Mobile subscribers are increasingly consuming e-mail, Internet, mobile video, instant messaging, and other multimedia services through a mobile broadband connection. This requires mobile operators to deploy a robust, scalable packet core network capable of massive amounts of throughput with exceptional reliability and availability.

Starent’s Packet Data Serving Node (PDSN) and Home Agent (HA) are the packet core gateways of choice for many of the world’s 3GPP2 network operators deploying CDMA and HRPD networks.

Supported on our ST40, now the Cisco ASR 5000, the Starent PDSN and HA deliver exceptional throughput, call transaction rates, capacity, and packet processing, along with significant memory resources. These performance capabilities are combined with subscriber and network intelligence, reliability, and high-availability to offer an industry leading solution mobile operators can count on to deliver robust multimedia services. As a result, the Starent PDSN and HA allow mobile operators to focus on building high-margin revenue streams without worrying about the packet core.

Starent Networks is a leading global developer of multimedia core equipment for the world’s most demanding mobile broadband networks. A true mobile broadband core network starts with the system intelligence and high performance of Starent Networks’ ST40, now the Cisco ASR 5000.
The Starent PDSN manages point-to-point protocol (PPP) sessions between the HA and external packet – or IP-based – networks, like the Internet. Once a session is initiated, the Starent PDSN identifies and authenticates the subscriber, then routes their session through the core network to the specified external packet network. The HA is the anchor point for subscriber sessions in order to manage mobility and maintain session continuity as the subscriber moves through the network.

Through simple software upgrades, Starent’s ST40, now the Cisco ASR 5000, supports present and future technologies to ensure investment protection as networks evolve, including support for Long Term Evolution (LTE)/Evolved Packet Core (EPC) and other access requirements such as WiFi, femtocell, etc.

### Ready for 4G/LTE

When deploying a 3G network, it is important to consider the implication on the network’s 4G strategy. In a CDMA network, that includes the ability to support an HRPD Serving Gateway (HSGW) for evolved HRPD (eHRPD) networks. The HSGW ensures converged mobility and management between the HRPD and LTE networks. The Starent HSGW can be co-located with the PDSN. In addition, Starent’s PDSN/HA supports pure HRPD to LTE evolution paths.

### In-line Services

Starent Networks’ platforms were designed to integrate network and service enhancing capabilities called In-line Services, which are deployed within the call flow, as opposed to requiring the call to be off-loaded to service provisioning servers and load balancers. This provides a simplified network topology and OpEX and CapEX benefits.

In-line Services take advantage of the platforms’ powerful processing and abundant memory to ensure more efficient traffic flow end-to-end, and a more secure and satisfying subscriber experience. This provides in-depth session awareness that allows network management on a per-subscriber basis and deployment of content-aware applications. Tasks are performed without introducing latency, session interruption, or other kinds of signal degradation. In-line Services use deep packet inspection and intelligent traffic steering to offer the following:

- Enhanced traffic monitoring, metering, and charging
- Application detection and optimization for peer-to-peer detection and control
- Network-based traffic optimization to achieve QoS based on volume, usage, time-of-day, and traffic type
- Stateful firewall
- Content filtering for parental control, black/white listing
Features

- In-depth session awareness allows management on per-subscriber, per-session basis and deployment of content-aware applications.
- Seamless interaction with RADIUS AAA, billing, and policy servers.
- PDSN and HA can be combined on a single platform to maximize efficiency and flexibility, reduce latency, and simplify network architecture.
- Simple IP, Proxy Mobile IP, Mobile IP, and IPv6 applications can operate independently or simultaneously within a single platform.
- High value In-line Services enhance subscriber revenue generation opportunities and network efficiency.
- Support on high-availability platform ensures subscriber satisfaction and 99.999% service uptime.

### Interfaces
- 10 Gigabit Ethernet
- Fast Ethernet

### Authorization, Authentication, Accounting

- RADIUS custom dictionaries
- Hotlining (Dynamic RADIUS CoA)
- RADIUS IS835C prepaid accounting
- Diameter Credit Control Application (DCCA)

### IP Address Allocation
- AAA assignment
- Local pools (dynamic or static)
- Overlapping private IP address pools

### VPN and Tunneling
- Multiple enterprise-specific contexts or resource pools
- Simple IP, Proxy Mobile IP, and Mobile IP
- 3GPP-3GPP2 inter-technology roaming (integrated GGSN/FA and/or HA services)
- IPSec
- MIP NAT Traversal for WiFi attached subscribers
- L2TP LAC and LNS
- IP-in-IP tunneling
- GRE tunneling
- 6 to 4 tunneling
- IEEE 802.1q VLANs

### Quality of Service
- Multiflow and per-flow accounting

### Routing
- Simple IPv4, Mobile IPv4, Simple IPv6 and Client Mobile IPv6
- RIP
- OSPFv2
- BGP4

### Enhanced Applications
- Alternative point-to-point protocol (Alt-PPP)
- Seamless cellular-to-wireless LAN cross-bearer mobility
- ROHC support for primary and/or auxiliary service connections
- Intelligent Traffic Control and per-flow bandwidth management
- Broadcast and Multicast Services (BCMCS)