INFINET
wireless

THE SUCCESS STORIES

Contents

Welcome!

It is with great pleasure that I share with you here some of the success stories Infinet Wireless has had over the past few years, thanks to the fruitful and loyal relationships we have developed with our global community of partners and customers.

Established in 1993, Infinet Wireless is one of the world's largest privately-owned Fixed Broadband Wireless Access (FBWA) R&D and manufacturing companies. With more than 27 years of intense customer-based research and product development, our range of wireless connectivity solutions are the preferred choice of service providers of all types and those who require uncompromising reliability.

To date, we have built a solid foundation in fixed wireless technologies and currently have thousands of deployments in over 130 countries, from the depths of Siberia, to the hot climates of the Sahara and to the wet plains of the Pampas. Our core strategy of providing the most flexible, reliable, cost-effective and innovative wireless solutions available today has helped us reach a leading position in the marketplace in all key verticals of the industry. We are fast becoming the benchmark for carrier grade and multi-service broadband wireless solutions.

Deployed on a truly global basis, our solutions have been chosen to provide strategic infrastructures for organisations such as British Telecom, LCR Honda, Anglo-American, Fujitsu-Siemens, SINOPEC China, TNK-BP, Total, China Mobile, Dubai Port World, to name just a few.

Our world-class R&D facilities enables us to develop leading wireless solutions that give us the cutting edge over our competition. These are backed up by industry-standard certification and recognition to give our customers the peace of mind they require when deploying mission-critical wireless infrastructures of all sizes.

Our company is built on the foundations of our hard-working team of over 200 engineers. Most of them have gained their extensive experience from the military, aerospace and commercial industries, which between them combine a multitude of wireless technologies, as well as our own proprietary hardware and software platforms, ultimately allowing us to develop the exact solutions that our end customers specifically demand from us. We are always looking to provide the best and most innovative wireless solutions, developing what the market needs and when it is needs them. Although we are confident in our technical and commercial abilities, we know we need to continuously listen to feedback from our customers and partners, before we incorporate them into our roadmaps.

We look forward to continuing the successful development of our company, whilst adding significant value to the businesses of our customers, wherever they are located.

DMITRY OKOROKOV,
CEO, INFINET WIRELESS

Advantages

Infinet Wireless is a leading manufacturer of fixed broadband wireless connectivity and provides a wide range of carrier-class infrastructures.

Established in 1993, we are one of the world's largest privately owned Fixed Broadband Wireless Access (FBWA) R&D and manufacturing compa-

nies and have fast become the preferred choice for service providers who require uncompromising connectivity.

Infinet is in demand worldwide with thousands of end-users deploying our solutions in over 130 countries, across all 5 continents.

Reliability

Thousands of Infinet Wireless units have withstood the most challenging environmental conditions across five continents, many of which remain in full operation even after 15 years of continuous use. Infinet Wireless can rightly claim that it delivers to its customers some of the most robust wireless units in the marketplace

Performance

High-capacity 1 Gbps speed and ranges of up to 100 km, enabling Infinet Wireless to deploy industry-leading infrastructures for fully-fledged triple-play support, both in metropolitan and rural networks, and which require the highest Quality of Service (QoS) and performance levels

Flexibility

Topology-agnostic, multiple frequency bands, universal wireless platforms can be tailored to individual customer requirements to give them exactly the solution they demand

Integration

Wireless units which are seamlessly integrated into virtually any network infrastructure (including MPLS), delivering the industry's richest set of networking features and benefits to the end users

History

1993 Development of our very first wireless solution, SkyMAN

1995 Launched the first wireless internet access service in the Russian Federation

1998 Art Communications deployed our solutions in Moscow, quickly becoming one of the largest FBWA networks in the world

2003 The Infinet Wireless brand is launched globally, with major initial projects won in Saudi Arabia and Malaysia

2007 Developed a new and unique wireless network architecture, known as MINT, providing a rich set of functionality and ease of scalability

2008 Launch of InfiLINK 2x2 – the first affordable Point-to-Point (PTP) MIMO solution in the marketplace operating in the 5 GHz frequency bands

2009 Launch of InfiMAN 2x2 – the world's first MIMO Point-to-Multipoint (PMP) solution in the 5 GHz bands

2010 Launch of the InfiMAN 2x2 product range in the 3.5 GHz bands

2011 Launch of integrated 28 dBi wireless units to enable coverage of distances over 50 km

2012 Developed a unique Instant DFS technology, an interference mitigation feature allowing the operating frequency to switch to a clean band without any packet loss the very first of its kind in PMP networks globally

2013 Launch of new Smn/Lmn subscriber terminals with a performance of more than 200 Mbps

2015 Launch of the InfiLINK XG – the flagship PTP wireless with capacities of up to 500 Mbps, a new TDMA protocol and intra-site synchronization

2016 Commercial launch of the InfiLINK XG 1000, with capacities of up to 1Gpps, effectively doubling those of previous product families:
  – Revamping of the InfiMAN 2x2 product family
  – Launch of new software tools: InfiPLANNER PTP planning tool and InfiMONITOR, a new network management platform

2017 Launch of the new R5000-Qmxb base station sector with an integrated antenna featuring cutting-edge beamforming technology

2018 Launch of our first Software Define Radio (SDR) solution: Quanta 5

2019 Launch of the Quanta 70, operating in the mm-wave frequency bands of 70GHz

Point-to-Point Solutions

Our Point-to-Point solutions, comprising of a wide range of wireless units from the InfiLINK XG 1000, InfiLINK XG, InfiLINK 2x2 and Quanta families, provide proven reliability and performance in all weather conditions.
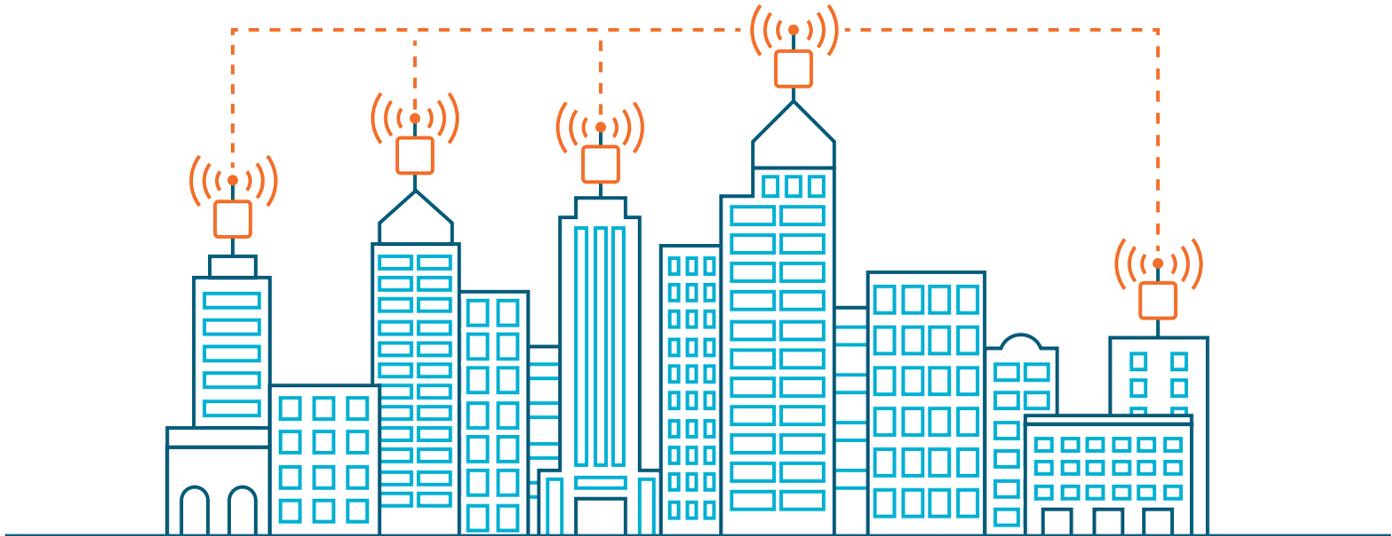

Key Features and Highlights

- Up to 100 km distances, without repeaters
- High gain integrated antennas from 14 dB to 39 dBi
- Extended QoS support
- Flexible frequency planning
- Extended temperature range from -55 to + 60°C, at 100% humidity
- TDD synchronisation support
- Operation in LOS/nLOS/NLOS conditions

Applications

- 4G/LTE/5G high capacity backhaul
- Wireless ISP infrastructure backhaul and internet access for remote locations
- Fully-fledged Fibre/FSO /Millimetre-wave replacement, extension or backup
- LOS and NLOS backhaul connectivity for macro- and small-cell base stations
- Video surveillance infrastructure over medium and long distances
- Rural/Suburban last mile connectivity

Point-to-Multipoint Solutions

Our family of Point-to-Multipoint solutions are available in frequency bands from 3 to 6.4 GHz and are based on innovative high-capacity base station sectors, including multiple options with beamforming antenna and subscriber terminals delivering from 8 Mbps up to 180 Mbps.
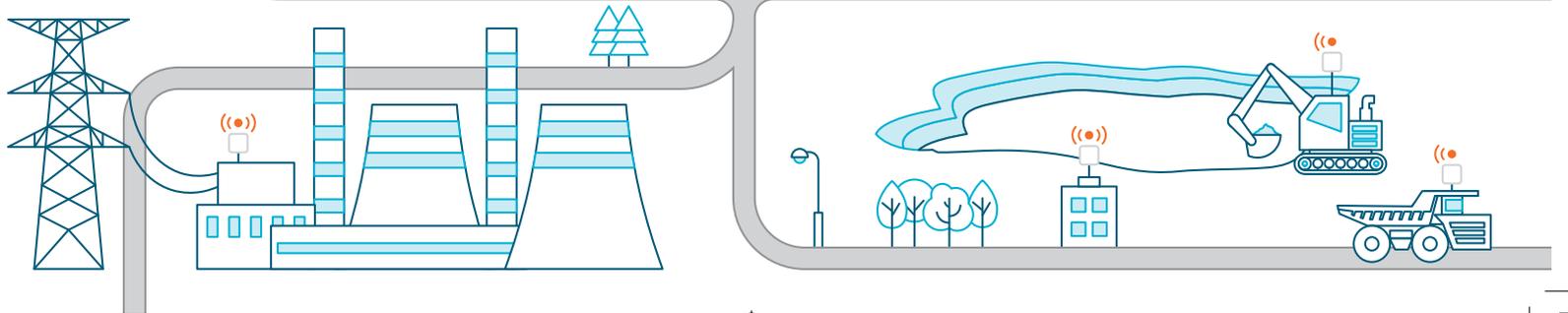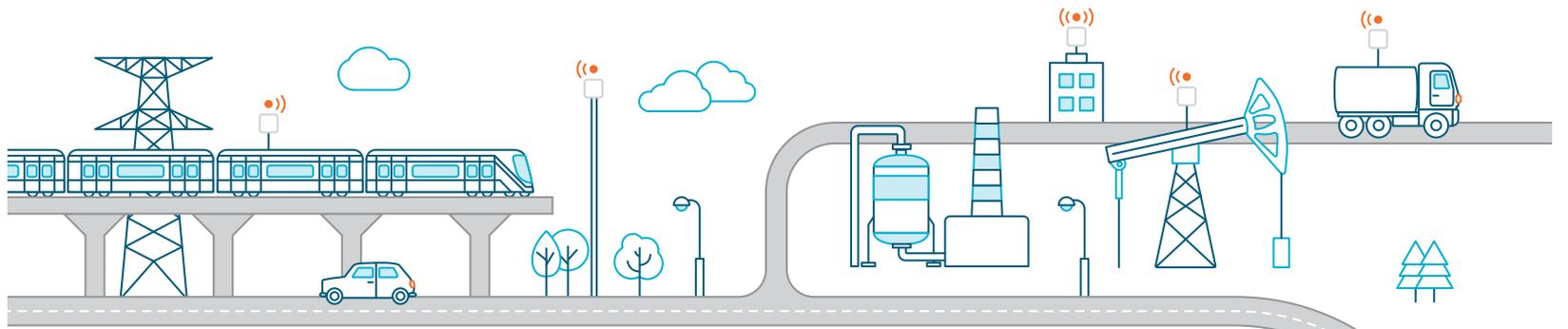
Key Features and Highlights

- Base station sector distance coverage: up to 40 km with integrated antenna
- Up to 250 Mbps base station sector performance in just 40 MHz of spectrum, significantly reducing capital expenditure
- Subscriber terminal performance: up to 180 Mbps
- TDD synchronisation
- Advanced QoS features, offering a robust and reliable solution

Applications

- Last mile access for Wireless ISP's and service providers
- High-Speed LAN or WAN corporate networks
- Wireless infrastructure for video surveillance and public safety networks
- High-density WISP access network
- Long-range enterprise network
- Rural low-density WISP coverage

CUSTOMER STORIES

Sector
Telecommunications

The largest fixed wireless broadband footprint in Russia

📶 Telecommunications   📍 Russia   💼 Enforta

Enforta was founded in October 2003 by a group of telecommunication industry executives. Its objective is to provide broadband telecommunication solutions based upon wireless and other state-of-the-art technologies in Russia's regional capitals.

Enforta's goal was to provide a full portfolio of broadband services to its SOHO, SME and Enterprise customers covering high speed internet access, local and national telephony, email, website hosting and dedicated VPN services for secure communication between home workers and branch offices. Achieving this with a broadband wireless network was both innovative and highly challenging in terms of working with a new technology on such a large scale. In particular, the challenges of wide-scale deployment across major cities was a deployment scenario that had not been tried anywhere else in the world.

To build a cost-effective, scalable national network using Wireless technologies in 3.4–3.7 GHz and 4.9-5.9 GHz, and also 6.0–6.4 GHz bands, Enforta chose Infinet Wireless's solution. Thanks to the high performance of the Infinet Wireless's solution (up to 300 Mbps) and a wide range of network functions, including routing, switching and QoS, Enforta offers a full range of services to meet the needs of large organisations, enterprises, small and medium businesses and private clients.

CHALLENGES

- Limited spectrum availability
- Lengthy regulatory process for approvals
- VoIP is regulated
- Demanding climatic conditions

SOLUTION

- InfiLINK 2x2 high-capacity Point-to-Point solutions
- InfiMAN 2x2 Point-to-Multipoint solutions
- More than 50,000 subscriber terminals and more than 2,500 Infinet Wireless Base Stations

CUSTOMER BENEFITS

Reliable coverage of wide areas

Ability to connect remote subscribers

Significant cost reduction on wireless infrastructure

Rapid deployment of networks

> "Infinet Wireless has been a valued strategic partner to Enforta for over five years. In over 50,000 fixed subscriber installations, Infinet Wireless's equipment has proven to be reliable, feature rich, and well supported. For operators with bandwidth-hungry subscribers, Infinet Wireless's products offer an outstanding price-performance ratio.
>
> **LEE SPARKMAN**,
> PRESIDENT OF ENFORTA

FBWA backbone network in the Baikal region

Telecommunications   Russia   IRSN

IRSN, the largest internet provider in the Irkutsk region of Russia, provides communication services to government and corporate clients, as well as consumers.

Previously, the provider was using satellite communication channels, which made it impossible to implement new interactive applications such as video conferencing, voice transfer, or connecting more than three computers to the internet at one time. This was due to the technological limitations of the components and the use of multiple satellite channels.

Faced with these difficulties when working on joint projects between the Ministry of Emergency Situations and the Federal State Unitary Enterprise of Radio and TV design, IRSN took the decision to modernise the existing network backbone and to move the links to a wireless access model.

The solution provided by Infinet Wireless was Point-to-Point wireless links, built using InfiLINK 2x2 units with integrated high gain antennas. The link length ranged from 11 km to 60 km with capacity of up to 300 Mbps at 40 MHz.

REQUIREMENTS

- Limited spectrum availability
- Lengthy regulatory process for approvals
- VoIP is regulated
- Demanding climatic conditions

SOLUTION

- InfiLINK 2x2 high-capacity Point-to-Point solutions
- InfiMAN 2x2 Point-to-Multipoint solutions
- More than 50,000 subscriber terminals and more than 2,500 Infinet Wireless Base Stations

CUSTOMER BENEFITS

Reliable coverage of wide areas

Ability to connect remote subscribers

Significant cost reduction on wireless infrastructure

Rapid deployment of networks

Construction of a transport radio network using Infinet's SkyMAN R5000

Telecommunications   Russia   The National Radio Association

The National Radio Association is the official body responsible for the national radio frequency. It has been created with the support of the State Communications Committee and GSN, Russia.

In 2009, Geyser-Telecom launched a network to provide wireless broadband access for the National Radio Association in the Moscow and Kaluga regions, using Infinet Wireless R5000. This network provides data transfer between stationary automatic radio control systems (ARMS) on mobile radio communication networks on the IMT- 2000/UMTS frequency.

The main element of the ARMS is stationary

DF (direction-finding) complex "BARS", which produces constant monitoring of the noise in Moscow and Kaluga. Information from ARMS is sent to the analysis centre in Krasnoznamensk.

