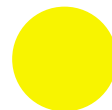
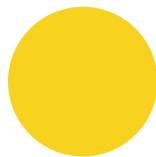


BreezeCOM and Floware unite



## Value Added Proposition for 26GHz Networks

Alvarix



## Introduction

As operators in the 26GHz market seek to adapt their business model to meet existing customer requirements and extend coverage to previously unreachable customers, the need for a flexible, low cost integrated solution continues rise in step with advancement in technology.

Combining the qualities and flexibility of WALKair 1000 and 3000, and operating in the 26GHz band, Alvarix addresses these needs to provide operators with an adaptable and cost-effective solution. By fully integrating the components and functionality of both WALKair families, Alvarix ensures that each system is specifically tailored to the needs of subscribers and their evolving demands.

## Adaptive Business Model

Alvarion's unique Alvarix solution has been developed to meet present demands and optimize the operator's business model - while providing the flexibility to adapt to future needs. By providing a combination of the maximum capacity available, low deployment costs, a pay-as-you grow modular structure and diverse entry levels, Alvarix delivers a convincing and unparalleled value-added proposition for operators in the 26GHz market.

Alvarix provides optimal price/performance solution by minimizing both CAPEX and OPEX, thus assuring the operator a rapid ROI, growth potential and maximized profitability.

## Integrated Solution

The Alvarix solution integrates Alvarion's WALKair 1000 and WALKair 3000 with the same Base Station facilities. Providing the flexibility of two entry levels at each Base Station and Terminal Station, the Alvarix enables operators to deploy their network according to their specific needs and optimize price/performance by minimizing CAPEX, while enhancing ROI.

Alvarix increases service offerings by delivering a combination of high-range capacity, system availability and coverage, thus enabling the operator to provide customers with a broad array of application types and segments, diversified multi-services and price structures. In addition, Alvarix extends the operator's coverage and market penetration by reaching new potential customers.

To accommodate different customer capacity profiles, Alvarix enables optimized CPE according to the customer's requirements and capabilities on each deployment phase, and facilitates the use of the appropriate price structure per customer. The Alvarix solution delivers multiple features and benefits, which enhance the delivery of a diverse variety of service packages and applications for existing and potential market opportunities, as follows:

**Table 1: Alvarix Applications**

Supports diverse segments, applications and multi-services	Increases opportunities to penetrate new markets and target new customers
Converged BWA and Cellular Backhauling Application	Enables the same BWA PMP infrastructure to be used for both applications increasing the potential businesses and improve the operator's business model
PMP Cellular Feeding	Enhances cost efficiency compared to PTP and leased lines
	Saves CAPEX for site acquisition and backhaul through easy integration into wireless sites of the cellular operator
	Increases BWA utilization
MDU/MTU Access application	Improves efficient use of trunk equipment  Enables multiple users to share same Terminal Station. Therefore, initial investment (CAPEX) is shared and business model improved.

**Table 2: Alvarix Features and Benefits**

High spectral efficiency (2.5 bits/sec/Hz) in conjunction with high capacity per BS (Up to 1.2 Gbps per cell)	Provides high data rates over a minimal bandwidth, thus allowing the carrier and service provider to efficiently utilize the spectrum and to maximize their revenues by deploying less BSs for a given territory. Result in less CAPEX and OPEX spending.
Multi-Carrier approach per sector saving the number of ODUs	Reduces OPEX & CAPEX by saving the number of required ODUs, roof-top Base Stations and infrastructure
Pay-as-you-grow structure	Enables additional carriers/capacity per sector, as and when needed, by adding only Indoor Units components
	Securing the investment by enabling gradual upgrading
Automatic/Manual dual modulation scheme (16QAM/QPSK) per Terminal	Increases the system availability and optimizing the coverage
	It improves the operator's business model by increasing the number of Station potential customers per BS
	Saving both the operator's CAPEX and the OPEX by eliminating the need of deploying new BSs in order to cover remote customers



