



# 4Motion<sup>®</sup>

*wireless broadband in motion*



Communicate  
Internet VoIP OPEN<sup>™</sup> WiMAX Convergence  
Simply connect Communities Gaming Go mobile Usability Gaming Simply connect  
Mobile WiMAX<sup>™</sup> IPTV Anywhere  
No limits Empower Personal Broadband Video Social media  
Any device

At home and on-the-go, 4Motion brings wireless broadband to new consumer segments in a variety of existing and emerging markets. Implementing Alvarion's OPEN WiMAX approach, 4Motion provides an end-to-end mobile wireless broadband solution, delivering the anytime, anywhere customer experience to bandwidth-hungry, packet-based applications.

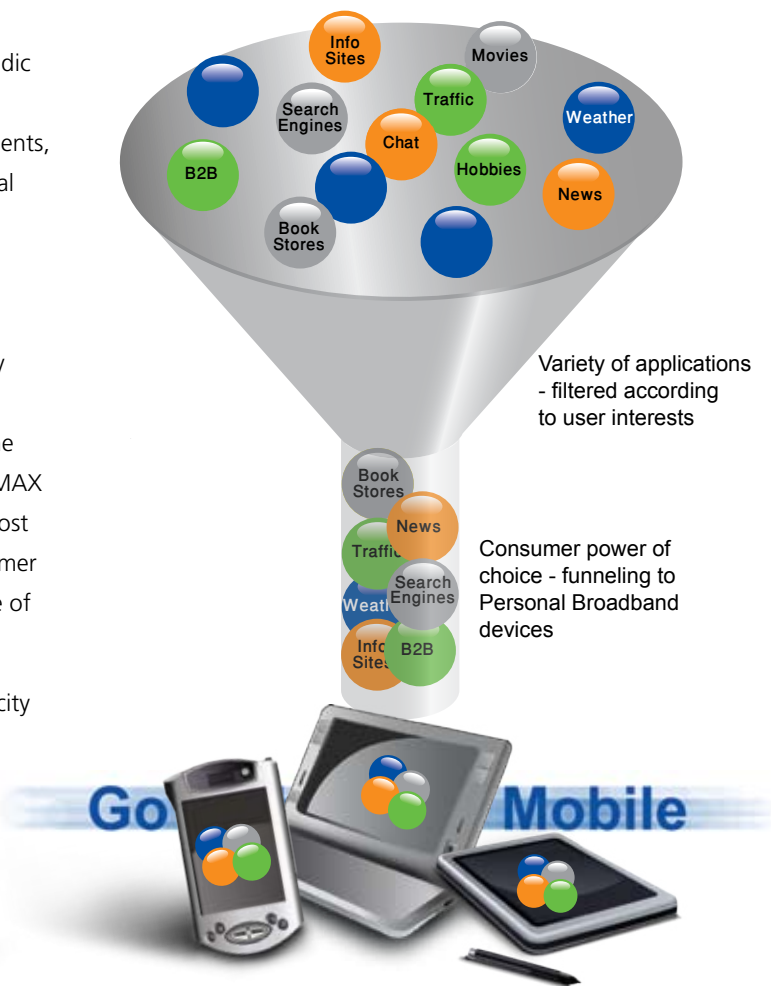
### WiMAX™ for Broadband Services

WiMAX is the leading technology for delivering fixed, nomadic and mobile wireless broadband to business and home subscribers. Suitable for rural, suburban and urban deployments, WiMAX offers operators the opportunity to bridge the digital divide when infrastructure resources are scarce as well as an alternative to voice and fixed broadband Internet services.

