



4Motion[®]

wireless broadband in motion



Anytime Internet VoIP **OPEN[™]** **WiMAX** Communicate Convergence
mobile Gaming Simply connect Communities Usability
Mobile WiMAX[™] IPTV Anywhere
 Broadband Video No limits Empower
 Social media **Any device** **Go mobile**

Imagine being able to offer customers access to high-speed Internet services, IPTV, live sports, gaming, video or voice calls and financial updates in real time, in their homes or on the go. Whenever they want, wherever they are, on any device. This anytime, anywhere mobile broadband vision is the Mobile WiMAX™ promise delivered by 4Motion®, as fixed and nomadic broadband services converge to mobile.

WiMAX™ for Broadband Services

WiMAX is an ideal solution for delivering broadband and voice services to business and home users. Suitable for rural, suburban and urban deployments, WiMAX offers operators the opportunity to cross the digital divide when infrastructure alternatives are scarce, as well as an alternative to DSL for connecting subscribers.

4Motion Delivers Mobile WiMAX

Mobile WiMAX facilitates always-on broadband connectivity, complete with mobility, handover and roaming services. This ensures that subscribers are always connected and on line.

4Motion is a complete, end-to-end Mobile WiMAX solution offering continuous broadband connectivity using many types of mobile consumer devices. This allows people to get the most out of work or play, and gives operators a competitive edge, enabling them to offer unique differentiated services to subscribers.



Mobile Personal Broadband Services

The merging of broadband and mobility means subscribers can now get mobilized with Personal Broadband services, enhancing their personal lifestyles and professional lives while boosting productivity. Potential customers of such a service include subscribers adding high speed data capacity to their existing mobile voice services; fixed users who want mobility; Wi-Fi users seeking additional range; and new users who want the many new applications of Personal Broadband services.

4Motion Addresses all Operators

4Motion assists fixed, mobile, satellite and emerging WiMAX operators in achieving their strategic business goals. Leveraging the unique advantages of Mobile WiMAX technologies, 4Motion enhances existing infrastructures, extends the services offered by fixed, nomadic and mobile networks, and is an excellent solution for the deployment of challenger broadband networks.

OPEN™ WiMAX Architecture

Alvarion's OPEN WiMAX is a disruptive, operator-centric approach which enables the complete ecosystem supporting the highly scalable 4Motion solution. The OPEN WiMAX ecosystem is based on three fundamentals: scalability, which makes it equally suitable for large, medium or small deployments; cost optimization, which enables operators to control network deployment costs; and application driven, which permits simple integration with third party applications and services.

Standard and interoperable, OPEN WiMAX supports a complete ecosystem that encompasses network equipment, consumer electronics and service offerings, allowing operators to select from a combination of vendors offering WiMAX-certified products in order to deploy best-in-class products in best-fit solutions. In this way, OPEN WiMAX removes barriers to entry for newcomers, enhances overall market performance and product offering and variety, and encourages creativity and innovation in competitive markets.

4Motion for Open, Mobile WiMAX

- All-IP end-to-end Mobile WiMAX solution
- Advanced technology integrated with different vendor options
- Cost-effective, future-proof and scalable
- Supports rich media-centric content services
- Fixed to mobile Personal Broadband services, anytime and anywhere
- Industry-leading core network WiMAX technologies
- Top capacity and coverage in fixed, nomadic and mobile environments
- Compliant with 802.16e-2005 and WiMAX Forum® Network Working Group certifications
- Complete ecosystem interoperable with WiMAX-standard third-party devices
- World's most mature, deployed and proven WiMAX base station system

“After working with the WiMAX expert Alvarion for two years and learning their unique Mobile WiMAX technology, it is clear that their 4Motion offering is the best solution for us. Alvarion's complete solution enables quick and easy deployment of mobile broadband services.”

