

Seaports have special needs

As warehouse locations and equipment move around outdoors, seaports need flexible connection solutions suitable for outdoor warehousing, without the limitations of wired infrastructures. Furthermore, they have to comply with security legislation (International Security for Ports and Ships - ISPS) designed to ensure maximum protection against terrorism and attacks, or face the prospect of losing business from shipping operators.

IP-based wireless broadband meets seaport needs

Wireless access is the solution for today's seaports, typified by expansive areas to be monitored and controlled; large volumes of cargo which often includes sensitive and dangerous materials requiring special safety measures and security; and many guest vessels seeking a more reliable and cost-effective solution for broadband access to satellite or GSM. The integration of an Alvarion IP-based wireless broadband infrastructure supports all seaport needs for security, operations and visitor access, ensuring the best return on investment and supporting all requirements for throughput, coverage and embedded security.

Flexible and cost effective solution

Alvarion wireless solutions offer the flexibility and mobility to provide access anywhere, anytime. Less expensive than fiber and ADSL, they also offer the scalability to add equipment and expand networks when necessary. This results in a cost effective solution with mobility that cannot be achieved with a wired solution.

Field-proven experience

Seaports worldwide, from Europe's largest cargo ports to small marinas in North America, rely on Alvarion solutions for wireless connectivity. This is because Alvarion has accumulated extensive experience and know-how in the WiMAX™ wireless broadband industry. The company's technology offers a range of features ideally suited to seaports, such as high survivability in outdoor installations, extensive ranges, coverage and throughput, mobility, easy deployment and suitability for security demands.



Technology Features

- **Outdoor design - high survivability**
 - Near 100% uptime
 - MTBF over 11 years; over 99.99% availability
 - Operational temperature range: -40°C to +60°C
 - IP-67 rating (NEMA 4X equivalent)
- **Range and coverage**
 - OFDM technology providing NLOS coverage and handling multi-path reflections
 - Maximum cell radius up to 20 miles
- **Throughput: 32 Mbps per sector (FTP)**
- **Security**
 - Hardware-based AES encryption
 - VLAN support
 - Secure network management
- **Mobility: data connectivity to vehicles at 50 km/hour**
- **Easy deployment**

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Meeting Seaport Demands for Security, Operations and Access



Seaports around the world are constantly facing new challenges, particularly as legislature makes demands for better security and telecommunications industries integrate technological innovations. Similar to other traditional business, seaport authorities are being forced to improve their IT infrastructures in order to remain competitive.

Wireless broadband access offers an ideal solution. In addition to eliminating the challenges involved in laying wireline infrastructures in concrete and in the sea, it also offers the opportunity to provide broadband access to vessels anchored in harbors and marinas.

About Alvarion

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

Meeting Seaport Demands for Securities, Operations and Access

The following field proven Alvarion systems are ideal for improving communications and operational efficiency in seaport utilities: BreezeACCESS®, BreezeNET®, BreezeMAX®, BreezeACCESS® Wi2 and BreezeMAX® Wi2.

Seaport Application

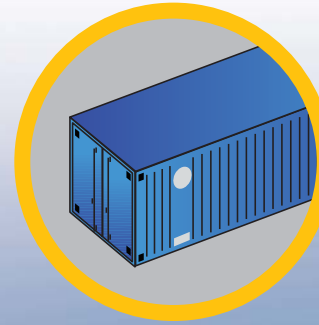


Alvarion's IP-based Wireless Broadband Access: Meeting seaport demands for security, operations and access



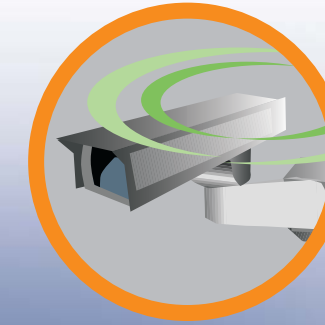
Better and permanent control of remote, large equipment

Enable permanent connection to remote and large equipment, such as onshore/offshore container and truck weighing devices and cranes - expensive resources often requiring a mobile network solution and operated by personnel who need constant voice and data connectivity to ensure the safe transfer of dangerous materials.



Wireless network equipment to ensure cargo integrity

- Wireless network equipment for access control (through personal ID badges).
- Mobile shipping container scanners for scanning the inside of steel containers, and electric lock scanners using wireless-connected micro switches for real-time determination whether a container lock has been broken.



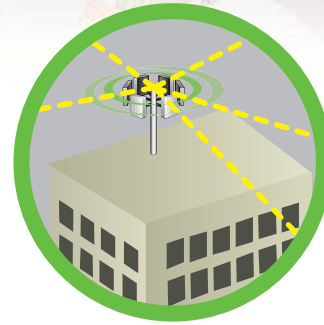
Real-time surveillance

- Thermal and regular cameras for monitoring and control.
- Intelligent video elements such as video motion detection (VDM) and license plate recognition (LPR).
- Touch and motion sensors for exact identification of where a physical barrier has been breached.
- Radar for monitoring security procedures used by vessels entering the port.



Reliable warehousing powered by a wireless network

Manage cargo warehousing with wireless connectivity, which is particularly important for items that have to be recorded and tracked by RFID/barcode, to ensure that their physical location is constantly registered in the warehouse software.



Effective administration through building connectivity

Provide mobile broadband for data connectivity essential for ERP and logistics applications to ensure the smooth running of all port operations; and voice connectivity to enable port employees to communicate at all times, even when on the go, using a cost-effective internal voice network.



Complete non-stop control of mobile vehicles

Achieve non-stop connectivity with mobile vehicles such as unmanned automated guided vehicles (AGVs), trucks and trailers, to ensure the constant mobile essential for smooth operations and safe handling.



Wi-Fi access for vessels

Seaports with wireless broadband access can offer Wi-Fi access as a service to boat owners seeking high-quality access at any time from anywhere in the defined marina area. Furthermore, Wi-Fi-enabled dockside remote monitoring can be used for measuring battery voltage; shore power and bilge pump activity, saving sailors both time and money.