The network consists of six Point-to-Point solutions, three of which have a length of 23, 43 and 45 kilometers. For customers, the main requirement is the high reliability of the communication channels. Therefore, equipment with a high power transmission must be used (Ot/50.36.300 and Ot/50.48.500). on the equipment with shorter distances, standard equipment can be used (L/50.36.63) with a frequency range of 4.95 – 5.05 GHz.

REQUIREMENTS

- Highly reliable communication channels
- Integration with noise monitoring

SOLUTION

- InfiMAN 2x2 – high-speed Point-to-Multipoint providing 240 Mbps capacity

CUSTOMER BENEFITS

High power transmission

High reliability of the communication channels

Economically effective solution

Rapid deployment of networks

FLEX equips Infinet solutions for high-speed connectivity across Moscow's harsh environments

📶 Telecommunications   📍 Russia   💼 FLEX

FLEX is one of the largest broadband Internet access operators in the Moscow region. to date, the operator's network covers the entire 44,300 km² of the Moscow region.

FLEX first began implementing Infinet solutions in 2002 when it needed to deploy links for banks and customers. The high functionality of the Infinet routing hardware installed exceeded all of the operator's expectations and saved it the trouble of using additional equipment. Moreover, Infinet solutions showed excellent performance in the adverse climatic conditions of the Moscow region, as well as best-in-class technical characteristics. FLEX ultimately decided to replace all devices from other manufacturers with Infinet solutions, determined by the reliability and flexibility of the solutions, the ability to modify the network, and the wide range of products available.

Due to the continuous expansion of the customer service packages and improvement of their quality, the operator needs constant link expansion. Infinet has developed a new solution, the R5000-Qmxb base station sector enhancing radio network efficiency, which was among the devices first tested by FLEX.

Today, FLEX network is built exclusively with Infinet equipment, and some of the devices installed back in 2003 are still fully functional to this day. The operator's network includes more than 8,500 subscriber units and 200 base stations, as well as 500 Point-to-Point connections with a signal range up to 55 km.

Infinet solutions allow the operator to provide a full range of services in the frequency bands of 5 and 6 GHz: an arrangement of backhaul channels, Internet access, VoIP and video surveillance systems.

CHALLENGES

- High speed network data transfer
- Decent network throughput with minimal spectrum
- High quality connection of existing links

SOLUTION

- 500 Point-to-Point links with a signal range up to 55 km and 20-25 km with an integrated antenna:
  - InfiLINK 2x2
  - InfiMAN 2X2
  - InfiLINK XG
  - R5000-Qmxb

CUSTOMER BENEFITS

Increase of the maximum network bandwidth

More efficient use of the spectrum

Ability to extend network without replacing the equipment

Effective solution that operates smoothly in the adverse climatic conditions

World Cup Final screening successfully delivered to Estonia Infinet Wireless solutions

Telecommunications   Estonia   STV

STV, a telecommunication company founded in Tallinn in 1991, offers a range of services such as Internet access, interactive television programs, VoIP and video surveillance to its diverse customer base. STV operates in large Estonian cities and its customers include hotel chains, the largest national shipping company, Tallink, as well as many other enterprises of all sizes.

STV has based its entire business model on providing its services via a wireless infrastructure, but the increase of its customers over time, coupled with demands for higher capacity and faster connectivity, has put a serious strain on its legacy network. This resulted in the company no longer being able to deliver the high-standard it prides itself on. It was ultimately forced to seek an alternative technology platform to ensure it remains competitive and is able to continue to deliver full customer satisfaction.

After careful evaluation of various available solutions, STV selected Infinet Wireless' InfiLINK 2×2 Point-to-Point family of solutions to transmit all data streams between Rakvere and two other neighboring towns. STV has now deployed hundreds of Infinet Wireless radio links and is reaching other areas and offering additional revenue-generating services such as video streaming for large events and video on demand.

STV was able to deliver highly reliable broadband connectivity to its customers wherever they were located. The easy installation of Infinet's solutions were also a key benefit for STV, enabling it to successfully compete with other service providers and to further extend its geographic reach in Estonia. The company is now gradually replacing the old and outdated infrastructure with Infinet Wireless' latest solutions, as it looks to further embrace the digital revolution and stay at the forefront of innovation.

CHALLENGES

- Link capacity exceeding 60 Mbps
- Stable connectivity even when connecting 20 or more subscribers
- High spectral efficiency
- Rapid return on investment

SOLUTION

- InfiLINK 2×2
- InfiMAN 2×2: R5000-Qmxb

CUSTOMER BENEFITS

No loss of performance, even when increasing the number of subscribers

High reliability and throughput

Quick deployment and relocation, easy to configure

Guaranteed minimum throughput to all customers

> Today, we are using Infinet's solutions to deliver a reliable video streaming service that will cover large events, like the recent World Cup, allowing us to avoid interruptions and disruptions that cause headaches to viewers and operators alike. Due to the reliability of the Infinet solutions, we can now enter into Service Level Agreements with hotels and deliver multicast television programmes. Throughout the process of deploying the Infinet solutions, we were also extremely satisfied with the added benefits it brought to our business, including a stable connection with high spectral efficiency which allowed us to transmit more data in a smaller radio channel, and its ease of deployment and configuration. We can now deliver speeds of up to 20 Mbps which is a major increase compared to what we were getting before.
>
> **ALEXEY BELKIN**,
> CHIEF NETWORK ADMINISTRATOR AT STV

Sevenet has significantly improved its network infrastructure and customer communication

📶 Telecommunications   📍 Slovakia   💼 Sevenet

Sevenet specialises in a range of business, public sector and consumer online services. These include traditional public internet access, a range of bespoke service offerings to business communities such as leased lines and wireless network installation services for local municipalities, as well as backbone connectivity for smaller ISPs.

Sevenet deployed a new state-of-the-art platform based on Infinet Wireless's solutions, running along an optical backbone and an Ethernet-to-the-Home network in Sturovo. In addition, Sevenet's network is based on a star topology, with a consolidated network operating centre located in Sturovo. Connectivity to the many smaller public sector customers is achieved through various wireless links from Infinet Wireless. For example, Sevenet deployed a number of R5000-Omx links operating at full capacity (i.e. 300 Mbps) in the 5 GHz frequency bands, in conjunction with external high performance antennas.

By using Infinet Wireless's solutions, Sevenet was able to deliver the required broadband connectivity to its customers, which resulted in higher network reliability and much improved customer satisfaction.

As an added bonus, Sevenet achieved significant cost reductions in its operating expenditure by not spending additional resources on licensed microwave links. These have a similar initial outlay and availability but come with high licensing fees.

CHALLENGES

- A large, diverse customer base with different needs
- Strong competition from major service providers offering broadband access in bigger cities
- Competition from smaller WISPs offering low-cost wireless connectivity in towns and villages

REQUIREMENTS

- Cost effective wireless infrastructure
- High-capacity backbones to support IP TV and Surveillance

SOLUTION

- InfiLINK 2x2 wireless Point-to-Point solution with capacity up to 300 Mbps throughput

CUSTOMER BENEFITS

Delivery of required broadband connectivity with higher network reliability

Ability to extend network without replacing the equipment

Rapid deployment of networks

Significant reductions in operating expenses for Sevenet

> " Infinet Wireless offered us benefits that proved invaluable, high availability and a great price-performance ratio. After using Infinet Wireless's solutions in our network for some time without experiencing any technical issues, we were confident that the company's technology was exactly what we had been looking for in order to achieve our corporate goals. The comprehensive training programme and on-going support offered by Infinet Wireless and its local partner Inter Crown Europe made a big difference to us.
>
> **ERNEST TOTH,**
> CO-OWNER OF SEVENET

Wireless to the home solutions for triple play

📶 Telecommunications   📍 Hungary   💼 Tisser Kft

Tisser Kft is one of a new breed of emerging ISPs and media companies in Hungary that utilises high-bandwidth connections to consumers to provide TV, Internet and IP phone services. Tisser Kft uses Infinet Wireless to provide high capacity "wireless to the home" solutions for triple-play.

Its business model has been built using a backbone fibre-optic cable network to deliver next generation ultrafast Ethernet-to-the-Building services.

In mid-2009, Tisser was asked to supply its triple-play service offering to a number of customers based in residential apartment blocks in Tiszaújváros, around 175 km North-West of Budapest. The apartment blocks required high-capacity connections to the Tisser backbone of at least 40 Mbps per apartment block link. This would normally have been achieved with a "Fibre-to-the-basement" (FTTB) solution, reaching an Ethernet distribution node in each block that would then supply residential apartments and small businesses directly with their internet, TV and IP telephone service.

Because of the immediate lack of availability of fibre to these apartment buildings, Tisser turned to Crown-Tech, an integration specialist for wireless systems, to explore the possibility of using broadband wireless links as an alternative to high-capacity fibre links. Crown-Tech conducted a number of site surveys and eventually recommended field-trialing an installation of Infinet's InfiMAN 2x2 and InfiLINK 2x2 units to provide the necessary links and high-capacity bandwidth to the core backbone.

REQUIREMENTS

- To rapidly deploy high-capacity wireless bandwidth links to consumer apartment blocks for delivery of voice, video and internet services
- To offer an alternative technology solution to "Fibre-to-the-Home" (FTTH)

SOLUTION

- InfiMAN 2x2 300 Mbps Point-to-Multipoint Base Stations
- Each Base Station served with InfiLINK 2x2 50 Mbps high capacity client links

CUSTOMER BENEFITS

Reliability of the system provided a viable alternative to fibre deployment

Savings of 90% on the budgeted mainte-nance costs

Highly efficient and focused spectrum usage provided maximum bandwidth

Significantly reduced deployment time over fibre installation

> " After nearly one year of operational experience, I can honestly say that the Infinet Wireless solution has offered an unparalleled level of reliability, with running costs far lower than anticipated, whilst still delivering rapid and reliable bandwidth connections to the end users for video, data and voice. I would recommend that other service providers should look to Infinet Wireless as a potential provider for their network.
>
> **LÁSZLÓ KALAPOS**,
> SENIOR IT MANAGER, CROWN-TECH

Kapulan provides wireless Internet solutions using Infinet Wireless products

📶 Telecommunications   📍 Hungary   💼 Kapulan Kft

Kapulan Kft is an Internet service provider that has been operating in the Győr-Moson-Sopron county of Hungary since 2013.

Kapulan had been using Point-to-Multipoint technology for public internet access and required a solution that could also deliver a high quality connection for businesses in the over-crowded 5 GHz spectrum.

As a result, Kapulan chose the Infinet Wireless solution. Kapulan now provides a competitive leased line service using the InfiMAN 2x2 equipment, offering 25/25 Mbps and 50/50 Mbps leased lines with the latency of just 2-3 ms. Digitop now provides a reliable internet connection for its clients and offers a scalable and dependable solution to future customers.

CHALLENGES

- To provide a reliable, high speed inter-net connection as an alternative option to optical fibre
- To provide business users with a high quality Internet service across an ever crowded 5 GHZ spectrum and a 35 km link

SOLUTION

- InfiMAN 2x2 Point-to-Multipoint solutions
- InfiLINK 2x2 Point-to-Point solutions

CUSTOMER BENEFITS

Faster data rates and high bandwidth

Significant reductions in operating expenses

Improving connectivity issues

Rapid deployment of networks

> " Infinet Wireless' distributor in Hungary said: "SinusNet has already successfully worked with Kapulan in the past to provide Infinet Wireless solutions in the Sopron region. Kapulan approached Infinet again when it needed a system to serve multiple business users cost effectively, even in a crowded 5 GHz spectrum. It is now serving Digitop and its clients as well as many other businesses are using the same system. The pioneering Infinet Wireless solution easily rectified and substantially improved all connectivity issues and now Digitop's clients have a constant level of throughput and is also able to provide a future-proof connection with an assured level of high bandwidth and low latency.
>
> **LÁSZLÓ POVÁZSAI**,
> SINUSNET (INFINET WIRELESS' DISTRIBUTOR IN HUNGARY)

Enabling Wireless Rural Broadband

Telecommunications   Hungary   Tom-Technik Kft

Tom-Technik Kft. Is an established ISP operating primarily in the Southern Plains of Hungary, with technical operations centred in Békéscsaba.

Through close relationships with a core ecosystem of partners and servicing a wide geographical area, Tom-Technik regularly participates in Rural Development Projects aimed at improving access to broadband infrastructure in rural or "technologically under-developed" areas.

As part of one of these projects, Tom-Technik secured EU funding to bring broadband internet into technically underdeveloped areas in Békés County, in the South Eastern part of Hungary.

Tom-Technik contacted Crown-Tech with the need to develop a feasible and cost-effective wide-area wireless network that could be rapidly deployed and easily maintained, targeted at offering affordable broadband connectivity for rural communities across the regions.

Following extensive field trials of the network architecture, Crown-Tech specified a wide-area network based exclusively on two vendors, with Infinet Wireless playing the key role in the core backbone of the wireless network, linking together smaller rural "collector" nodes with its high-capacity, Point-to-Point backhaul products.

REQUIREMENTS

- To bring affordable and reliable broad-band access to rural communities
- To deploy a rural broadband network that requires minimal infrastructure support and maintenance
- To utilize wireless backhaul technolo-gies to quickly deploy the community networks

SOLUTION

- InfiLINK 2x2 300 Mbps, 200mW Point-to-Point wireless backhaul products
- GRANTE high performance antennas

CUSTOMER BENEFITS

Reliable and easy to deploy core back-bone network

Easy deployment and integration of CPE units

Affordable solution for rural broad-band with minimal maintenance cost profile

Robust links mean fewer links required for high bandwidth transmission rates

" I believe that we have finally found a core network wireless product which has the right features for the right price, whilst offering very high availability and reliability.

TAMAS BATKI CEO,
TOM-TECHNIK KFT

Enabling SME businesses with Infinet Broadband Wireless

📶 Telecommunications   📍 Eastern Europe   💼 D-Link

D-Link's Eastern European team recognized that a potential lack of leased-line availability through the region could indeed cause an issue for its partners when bidding to deploy multi-site enterprise and SME networks.

D-Link Europe had decided to enter into the enterprise and business solutions arena to challenge the dominance of existing incumbent players such as Cisco in the midmarket and service provider networking segment.

Their offer of leading edge, high performance technologies in the enterprise LAN, WAN, Wireless and Security segments pose a strong competitive threat to the incumbent players, whilst in addition being positioned as highly price-attractive solutions to their target market seg-

ments.

In Hungary alone, D-Link's partner base has already deployed Infinet Wireless's solutions into at least four service provider/ Wireless-ISP networks offering end-user Wi-Fi and high-capacity Cable/ETTH (Ethernet-to-the-Home) connectivity, as well as providing campus services to a number of medium and large enterprise networks.

D-Link is now partnering with Infinet Wireless to offer Point-to-Point and Point-to-Multipoint wireless solutions across its entire Eastern European region, and the joint proposition of the two companies extends beyond just their respective product portfolios to offer partners and customers support, training and integration services.

REQUIREMENTS

- To enable SME and Enterprise businesses to connect wide-area networking applications where leased-line availability is scarce

- To offer distribution and channel partners the ability to send D-Link Enterprise data networking solutions end-to-end to customers who want to adopt IP technologies across multiple sites

- To overcome the sales obstacles of multi-site IP networking technologies where leased-line availability or high costs become a barrier to deployment

- High-reliability and uptime requirement for constant information and communications for IP

- Ethernet, storage area networking and VoIP traffic

- Efficient, low-cost solution with rapid deployment required

SOLUTION

- InfiLINK 2x2 long-range backhauls, Point-to-Point high-capacity products

CUSTOMER BENEFITS

Cost effective, high bandwidth link with unrivalled price-performance ratio

A low-cost efficient solution with rapid deployment

High reliability and throughput for difficult environmental conditions

Easily integrated networking equipment fully supported D-Link applications

Breitbandnetz-Sachsen Uses Infinet Wireless to Deliver World-Class Wireless Local Loop

Telecommunications   Germany   Breitbandnetz-Sachsen GmbH

Breitbandnetz-Sachsen GmbH plans, builds and operates high-speed broadband connectivity networks across Saxony, Germany, for both consumer and business customers.

Unlike many networks around Germany, Breitbandnetz-Sachsen's network is built completely independently of the conventional telephony network, allowing their customers to benefit from high-speed broadband communications and triple-play (voice, video/TV, data) services without legacy infrastructure restrictions.

Founded in 2010 from the NGN (Next-Generation Networks) division of NU GmbH, Breitbandnetz-Sachsen still works closely with NU across numerous infrastructure projects, including most recently the planning and development of local loop access across its network.

Following a set of successful trials, NU and Breitbandnetz-Sachsen decided on the Infinet Wireless range of Point-to-Multipoint products as the solution of choice for their local loop wireless MAN (Metropolitan Access Network) deployments.