Dr. Gin-Kou Ma, Deputy General Director of SoC Technology Center, ITRI



4Motion Product Portfolio

The 4Motion end-to-end solution is based on the following elements:

- **Radio access network**, consisting of BreezeMAX® radio base stations and access service gateways (ASNs)
- **IMS-compatible core network**, consisting of an authentication, authorization and accounting (AAA) server, a home agent and network management
- **End-user equipment**, consisting of outdoor and indoor CPEs and personal devices

Radio Access Network

BreezeMAX Radio Base Stations: Alvarion's robust WiMAX 16e-compliant platform leveraging the company's BWA industry leadership, successfully proven field experience and advanced core wireless and networking technologies, including many years of experience with OFDM/OFDMA technology.

Access Service Gateways (ASNs): Alvarion-developed or third party gateways connecting the WiMAX RAN to the IP core which perform the subscriber and service management functions needed for Mobile WiMAX RANs and facilitate the ultimate provision of revenue-generating services and applications. The BreezeMAX ASN-GW provides linear scaling from small sites to large and widespread deployments, and offers a distributed topology which improves backhaul utilization and supports simple IP mobility localization. Alternatively, third party centralized ASN-GWs are implemented as part of the 4Motion OPEN WiMAX policy.

End User Equipment

Outdoor Installed CPEs: BreezeMAX PRO-S consists of an indoor unit (IDU) and an outdoor unit (ODU) that contains the modem, radio, data processing and management components, as well as an integral high-gain flat antenna with either vertical or horizontal polarization. An ODU with a connector to an external antenna is also available.

Indoor Installed CPEs: BreezeMAX Si is a self-installable, nomadic WiMAX subscriber unit providing broadband data services in a compact design. Ideal for residential and SOHO users, it is a complete indoor solution (without the need for an outdoor unit) supplied with installation software and/or a smart card for simple self-installation and automatic service operation.