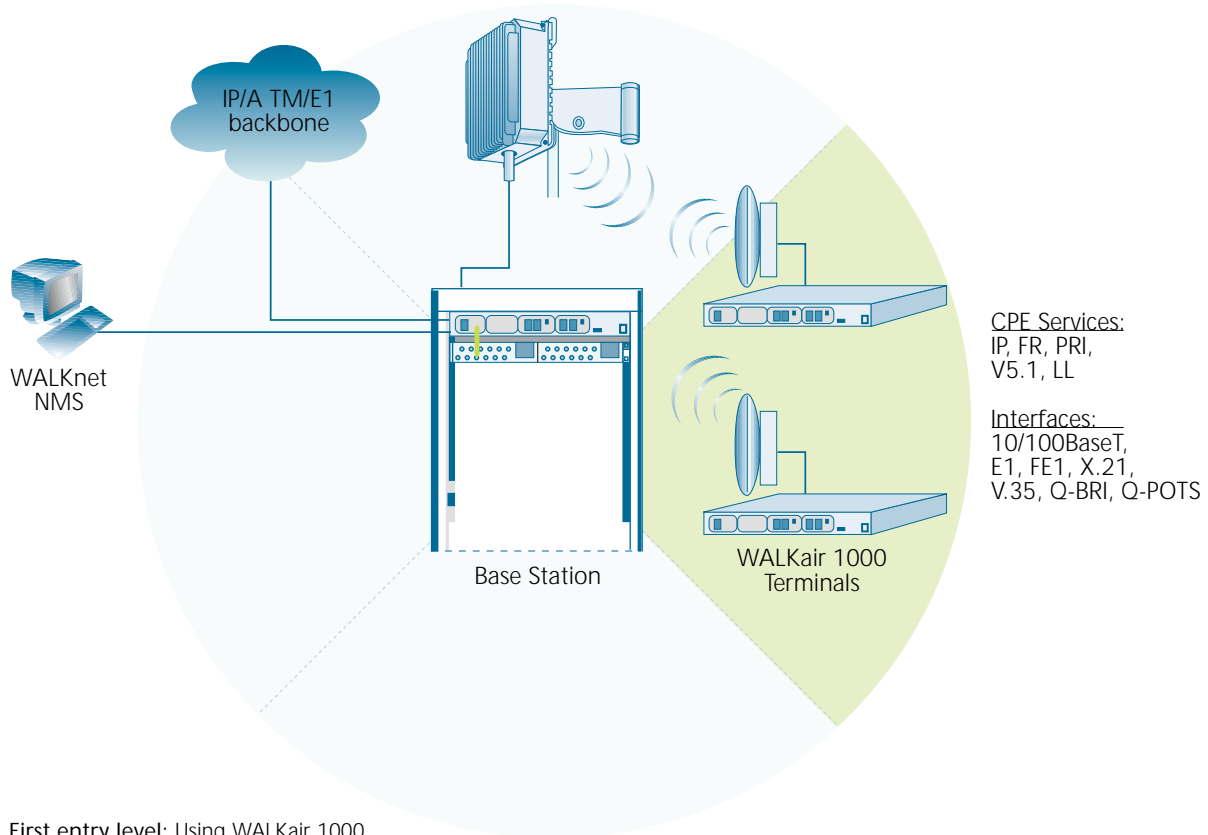
Smooth integration and migration between the two product lines (WALKair 1000 and WALKair 3000) that are integrated under the Alvarix	Same ODU and IF components at the TS and BS
	Same network management (WALKnet) and Frequency Planning (NIR) tools
	Saving the operator OPEX when integration/migration of both product lines is needed