### 4Motion Delivers Mobile WiMAX™ Today

Mobile WiMAX facilitates always-on broadband connectivity complete with mobility, handover and roaming services, ensuring that subscribers are connected and online 24/7. The 4Motion solution offers continuous, end-to-end Mobile WiMAX broadband connectivity and allows subscribers to get the most out of work or play by supporting a variety of mobile consumer devices. This Personal Broadband experience targets a range of market segments:

- Customers looking to add wireless broadband data capacity to existing mobile voice services
- Fixed subscribers interested in wireless broadband access for true mobility
- Wi-Fi customers seeking extended range
- New subscribers who want to access cutting edge applications available only over Personal Broadband



## Personal Broadband Services

4Motion empowers fixed, mobile, satellite and emerging WiMAX operators to achieve strategic business goals. Leveraging the unique advantages of Mobile WiMAX technologies, 4Motion acts as a strategic enabler for the deployment of challenger broadband networks. It enhances existing infrastructures and extends the offering of unique, differentiated services with top QoS in both existing and emerging markets.

## OPEN WiMAX Architecture

Alvarion's OPEN WiMAX is an innovative approach to WiMAX implementation, enabling operators to choose solution elements that best address their business case. OPEN WiMAX marks the beginning of an operator-centric era in telecommunications services, and offers an ecosystem based on three fundamentals:

**Scalability**, making it equally suitable for large, medium or small deployments

**Cost optimization**, enabling operators to control network deployment costs

**Application centric**, allowing simple integration with third party applications and services

## Comprehensive WiMAX Ecosystem

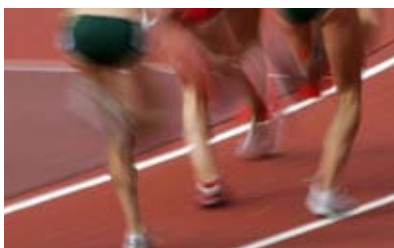
Alvarion's OPEN WiMAX approach supports a comprehensive WiMAX ecosystem. This includes network equipment, consumer electronics and service offerings, enabling operators to select best-of-breed products from a combination of vendors offering WiMAX-enabled solutions. Furthermore, OPEN WiMAX removes barriers to entry for challengers while enhancing overall market performance, product offering and variety, and driving excellence and innovation in competitive markets.