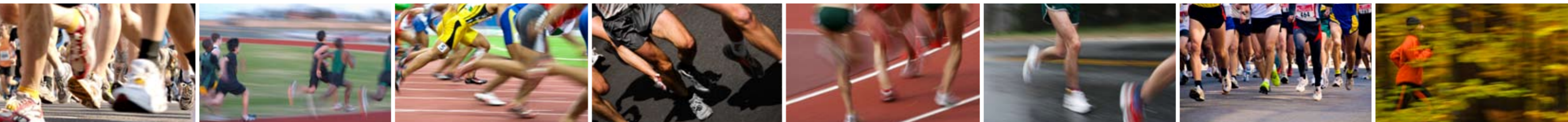
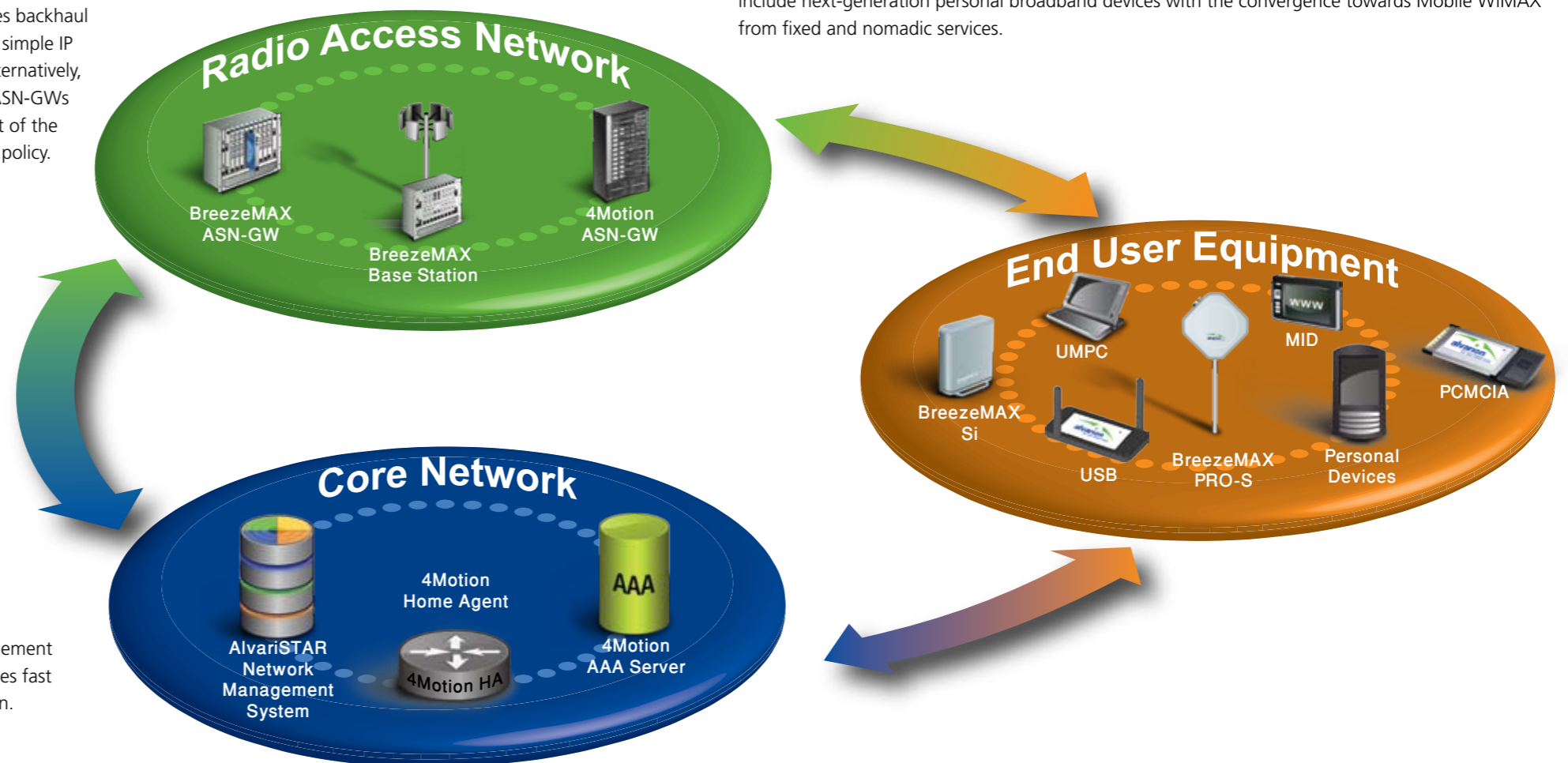
Personal Devices: The strong Mobile WiMAX ecosystem supports a range of personal devices, including laptops enabled by WiMAX chips and processors, PC cards and USB dongles, UMPCs (ultra mobile PCs) and MIDs (mobile Internet devices). This ecosystem will continue to grow exponentially to include next-generation personal broadband devices with the convergence towards Mobile WiMAX from fixed and nomadic services.

Core Network

AAA Server: Third party equipment providing an authentication, authorization and accounting process to track the consumption of network resources by users for various purposes such as management, planning and billing.

Home Agent: Third party router on a mobile node's home network which tunnels datagrams for delivery to the mobile node when it is away from home, and maintains current location information for the mobile node.

Network Management: AlvariSTAR carrier-class network and element management system developed by Alvarion, which simplifies network deployment and enables fast customer-based expansion with effective fault management for quick resolution.



