoS for specific application traffic such as voice, and enables differentiated charging. This market offer features support for standard 3GPP interfaces between the HSS and PCRF functions and the evolved packet core, enabling ease of deployment.

OPERATOR BENEFITS

- Supports LTE data services out of the box
- Multimodal device support and shared wallet with 4G tablet and 3G smartphone
- Always on and increased Quality of Service experience with integrated policy control
- Supports higher quality content on 4G devices and enables the monetization of large screen and high-definition content bundles
- Features extensive proven multivendor interoperability for ease of insertion into evolved packet core

KEY FEATURES

- De-risk deployment — Features proven technologies deployed in production LTE networks today
- Standard-based EPC solution — including Subscriber authentication, authorization, policy and charging control
- 3GPP R8/R9 standards support
- Enables IMS integration with standards-based Rx interface
FUNCTIONAL COMPONENTS

The LTE Data Access market offer leverages the following functional components of the Data Experience Solution as shown in Figure 1.

**Product catalog**
The Product Catalog enables a common service definition for applications and services in the LTE network. Using the product catalog’s graphical user interface (GUI), product managers can create new service offerings by defining parameters in the market offer’s template.

**Integrated policy and charging engine**
The integrated policy and charging engine performs both the policy control and charging capabilities in the Data Experience Solution. It meters data usage for each defined service offering in real-time through standards-based integration with the policy and charging enforcement functions in the mobile packet core network. It can meter usage based on volume or time, or a combination of both — which leads to innovative service offerings.

**HSS**
The Home Subscriber Server (HSS) is the master repository for subscriber profiles, device profiles and state information as part of the Data Experience Solution. The HSS manages subscriber identities, service profiles, authentication, authorization and Quality of Service (QoS) for LTE and IP Multimedia Subsystem (IMS) networks.

**Intelligent routing function**
The intelligent routing function provides a single Diameter interface to the 4G packet core network. When the Data Experience Solution sends a real-time policy or charging control to the network, this component acts as the common Diameter interface to all devices in the network and provides routing and load balancing capabilities.
CONFIGURATION OPTIONS

Using the LTE Data Access market offer, operators can offer data access and services for 4G LTE, including subscriber authentication, access, policy and charging control.

The LTE Data Access market offer includes a number of configuration options that allow you to rapidly customize the design of service offerings:

- Rate plan definition ($/MB)
- QoS definitions for access and services
- Voice over LTE — support for real-time applications

HOW IT WORKS — VOICE OVER LTE

1. Subscriber turns on the LTE smart phone
2. Subscriber’s USIM and service entitlement is verified by the DES HSS; HSS returns authentication vectors and APN information to the MME
3. Best effort data bearer policy is sent to the Packet Gateway
4. Subscriber launches the VoLTE application; the application interacts with VoLTE server
5. VoLTE application requests guaranteed QoS bearer from the PCRF
6. Integrated policy and charging engine sends PCC rule with appropriate Quality Class Indicator (QCI)
7. Integrated policy and charging engine produces the CDRs for Best Effort and Guaranteed bearer and sends them to the BSS