Wi-Fi Offload

Wi-Fi extension for 2G/3G/LTE
Maximize the power of your network

The evolution of 2G to 3G and LTE infrastructure created a data monster! Subscribers today demand ubiquitous access to high bandwidth services on their mobile devices, causing a major shift of data traffic from fixed line networks to mobile networks. As a result, mobile networks are now nearing congestion, and operators are looking to offload data with cost-effective solutions to increase their capacity during peak-hours.

Fortunately, an increasing number of 3G/LTE devices are Wi-Fi-enabled, opening up the possibility of shifting a large chunk of data traffic from 3G/LTE to Wi-Fi.

Atos' solution – Wi-Fi Offload – increases the capacity of your 2G/3G/LTE mobile network with minimal investments. By integrating Wi-Fi networks with 2G/3G (Radius) and LTE (Diameter) environments, your subscribers are provided with seamless authentication and a consistently high service level, regardless of what access technology they use.

Wi-Fi Offload guarantees optimal data traffic performance by making intelligent decisions like keeping selected data flows on preferred networks. For example VoIP applications are only on 3G, even if Wi-Fi is available. It uses built-in, standardized SIM-based authentication methods to smoothly integrate internet access via 3G/LTE and Wi-Fi. With this, your subscribers won't even notice when they are switched to Wi-Fi.

Wi-Fi Offload can play an important role in boosting subscriber loyalty and decreasing churn to Wi-Fi-only providers by increasing your subscribers' satisfaction and improving their individual user experience. It does so with minimal initial infrastructure investments, thanks to its modular architecture.
It is highly scalable, and it is flexible to grow along with your data and business with changing market demands.

Wi-Fi Offload – complete & flexible for all Wi-Fi authentication schemes

- 3,000 complete EAP authentications per rack unit (per rack-mount server)
- Supports 400,000 aggregated or direct connected WLAN access points or more
- Platform processes approximately 300 million subs worldwide

Authentication – standardized and easy

Wi-Fi Offload utilizes the IETF industry standard EAP-SIM/AKA secure authentication methods that are part of the Extensible Authentication Protocol (EAP) family. They allow subscribers to seamlessly move between 2G/3G/LTE networks and Wi-Fi-driven access networks with only a single login.

The EAP-SIM/AKA methods use preexisting infrastructure to provide mutual authentication between devices containing SIM-cards and the subscriber credentials stored within the HLR (Home Location Register) and the HSS (Home Subscriber Server), for 2G/3G and LTE, respectively. Your subscribers only need their SIM card to access your network.

Additionally, Wi-Fi Offload also supports the Protected EAP (PEAP) authentication method, preferred by Android devices.

Wi-Fi integration – comprehensive and open

Wi-Fi Offload offers a single solution that combines state-of-the-art Radius AAA functionality with the evolutionary Diameter LTE/3GPP architecture. It simultaneously integrates HSS nodes, HLR nodes and the Wi-Fi access network, while retrieving subscriber-related credentials with Diameter and MAP protocol, respectively. Wi-Fi Offload also communicates with all user data repositories via LDAP (Lightweight Directory Access Protocol) in order to fetch additional subscriber profile information.

Interoperability – compatible and adaptable

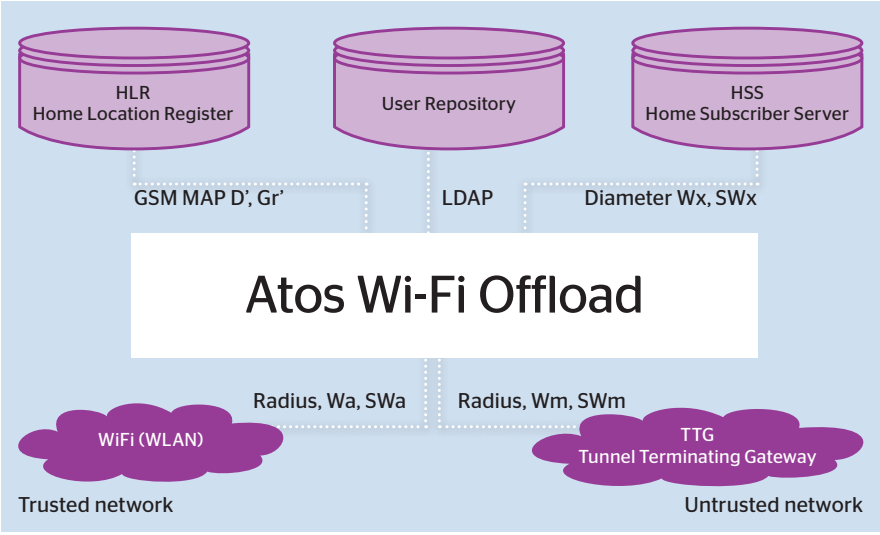
Wi-Fi Offload is compatible and interoperable with all Wi-Fi access point devices and common packet gateways available today. Communication with different HSS/HLR vendors is guaranteed through standardized interfaces.

Solution architecture – scalable and reliable

Wi-Fi Offload runs on a highly scalable, Unix-based platform architecture. Application front-end servers mutually provide services like authentication, authorization and accounting as part of the business logic processing. Additionally, a redundant set of high-performance back-end servers carry central services, such as real-time session management, as well as appropriate interface services like LDAP.

Wi-Fi Offload can be co-located, combined, or converged as part of the Atos Session Manager (AAA) and the Atos Policy Manager (PCRF). It is designed for a variety of carrier-grade Atos Session Manager platform variants:

- Entry Level platform (2 rack-mount servers) for up to 1 million subscribers
- Standard platform (6 rack-mount servers) for more than 1 million subscribers (can be scaled to tens of millions subscribers)
- Blade architecture for flexible use cases.



Charging – flexible and safe

Wi-Fi Offload supports both online and offline charging methods. For each Wi-Fi session, it generates CDRs (Charging Data Records) that can be sent to, or collected by, your external billing system.

Due to the carrier-grade platform architecture, the accounting data is safe and robustly stored on the backend servers, ready to be retrieved via SFTP by your billing server. Other charging methods include Diameter Credit Control Application (DCCA) and voucher or captive portal-based methods.

Atos' Wi-Fi Offload is the proven and powerful solution to significantly enhance the capacity of your mobile network by authenticating and integrating Wi-Fi into 2G, 3G, and LTE environments.

Relevant standards:

- Radius RFC 2865, 2866, 2869
- IEEE 802.11i Security WPA2
- IEEE 802.1X/Enterprise mode
- IETF EAP RFC 3748
- IETF SIM/AKA RFC 4186/4187
- 3GPP Diameter Wx, SWx, SWm, SWa
- 3GPP TS 23.234

For more information: **+40 268 409 400 / info-cc@atos.net / atos.net/convergence-creators**

CT_180307_AS_wifi-offload