4Motion Prod

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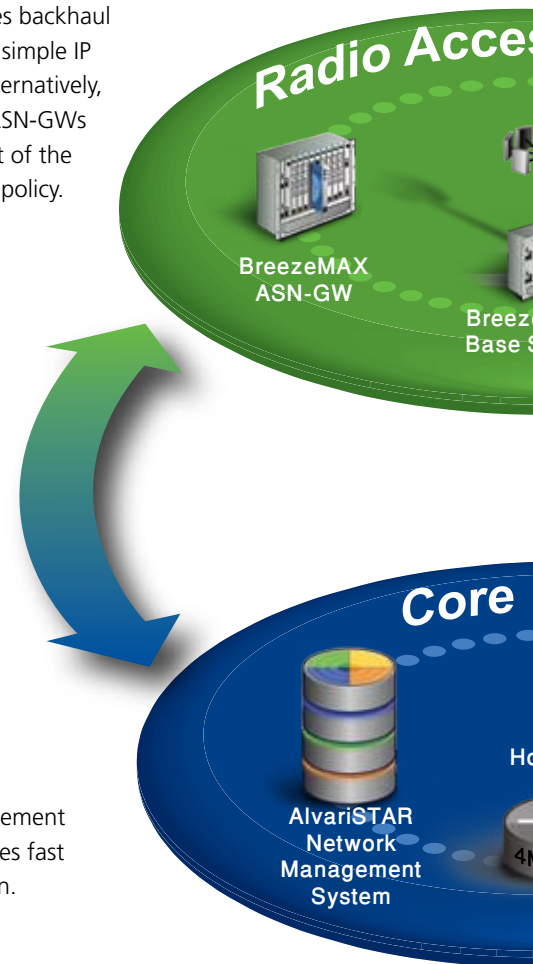
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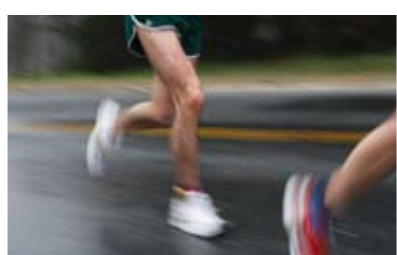