REQUIREMENTS

- Local loop deployment for wireless broadband services to local customers, delivering consistent 10-100 Mbps services
- Point-to-Multipoint MAN (Metropolitan Access Network) capability
- Low latency and high reliability connections for delivery of voice, video, data, TV services
- Frequency band stability and accuracy
- Low cost of ownership in terms of support, deployment and management

SOLUTION

- InfiMAN 2x2 Point-to-Multipoint Base Stations
- InfiMAN 2x2 CPE radios operation at full capacity

CUSTOMER BENEFITS

Stable broadband wireless platform with consistent and reliable throughput

Improved capacity and services that can be upgraded on remotely

Reduced deployment and support costs

Over-the-air frequency selection for BS with minimal frequency drift

> "
> Infinet Wireless's MAN range of solutions provided us with the opportunity to address this market segment without the need for any technical compromise at all in our designed solution. Speed, throughput, latency and deployment cost targets were easily reached – and maintained – throughout the trial by Infinet Wireless, and although the point cost of individual units may not have been the cheapest of the products tested, the overall cost of ownership and deployment of the Infinet network solution as a whole made it the most financially attractive – and technically reliable – of all of the solutions assessed.
>
> **DR. THOMAS WITT**,
> THE PROJECT LEADER AND DESIGN AUTHORITY AT NU GMBH

Radio Teknoloji Hizmetleri A.Ş. And Infinet Wireless Beat Challenging Conditions to bring Connectivity

Telecommunications   Turkey   Bida Teknoloji Hizmetleri A.Ş.

Bida Teknoloji Hizmetleri A.Ş. Is an Internet Service Provider based in Bursa. It has a lot of experience in wireless network solutions and distribute Infinet Wireless equipment in Turkey. They handled planning and design for Bida Teknoloji projects, comparing the various equipment options available from major wireless providers.

What made the project more challenging is the weather conditions in Bursa, the city experiences eight-to-nine months of heavy rain and snow per year, creating difficult conditions for deployment. In addition to this, the city is the third largest in Turkey, therefore numerous residential buildings cause interferences for wireless signals, as did the mountain which contains the town's ski resort.

Infinet Wireless InfiMAN 2x2 products for PtMP has been used for the the project. The R5000 family provides performance between 40 and 300 Mbps, with an output power up to 23 dBm, for distances up to 15 km. Thus Bida Teknoloji now shows high quality ISP – offering 99% uptime for all services for the customers. Since the deployment of the new system in November 2015, Bida Teknoloji have noticed significant improvement of their wireless network and continue to receive positive feedback from the customers. The infrastructure has provided consistent, reliable service across all applications despite the varying adverse weather conditions.

CHALLENGES

- To provide a reliable, high speed internet connection in difficult weather conditions including heavy rain and snow, as well as built up residential areas and mountainous conditions

SOLUTION

- Wireless platform based on Infinet Wireless' high performance Point-to-Point and Point-to-Multipoint
- Two R5000-XM Point-to-Point units
- Ten R5000-MMXBS Point-to-Multipoint units
- Five R5000-SMNC-50 SM unitsTen Infinet R5000-SMNC- 300 SM units

CUSTOMER BENEFITS

Consistent, reliable service across all applications

Provided high quality products with maximum bandwidth coverage

Quick and easy installation

High reliability and throughput

> " Infinet Wireless is a global leader and pioneer in the wireless indus-try and we feel very comfortable when offering their solutions to our customers. Infinet Wireless are trustworthy, reliable and provide high quality products with the best bandwith coverage – especially in long distances. Their products are designed and manufactured for the outdoor environment, so when we deployed their solutions for our project in Bursa, the bad weather and natural conditions were not a problem – Infinet's team were fully prepared and we had no problems with the installation.
>
> **MR ABDURRAHMAN,**
> GENERAL MANAGER AT RADIO TEKNOLOJI HIZMETLERI A.S

Infinet Wireless makes city-like speeds a reality in Turkish town

Telecommunications   Turkey   Radio Teknoloji Hizmetleri A.Ş, Pursaklar

As in any urban area, high-speed, reliable Internet is a must for businesses and residents alike. Over time, the Pursaklar authorities had become increasingly aware that they were struggling to provide residents with a fast, non-interrupted connection that provided a similar experience to what they would get in the city of Ankara.

As in any urban area, high-speed, reliable Internet is a must for businesses and residents alike. Over time, the Pursaklar authorities had become increasingly aware that they were struggling to provide residents with a fast, non-interrupted connection that provided a similar experience to what they would get in the city of Ankara.

To transform their communications network into a state-of-the-art infrastructure capable of delivering reliable and high capacity broadband for cloud, voice and data services, the Pursaklar authorities approached Radio Teknoloji

Hizmetleri A.Ş, a specialist in delivering solutions for wireless networks.

After a rigorous testing process, with no other products in the marketplace meeting and exceeding the customer's demands, Radio Teknoloji selected Infinet Wireless as its strategic technology partner. Following various meetings and a rigorous proof of concept, a wireless broadband network was deployed to meet the backhauling needs of all types of enterprises. This new network was based on Infinet Wireless' well-proven Point-to-Point family of solutions, the InfiLINK 2x2.

Prior to the deployment of the Infinet platform, Pursaklar was paying huge monthly fees to its legacy service provider to achieve a mere 10Mbps connec-tivity. Since deploying the Infinet solutions, it has reported a major increase of speeds of up to 450Mbs. The pay-as-you-grow nature of the network also means it is future-proofed against rising demand for its services.

CHALLENGES

- Extreme weather conditions causing network interference
- Residential buildings creating obsta-cles, leading to unreliable connectivity
- To reliably provide high-capacity voice, data and cloud services to customers
- Network bandwidth of at least 70 Mbps in extreme and hostile climatest

SOLUTION

- InfiLINK 2x2 R5000-Xm
- InfiMAN 2x2 R5000-Mmbs
- InfiMAN 2x2 R5000-Smnc-50 Mbps
- InfiMAN 2x2 R5000-Smnc-300 Mbps

CUSTOMER BENEFITS

Achieves capacity of up to 240 Mbps per sector

Flexible frequency planning and powerful interference mitigation tools

Fast, reliable communications for thou-sands of citizens

Improved productivity

> "We are elated with the reliable and secure network connectivity that Infinet Wireless and Radio Te-knoloji have provided us. Due to the adverse weather conditions and large building obstacles, our pre-vious infrastructure had become unfit-for-purpose it could not meet demand and was unreliable. We tried numerous solutions but ultimately needed a reliable and high capacity platform – which is ex-actly what we got with Infinet. Since the deployment of our new network, the connectivity has been robust, with no outages en-countered, and we have also received overwhelmingly positive feedback from our customers. We are pleased to have an efficient and functioning infrastructure which keeps on running perfectly even in adverse weather conditions. I cannot thank the teams enough.
>
> **MR ABDURRAHMAN,**
> GENERAL MANAGER AT RADIO TEKNOLOJI HIZMETLERI A.S

Reliable wireless solutions for Mada Communications

Telecommunications   Kuwait   Mada Communications

Mada Communications has positioned itself as one of the leading providers of internet and VPN connectivity in the Gulf region. From its early days of establishment in the 1980's, serving as a communications consultancy to the Ministry of Communications in Kuwait, Mada has fast become the pioneer in bringing wireless internet solutions into the region, catering for the requirements of corporations and individuals on all levels.

In early 2012, and following an unprecedented surge in demand for higher bandwidth by customers in the Kuwaiti market, Mada took the decision to swap its then existing Point-to-Multipoint infrastructure (based on WiMAX & pre- WiMAX) to a new and more advanced platform that would cater for today's requirements as well as having the ability to fulfil future demand.

Mada selected Infinet Wireless's MIMO range

of solutions (InfiMAN 2x2 and InfiLINK 2x2) over competitive solutions available in the marketplace, and conducted an extensive field trial based on a stringent testing and acceptance plan. One of the major limitations that Mada faced on its previously deployed WiMAX network was the inability to work on different modes (Bridge/VLAN/Router Modes). With Infinet Wireless, it has the option to have multiple topologies and modes on different CPEs that are connected to the same Sector, depending on each customer's specific requirements.

Another major drawback of the old WiMAX network was the fixed ratio of the download/upload nature, which resulted in unused bandwidth and limited upload provisioning. With Infinet Wireless's "Adaptive TDD Feature", Mada is now able to provide the exact upload bandwidth required by each customer and, at the same time, significantly increase the efficiency of each Base Station sector.

REQUIREMENTS

- New infrastructure to replace an existing WiMAX network, providing increased reliability and coverage
- High capacity Base Stations and subscriber terminals
- Cost-effective

SOLUTION

- InfiMAN 2x2 and InfiLINK 2x2 product families in the 3.5 GHz frequency bands

CUSTOMER BENEFITS

Significantly reduced outages

Increased geographical coverage and available capacity

"Install-and-forget" infrastructure

Maintains extremely low latency figures

Long distance WiMAX for Saudi Arabia's leading telecoms provider

Telecommunications   Saudi Arabia   Integrated Telecom Company (ITC)

Integrated Telecom Company (ITC) is one of Saudi Arabia's leading telecoms service providers. Established back in 2005, ITC is committed to providing the best next-generation data, connectivity and internet services for its business customers and consumers throughout the kingdom.

ITC partner, European Telecom International, chose Infinet Wireless's R5000 family of products for last mile wireless Point-to-Point access.

Infinet Wireless offered not only proven hardware reliability but a wide range of products providing wireless transmissions in excess of 90 kilometers. All of this was made possible at a highly cost effective price and with fast and effective technical support.

Since installing the R5000 family of products in ITC's extensive network, European Telecom International has been impressed with the reliability of the service – providing high bandwidth even across ultra long distances.

CHALLENGES

- Dedicated bandwidth for ultra long distance
- Reliable WiMAX service delivery
- Highly cost effective price
- Fast and effective technical support

SOLUTION

- Infinet Wireless's R5000 family

CUSTOMER BENEFITS

Stand-alone monitoring

Highly cost effective technology in omparison to wired-connection

Wireless transmissions in excess of 90 km

MIMO 2X2 architecture

Connect Selects Infinet Wireless as Platform for Growth

Telecommunications   Lebanon   Connect

As the premier Internet Service Provider in Lebanon with approximately 200 points of presence, residential end-users, corporations and critical infrastructure enterprises like government agencies and banks rely heavily on Connect to provide them with high-bandwidth and reliable connectivity.

Connect's previous infrastructure, based on WiMAX technology, not only struggled to meet their customers' requirements for high capacity but also proved to be unsuitable for corporate customers.

Connect tested a few wireless units from the InfiLINK 2x2 PRO portfolio, Infinet's high performance, Point-to-Point wireless solutions. Not only were the units easy to install, they also performed extremely well from the start, giving the Connect technical team the confidence to install 70 units. In parallel, Connect also deployed 30 units of the InfiLINK 2x2 LITE (a cost-effective, medium capacity PTP wireless product range) to provide larger enterprise customers dedicated high capacity connectivity. For a number of their most critical and strategic locations, Connect opted to deploy the InfiLINK XG, a recent addition to the Infinet product family, which is capable of reaching a peak net throughput of 500 Mbps in 40 MHz of spectrum and more than 130 Mbps in only 10 MHz.

REQUIREMENTS

- Reliable, high-capacity network
- Easy to install and maintain
- High performance versus cost ratio

SOLUTION

- InfiLINK 2x2 PRO
- InfiLINK 2x2 LITE
- InfiLINK XG
- InfiMAN 2x2

CUSTOMER BENEFITS

Extremely stable, high-bandwidth network

Significant reduction in maintenance costs and service calls

Ability to provide robust networks to critical infrastructure enterprises

Highly reliable and easy to deploy core backbone network

" We routinely had network outages with our previous Wi-Fi based PTP equipment which was a drain on our financial and human resources and had a noticeable negative effect on our business growth and reputation. With the Infinet solution, we no longer have any downtime or performance loss, ultimately giving us the confidence that we can provide our customers with the best-in-class wireless network. Infinet has truly saved our corporate business.

JUBRAN EL AYAN,
RF MANAGER AT CONNECT

Infinet Wireless offers wireless solutions for Astel Company

Telecommunications   Kazakhstan   ASTEL

ASTEL is the largest service provider and system integrator in the Republic of Kazakhstan. The main activities of the company are the provision and implementation of telecommunications services in Kazakhstan, along with the construction of corporate data and voice transmission networks.

Due to the rapid growth ASTEL's customer base a need for a reliable technical solution which provides a high quality and a stable performance with minimal operational and capital investments became obvious. The equipment's ability to cope with extreme weather conditions was also a significant deciding factor, therefore ASTEL yet again opted for Infinet Wireless' solutions, which stood out from its business rivals.

Numerous tests of broadband wireless access systems of various manufacturers were carried out, and only InfiMAN 2x2 Point-to-Multipoint solution demonstrated the required stability and reliability in extreme weather conditions. This product offering from Infinet Wireless can withstand a high level of interference and also proved to be the most financially viable.

OBJECTIVES

- Cost-effective solution
- High-capacity longhauls
- A stable operation in fog, snowfall and low temperature conditions
- Flexible support of various types of data traffic
- Extensive support of VLANs & Quality-of-Service

SOLUTION

- 154 InfiMAN 2x2 Point-to-Multi-point Base Stations with thousands of Subscriber Terminals

CUSTOMER BENEFITS

Stable operation in fog, snowfall and low temperature conditions

City-wide and region-wide coverage

Low CAPEX and OPEX

The scalable solution allowing to connect a big number of subscribers

The network overhaul to connect remote 4G base stations

Telecommunications   China   China Mobile

A vast region of deserts and mountains, the Xinjiang province in North-West China is best known for the ancient Silk Road trade route. Yet, with a growing population of more than 21 million people spread across the autonomous territory to serve, China Mobile – the world's largest mobile phone operator – was strug- gling to deliver optimum capacity over the long distances due to the remote locations of its 4G base stations.

China Mobile realized it needed to deploy a solu- tion, which could ensure seamless connectivity between each base station and guarantee per- formance in adverse climate changes. The infra- structure previously in place was simply not able to deliver seamless and zero downtime perfor- mance that the mobile phone operator required.

After successfully conducting a number of Proof of Concept trials (PoC's) in various challeng- ing environments, China Mobile worked closely with Xinjiang Yingsheng Information, Infinet's partner and a key Chinese integrator to find the best solution. Infinet's InfiLINK XG 1000 Point-to- Point (PTP) was selected thanks to the flexibility it provided China Mobile with to operate multiple services simultaneously, including voice and data transfers across its legacy 2G and 3G networks, as well as its newer 4G platform.

Now thanks to the phenomenal success of the project, future plans are already being discussed between all parties to integrate Infinet's solu- tion across the entire network infrastructure. The solution's high processing power and consistent performance now seamlessly maintain extremely low latency figures while delivering a high capac- ity speed of up to 1GB per second.

CHALLENGES

- To formulate, and implement a fast, reliable and weather-resistant solution to the residents of Xinjiang

- To combat lack of connectivity by introducing wireless connectivity, data transmission, and mobile service even to those living in rural areas of Xinjiang

- To standardise two Gigabit Ethernet ports and an SFP fibre interface into China Mobile's network practice

SOLUTION

- InfiLINK XG 1000 Point-to-Point (PTP) solution

CUSTOMER BENEFITS

Optimum capacity over long distances of over 100 km

Major cost savings, allowing money to be spent on improving services elsewhere

Elimination the need for additional converters and third part interfaces

High capacity of up to 1GB per second

"We are always ready to implement the most complex of solutions and we have continued to prove this through our latest project with Infinet Wireless. Easy to install, configure and manage, the wireless PTP solution was a major technology upgrade from the previously installed microwave technology and was a cut above the competitors who also took part in the PoC phase of the project. We are delighted to be working with Infinet and to provide a solution to enable China Mobile, offering them the best connectivity they can possibly have access to today. We look forward to working on the future plans to continue expanding and maintain connectivity across China.

MR WANG SONGTAO,
GENERAL MANAGER AT XINJIANG YINGSHENG INFORMATION

2010 FIFA World Cup (1/2)

Telecommunications   South Africa   Lasernet

Lasernet was selected by word of mouth and referral as a primary connectivity provider to specific third party clients for the World Cup 2010 that was hosted here. Lasernet have an extensive private network in Johannesburg, Cape Town and Durban. Our core business is the movement of large data files utilisingutiliz-ing our high speed Point-to-Point connectivity to our clients.

Associated to our data transfer capabilities are the added value services in the media industry, we provide teleconferencing, media streaming, data archiving and just recently the ability for live broadcast over IP. Lasernet have been operat-

ing in the media industry since 2005 and provide high speed connectivity to almost all post facili-ties, local broadcasters, as well as many SME and corporate clients. In 2008 we exclusively chose Infinet Wireless products as our core link infra-structure, this decision proved very successful and has enabled us to expand rapidly making use of the robust technology provided by the Infinet Wireless product range.