## 4Motion Highlights

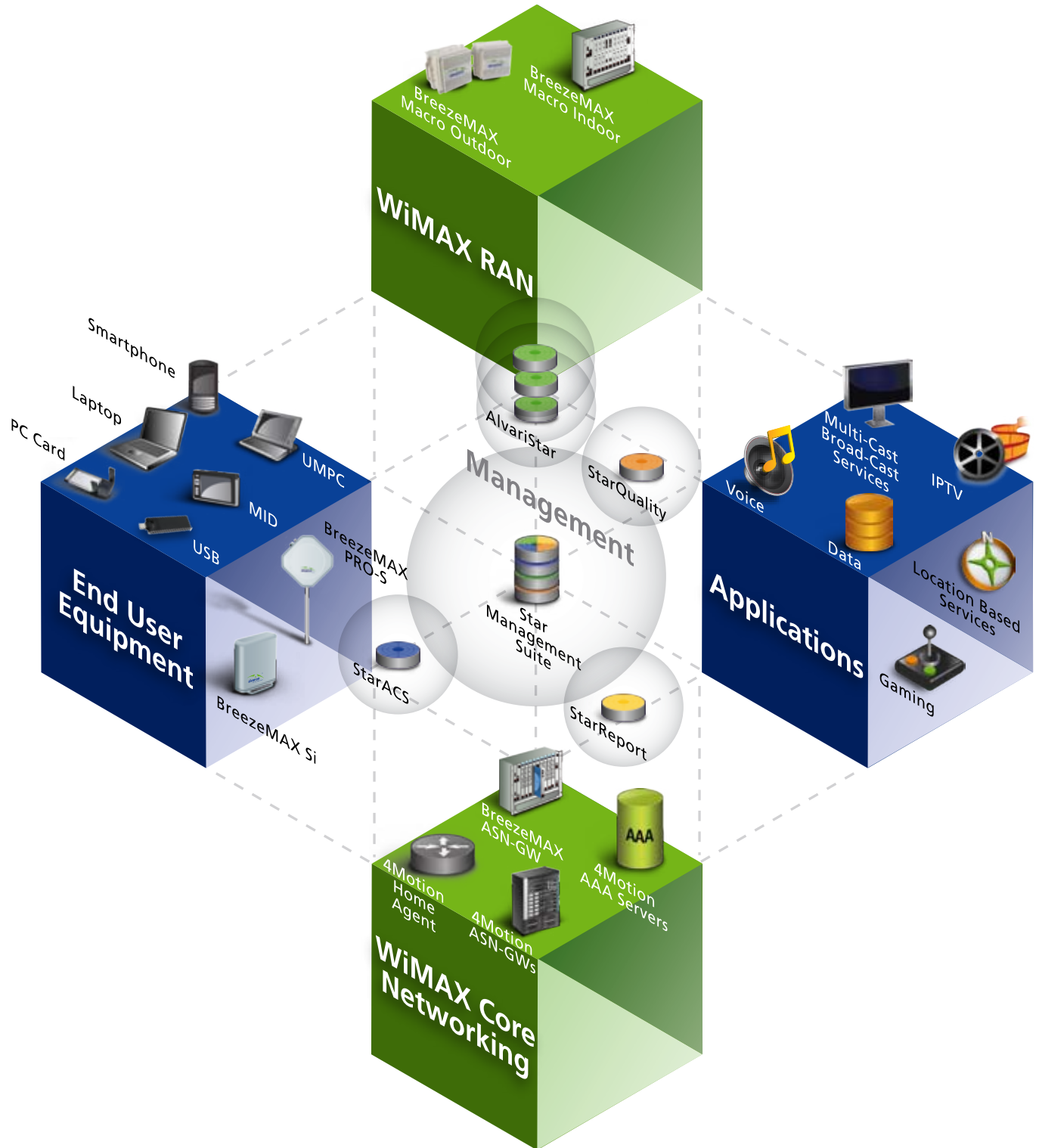
- All-IP end-to-end Mobile WiMAX solution for mobile and fixed deployments
- Advanced technology integrated with different vendor options
- Support of rich media-centric content services
- Personal Broadband services for anywhere, anytime experience
- Industry-leading core network WiMAX technologies
- Compliant with 802.16e-2005 and WiMAX Forum® Network Working Group certifications
- Integrated SentieM technologies
- 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 Solution



# on Components



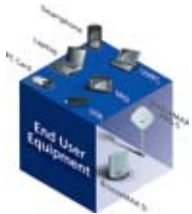
## WiMAX Radio Access Network

The WiMAX radio access network (RAN) is part of the mobile telecommunications system, and implements the radio access technology. Conceptually, it connects end user devices to the WiMAX Core Networking. WiMAX RANs are fundamentally different from legacy RANs, as they uphold Profile C topology, integrating Alvarion's robust WiMAX 16e-compliant BreezeMAX base stations.



## WiMAX Core Networking

Linking the WiMAX RAN to the application layer, WiMAX Core Networking forms the central component of the network. The WiMAX Core Networking is fundamentally different from legacy Core Networks because it upholds the Profile C topology. Consequently it includes access service network gateways (ASN-GW) a home agent (HA) and an authentication, authorization and accounting (AAA) server.



## End User Equipment

End user equipment is the customer's access point to the WiMAX network and devices. It includes fixed or nomadic enablers such as indoor and outdoor CPEs, and Mobile WiMAX equipment such as smartphones, MIDs and WiMAX-enabled laptops. Physically, end user equipment is connected at the end of the network, although it functionally connects throughout the entire system. The 4Motion ecosystem supports a range of end user equipment, consisting of outdoor and indoor CPEs and personal devices such as laptops, PCcards, USB dongles and UMPCs (ultra mobile PCs).