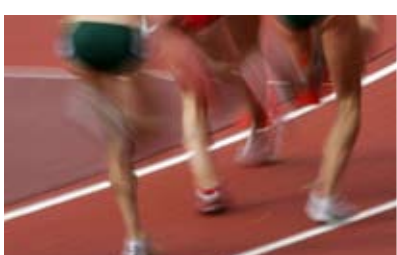
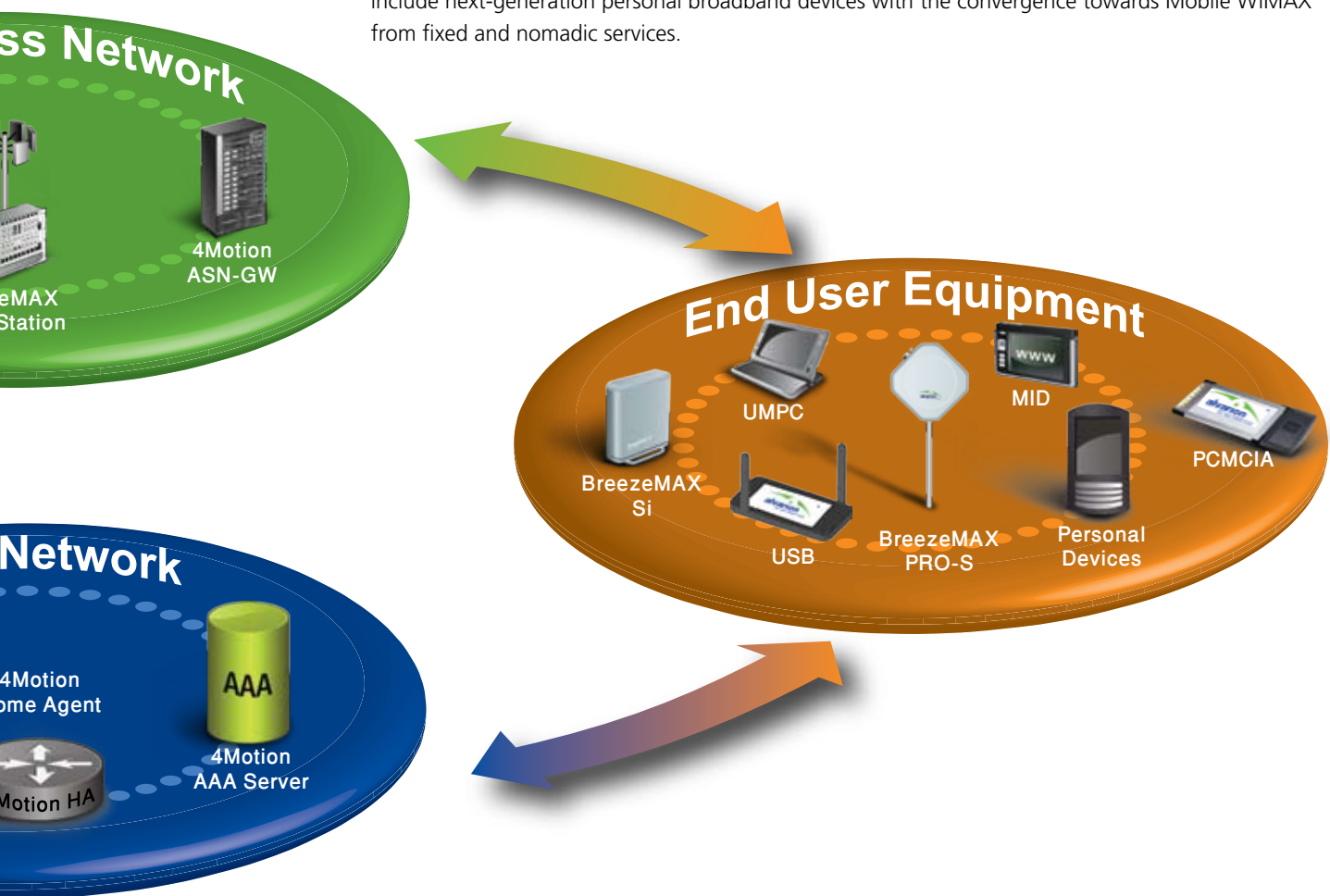
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Alvarion's SentieM™ Technologies for Better Coverage, Capacity and QoS