The advent of the WC 2010 required us to provide various connectivity solutions, specifically where the national telcos were unable to deploy in the tight time scales this period presented. A few of the instances are detailed below:

1. **Lasernet provided connectivity for Adidas at the Sandton convention centre**

   Adidas had on the ground camera crews doing coverage of the WC 2010, daily this coverage was downloaded and edited in the studio and the finished Quicktime media file was then transferred over the Lasernet network via Smartjog to New York and was made available to the international contingent for broadcast. to achieve this, Lasernet installed a Point-to-Point Infinet Wireless link from Sandton to our central switching facility, and provided transfers speeds in excess of 100 Mbps. The efficiency of the solution proved very successful and was utilised during the entire period of the World Cup 2010.

2. **Lasernet provided connectivity for Castrol to Johannesburg and Cape Town stadiums**

   Castrol had a requirement to stream multiple clips to both the Johannesburg and Cape Town stadiums. The content was varied but included interviews and informational content that visitors to their hospitality tents could view. They provided multiple PC's in order to allow multiple users to access their streaming and web content, both in Johannesburg and Cape Town. This service was also utilised during the entire WC 2010 event and

was achieved by installing temporary Infinet Wireless links over multiple hops to finally terminate at the hospitality tent areas at both stadiums.

3. **Lasernet provided walk in clients with a facility to transfer daily content**

   Lasernet, out of necessity, became a portal for freelance producers, editors and cameramen to walk in to our offices and have the facility to transfer and publish their content to the international market. These clients would shoot footage of daily events and then edit and transfer from our local switching centres in Johannesburg, Cape Town and Durban. The current telco facilities could not provide the speed to the freelance community and our cost effective transfer facility utilising our Infinet Wireless regional networks proved highly successful for these clients.

4. **Lasernet provided a quick link for FIFA streaming**

   Lasernet were requested, at short notice, to provide a link to FIFA in order for them to stream internationally. This was utilised over a period of two days and again proved to be very successful in facilitating the live stream required by FIFA.

   These are but a few of the instances where

2010 FIFA World Cup (2/2)

Lasernet were instrumental in providing connectivity during our hosting of the WC 2010. Our connectivity options are being required by more and more clients that find themselves without connectivity from the national telcos due to instability of diginet and ADSL.

The opportunities we are presented with because of this are immense, and due to our robust infrastructure on the Infinet Wireless range of products we are able to continue our dynamic growth.

REQUIREMENTS

- Transmission of large media data volumes
- Establishing the communication channels for international streaming broadcast
- Connectivity for large amount of subscribers

SOLUTION

- High-speed links with InfiLINK 2x2 Point-to-Point (speed more than 100 Mbps)
- Infinet Wireless links over multiple hops to the hospitality tents areas of two stadiums

CUSTOMER BENEFITS

The highest performance

Simultaneous transmission of different data type

Easy and fast deployment

City-wide and region-wide coverage

Infinet Wireless solutions to provide high-speeds to enterprise networks

Telecommunications   Sierra Leone   AI Networks Limited

Koidu is the capital and largest city of the diamond-rich Kono District in the Eastern Province of Sierra Leone. The fourth largest city in Sierra Leone by population and home to one of the largest pit diamond mines in the country, Koidu regularly suffers from fast changing and harsh weather conditions, ranging from heat to rain and extreme humidity.

AI Networks Limited is a leading provider of data transmission via its wireless infrastructure for applications such as LAN/WAN connectivity, video streaming and voice communication for the West-African market. Prior to the deployment of Infinet's solutions, many of AI Networks' clients experienced frequent problems delivering their respective services due to major network outages of their legacy 7 and 13 GHz microwave platforms. These were simply not able to operate seamlessly and reliably due to the prevailing weather conditions.

AI Networks decided to select Infinet Wireless

as its strategic technology partner as part of a major overhaul of its network. The selection of Infinet was based on the well-proven and future-proofed solutions it offers, coupled with its ability to operate in all types of climates without any signal degradation or loss of performance.

The company's InfiLINK 2×2 high capacity Point-to-Point (PTP) solution was initially deployed in two separate areas of Koidu to provide connectivity in non-line-of-sight (NLOS) conditions to deliver up to 280 Mbps net –, which exceeded all expectations. Additional links were later deployed to connect locations across long distances, typically up to 90 km. For much shorter distances and in order to deliver last mile connectivity, AI Networks opted for Infinet's LITE solutions.

AI Networks now provides reliable connectivity to all its corporate customers, delivering more revenue-generating services and significantly improving customer satisfaction.

CHALLENGES

- To extend and provide wireless connectivity to businesses in the rural region of Koidu
- To implement a highly reliable, fast, and weather-proof solution for the residents of Koidu
- To achieve bandwidth of at least 300 Mbps even in extreme climatic conditions

SOLUTION

- InfiLINK 2×2 PRO High-capacity 300 Mbps Point-to-Point wireless solutions
- InfiLINK 2×2 LITE with Integrated 19 dBi for the access layer

CUSTOMER BENEFITS

Guaranteed interference-free, fast, and reliable wireless connectivity

Ease of integration into the environmental area

High reliability and throughput

Easy and fast deployment

> " Since we expanded our existing infrastructure with Infinet Wireless solutions, our customers have expressed great satisfaction and can now focus on delivering their services to their own customers. Infinet's solutions are without a doubt the best we could find in today's marketplace for tackling radio interference issues and unpredictable weather conditions. We are now actively promoting our services in the entire country, knowing that we can meet and exceed all customers' expectations. The feedback we are receiving every day is excellent. The Infinet team's support has been tremendous, and we just cannot thank them enough for what they have done for us, and the town of Koiduy.
>
> **ALVIN EMERSON-THOMAS**,
> TECHNICAL DIRECTOR AT AI NETWORKS

Infinet Wireless provides flexible microwave communications solutions to Zanlink

📶 Telecommunications   📍 Zanzibar   💼 Zanlink

Zanzibar is an archipelago located in the Indian Ocean off the eastern coast of Tanzania, and consists of numerous small islands and the two main islands: Unguja (referred to informally as Zanzibar) and Pemba. Zanlink is the leading ISP in Zanzibar and provides communications coverage, connectivity and enterprise services across the entire geography of Zanzibar.

Zanlink turned to Infinet Wireless for a more flexible solution that would meet its needs and would also reduce the operational costs needed to upgrade its wireless backhaul network. Infinet Wireless's Point-to-Point and Point-to-Multipoint solutions were attractive to Zanlink primarily because of the operational flexibility and savings that the solutions could bring: frequency allocation for the InfiLINK 2x2 backhaul units can be selected and allocated through software across a variety of frequencies from 4.9 to 6.0 GHz from a central management location, meaning

fewer visits to the Base Station sites to upgrade or replace deployed units. In the same vein, the Infinet Wireless units can also be software-upgraded for capacity increases, meaning the network link capacity can be scaled quickly and easily as demand across the backhaul network grows, again giving Zanlink the flexibility to upgrade without the need to physically visit the Base Station location.

The success of the Infinet Wireless products in the Zanlink core infrastructure has led Zanlink to broaden the use of Infinet Wireless products across its network. Its improved stability and throughput over previously deployed equipment, has led to the introduction of Infinet Wireless solutions beyond the backhaul network and into the client connectivity layer, where Zanlink is now using Infinet Wireless's solutions to also deliver wireless broadband connectivity and services directly to client premises as well as across the backhaul network.

REQUIREMENTS

- High capacity backhaul
- Extended frequency range for the wireless backhaul
- Reduction of operational costs
- Simple and flexible backhaul capacity upgrade

SOLUTION

- InfiLINK 2x2 Point-to-Point links and InfiMAN 2x2 Point-to-Multipoint systems

CUSTOMER BENEFITS

Improved throughput and stability of the backhaul infrastructure

Increased capacity that can be upgraded remotely

Minimization of installation and maintenance costs

Immediate upgrade of service and capacity

Wireless broadband in Jamaica

Telecommunications   Jamaica   DEKAL Wireless

DEKAL Wireless is Jamaica's first island-wide broadband Wireless Internet Service Provider (WISP). Its aim is to provide its subscribers with access to the Internet anytime, anywhere in the country, whilst maintaining the highest quality of service possible, the most flexible and hassle free service provision, at the most economical and affordable price.

Infinet Wireless and its local partner SUPER-WIFI Solutions were approached by the service provider to design and implement an island-wide wireless solution as an overlay network to its already existing overhead fibre network, which itself was experiencing frequent down-time. The terrain across Jamaica has always been a challenge to any wireless provider, not helped by the presence of numerous mountains in the country, which makes it difficult to achieve Line-Of-Sight (LOS) conditions and provide the ultimate connectivity.

Infinet Wireless's range of Point-to-Point solutions, InfiLINK 2x2, was selected as the best available solution, combining non-LOS capabilities with high throughputs of up to 280 Mbps and a range of Quality of Service (QoS) features to offer DEKAL's customers a reliable service and full peace of mind.

REQUIREMENTS

- To bring affordable and reliable broad-band access to the whole of Jamaica with excellent, consistent performance
- To deploy an infrastructure that requires minimal support and mainte-nance
- To provide long-range backhaul to reach all parts of the country

SOLUTION

- InfiLINK 2x2 Point-to-Point connectivity with 300 Mbps capacity and 200mW transmit power
- Third party high performance antennas to cover long distances

CUSTOMER BENEFITS

Reliable and easy to deploy core backbone network in 5 GHz

Robust solutions to cater for extreme and inclement weather conditions

Affordable solution for rural broadband with minimal support

Easy and fast deployment

Staying connected on the slopes

📶 Telecommunications   📍 Chile   💼 Valle Nevado Park,

Valle Nevado Park, a ski resort and park close to Santiago Chile, is located at the centre of mountains 3700 m high above sea level, boasting one of the best terrain parks in South America. The resort is the center for many attractions – cable cars, restaurants, recreational buildings – all of which have several kilometers between them, causing network connectivity access to be restricted.

Valle Nevado considered implementing a fiber optic network, however this was expensive and a major risk due to high snowfall in the winter, which can reach as high as 2 meters. The park was looking for a hardened solution that could also support low temperatures, with fast installation.

Servired Chile, partner of Infinet Wireless, specialize in the development and implementation process of telecommunication services, was approached by Valle Nevado Park to help provide accessible network access across the park. Servired installed the InfiLINK 2x2 wireless high-speed Point-to-Point solution for the main channels, and the InfiMAN 2x2 base stations and terminals (Point-to-Multipoint) for the last mile connection. The InfiMAN 2x2 was deployed at three base stations to bring service to 12 separate remote units around the park, ensuring a long-range rural connectivity. Each base station had a backhaul link to the central site using InfiLINK 2x2 at 5 GHz, in order for Valle Nevado Park to provide seamless connectivity of up to 280 Mbps.

REQUIREMENTS

- To provide a cost-effective and reliable network for Valle Nevado Park
- The solution needed to be implemented efficiently, so that it was in place before winter, the resorts busiest time

SOLUTION

- InfiMAN 2x2 Point-to-Multipoint backhaul network
- InfiMAN 2x2 19 dBi were installed around the park to provide reliable coverage to approximately 4 to 7 km between each remote location
- Each base station had a backhaul Point-to-Point link to the central site using the InfiLINK 2x2

CUSTOMER BENEFITS

Communication to operate wirelessly throughout the park

Option for Valle's customers of payment with credit cards

Cost-effective and reliable network

Extremely stable, high-bandwidth solutions

"The technology of Infinet Wireless and determination of Servired Chile has been fundamental to helping Valle Park grow technologically. It has helped innovate our park, allowing us real and continuous wireless internet at different points of the park, in a simple and fast implementation. We are very satisfied with the solutions implemented so far and we look forward to continuing to grow together with the help of Infinet Wireless products and Servired Chile solutions.

MIGUEL YANINE,
MANAGER AT VALLE NEVADO PARK

Royal Telecom and Infinet Wireless provide connectivity in Bucaramanga

📶 Telecommunications   📍 Colombia   💼 Royal Telecom

Royal Telecom is a Columbian distribution partner of Infinet Wireless. It was established in 1999 and has been a major player in the Columbian telecoms space for over a decade, with a presence nationwide spanning from Bogota to Medellin and Cartagena to Manizales. It specialises in the wholesale distribution of communications and security solutions, offering with first class service from globally recognised brands.

Royal Telecom was approached by its customer, Telebucaramanga, the premier supplier of telephony, broadband Internet and Digital Satellite services to households and SMEs in Bucaramanga, the capital city of Santander, Colombia. It needed to supply two customers with a reliable, high capacity long distance link. Royal Telecom suggested Infinet Wireless's Point-to-Point prod-

ucts as the ideal solution for the challenge and the company installed two InfiLINK 2x2 PRO units and one InfiLINK 2x2 LITE unit. Infinet Wireless's products provided Royal Telecom with a solution that exceeded the capacity and had better system gain than that of its competitors.

InfiLINK 2x2 is a wireless Point-to-Point solution which combines high-speed capability, up to 280 Mbps throughput, with a rich set of best-in-class features and benefits. It supports leading-edge radio protocols, providing unrivalled spectral efficiency and wireless transmissions over distances in excess of 90 km. The radio link for Telebucaramanga stretched across 103 km and the capacity achieved was 30 Mbps, helped by the 34 dBi gain antennas. This provided Telebucaramanga with a flexible, robust and reliable solution to provide connectivity to its customers.

REQUIREMENTS

- Robust long distance microwave link
- High capacity

SOLUTION

- InfiLINK 2x2 PRO and InfiLINK 2x2 LITE Point-to-Point connectivity

CUSTOMER BENEFITS

Reliable link over 103 km

High reliability and throughput

30 Mbps capacity

Robust long distance microwave links

> " Thanks to the solutions provided by Infinet, Royal Telecom is able to offer Telebucaramanga the best technology for the job. The installation was simple and, along with our support and Infinet's products, Telebucaramanga can be assured of a flexible, robust and exceedingly reliable connection.
>
> **GUILLERMO SAENZ**,
> ROYAL TELECOM

Infinet Wireless and Royal Telecom provide backhaul peace of mind for UNE

Telecommunications   Colombia   Telebucaramanga

Royal Telecom is a Colombian distribution partner of Infinet Wireless. It was established in 1999 and has been a major player in the Colombian telecoms space for over a decade, with a presence nationwide spanning from Bogota to Medellin and Cartagena to Manizales. It specialises in the wholesale distribution of communications and security solutions, offering first class service from globally recognised brands.

One of Royal Telecom's customers, UNE, a nationwide telecommunications company in Colombia that provides fixed and wireless broadband access and cable television, required a solution to backhaul its LTE Base Stations using a microwave link on an unlicensed band. Having compared Infinet Wireless's range of products with others available on the market, Royal Telecom recommended its Point-to-Point products to provide a solution. In comparison with its competitors, Infinet Wireless's products offer the best RF performance and system gain, the highest capacity and the best QoS available.

Infinet Wireless Point-to-Point solutions are being used to connect the Base Stations, using the InfiLINK 2x2 LITE and InfiLINK 2x2 PRO products. 17 InfiLINK 2x2 PRO and six InfiLINK 2x2 LITE units have been installed to connect three bases stations and seven CPEs. This will be followed soon with two further InfiLINK 2x2 PRO and InfiLINK 2x2 LITE units. InfiLINK 2x2 is a wireless Point-to-Point solution which combines high-speed capability, up to 280 Mbps throughput, with a rich set of best-in-class features and benefits. It supports leading-edge radio protocols, providing unrivalled spectral efficiency and wireless transmissions over distances in excess of 90 km.