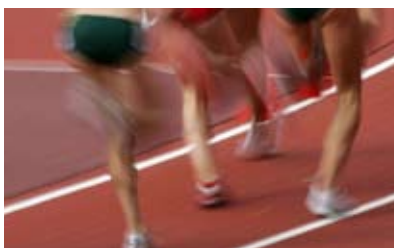
## Applications

The application layer enables operators to host various WiMAX applications available to subscribers. These applications integrate voice, data and video. Today, thousands of applications are supported, and with the realization of Personal Broadband, the bandwidth barrier has been removed to enable location-based and mobile shopping applications.



## Management

The Star management suite is a carrier-class management solution for 4Motion. Featuring 4 modules for managing WiMAX networks and end user devices, assuring QoS and generating inventory reports, it provides operators with comprehensive monitoring and control of the entire network.

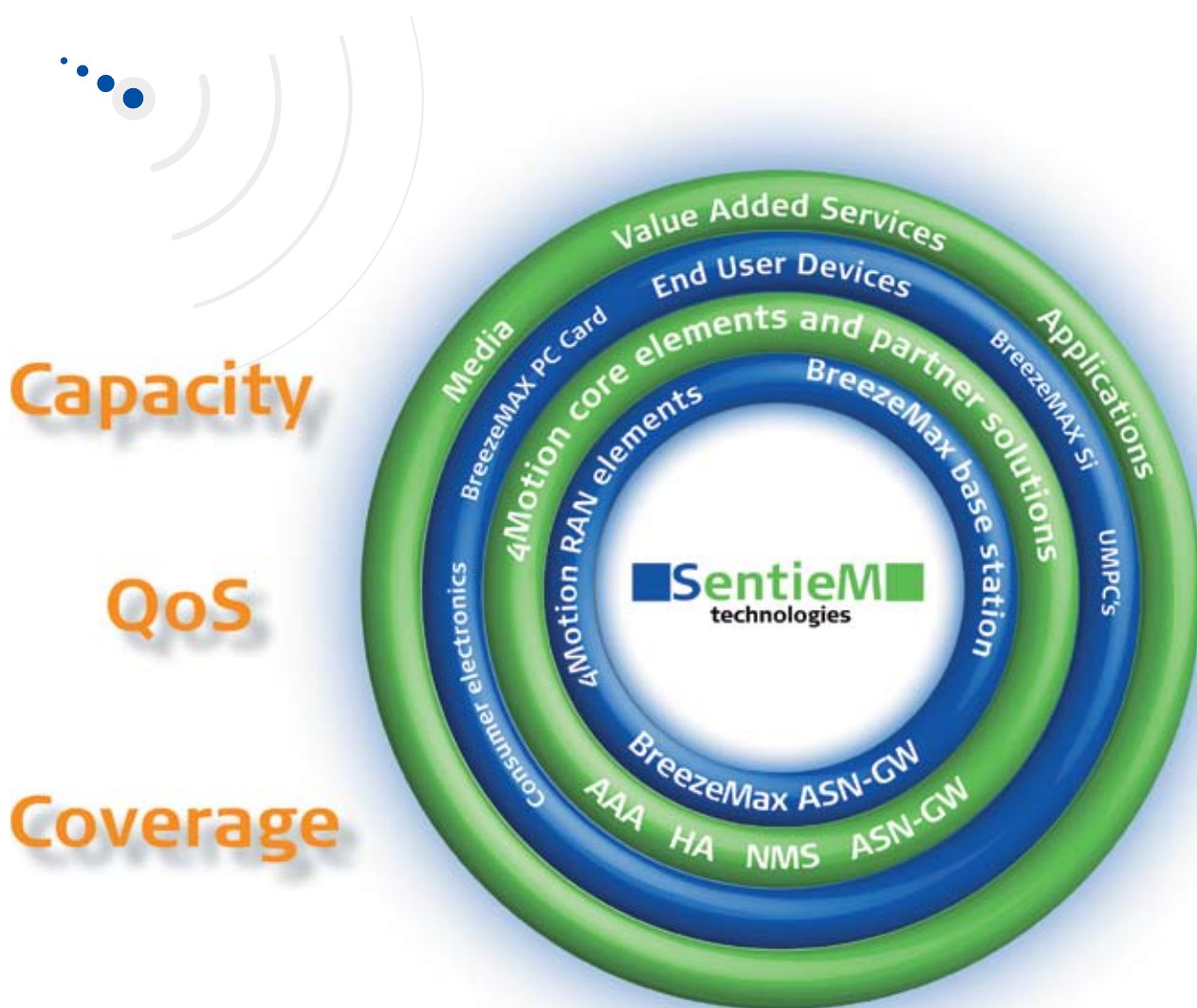


## Alvarion's SentieM Technologies for Technological Superiority

4Motion integrates SentieM technologies, which considerably improve coverage, capacity and QoS by utilizing advanced antenna technologies, radio resource management, radio network architecture and media technologies. 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.

### 4Motion Operator Benefits

- Operator-centric solution enabling operators to choose the best fit for their network demands
- Alvarion SentieM technologies including advanced antenna technologies, radio resource and media management, and radio network architecture
- Improved business case with reduced CAPEX and OPEX and top capacity, coverage and quality-of-service



