

Multi-Access

To meet the demands of exponential mobile data traffic growth, service providers are leveraging multiple access network technologies. This approach can fundamentally change the economics of delivering mobile data-intensive services can by balancing the various traffic requirements across multiple access networks simultaneously.

Bridgewater has a rich pedigree in multi-access support, allowing service providers to ensure a seamless subscriber experience across all networks. With a flexible offering that enables migration to 4G, the Bridgewater® Service Controller (AAA) manages a transparent multi-access experience for subscribers.

Opportunities and Challenges

In addition to increased data traffic forcing new requirements on mobile networks, service providers around the world are embracing multi-access networks for various business reasons:

Technology consolidation

Service providers following a unified technology migration path, with regional entities deploying GSM/HSPA networks in addition to existing CDMA networks, can benefit from economies of scale in both handset numbers and network infrastructure.

Reduction in access control silos

Aging access control infrastructures cannot meet the demands of exponential mobile data growth in a multi-network world. Service providers are now leading the drive towards support for converged infrastructures that can support multiple access networks – 3G, 4G, Fixed, and Wi-Fi – simultaneously.

4G overlay

Next generation networks support personalized, data-intensive applications and services, often as an extension to an existing 2.5 or 3G network. These overlay 4G networks enable service providers to meet the demands of huge mobile data growth.

Extend roaming coverage

GSM/HSPA networks offer worldwide roaming as the majority of networks in Asia and Europe meet the 3GPP standard. CDMA/EVDO operators, particularly those outside of North America, may be at a revenue disadvantage when it comes to offering roaming services unless they deploy a GSM/HSPA overlay network.

Data Offload

Offload to Wi-Fi or femtocells offers service providers lower cost-per-bit delivery of mobile data, reduces network congestion and enables fixed mobile convergence.

Challenges

Deploying services across multiple access networks creates challenges for service providers:

- Ensure subscribers receive the same user experience regardless of access network.
- Service portability and parity with a single sign-on experience, including for applications, across multiple access networks.
- Maintaining security across multiple networks.
- A common view of subscriber entitlements that enables accelerated time to market for new services across networks and subscribers.
- Many operators have multiple aging access control/AAA infrastructures currently deployed – a migration approach to a common infrastructure is required to meet the performance and scalability demands of 4G networks.

Bridgewater Solution

The Bridgewater Service Controller offers broad support for key service control functions such as authentication, authorization and accounting for service providers deploying a multi-network strategy.

Including support for 3GPP, non-3GPP, LTE and fixed mobile convergence scenarios, the Service Controller ensures a transparent access

experience as subscribers move between different network types.

Extensive multi-access network support

Service providers require a standards-based service control product that fully supports the wide range of devices, applications and subscriber types in a multi-access network. By deploying a vendor agnostic solution, service providers can avoid vendor lock-in, exploit vendor economies of scale and leverage existing investments.

Multiprotocol support

Support for both RADIUS and Diameter is important for simultaneous 3G and 4G support, providing flexible support for interworking scenarios.

Eliminate silos

Service control products that provide for a consistent subscriber database across multiple networks are essential to reducing overall provisioning costs and eliminate multiple silos.

Interworking

Service controls for multi-access networks need to simultaneously support 3G, 4G and Wi-Fi technologies to manage subscriber access to networks, including revenue-critical accounting functions.

Multivendor interoperability

Service providers operating multiple access networks require support for simultaneous interoperability with multiple vendors. Technology streams may differ between 3G and 4G networks, and with CDMA operators deploying new 3GPP networks.

Standards Support

Multi-access requires standards-based interfaces from key standards organizations and industry bodies including the WiMAX Forum, 3GPP2, 3GPP and ETSI.

Carrier grade performance and scalability

Large data throughput increases mean that carrier grade performance and authentication support is required. 4G technologies are expected to deliver a four to six fold increase in transactions for comparable functions, compared with 3G networks. Performance and scalability are therefore critical.

Common subscriber management capability

The ability to model devices and subscribers allows service providers to use a common approach to managing authentication and authorization for individuals, groups of subscribers, and equipment such as femtocells or machine-to-machine devices such as smart meters.

Regulatory compliance

Compliance with regulatory concerns is more complex in 4G, requiring support across multiple access networks for activity such as lawful intercept.

The Bridgewater Advantage

Multi-access pedigree - vendor neutral

As an independent control plane vendor, Bridgewater's solutions are multi-vendor and multi-access, ensuring a common approach to managing services and policies across networks. Bridgewater's solutions deliver future proof systems that can also leverage existing legacy equipment. This allows all network elements to be supported on a common platform.

Rich heritage in control plane transformations

Bridgewater has extensive experience in 2G to 3G and 3G to 4G transformations including the knowledge needed to implement a robust service control and subscriber management system for multiple access networks.

Unified subscriber data management

Bridgewater's Subscriber Data Broker™ can be combined with the Service Controller to enable a flexible and dynamic approach to network access control. It enables flexible service bundling across all network technologies including 3G and 4G. It also helps service providers accelerate revenues by bringing new personalized services to market faster.

About Bridgewater Systems

Bridgewater Systems, the mobile personalization company, enables service providers to efficiently manage and profit from mobile data services, content and commerce. The company's market leading mobile personalization portfolio provides a real-time, unified view of subscribers including entitlements, devices, networks, billing profiles, preferences and context. Anchored by Bridgewater's Subscriber Data Broker™, the portfolio of carrier-grade and standards-based products includes the Bridgewater® Service Controller (AAA), the Bridgewater® Policy Controller (PCRF) and the Bridgewater® Home Subscriber Server (HSS). More than 150 leading service providers including America Movil, Bell Canada, Clearwire, Cox, Hutchison Telecom, Iusacell, Scartel, SmarTone-Vodafone, Sprint, Tata Teleservices, Tatum, Telmex, Telstra, and Verizon Wireless use Bridgewater's solutions to rapidly deliver innovative mobile services to over 150 million subscribers. For more information, visit us at www.bridgewater.com.

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