REQUIREMENTS

- Provide backhaul to LTE Base Stations using a microwave link

SOLUTION

- InfiLINK 2x2 LITE and InfiLINK 2x2 PRO units to connect Base Stations and CPEs

CUSTOMER BENEFITS

High-performance, flexible backhaul solutions

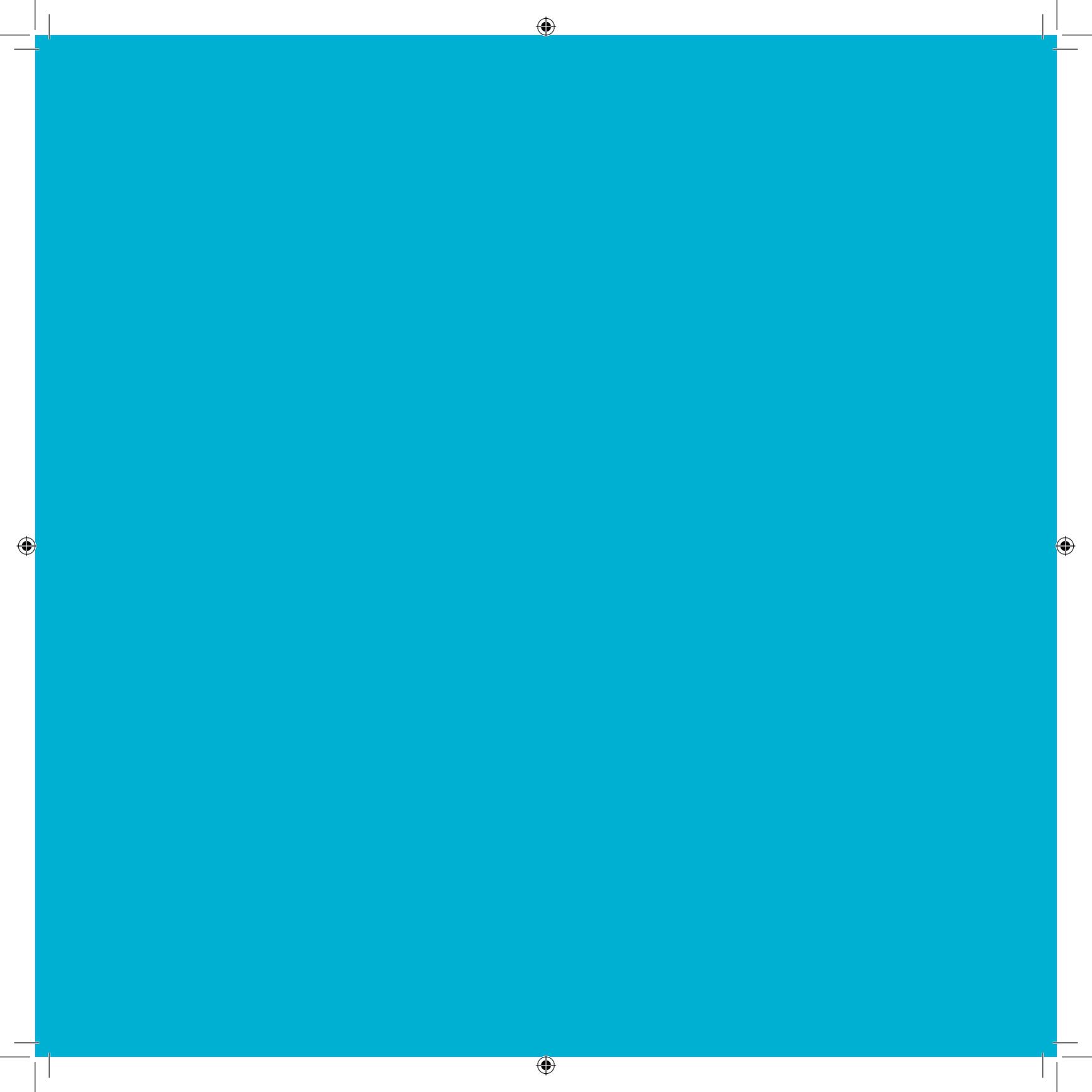High capacity and excellent QoS

Easily scalable system

Efficient solution with rapid deployment

> " The performance of Infinet's products are way ahead of the competition, so we are pleased to be able to offer them to our customers as it enables us to provide best-in-class solutions. UNE is a national telecommunications company and as such it is imperative that we provide them with the most reliable and best performing solutions available.
>
> **GUILLERMO SAENZ**,
> ROYAL TELECOM

Sector
Mining

Kachkanarsky Ore Mining and Processing Plant

Mining   Russia   EVRAZ KGOK

EVRAZ KGOK is one of the five largest ore mining companies in Russia. Its main deposits of titanium magnetite ores, containing a much sought-after vanadium alloy component, are located some 140 km from its sister plant EVRAZ NTMK, all in the Sverdlovsk region in the Urals Federal District. This mine is strategic to the Russian economy as it is a main centre for the national production of high-tensile, alloy steel products.

The deployment of the network started in November 2012 and was completed in March 2013, covering more than 80% of the entire plant and the surrounding areas (more than 60 km²). High reliability and fully secure wireless connectivity was delivered to all work areas and across all routes of transport, including four raw material mine pits. The backbone network consists of 22 Base Station sectors, spread across 14 locations to give full coverage, with up to three sectors installed on specific locations to cater for the difficult terrain.

To ensure the reliability of the links, each subscriber terminal was equipped with two omnidirectional antennas. Each terminal was configured in a specific way so as to ensure seamless roaming from one Base Station to another. The switching time achieved is less than one second. Seamless integration with an already existing wired network was achieved via the use of fibre optic cabling, as well as through the use of InfiLINK 2x2 PRO family.

The moving vehicles were each equipped with InfiMAN 2x2 Lmnc subscriber terminals to provide the required data and video links throughout the loading, unloading, earth moving and tracking activities. Each terminal was configured in a specific way so as to ensure seamless roaming from one Base Station to another and in any one of four pre-defined frequency channels.

CHALLENGES

- Difficult terrain and harsh climate
- Linking moving vehicles with fixed locations

REQUIREMENTS

- High-speed and reliable links for data and video transmission
- Creating a unified network across the entire plant
- Integration with GPS monitoring systems to gather information about the location of each vehicle

SOLUTION

- InfiLINK 2x2 Point-to-Point solution which provides broadband capacities of up to 300 Mbps
- InfiMAN 2x2 Point-to-Multipoint solution with capacity of up to 240 Mbps
- Available capacity of at least 10 Mbps per vehicle, travelling at speeds of up to 60 km/h

CUSTOMER BENEFITS

Enabled reliable data transfer

Provided full coverage of the entire area, with no black spots

A consistent and reliable high speed network across the mining site

Significant improvement in overall productivity of the mine and associated plants

Mission Critical Technology for Kazakhstan's top coal producer

Mining   Kazakhstan   Shubarkol Komir JSC

Shubarkol Komir JSC is one of Kazakhstan's largest thermal coal producers. Shubarkol Komir produces over nine million tons of coal per year, supplying around 25% of the domestic fuel needs in Kazakhstan.

As part of a recent strategic review, company's executives decided to introduce automated production accounting and provide better security and asset management through the deployment of a new video surveillance system. With the main objective of improving data transfers across all its sites and providing dynamic CCTV coverage, Shubarkol Komir decided to deploy a more reliable platform, using the most modern broadband wireless solutions such as Infinet's.

Satisfying the customer's requests, Infinet's record-breaking Point-to-Point solution, the InfiLINK 2x2, was selected to provide data transfer rates of up to 70 Mbps between remote locations. For NLOS conditions across the challenging terrain, the InfiMAN 2x2 Point-to-Multipoint platform were deployed to connect the remote facilities to strategically located base stations. With capacities of up to 35 Mbps and fully functional throughout the -55 to +60 °C temperature range, the solution ensured that all links were fully integrated and stable throughout the mines, with more room to grow in the future as requirements change.

Infinet's high-quality wireless technology have ensured the now flawless operation of Shubarkol Komir's network, eliminating the risks often associated with interferences when operating in a unlicensed frequency spectrum, and ultimately protecting the company's valuable assets, whether deolyed centrally or in remote locations.

REQUIREMENTS

- Network bandwidth of at least 70 Mbps in a hostile environment and climate
- Broadband wireless video surveillance connectivity with remote facilities and mining sites
- Proven outdoor technology which can operate seamlessly even in harsh climate conditions, with wide temperature fluctuations

SOLUTION

- InfiLINK 2x2
- InfiMAN 2X2
- InfiLINK XG
- InfiMONITOR monitoring system

CUSTOMER BENEFITS

Ensuring transfer of information from mining sites to the control center

High performance links, delivering a large volume video streams

High reliability and throughput even in NLOS conditions

Cost-effective solutions, with proven scalability to meet future requirements

"

Mining enterprises consider the connectivity to remote sites to be critical for ensuring the flawless operation and productivity of their pits, including the most remote ones. We are always ready to implement the latest technologies to improve our productivity and gain access to real time information from our facilities wherever they are located. As a direct result of selecting Infinet's wireless solutions, coupled with a brand new video surveillance system in all our quarries, we have significantly increased the volume and quality of the data collected from all our sites, making it much easier for our management teams to respond dynamicllay and improve the company's overall productivity. This new platform has also positively affected the organisation of our business processes.

ARGYN AGZAMOV,
DEPUTY CIO AT EURASIATELECOM LLP ("EURASIAN GROUP", ERG)

Infinet Wireless solve network connectivity challenges for a leading Indonesian mining contractor

🛒 Mining   📍 Indonesia   💼 PT Saptaindra Sejati (SIS)

PT Saptaindra Sejati (SIS) is a well established and rapidly growing modern mining contactor in Indonesia, providing integrated mining services to a number of customers across the region.

Mining locations can often be positioned in difficult-to-reach locations, and even the top of the mines themselves can introduce significant technical challenges in laying and maintaining a communications and it infrastructure network.

PT Saptaindra Sejati (SIS) approached its preferred integration partner, Wirakom, to recommend,

design and support a suitable network for its needs. Infinet Wireless was chosen on the basis of a number of key factors that differentiated it from its competition its support of wireless communications across the unlicensed spectrum and its reliability and ability to cope with difficult terrain, geography and weather conditions.

Another key factor in choosing Infinet Wireless's solutions centred around its "Greenfield mode" feature, which PT Saptaindra Sejati (SIS) believes has brought additional stability to the wireless communications links, particularly in times when atmospheric interference is at a high.

REQUIREMENTS

- Bandwidth links between remote mining operation and administration centres
- To achieve over 100 Mbps and across distances in excess of 29 km through difficult terrain
- High-reliability and uptime requirement
- Difficult environmental factors
- Efficient, low-cost solution with rapid deployment and remote support capability

SOLUTION

- InfiLINK 2x2 PRO Mmx
- InfiMAN 2x2 Smnb
- InfiLINK 2x2 LITE Smn
- Greenfield mode feature

CUSTOMER BENEFITS

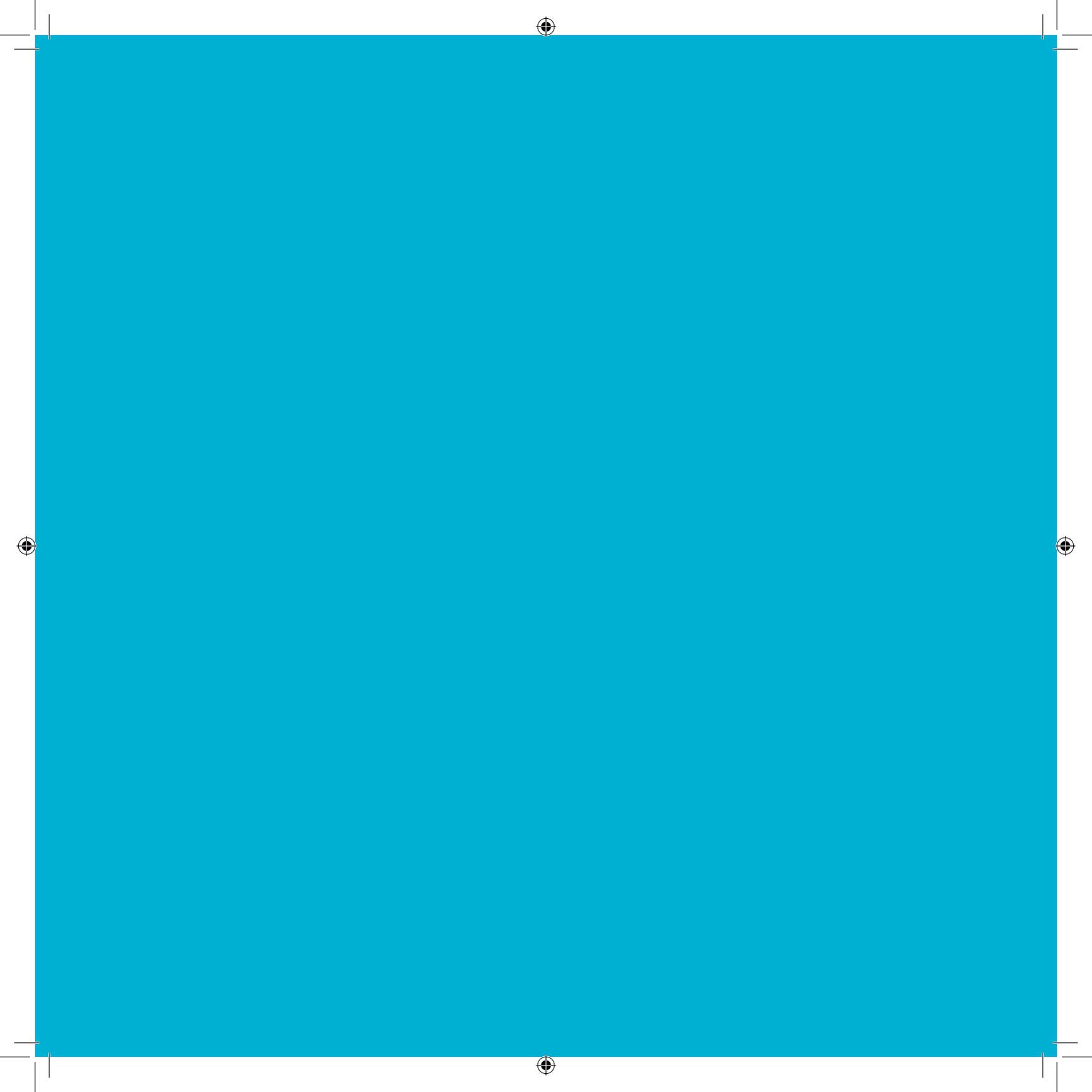A consistent and reliable high speed network across the mining site

A low-cost, high performance solution with rapid deployment

Stability and reliability of the link across a difficult terrain

Ease of integration with existing systems, able to accommodate new changes

Sector
Oil&Gas

Wireless technology links oil wells in the extremes of Siberia

Oil&Gas   Russia   TNK-BP

Samotlorneftegaz is TNK-BP's top producing site and the company's biggest subsidiary in the Russian Federation. Its core activities are the exploration and development of oil and gas fields, parametric drilling, exploration, appraisal and production wells for hydrocarbons and extraction, transportation, treatment, processing and sale of hydrocarbons and the construction of oil and gas field facilities. Responsible for developing the central and south western sectors of the Samotlor field, the company currently produces 65% of its recoverable reserves.

As a part of the company's "Asset for the future – Intelligent oil well" programme, TNK-BP looked to Infinet Wireless and MTS, the leading telecommunication providers in Russia and the CIS countries, to deploy a wireless telecommunication infrastructure for the Samotlor oilfields in the Khanty-Mansiysk Autonomous Region in Russia, approxi-mately 2,500 km north east of Moscow.

Taking into account the territorial nature of the project with harsh environments and temperatures as low as -55°C, MTS proposed Infinet Wireless's broadband wireless access solution to carry a variety of transmitted traffic – video, voice, data and SCADA applications – as well as meet high reliability and safety requirements.

The solution supports Internet access, the corporate network, telephony, the transmission of surveillance footage and telematics to provide the remote management of key processes.

At present, the network includes 62 Base Stations and about 2,500 subscriber terminals, ensuring reliable and stable communication within a radius of 20 km from the point of data transfer, with speeds of up to 60 Mbps.

REQUIREMENTS

- A reliable communications network to provide Internet access and video surveillance, as well as support all existing SCADA applications
- Improved quality and reliability of remote site monitoring
- Cost effective solution, which still maintains maximum safety and reliability levels

SOLUTION

- Long range multipoint solution based on dozens of multi-sector Base Stations and thousands of CPEs

CUSTOMER BENEFITS

Reliable communications platform, linking remote sites (up to 20 km)

Robust and sustainable connectivity in extreme temperatures as low as -55°C

Highly reliable and easy to deploy

Provided full coverage of the entire area

LUKOIL strikes it rich with Infinet Wireless

Oil&Gas   Russia   LUKOIL

LUKOIL is a major international oil and gas company, accounting for 2.2% of the global output of crude oil. The company implements oil and gas exploration and production projects in 12 countries but is most active in four federal districts of the Russian Federation: the North West, the Volga, the Urals and the South. At the end of 2012 LUKOIL's six refineries had produced 73.5 million tons of crude oil a year.

In order to ensure that its extraction facilities meet the latest industry ecological standards and safety policies, LUKOIL needs to ensure that its SCADA systems need to be controlled in real-time. As a result, LUKOIL required a reliable network solution, driven by a Point-to-Point arrangement, which would provide an increase in Base Station capacity and coverage.

With this in mind, LUKOIL approached integration specialist Lukon in order to put in place a highly reliable, robust and secure communications system.

Due to the locations of the Base Stations, LUKOIL needed equipment that could operate in harsh environments covering up to 15 km. Lukon suggested and trialled the robust and reliable InfiMAN 2x2 with its Integrated Sector Antenna Base Stations, ensuring maximum RF performance with the benefit of quick and simple installation processes.