*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*

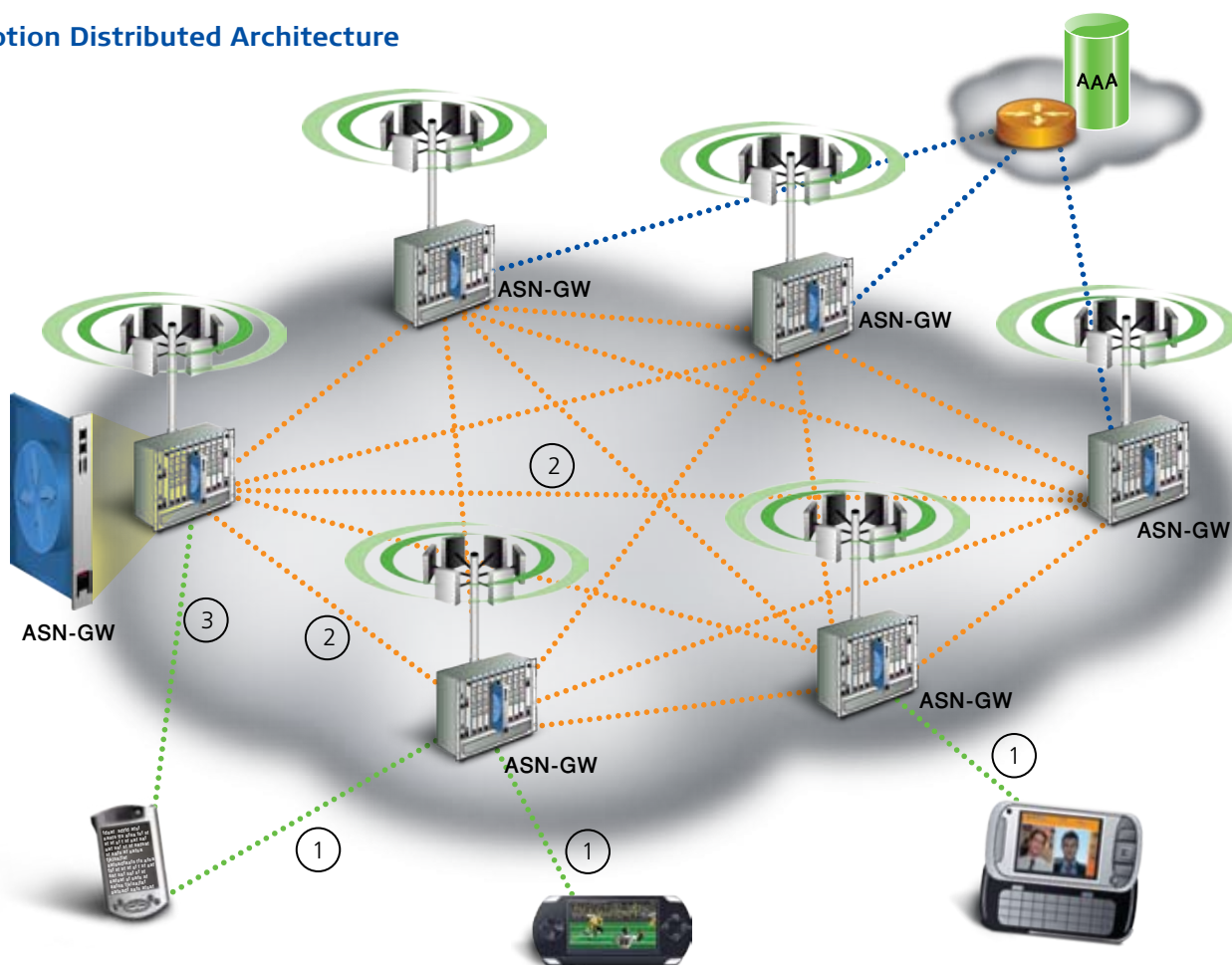


## Optimized Total Cost of Ownership

The 4Motion solution enables converged voice, video and multimedia services over an all-IP network architecture, addressing the current and future needs of the communications, business and entertainment markets. Combining quality-assured high throughput and availability, advanced radio resource management technologies, component redundancy and a comprehensive network management system, 4Motion is the solution of choice for all types of operators. 4Motion supports flexible pay-as-you-grow deployment schemes for rapid market

penetration, and enables more users per cell site and more available bandwidth (more applications and services), thereby reducing the number of necessary sites, CAPEX and OPEX. By leveraging this widely-deployed solution with advanced SenteM technologies, Alvarion's 4Motion offers a unique deployment paradigm which transforms technological superiority into a compelling business case. This paradigm optimizes total cost of ownership (TCO), providing operators with a sustainable, long-term cost advantage.

## 4Motion Distributed Architecture



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.



## Headquarters

International Corporate HQ  
corporate-sales@alvarion.com

North America HQ  
n.america-sales@alvarion.com

## Sales Contacts

Australia:  
anz-sales@alvarion.com

Asia Pacific:  
ap-sales@alvarion.com

Brazil:  
brazil-sales@alvarion.com

Canada:  