### Flexible Base Station Solution

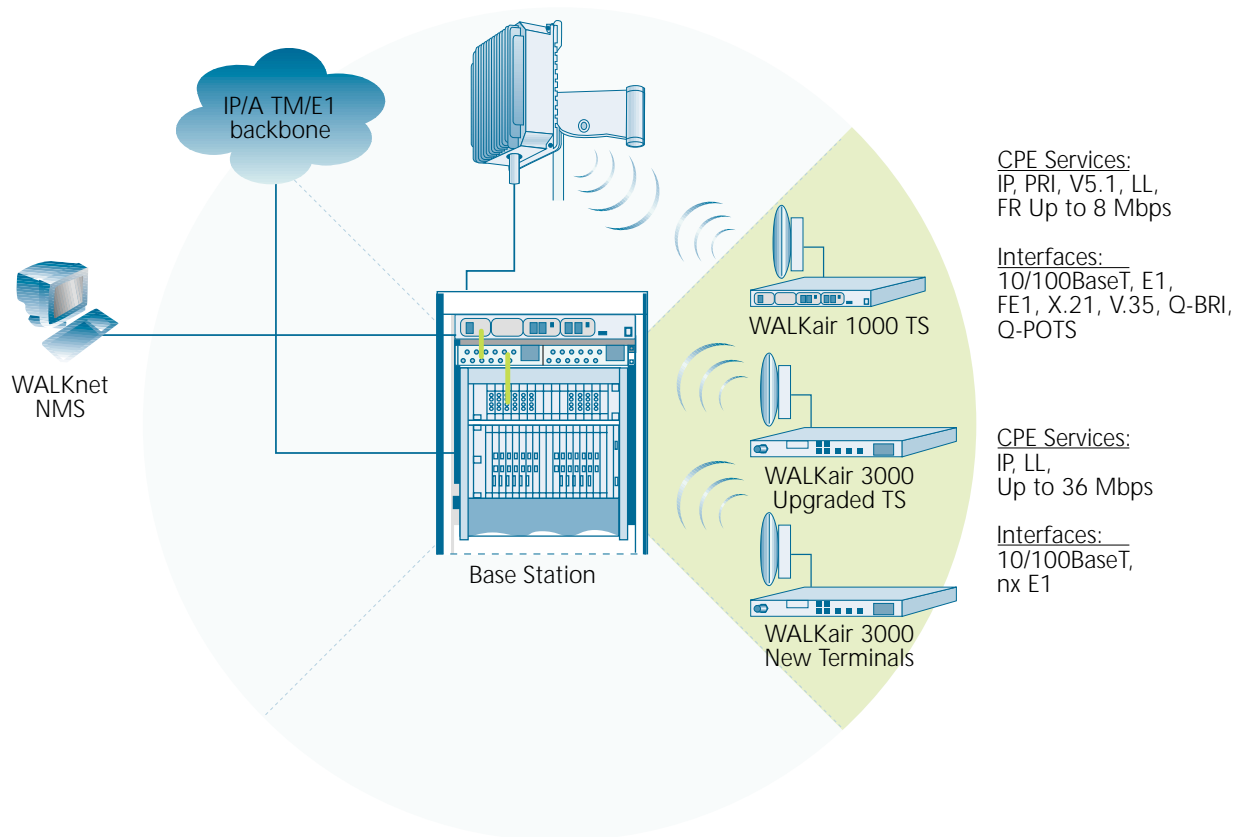
Alvarix provides a choice of Base Station options according to the actual need at a specific deployment evolution phase, as follows:

- **First entry level:** Using the WALKair 1000 to deliver up to 512 Mbps per Base Station, the Alvarix first entry deployment is recommended for alternative or established operators seeking an initial, low investment solution suitable for remote/sub-urban areas.
- **Second entry level:** The Alvarix second entry deployment, employing either an additional WALKair 1000 or the WALKair 3000, is recommended for operators with a larger initial deployment. With large capacity cells delivering up to 1.2 Gbps per Base Station, the second entry level provides high availability and coverage to dense urban regions. Smooth migration and integration during each deployment phase is assured.

To enhance cost efficiency and reduce CAPEX, Alvarix shares the Outdoor Unit at the Base Station and Terminal Station, and uses the same IF frequencies and IF cable between the Indoor and Outdoor units. In addition, Alvarix employs the same Network Planning Tool (NIR) for easy frequency planning and the same combined Network Management System (WALKnet).



First entry level: Using WALKair 1000



Second entry level: Employing either additional WALKair 1000 or WALKair 3000



## Optimized Terminal Station Solution

Alvarix provides a choice of Terminal Station options, as follows:

- Standard Terminal Station: Optimized for SOHO, SE, MDU/MTU and GPRS/GSM feeding, the standard Terminal Station supports legacy voice services by POTS/ISDN-BRI/E1/FE1/V5, in addition to data services of up to 8 Mbps capacity.
- High Capacity Terminal Station: Optimized for ME and large corporations, MDU/MTU and UMTS feeding, the high capacity Terminal Station supports legacy voice services by E1 and FE1 and data services of up to 36 Mbps capacity.

## Multi-Service Platform

Alvarix enables a range of services including data, voice, leased line and PMP cellular backhaul.