REQUIREMENTS

- Real-time control of SCADA system
- Robust design to operate in harsh environments – temperatures as low as -55°C
- Coverage of up to 15 km
- Quality of Service support for a variety of traffic

SOLUTION

- 3 InfiLINK 2x2 long-range backhauls, Point-to-Point high-capacity products
- 12 InfiMAN 2x2 Base Stations with 77 CPEs, Point-to-Multipoint high-capacity

CUSTOMER BENEFITS

Low entry costs

Reliability across all types of terrain and climate

Better ROI achieved through the use of more capacity in less spectrum

Trustworthy communications for an industry that demands consistency

Infinet drills for success at China Petroleum and Chemical Corporation

Oil&Gas   China   DongYing Oilfield

DongYing Oilfield, located in the ShanDong province of China, and operated by China Petroleum and Chemical Corporation, is a crucial part of the local economy and one of the largest oilfields in the People's Republic of China.

The oilfield had an existing and unreliable infrastructure that was over ten years old. The local operators approached Infinet Wireless's partner in the region, BoDaXun, to help them identify a suitable and robust solution that would both meet their current needs and also future proof the network for years to come. BoDaXun recommended Infinet Wireless's solutions, a combination of Point-to-Point and Point-to-Multipoint topologies, as the best infrastructure that would provide a cost-effective, stable and reliable wireless network with unprecedented low latency. BoDaXun deployed Infinet Wireless's Poin-to-Point solutions, InfiLINK 2x2, for all back-

hauling and remote data transfer links, and the Point-to-Multipoint solutions, InfiMAN 2x2 and associated subscriber terminals, to aggregate the oil well data and provide the optimum performance to China Petroleum and Chemical Corporation. The oilfield operators were impressed by the simplicity of installation and ease of alignment of the wireless units, the flexibility and high reliability they offered, the improved QoS offered by Infinet Wireless, the net throughput at each location as well as the support offered by BoDaXun and Infinet Wireless locally. The entire infrastructure will be constantly monitored by Infinet Wireless's InfiMONITOR, a complete software toolbox of network management and monitoring features, which includes flexible viewing options, performance monitoring, configuration of all network elements, user management as well as advanced fault management.

REQUIREMENTS

- Network capable of carrying video surveillance traffic reliably
- High capacity links to collect and dynamically transfer complex oil-well data
- Wireless solution that could be deployed rapidly and cost-effectively

SOLUTION

- InfiLINK 2x2 PRO Mmx series
- InfiLINK 2x2 LITE Lmn series fitted with high-gain external antenna
- InfiMAN 2x2 for Point-to-Multipoint
- InfiMONITOR (Network Management System)

CUSTOMER BENEFITS

Video surveillance data streams transmitted dynamically without jitter or delay

Highly reliable solution

One unified network management system for the entire oil field

A consistent and reliable high speed network across the mining site

Cost-effective solution and improved connectivity across oil fields

Oil&Gas   Colombia   AxURE Technologies® S.A.

AxURE Technologies® S.A., a Colombian company, provides essential telecommunications solutions and services to more than 85% of the petroleum industry in eastern Colombia.

AxURE Technologies approached Royal Telecom, Infinet Wireless' partner in Colombia, a well-established supplier of fixed wireless solutions, to help them identify, select and deploy a future-proof and reliable wireless platform. The solution that was ultimately deployed consisted of a combination of both InfiLINK 2x2 and the InfiMAN 2x2 product families to three of the largest oil fields companies in Colombia and enabled them to connect their main sites to all their deep-water drilling locations. This new platform was based on dozens of 19 dBi subscriber terminals and multiple InfiLINK 2x2 links fitted with 23 dBi antennas, allowing full access to all the remote exploration facilities and field sensors. It also offered a much greater network stability as compared to the previous satellite-based infrastructure. The easy setup of the network also enabled AxURE to migrate all of its existing customers to the new platform effortlessly and provide them with additional services such as video conferencing. AxURE Technologies now has the best available wireless infrastructure to sustain its exploration facilities, most of which are several kilometers away.

REQUIREMENTS

- To provide a reliable and quality solution to AxURE
- Technologies® S.A in the eastern oil fields of Colombia
- To migrate all existing customers from its existing satellite solution
- The solution needed to be implemented in the harsh environment and isolated areas of Colombia

SOLUTION

- InfiLINK 2x2 units with integrated 23dBi antenna
- InfiLINK 2x2 units with higher gain external antenna
- Dozens of subscriber terminals from the InfiMAN 2x2 family with a mix of 19, 23 and 28 dBi integrated antennas

CUSTOMER BENEFITS

A stable solution, with increased through puts and significantly improved latency

Reduced operation costs to provide a much better service

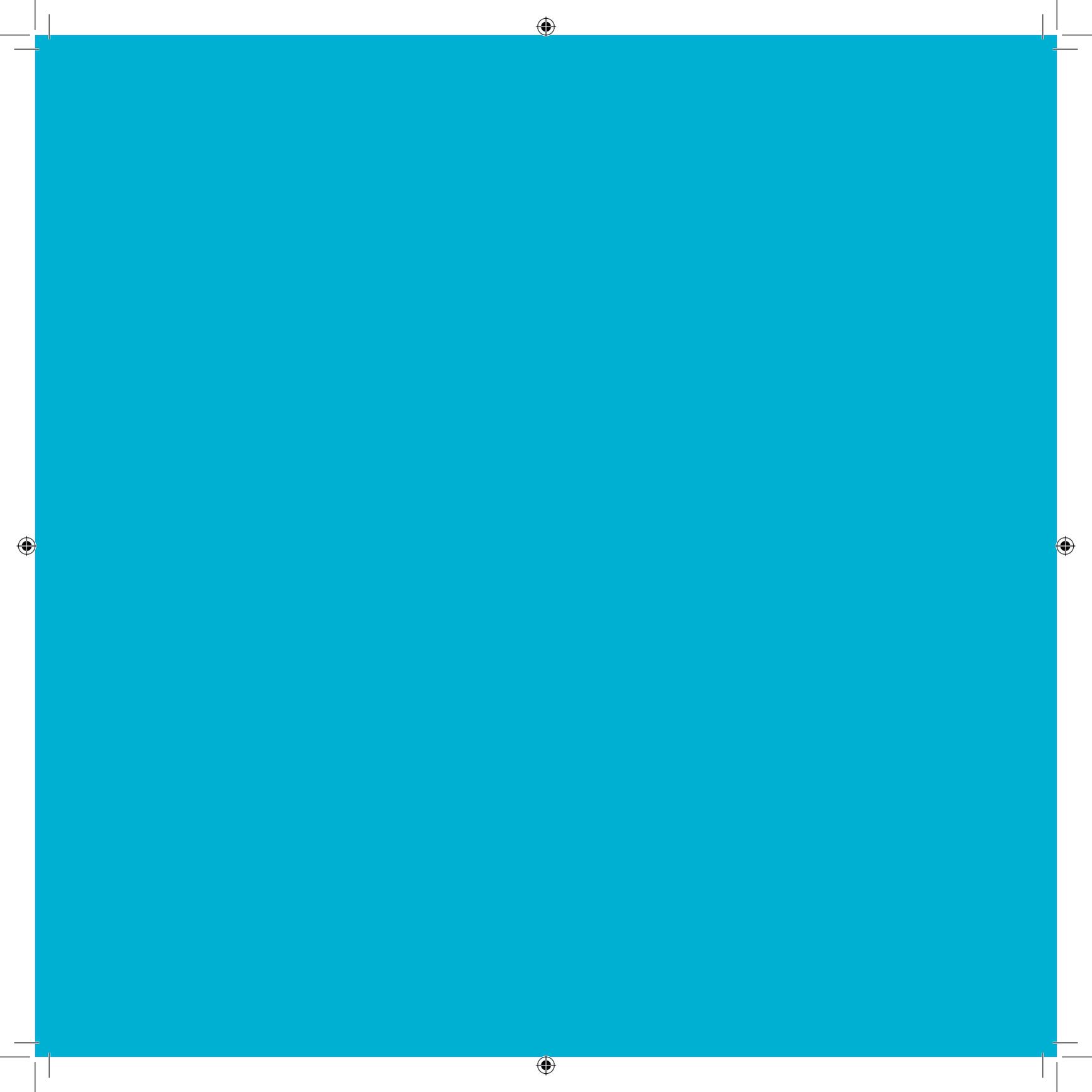Implemented network in the harsh environment and isolated areas of Colombia

Highly reliable solution

" The technology delivered by Infinet Wireless and its local partner has been fundamental to our business in terms of improving our own brand, allowing us to access real-time all the different MICU units in the field and ultimately better manage our assets and those of our customers. We are very satisfied with the solutions implemented and we plan to grow together with the help of Infinet Wireless, our key technology partner.

JUANA PATRICIA MARTÍNEZ,
SEP & STRATEGY MANAGER AT AXURE TECHNOLOGIE

Sector
Energy

Orekhovo-Zuevsky Power Lines

⚡ Energy   📍 Russia   💼 Electroset

Utilities provider "Electroset", based in the Orekhovo-Zuevo region, provides services to local government organisations and end-users in the region.

The main purpose of the new fixed wireless network was to reduce downtime on the electricity grid, control the energy consumption of end-users and collect and transfer information from end-users' energy meters to a processing centre. It required 100% coverage of the whole town.

The plan was to link 266 district transformer substations. In total, there are three stages of construction.

During the first stage, to ensure maximum coverage, the central Base Station was chosen, at a height of 70 m.

On this, four Base Stations were mounted. This point provides access for up to 80% of the transformer substations (TS) around the city. 15 subscriber terminals were also installed here.

At the second stage of construction, additional relay points were established to provide access to the remaining TS. This forms a backbone network and expands its coverage zone without loss of signal quality and wasting a large amount of frequency resources.

For the third stage mass connection of the TS is planned to support the wireless broadband access.

CHALLENGES

- A wide coverage area – 200 km²
- A large number of end-users
- Connecting 100 subscribers in one sector

REQUIREMENTS

- Minimise power loss
- Control and metering of electricity consumption by users
- Provide remote access to the data from the metres and transmit for central processing

SOLUTION

- InfiMAN 2x2 Point-to-Point solution

CUSTOMER BENEFITS

Private single network for the collection and transmission of end-user devices data

Substantial energy savings by end users

Highly reliable solution

Quick and easy installation

TatAISEnergo

⚡ Energy   📍 Russia   💼 TatAISEnergo

TatAISenergo, a division of Tatenergy, provides technology solutions to the utility industry which include design, construction, installation and the subsequent management and maintenance of IT Infrastructures in the Republic of Tatarstan.

TatAISEnergo determined a need for a high capacity wireless network that could be deployed quickly to provide its end-customers' Smart grid, SCADA and CCTV systems, with up-to-date communications at a reasonable cost, and with the capability to transmit E1 streams.

This project includes 7 installed Base Stations, 100 R5000-Smnc Subscriber Terminals (small form factor that is optimal for urban installations).

The Infinet Wireless InfiMAN 2x2 solution encapsulates E1 streams into IP packets with TDM over Ethernet equipment, transmitting from the Base Station to the Customer Premises Equipment (CPE), meaning that TatAISenergo is able to connect disparate users, where previously connectivity was unavailable.

REQUIREMENTS

- Fast deployment of a high capacity wireless network
- Capability to transmit E1 streams
- Capability to provide smart grid, SCADA and CCTV systems

SOLUTION

- InfiMAN 2x2 Point-to-Multipoint solution
- 32 Mmx Base Station sectors (4 sectors in each BS)
- 100 Smnc Subscriber Terminals (small form factor that is optimal for urban installations)

CUSTOMER BENEFITS

Robust and reliable equipment, high bandwidth of radio link

High real throughput, quick and easy installation

QoS, reach routing and security feature set

Low capital and operating costs

> **"** We decided to run a test of wireless channels before we implemented the real system, and we were impressed with how well the Infinet solutions work in hazardous urban environments.
>
> **NIKOLAI AKSEONOV,**
> HEAD OF THE TECHNICAL AND PRODUCTION DEPARTMENT AT TATAISENERO

Video surveillance system at Donbassenergo power plants

⚡ Energy   📍 Ukraine   💼 PJSC Donbassenergo

PJSC Donbassenergo currently enjoys a 4.6% market share for electricity production and 11.6% in thermal generation in the country. The company has two thermal power plants there – Starobeshivska TPP and Slovianska TPP.

During the redevelopment of the Starobeshivska and Slovianska power plants, Donbassenergo realised a need for an advanced video surveillance solution to be deployed over a new wireless infrastructure.

Donbassenergo's demanding specification centred around the need for images from their surveillance cameras to be viewed remotely, online, 24 hours a day, showing the different areas of construction progress and also the automated dispatch management system in the power station.

During the construction phase, the surveillance cameras were moved to different areas of the sites, so it was necessary to ensure the continuity of connection wherever they were relocated. The system needed to be robust for this harsh environment.

Infinet Wireless's solution was based on the InfiLINK 2x2 LITE topology. More specifically, the deployment was finalised using a number of Smn units integrated with 19 dBi antennas for the remote camera sites, all connected with Infinet Wireless's InfiMAN 2x2 Mmx Base Stations operating with a capacity of up to 300 Mbps.

CHALLENGES

- A high level of electromag-
  netic interference
- Constant movement of cam-
  eras to new locations through-
  out the construction process

REQUIREMENTS

- Deploy a reliable and rede-
  ployable video surveilance
  system to monitor the recon-
  struction process of the power
  plant
- Provide Internet access
  to users for remotely viewing
  images from the cameras
- High reliability links
- Ability to install cameras and
  local switching nodes any-
  where on the construction site

SOLUTION

- InfiLINK 2x2 LITE Point-to-
  Point solution
- InfiMAN 2x2 Point-to-Mul-
  tipoint solution, with Base
  Stations of up to 300 Mbps
  capacity

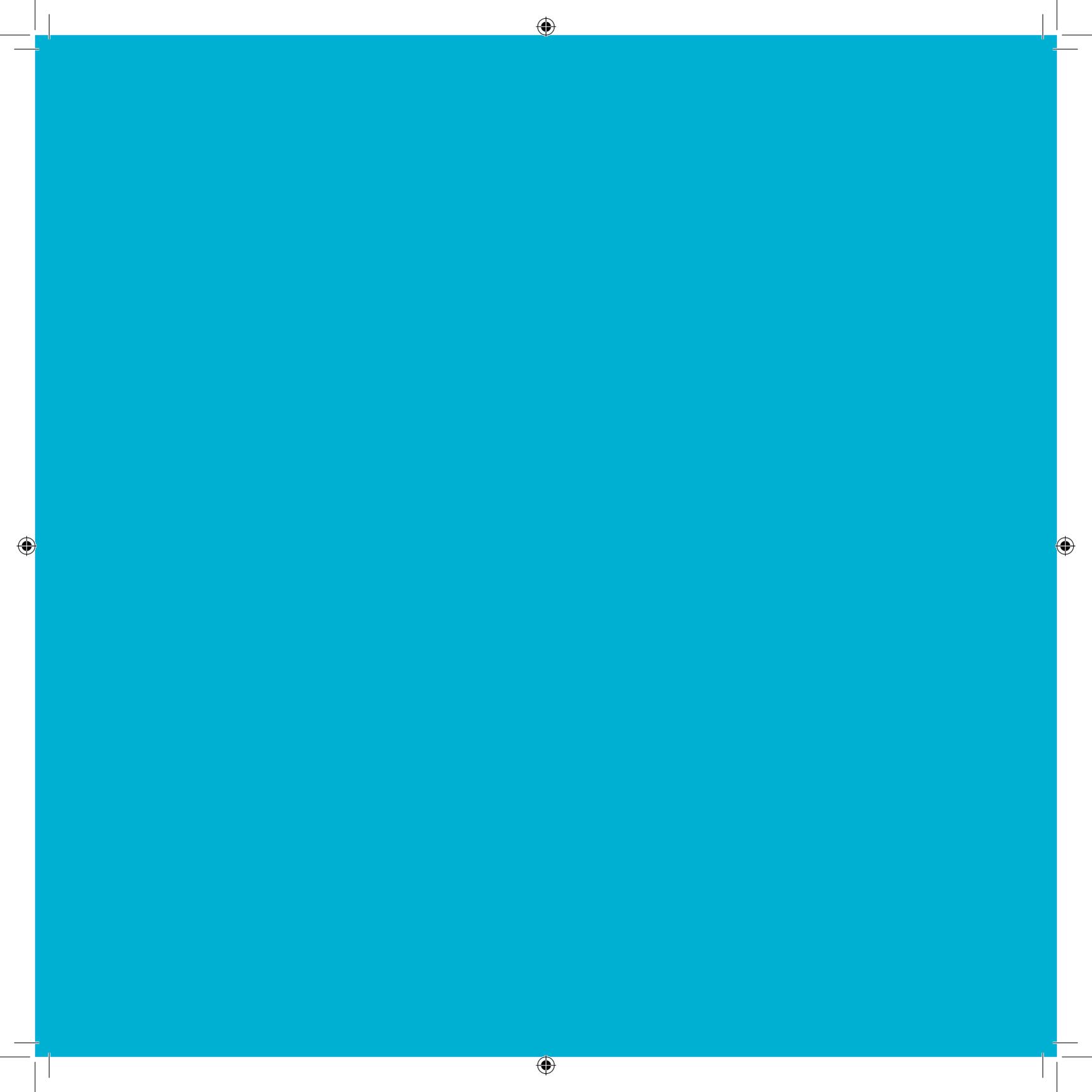## CUSTOMER BENEFITS

Economically effective solution

High reliability of the communication
channels
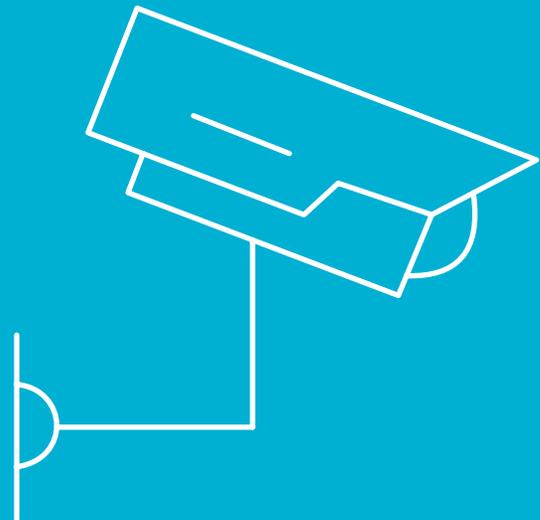
Full integration with local switching
nodes

Low capital and operating costs

Sector
Security/Surveillance

"Safe City" Programme

Security/Surveillance   Russia   A-TEL

The company "Nasha set" or "Our network" (under the trade mark A-TEL), is one of the providers of telecommunication services for the "Safe City" programme. Implemented by the Government of Moscow, A-TEL provides a system of urban public CCTV, main high-speed links and network segments of "last mile" connectivity to transmit signals from a large number of cameras overlooking the streets.

