



## Mobile Data Offloading Solution for 3G/LTE Networks

With the exponential growth in mobile data usage, Wi-Fi is becoming a “must have” ingredient in operators’ arsenal and long term strategy. Yet, building successful large scale Wi-Fi networks poses challenges in both the radio and service layers, which must be well addressed for having the quality of service, the scalability and the profitability that operators need.



## Solution Benefits

### For operators

- Increased network capacity and coverage in high traffic areas through carrier Wi-Fi services
- New revenue sources, supporting visitors, wholesale, roaming, and future location based-services
- Quick ROI with minimum number of base stations per sq-km, reduced backhauling needs, cellular site co-location, and leveraging on existing cellular core elements
- Rapid deployment and trouble-free operation of large scale Wi-Fi networks
- Improved customer satisfaction and reduced churn
- Supports unified user profile for billing, pre-paid and post-paid

### For end-users

- High service quality and fast data rates
- Automatically connects mobile handset to the network, using SIM credentials
- Secured access
- Enables “cellular-like” access and roaming



# Mobile Data Offloading Solution for 3G/LTE Networks

Alvarion mobile data offloading is a complete solution for Wi-Fi cellular integration and hotspot services, including advanced carrier-grade base stations, Access Controllers and network management, enabling operators to rapidly and cost effectively deploy large scale Wi-Fi networks, with the high quality of service end-users expect.

## Solution Highlights

- Best-of-breed carrier-grade Wi-Fi technology
- Scalable to large area networks, indoors and outdoors
- Seamless automatic SIM based cellular users authenticating
- Distributed Access Controllers, embedded within the Wi-Fi base stations
- Supports 3G and LTE core integration
- Supports trusted and untrusted 3GPP networking
- WFA Passpoint™ (Hotspot 2.0 with 802.11u) ready
- Traffic tunneling and “local breakout” routing options



# Mobile Data Offloading Solution Description

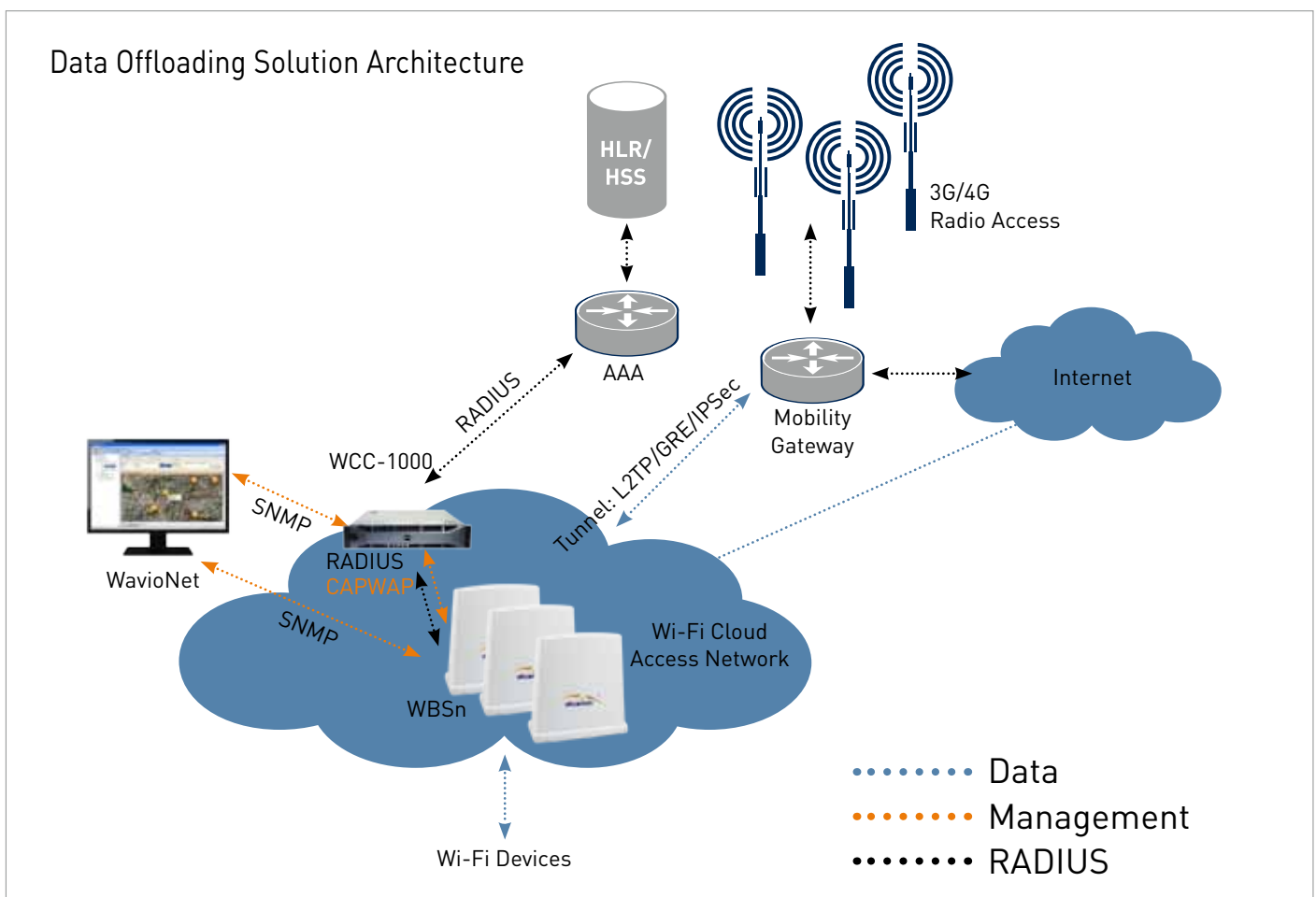
Alvarion mobile data offloading solution is a comprehensive solution addressing the scalability, reliability and security needs of operators. The solution includes the WBSn family of carrier grade Wi-Fi base stations with their built-in Access Controllers, the WCC-1000 Wi-Fi Cloud Controller and WavioNet NMS solution.