Table 3, below, summarizes the range of services:

**Table 3: Alvarix Range of Services**

Data	IP over Ethernet 10/100 BaseT, Frame Relay, ISDN Quad-BRI
Voice	V5.1 (for voice MUX) over E1, ISDN Quad-BRI, ISDN PRI
Leased line	E1/Fractional E1, V35/X.21
PMP cellular backhauling	Leased lines over E1 for GPRS/GSM feeding, nxE1 IMA fo UMTS (3G) feeding

## Summary

For operators in the 26GHz band, Alvarix meets all present and future market requirements by providing a fully-integrated, flexible, adaptable and highly cost-effective solution. The table below summarizes the Alvarix Access and Feeding applications key qualities and attributes:

**Table 4: Alvarix Qualities and Attributes**

Access application	<ul style="list-style-type: none"> <li>• Delivering next-generation broadband IP services</li> <li>• Legacy Voice and Data services</li> <li>• Always on services</li> <li>• End-to-end QoS and SLA</li> <li>• Fiber-to-building concept</li> </ul>
Feeding application	<ul style="list-style-type: none"> <li>• Licensed frequency bands</li> <li>• Multiple standard interfaces and services</li> <li>• Reliability</li> </ul>
Both types of applications	<ul style="list-style-type: none"> <li>• Largest coverage capacity available</li> <li>• Scalability through diversified Terminal Station and modular, flexible Base Station</li> <li>• Availability BER &lt; 10<sup>-9</sup>, 99.995%</li> <li>• Carrier class service</li> <li>• Comprehensive network management tool</li> </ul>

## **About WALKair 3000**

WALKair 3000 is an advanced point-to-multipoint broadband wireless access solution, delivering Carrier Class services at upstream and downstream rates of up to 36 Mbps. WALKair 3000 is designed for new and established carriers requiring proven last mile solutions for small and medium businesses and multi-dwelling and multi-tenant unit (MDU/MTU) applications. In addition, WALKair 3000 is the optimal solution for next generation cellular backhauling applications.

This new system is based on Alvarion's industry-leading cluster of high spectral efficiency, frequency reuse and dynamic bandwidth allocation technologies. The solution delivers the highest coverage capacity available from any broadband wireless access vendor.

## **About WALKair 1000**

WALKair 1000 is the ideal point-to-multipoint broadband wireless access system for Carriers servicing small/medium enterprises (SMEs), Multi-Tenant and Multi-Dwelling Units, (MTUs and MDUs), SOHOs, industrial, retail and residential subscribers.

Operating in the standard ETSI 3.5, 10.5 and 26 GHz frequency bands, WALKair 1000 maximizes data throughput volume by providing a total cell capacity of 256 Mbps at a 28 MHz frequency allocation and more than 512 Mbps at 56 MHz, using single polarization. A single WALKair 1000 Base Station can support up to 2048 Terminal Stations with peak data burst rates of 4 Mbps.

## **Alvarix**

Alvarix combines both WALKair systems to provide operators in the 26GHz band with unique services support suitable for a wide range of applications, and to facilitate a smooth integration to higher capacity services. WALKair 3000 operates in the same environment as the WALKair 1000 and can reside on the same cell, efficiently providing varying bit ranges to a wide variety of user profiles. The WALKair 3000 system is specifically designed for delivering next-generation broadband IP services, providing true multi-service end-to-end QoS capability. Small and Medium business (SME) applications as well as Multi-dwelling applications such as Radio To The Building (RTTB) and Radio To The Office (RTTO) can benefit from the high quality voice, high speed Internet access and other IP data services provided by the Alvarion WALKair 3000 system.

## **About Alvarion**

Alvarion is a premier provider of solutions based on Point-to-Multipoint (PMP) Broadband Wireless Access (BWA) used by telecom carriers, service providers, and enterprises worldwide. Alvarion systems provide Internet access and voice and data services in the last mile, cellular network feeding, building-to-building and wireless local area network (LAN) connectivity.

Alvarion offers the broadest range of BWA solutions by market segment and frequency band, designed to address all carriers' and service providers' business models. With its combined market experience, strong customer base, diversified distribution channels and field-proven deployments, Alvarion is a leading BWA pure play provider for every end user profile, from residential subscribers to business customers.





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