To develop this integrated project, A-TEL turned to SPC Dateline – a highly respected telecom infrastructure solutions provider. Given the specific nature of the project – an urban environment with a large number of connection points over a large coverage area – Dateline suggested the use of Infinet Wireless's InfiLINK 2x2 solution

of high-speed backbone channels (Point-to-Point) and the InfiMAN 2x2 Base Stations and terminals (Point-to-Multipoint).

The main challenge of this project was a complex electromagnetic environment with a high density of radio coverage and the absence of reliable data on the spectrum workload. The regular transmission of video streams would lead to a significant increase of traffic on the input network, so it was decided that Infinet Wireless's automatic frequency selection mode would be the best solution. Thanks to the ease and speed of deployment of Infinet Wireless's solutions, A-TEL was able to quickly deploy and secure its network under the requirements laid out by the Moscow Government's Department of Information Technology.

REQUIREMENTS

- High-capacity to enable the transmission of surveillance footage
- A large number of connection points across a vast area
- Equipment that could operate in conditions with strong interference and on a crowded spectrum

SOLUTION

- InfiLINK 2x2 for the main backhauls
- InfiMAN 2x2 for the "last mile" connection)

CUSTOMER BENEFITS

Fast deployment of the network

Reliable connections in all weather conditions

Low capital and operating costs

Centralised monitoring and management

Olympic Sailing Security Network during Olympic Games 2012

Security/Surveillance   United Kingdom   Dorset Police

When London won the bid to host the 2012 Olympic Games, the safety and security of both competitors and spectators was of paramount importance.

With the Olympic sailing taking place in Weymouth, in the south of England, Dorset Police had to undertake its largest security operation to date to ensure the safety of thousands of visitors and athletes. They required a reliable wireless infrastructure that would provide secure CCTV transmission from both fixed and mobile locations.

The strict conditions imposed by the Olympic

tender committees meant that the selected solution had to be reliable, cost efficient and with no adverse impact on the environment. Taking into account the location of the deployments, the solution also had to be able to withstand harsh sea-air conditions.

UK Broadband Ltd and Quadrant Security Group, working closely with Infinet Wireless, submitted a proposal to provide a comprehensive solution to Dorset Police. This submission, based primarily on Infinet Wireless's InfiLINK 2x2 and InfiMAN 2x2 families of wireless solutions, was ultimately successful in winning the bid.

REQUIREMENTS

- Span a wide geographical area (land & sea)
- Deliver fixed and mobile coverage
- Deployable on a temporary basis and cost efficiently
- Had no environmental impact
- Could withstand harsh sea-air conditions

SOLUTION

- InfiLINK 2x2 – wireless backbones with a capacity of up to 280 Mbps
- InfiMAN 2x2 – user terminals and Base Stations with a capacity of up to 240 Mbps per sector

CUSTOMER BENEFITS

Provided required bandwidth

Large number of connection points

Significant reduction in capital and operating costs

Rapid network deployment

> " UK Broadband's and Infinet Wireless's reputation and experience were paramount in the decision to partner with them – and the project was a huge success as a result. Our collaborative approach enabled us to maximise our collective expertise in providing a solution that was consistent, cost effective and most importantly, one that overcame all of the challenges with delivering CCTV transmission over land and sea.
>
> **PHIL DOYLE**,
> MANAGING DIRECTOR, QUADRANT SECURITY GROUP

Cherwell District Council Selects Infinet Wireless Solutions to Provide CCTV Infrastructure in Banbury

Security/Surveillance   United Kingdom   Cherwell District Council ()

Banbury is the principal regional town of North Oxfordshire, U.K., lying 100 km north-west of London and 60 km south-west of Birmingham.

The town and surrounding areas come under the local government jurisdiction of Cherwell District Council, who – in partnership with Thames Valley Police- had previous commissioned an urban-area CCTV project to improve the security of residents and businesses across the town.

Infinet Wireless teamed up with its strategic partner, UK Broadband (UKB), who also enlisted the assistance of CDS Systems – one of Europe's largest independent providers of integrated security systems – to submit a joint proposal for this project based around Infinet Wireless's InfiLINK 2x2 Point-to-Point broadband wireless solutions.

Cherwell District Council now has a state-of-the-art, fully functional and extremely reliable broadband wireless solution that has removed the need for expensive cables, thus saving significant costs on leased lines rental as well as providing them with the flexibility to add additional CCTV cameras in the future with minimal additional cost.

CHALLENGES

- To provide high quality, cost-effective wireless CCTV connectivity
- Allow flexibility in deployment locations for new cameras – including the deployment of temporary facilities
- Reduce current CCTV operating costs by eliminating the need for fixed-line leasing

SOLUTION

- InfiLINK 2x2 Mmx, Point-to-Point solutions, offering throughput of up to 280 Mbps at distances up to 30 km

CUSTOMER BENEFITS

Reduce operating costs by eliminating line rental costs from operators

Flexible and easy-to-maintain solution

Scalable design, allowing for additional cameras to be quickly added in the future

High-capacity platform, essential for real-time video streams

"
Infinet Wireless's products have enabled us to deliver a reliable solution of the highest standard to our customer, offering them significant cost-savings and flexibility in the management of their CCTV network whilst still being able to utilise the existing investment they had made in their camera sites and infrastructure. We have provided Cherwell District Council a wireless solution that is future-proof, secure, flexible and cost effective.

ADRIAN WHEELER,
HEAD OF SALES AT UK BROADBAND

Infinet Wireless enables urban surveillance in the UK

Security/Surveillance   United Kingdom   Swindon Borough Council

Since the UK's Crime and Disorder Act of 1998 was implemented, local authorities are required to give high regard to crime prevention. Crime reduction and community safety are at the heart of their medium and long term planning strategies and day-to-day practice. Swindon Borough Council is at the forefront of tackling crime. as part of this initiative it was the first Council to implement wireless closed-circuit television (CCTV) surveillance as part of its crime reduction policy, transforming Swindon for the future.

An extensive network covering tens of square km and supporting approximately 200 camera feeds has been implemented across Swindon. The meshing capability of Infinet Wireless radios makes them a key element in the solution. Deployable cameras can connect to any wireless node on the fixed camera network to provide real time video feeds in the central monitoring station. These cameras are proving to be an invaluable tool in preventing transient anti-social behaviour.

The integrated approach provides Swindon with a versatile and mobile CCTV network that can be deployed rapidly in hotspot areas, where required, without the need for expensive leased line installations with long lead times, giving Swindon a flexible, robust and scalable solution.

Swindon Borough Council has saved a significant amount of money on its CCTV transmission costs by implementing a wireless IP infrastructure instead of traditional wired analogue circuits.

OBJECTIVES

- House burglary prevention
- Prevention of petty crime, graffiti, street robberies and vandalism
- Scalability of the system, with minimal investment

REQUIREMENTS

- Wide area network connectivity between council buildings
- Broadband initiatives for digital inclusion
- Metropolitan wireless hotzones for Council employees or public access
- In-vehicle surveillance for public transport and emergency services vehicles

SOLUTION

- InfiLINK 2x2 Point-to-Point
- InfiMAN 2x2 Point-to-Multipoint

CUSTOMER BENEFITS

High speed multiservice network infrastructure

Minimal packet loss

QoS support

Ease in maintaining network due to the 15-year guarantee of consistent working

> " We were fascinated to hear about the capability of the latest radios from Infinet Wireless. When we were advised that we could have a completely compatible, integrated solution for our housing stock and for fixed and rapid deployment of street cameras, we could immediately see that it was ideal for any local authority like us.
>
> **MARK WALKER**,
> HOUSING AND REGENERATION MANAGER FOR SWINDON BC

Inter Crown Europe and Infinet take Global-Line on a journey of discovery

📹 Security/Surveillance   📍 Hungary   💼 Wireless ISP Global-Line

Wireless ISP Global-Line needed to change its business model, as the scope for a traditional Internet service provider was becoming increasingly limited. Infinet Wireless and Inter Crown Europe helped it change to cater for a new market.

New growth was needed by the business. One of the opportunities available was to offer IP video surveillance to businesses and local authorities in the city of Hatvan and neighbouring towns.

Since this would involve streaming high-resolution pictures, it was clear that the existing network needed to be upgraded. Extra capacity and new management tools would be the minimum requirements. A detailed performance testing,

which compared other vendors' options with an InfiLINK 2x2 solution, suggested that any short-term cost savings on other kits would be outweighed by the superior performance and cost effectiveness of the InfiLINK 2x2 platform. Infinet Wireless's commercial and technical support was superior too.

The potential for interference and pulse collisions in a busy municipality was quickly neutralised by the rapid response of Infinet Wireless's support team. One of the characteristics of Infinet Wireless hardware is that it offers excellent diagnostic features and these enabled the team to make rapid progress in ironing out possible problems. Global-Line reports that the links work flawlessly.

CHALLENGES

- High load unlicensed frequency ranges in an urban environment

REQUIREMENTS

- High-capacity backbone
- Low latency and jitter
- Minimal packet loss
- QoS support

SOLUTION

- 16 InfiLINK 2x2 high-capacity Point-to-Point solution

CUSTOMER BENEFITS

Flawless network operation across areas with a lot of radio interference

Stable, robust and secure communications to provide video surveillance

Up to 80 Mbps throughput in crowded urban environments

Excellent diagnostic features and support services

"

Infinet Wireless provides greater long-term customer benefits and exceptional commercial and technical support. We decided to use Infinet Wireless products as the backbone links for the IP surveillance system.

VIKTOR SZECHENYI,
CEO, GLOBAL-LINE

City of Kaposvár develops innovative wireless approach to crime prevention

Security/Surveillance   Hungary   SinusNet

Kaposvár is an historic city located in the south-west of Hungary, some 185 km distance from Budapest, and is one of the principal cities of Transdanubia and the capital of Somogy County.

With this growth in population and visitor numbers comes the constant need for increased security and crime prevention across the breadth of the city, and with this in mind the local council began planning how to implement a strategy that would help to discourage crime and reduce its occurrence in public areas.

The project was implemented by Infinet Wireless partner in Budapest – SinusNet – the company, bringing together highly qualified engineers with long-term experience in creation of telecom infrastructure and in development of IP-networks.

The aggregation of the camera video streams is provided by Infinet Wireless's InfiMAN 2x2 series of Point-to- Multipoint broadband wireless Base Stations, offering unparalleled reliability and throughput to fully meet the needs of the bandwidth-hungry imaging network.

REQUIREMENTS

- Absolute reliability
- High throughput
- Uninterrupted operation
- Real-time video streaming
- Support of different types of applications

SOLUTION

- InfiMAN 2x2 Point-to-Multipoint Solution

CUSTOMER BENEFITS

Scalability

Easy and fast deployment

The highest throughput for band-width-hungry imaging network

Unrivaled reliability

Urban Video Surveillance Network in Sumirago

Security/Surveillance   Italy   SinusNet

In 2009, the town of Sumirago identified the need to deploy a video surveillance network across key areas of the town. Its purpose was to provide the local residents and businesses with an additional level of safety and security within their community.

Sumirago is a small town in the region of Lombardy. SIR.tel. srl., an Infinet Wireless Gold Channel Partner with extensive experience in the design and distribution of broadband wireless architectures and solutions, was chosen to work in partnership with Tel.e.Sic to plan and deploy the wireless surveillance network across the municipality.

In January 2010, the Sumirago Police Department in Italy brought into service their newly commissioned wireless video surveillance network, which provided coverage across key areas of the town.

The overall result was a reliable and easy-to-deploy urban video surveillance system. It was commissioned quickly with minimal disruption to the local community and has the ability to quickly scale-up or redeploy elements of the surveillance network when required, for additional video surveillance camera points or other types of traffic across the network.

REQUIREMENTS

- To provide a cost-effective video sur-veillance solution based on a wireless network
- To ensure scalability for future growth of the network
- To provide high efficiency and throughput in a Point-to-Multipoint architecture

SOLUTION

- InfiMAN 2x2 Point-to-Multipoint solution
- Dynamic Access Marker software feature for improved network resilience

CUSTOMER BENEFITS

Easy to scale up and redeploy camera sites due to wireless infrastructure

Quick deployment and relocation, easy to configure

Ability to carry other data/voice traffic whilst prioritising video traffic

Highly resilient network

New system to increase traffic safety and crime prevention for Galati

Security/Surveillance Romania Galati City Hall

Galati, located in the eastern Romania, is the capital city of Galati County. The municipality of Galati manages various public services in the city, including the automobile traffic management and surveillance services to ensure its residents' safety.

To do this, the municipality of Galati undertook extensive research to find the right solution suppliers. The whole project was conducted in partnership with three companies, where Mobilis, the strategic partner of Infinet Wireless in Romania was responsible for the data transport network from the locations of interest to the dispatcher as well as designing the radio network.

The project's consortium proposed that all intersections be coordinated by centralised software and monitored by the Traffic Control Centre, with all communications being done via a wireless network. The network was built at street level by utilising the existing infrastructure in addition to radio solutions from Infinet Wireless, including 18 of Infinet's record-breaking Point-to-Point InfiLINK XG units, 9 R5000-Mmxbs base stations, and 43 subscriber terminals R5000-Smn with integrated 23 dBi dual-pol antennas.

After the implementation of the entire project, Galati has become a safer city, allowing street-level video monitoring of 36 zones of the city.

REQUIREMENTS

- To provide Galati with a feasible solution to manage road traffic and improve surveillance systems to prevent crime in the city

SOLUTION

- The wireless network was deployed with Infinet Wireless equipment and consists of InfiLINK XG units Point-to-Point topology, base stations R5000-Mmxbs and subscriber terminals R5000-Smn with integrated 23 dBi antennas

CUSTOMER BENEFITS

A stable and secure network

Highly reliable operation across all types of terrain and climate conditions

Low capital and operating costs

Rapid deployment

" We were looking for reliable partners to work with on this project and Mobilis and Infinet Wireless became the obvious choices based on their superior technology. The cooperation complemented the robust requirements Galati needed, thanks to the wireless radio networks installed. Due to the reliability of Infinet Wireless products and the Mobilis experience, we were able to provide residents of Galati with a low-cost, safer traffic management system and video surveillance in many new areas.

VIOREL MANCAS,
PROJECT MANAGER & TECHNICAL MANAGER AT GALATI CITY HALL

State-of-the-art IP surveillance across Dakar port facility

🎥 Security/Surveillance   📍 Senegal   💼 Dubai Port World

Dubai Port World is a global marine terminal operator with 49 terminals in 27 countries. It ranks amongst the world's four largest container terminal operators. In June 2007, DP World announced that the Port of Dakar, Senegal, had awarded it the concession to operate and further develop the existing container terminals at Dakar, with the aim of more than doubling the capacity of the existing terminal.

DP World took the decision to prioritise the security coverage across the Dakar Port site in order to improve the control, access and health & safety processes throughout the facility. as part of this initiative, the need for real-time video-surveillance across the existing four terminals was identified as a priority, including at the main access point, which was also the location where employees were paid their salaries. Improved security at this point would not only enhance the overall security of goods and services to the site, it would also act as a safety mechanism for the employees.

