

Enable New Business Models

Enable New Business Models with the Flexibility of vRAN and vEPC

Distributed networks enable new business models

While RAN virtualization is leading to centralized approaches in the radio network, virtualization in the mobile core network allows key functions to be distributed out to the edge. Together, [vRAN](#) and [vEPC](#) provide unparalleled flexibility for operators to deploy network intelligence more effectively to not only improve network performance and customer experience but also create new revenue-generating services and applications that were previously not possible with traditional network architectures.

A vital feature of a natively designed vEPC that enables new business models is Control and User Plane Separation (CUPS). As the name suggests, the control and user planes are separated to allow the different functions to scale independently, which gives operators more flexible deployment options and better tools for coping with increasing volume and dynamic variations of network traffic. With CUPS inherently designed into the vEPC, operators have more granular scalability across different functions, which avoids over-provisioning and allows operators to increase capacity in lockstep with demand across consumer mobile broadband services and IoT device connectivity.

The role of disaggregation

The disaggregation in the mobile core is not only a tool for optimizing networks today but also a fundamental principle of [5G network architecture](#). Since the user plane functions can be distributed to the network edge closer to users, the architecture significantly reduces round-trip time so that it's possible to support low-latency services, as envisioned by 5G ultra-reliable, low latency requirements. Initiatives such as ETSI's [Multi-access Edge Computing \(MEC\)](#) have developed a variety of use cases enabled by distributed edge intelligence – including augmented reality, IoT or video caching -- that are creating new business models for mobile operators.

By disaggregating the core network functions, the vEPC also supports another fundamental 5G principle, network slicing. vEPC instances distributed across the network can be subdivided into multiple network slices. Each slice can be dedicated to a specific service, user, or quality of service (QoS) by assigning different parameters to each slice. Network slicing is the foundation for a wealth of new pricing and service models.

vEPC with CUPS also enables mobile operators to serve sectors that have previously been cost prohibitive to serve, such as the enterprise market. The vEPC can scale up or down to support networks of any size as well as a variety of use cases, including private LTE networks, public safety LTE, or dedicated core network for NB-IoT deployments.

With the availability of a new shared spectrum, such as the 3.5GHz Citizens Broadband Radio Service (CBRS) in the U.S., and new technologies that leverage unlicensed spectrum, such as MulteFire, coupled with a small-scale vEPC that can be deployed on premises, any enterprise can operate its LTE network. The vEPC and vBBU combined with indoor small remote radio heads connected over Ethernet cabling, enable [enterprise private LTE networks](#) that are more cost-effective than current Distributed Antenna Systems (DAS). According to Mobile Experts, on-premise CBRS small cell networks allow a 68% [cost reduction](#) compared to DAS networks.

As the private LTE use case shows, vEPC with CUPS offers a more cost-effective way to provide enterprise computing services and allows new players to enter the market. Now, mobile operators have an opportunity to devise new ways to serve enterprise customers.