## WBSn Family of Wi-Fi Base Stations

The WBSn is a family of advanced carrier-grade Wi-Fi base-stations with unique two-way Beamforming 802.11n, outstanding interference immunity and rich set of features for core integration. WBSn base-stations are optimal for numerous Wi-Fi application including wide-area networks, 3G/LTE data offloading, large venues and smart cities. With powerful 2.4 and 5 GHz radios, WBSn family delivers up to one gigabit capacity and robust connectivity in challenging conditions of interference, Non-Line-Of-Sight (NLOS) and outdoor-to-indoor penetration. WBSn family enables service providers to deliver the QoS end-customers expect and facilitate a faster ROI with minimum number of base station sites per any given area.

## WBSn Main Features

- Two-way Beamforming 802.11n, 3x3 MIMO and three spatial data streams
- Powerful interference immunity suite
- Robust IP-68 rated outdoor units, and indoor units
- Flexible antenna field-of-view, Omni and Sector
- Maximum 512 registered uses and gigabit capacity per base station
- Rich networking features for core integration
- 2.4 and 5 GHz access and backhaul





## Distributed Access Controller

Every WBSn base station includes a built-in Access Controller for controlling the base station traffic. This provides a powerful distributed Access Controller solution, which is scalable, has no single point of failure, and provides cost effective backhauling of only allowed traffic. The built-in Access Controller enables efficient traffic shaping\* and Service Level Agreement (SLA) enforcement per user session at the base station. Furthermore, it includes RADIUS authentication (EAP-SIM, EAP-AKA and portal based), walled garden services, and RADIUS accounting messages (time and volume based) for pre-paid and post-paid billing. The embedded Access Controller further enables traffic tunneling\* to a mobility gateway at the cellular core, such as ePGW in LTE architecture (3GPP IP Access) so as to support trusted non-3GPP network security, service continuity and Wi-Fi-cellular mobility\*. Alternatively, the traffic can be directed to the Internet so as to reduce the backhauling cost – also known as “local breakout IP Access”.

\* Planned general availability in H2 2012

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## Alvarion WCC-1000\*

The WCC-1000 is Alvarion's Wi-Fi Cloud Controller. Each WCC-1000 can scale to manage tens of thousands of users. Multiple WCC-1000 units may be used, with redundantly, for a true scalable, pay-as-you-grow network of millions of Wi-Fi users. Main WCC-1000 features include.

- Authentication GW – RADIUS proxy, providing a single peer to the AAA from the whole Wi-Fi cloud, making Wi-Fi network scalability transparent to the AAA
- Base station registration – rogue AP prevention, only identified base stations can connect for service
- Mobility – key caching for fast Wi-Fi handover (802.11r in future)
- Automatic hands-free WBSn firmware and configuration upload
- Resource Management
- User authentication based on EAP, WISPr 2.0 and portal

\* Planned general availability in H2 2012

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## WavioNet and AlvariStar

WavioNet and AlvariStar are the comprehensive network element management solutions with full FCAPS element management support, providing a single point of management for controlling and configuring the full Wi-Fi network.



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**2400** WBSn-2400-S  
Sector base station, operating in the 2.4 GHz band

**2450** WBSn-2450-S  
Sector base station, operating in 2.4 and 5 GHz bands  
simultaneously



**2400** WBSn-2400-O  
Omni base station, operating in the 2.4 GHz band

**2450** WBSn-2450-O  
Omni base station, operating in 2.4 and 5 GHz bands  
simultaneously



**2450** WBSn-2450-OS, WBSn-2450-SO  
Omni base station in 2.4 GHz with Sector base station in 5 GHz,  
and Sector in 2.4 GHz with Omni in 5 GHz



**2450** WBSn-2450-I  
Indoor base station, operating in 2.4 and 5 GHz band  
simultaneously



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Alvarion Ltd. (NASDAQ:ALVR) provides optimized wireless broadband solutions addressing the connectivity, coverage and capacity challenges of telecom operators, smart cities, security, and enterprise customers. Our innovative solutions are based on multiple technologies across licensed and unlicensed spectrums.  
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