4Motion is enhanced by Alvarion's SentieM technologies, which considerably improve coverage, capacity and QoS by utilizing advanced antenna technologies, radio resource management and radio network architecture. The result of years of extensive and highly advanced technological development, SentieM technologies combine innovation and responsiveness to market demands. Providing more than just compliance with the IEEE 802.16e-2005 standard, they leverage superior technological advantages to facilitate better Mobile WiMAX networks.

BreezeMAX Highlights

- Successfully field proven in over 200 commercial WiMAX deployments
- Deployed in over 150 countries
- Robust WiMAX platform
- Best NLOS and coverage performance
- Wide variety of frequencies: 1.5-6 GHz
- Modular and scalable architecture
- Enhanced QoS voice support
- Mobile, portable and fixed services

Capacity

QoS

Coverage



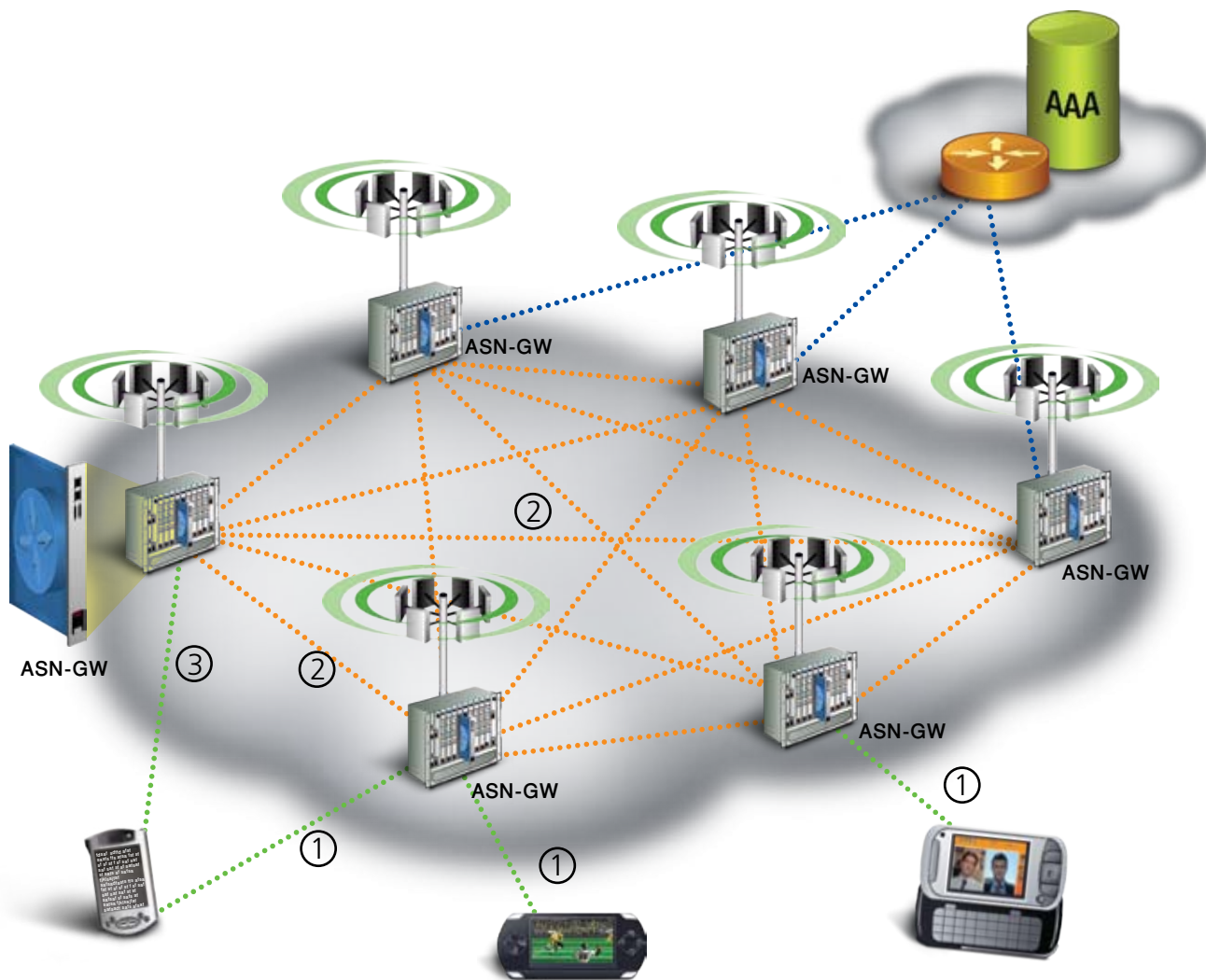
4Motion is an end-to-end Mobile WiMAX solution. Radio access networks consist of Alvarion BreezeMAX base stations and end-user equipment, incorporating SentieM technologies to offer superior Mobile WiMAX performance



Mobile WiMAX is Leaving Limits Behind

WiMAX is a compelling, low-risk option for the fixed and portable broadband market. As fixed and nomadic services converge to mobile, WiMAX-based mobile broadband enables a shift towards multiple devices and multiple services per subscriber, permitting operators to move beyond the one-subscriber, one-ARPU, one-device model.

Alvarion's 4Motion OPEN WiMAX solution, powered by its innovative SentieM technologies, is setting new levels for the entire industry. Putting wireless broadband in motion, it is delivering the promise of anytime, anywhere Mobile WiMAX, leaving limits behind and offering added value to both providers and consumers.



1. Subscriber enters network and is anchored to a selected ASN-GW.
2. Subscriber is handed off to another base station.
The base stations then negotiate radio information over IP transport and the subscriber is connected to a new base station while still being served by the initial ASN-GW.
3. Subscriber moves to a different base station which can serve different subscribers through different anchored ASN-GWs.



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About Alvarion

Alvarion is the largest WiMAX pure player, ensuring customer's long-term success with fixed and mobile solutions for the full range of frequency bands. Based on its OPEN WiMAX strategy, Alvarion offers a superior wireless broadband infrastructure and an all-IP best-of-breed ecosystem in cooperation with its strategic partners. Alvarion has more than 200 commercial WiMAX deployments worldwide.



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Internet VoIP OPEN™ WiMAX Convergence
Simply connect Communities Gaming Go
Mobile WiMAX™ IPTV Anywhere
No limits Empower Personal
Video Any device