canada-sales@alvarion.com

Caribbean:  
caribbean-sales@alvarion.com

China:  
cn-sales@alvarion.com

Czech Republic:  
czech-sales@alvarion.com

France:  
france-sales@alvarion.com

Germany:  
germany-sales@alvarion.com

Italy:  
italy-sales@alvarion.com

Ireland:  
uk-sales@alvarion.com

Japan:  
jp-sales@alvarion.com

Latin America:  
lasales@alvarion.com

Mexico:  
mexico-sales@alvarion.com

Nigeria:  
nigeria-sales@alvarion.com

Philippines:  
ph-sales@alvarion.com

Poland:  
poland-sales@alvarion.com

Portugal:  
sales-portugal@alvarion.com

Romania:  
romania-sales@alvarion.com

Russia:  
info@alvarion.ru

Singapore:  
asean-sales@alvarion.com

South Africa:  
africa-sales@alvarion.com

Spain:  
spain-sales@alvarion.com

U.K.:  
uk-sales@alvarion.com

Uruguay:  
uruguay-sales@alvarion.com

For the latest contact information  
in your area, please visit:  
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## About Alvarion

Alvarion (NASDAQ: ALVR) is the largest WiMAX pure-player with the most extensive WiMAX customer base and over 250 commercial deployments around the globe. Committed to growing the WiMAX market, the company offers solutions for a wide range of frequency bands supporting a variety of business cases. Through its OPEN WiMAX strategy, superior IP and OFDMA know-how, and ability to deploy end-to-end turnkey WiMAX projects, Alvarion is shaping the new wireless broadband experience.



[www.alvarion.com](http://www.alvarion.com)

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Video Any device Social media