INEXO, a systems integrator specialising in wireless and networking solutions and part of the Ceron group, was approached by DP World and its local technology solutions partner in Senegal to design and integrate the networked wireless video surveillance solution. INEXO specified Infinet Wireless's InfiMAN 2x2 products to support the majority of the pre-installed camera locations, where the throughput and distance support of the systems proved more than adequate for video transport, even when Line-of-Sight paths were partially obstructed. Infinet Wireless's R5000-O and R5000-Om products were deployed as Base Station masters for the site.

The low latency of the Infinet Wireless solution also proved a deciding factor for the deployment, since the surveillance was based on PTZ (remote-controlled) IP Video Cameras, which require low-latency transmission in order for the cameras to be quickly manoevered into their surveillance positions from the control centre.

OBJECTIVES

- To provide a cost-effective video surveillance solution based on a wireless network
- To ensure scalability for future growth of the network
- To provide high efficiency and throughput in a Point-to-Multipoint architecture

CHALLENGES

- The need for a combination of Point-to-Point and Point-to-Multipoint wireless solutions
- The difficult climatic conditions of the location
- Dynamic Access Marker software feature for improved network resilience

SOLUTION

- InfiMAN 2x2 series Base Stations for Point-to-Multipoint applications
- 3 InfiLINK 2x2 Smn integrated antenna CPEs
- 13 InfiMAN 2x2 Smnc with 35 Mbps net throughput integrated antenna CPEs
- 1 InfiMAN 2x2 Omx dual radio 54 Mbps Base Station
- 1 InfiMAN 2x2 Omxb MIMO high-capacity Base Station

CUSTOMER BENEFITS

Cost effective, high bandwidth link with unrivalled price-performance ratio

Rapid deployment

High reliability across difficult Non-LOs terrain and in difficult climatic conditions

Increased security and safety awareness

City-wide wireless video surveillance and security network

Security/Surveillance   Brazil   Comtex

As part of a "growth acceleration programme", the Brazilian Government is making progressive investments in order to narrow the gap between the richer and poorer districts of the region, aimed at reducing violent crime and improving the overall security and personal safety of its citizens across the region.

The State of Rio de Janeiro has made the decision to deploy a new wireless broadband network. It specifically supports existing CCTV and newly-expanding IP surveillance systems across 26 targeted areas of the city, with the goal of an expected completion within 12 months for the entire project. The City of Rio de Janeiro turned to Comtex, a specialist in the development and deployment of video surveillance solutions and electronic security, to build the next generation wireless CCTV/IP Surveillance network. Following extensive trials with a number of different wireless networking solutions, Comtex decided on Infinet Wireless' InfiMAN 2x2 MIMO high capacity, Point-to-Multipoint wireless technology to provide the wireless infrastructure that would serve the city's surveillance and safety network.

Infinet Wireless's technology enables lower cost, high-speed throughput applications, over extended coverage areas of challenging terrain. Infinet Wireless's reputation for reliability and robustness across difficult terrains and through varying environmental and climatic conditions is well known across the industry.

REQUIREMENTS

- To deliver a scalable solution for next-generation CCTV and surveillance systems across 26 targeted areas of the city within a 12 month timeframe
- To deploy an IP surveillance wireless networking solution that will be able to integrate with existing CCTV technology
- To provide a solution capable to support additional networking and communications services for the 2016 Olympic Games

CHALLENGES

- Difficult terrain
- Varying environmental and climatic conditions
- Tight project deadlines

SOLUTION

- InfiMAN 2x2 MIMO high-capacity Point-to-Multi-point broadband wireless
- InfiMAN 2x2 standard capacity Point-to-Multipoint broadband wireless

CUSTOMER BENEFITS

Deployable across geographically challenging terrain

Significantly reduced deployment time

The option to overlay communication and data services over the wireless network

Provides future-proofing upgrade capability for security and public services

"
Infinet Wireless's InfiMAN 2x2 range of products and technology offers a high-capacity wireless network that is quick to deploy and incredibly economical to operate. The excellent performance and bandwidth flexibility of the technology enables us to significantly reduce our deployment time and up-front network investment. Coupled with outstanding customer service and support, this made Infinet Wireless the perfect and obvious wireless technology partner for Comtex.

SERGIO NERCESSIAN,
COMTEX

Patrolling the wild "Jungle Zone" of Colombia with long distance CCTV backhaul

Security/Surveillance   Colombia   IKUSI

The need for better, more reliable video surveillance can be seen as a global issue. Areas with high levels of crime need to be able to quickly dispatch the relevant units to deal with various situations. This was a problem that was facing the local authorities based in the Southern part of Columbia in what is known as the 'jungle zone'.

IKUSI, part of the Velatia Group based in Mexico is a multinational company that specializes in telecommunications and service system integration solutions, had been asked by the local authorities to provide a CCTV backhaul solution for deploying CCTV regionally. In an effort to find the most cost effective solution and network structure, many other competitor brands were tested and evaluated. However, the Infinet Wireless brand succeeded in solving above and beyond what was required and the InfiLINK

2x2 LITE product was installed with an external antenna and a license for 50 Mbps of bandwidth.

The solution was jointly installed by Royal Telecom, a long standing partner in the telecommunications industry of Infinet Wireless equipment for South American customers. The full installation of the network backhaul was achieved in less than 3 days and operation commenced shortly after this. Once the backhaul was successfully switched on, the customer saw that the wireless broadband capa-bilities outperformed traditional fibre optics in terms of performance, costs and time saving. The system is now also scalable, as IKUSI only initially required the solution to cover distances of 50 kilometers with a performance of 50 Mbps, but the current Infinet Wireless solution can actually transmit with a performance of up to 180 Mbps.

CHALLENGES

- Providing a robust network backhaul to coverage area 50 kilometers away from the main monitoring site, and to be able to withstand high humidity levels, rainfall and jungle terrain
- A backhaul network that can transmit CCTV footage and video data at high speed and consistent quality, without lag
- A cost effective set-up that supports future improvements and additional points

SOLUTION

- InfiLINK 2x2 LITE
- Smn 23 dBi integrated antenna

CUSTOMER BENEFITS

A robust network that features hard-ened radios in extreme humidity

Ease in maintaining network due to the 15-year guarantee of consistent working

Future-proofed system that can be upgraded easily

Control over the bandwidth allocation in the area

"

The Infinet Wireless solutions that were implemented in this project allowed us to fix the backhauling issues faced by the local authorities within this region of Southern Colombia. We were not only able to execute this project in a very short space of time, but also provide our customer with a robust and stable system. as the solution had a mean time between failures guarantee of 15 years, IKUSI has also seen a cost saving in terms of resources and the money that we were spending on travelling to remote areas to correct maintencance issues.

RAMON MONTES,
IKUSI COLOMBIA MANAGER

A surveillance solution that reduces crime for Neiva City by up to 32%

Security/Surveillance   Colombia   Cala Networks

Situated in the south of Colombia, Neiva is the capital city of Hulia. Due to the rise of the mining industry in the area, crime around the roads leading to the mines was once one of the greatest challenges faced by Neiva.

In an effort to eliminate crime altogether, a network of video cameras was installed using a fibre optic network across the entire Neiva district, but the cost of increasing the existing network was deemed too high, and would have taken a long time to deploy. So the local authorities decided that a wireless system would be more appropriate.

One of the biggest challenges was ensuring that a wireless solution was able to deliver the same features and reliability as the existing network. Cala Networks, a company with over 15 years' experience in consulting on radio frequency and the integration of complete CCTV solutions, was asked to assess the pro's and con's of deploying a wireless network. Cala Networks recommended Infinet Wireless' solu-tions as the best fit one for Neiva City. The cost effectiveness of the Infinet Wireless solution turned out to be much better than the fibre optic-based solution, and provided a stable, reliable and low-cost investment across a wider area within the Neiva district. as the CCTV cameras now cover more of the urban areas across the city and surrounding areas, crime has been reduced by up to 32%.

CHALLENGES

- Providing a robust network backhaul tPoor Line of Sight (LoS) due to tree planting and the urban development
- The solution had to overcome a high level of radio frequency pollution within the city
- The solution needed to be available around the clock with CCTV images being transmitted in real-time

SOLUTION

- The combination of the InfiMAN 2x2 PtMP and
- InfiLINK 2x2 PtP units: 1 unit Mmxb with 240 Mbps
- 8 units Smnb 23dBi with 180 Mbps
- 35 units Smnc 19 dBi with 8 Mbps
- 8 units Mmx with 300 Mbps
- 12 units Smn with 180 Mbps 8 units Smn with 8 Mbps

CUSTOMER BENEFITS

Cost-effective solution compared to fibre optic cabling

Scalable solution: the ability to deploy more CCTV cameras across larger distances

Robust CCTV system controlled and managed from a central location

Highly reliable solution

> " The client was looking for a reliable partner to work with on this project and Infinet Wireless was the obvious choice based on their superior technology. The cooperation with Cala Networks complemented the client's project thanks to the management skills and knowledge of implementing CCTV solutions. Due to the reliability of the Infinet Wireless products and the Cala Networks experience, we were able to provide the client with a stable, reliable, low-cost and scalable CCTV solution in a relatively short space of time.
>
> **JAVI ER BORDA**,
> SALES MANAGER, CALA NETWORKS

Making Bojaca safer with surveillance solutions

Security/Surveillance   Colombia   Maicrotel

In recent years Bojaca had started to fight against rising crime in the area — prominently drug trafficking and cattle theft — but it failed to tackle it due to its poor existing network of closed circuit security cameras which oper-ated on a fibre optic network.

The Bojaca government recognized that it needed a solution without necessarily spending a big part of its budget, that would enable it to remotely monitor the town via CCTV cameras. Bojaca turned to Infinet's partner in Colombia, Maicro-tel, a leading communication solutions provider who installs and manages turn-key video moni-toring solutions for the police force. Maicrotel and Infinet Wireless deployed a network which could

carry IP cameras — some fixed and some pan tilt zoom (PTZ) – in six initial important sites of Bojaca. Initially, four existing cam-eras were moved across to a new wireless platform based on the InfiMAN Point-to-Multipoint solution with the option to install more cameras in the future. Other exist-ing cameras were re-deployed using the InfiLINK Point-to-Point solution as they were in locations out of the 90° coverage of the InfiMAN solution.

The Bojaca police now have all eyes on the CCTV in the town and are able to check all videos to pre-vent crime and pinpoint exact crime scenes in order to dispatch to the nearest police officers, thus providing a safer environment for its citizens and visitors alike.

CHALLENGES

- Cost-effective, straightforward solution to improve surveillance of the town via CCTV cameras and generate solid evidence to convict criminals

SOLUTION

- InfiMAN 2x2 solutions based on the Smnb integrated units, fitted with a 90° antenna, deployed in four central sites in Bojaca

- InfiLINK 2x2 solutions based on LITE products fitted with 19 dBi flat panel antennas, deployed in other sites that were out of the base station coverage

CUSTOMER BENEFITS

Straightforward and cost-effective

Contributes to preventing crime, as well as identifying criminals

Implementation of a 24/7 monitoring solution, including video recording
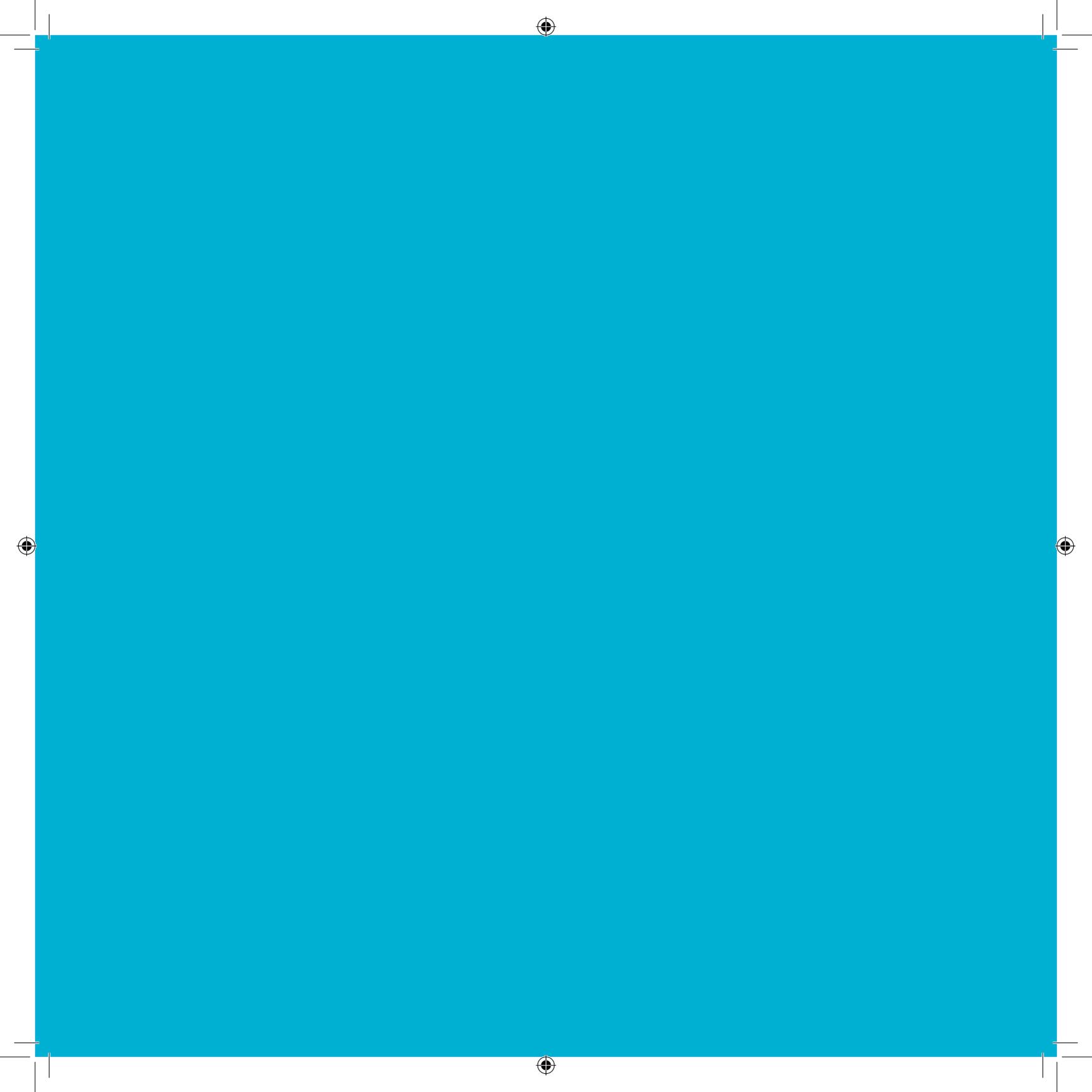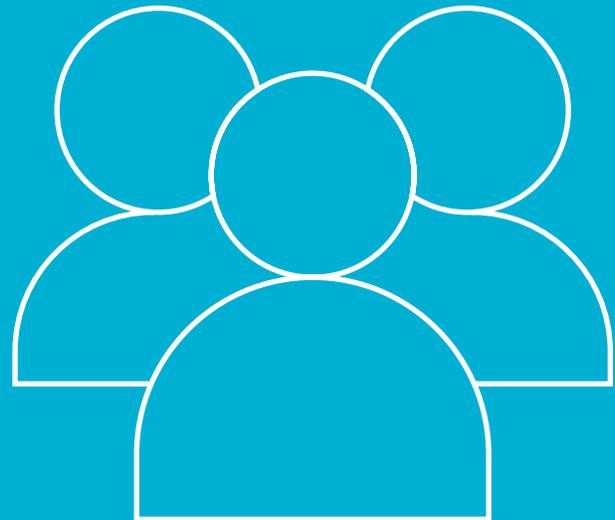
Rapid deployment

> "
> Maicrotel's design and installation, along with Infinet's local support in Colombia, has allowed the law enforcement agencies to extend the area they can monitor efficiently and reliably from the main control rooms. The entire town of Bojaca is now monitored 24/7 and criminals are caught quicker than ever thanks to Infinet and its local partner Maicrotel.
>
> **JUAN CARLOS GAITAN**,
> BOJACA MAYOR

Sector
Social/Government

Using wireless broadband to broadcast church services online

Social/Government   **Russia**   **The Abode "MONSEGUR" "Orthodox Church of the Theotokos"**

The Abode "MONSEGUR" "Orthodox Church of the Theotokos", located in the Dmitrovsky district of Moscow, Russia, has embraced today's online technology advances by innovatively broadcasting their daily religious services and seminars for their congregation members through the world wide web – and have actually done so for at least the past six years.

Over time, they have built a strong internet following, and typically attract over 500 members daily to participate in their church service broadcasts and remote seminars. The broadcasts have become so popular that the church has even diversified and expanded their range of broadcasted services, and now provides content to their audience through media such as web radio and cached video content in addition to live-streaming video. With these challenges in mind, Abode "MONSEGUR" turned to Infinet Wireless to help them achieve their objectives of broadcasting high quality video and media to their audience. The brief was not easy: it would require a direct

communications link from the monastery to the main infrastructure hub – at least 15 km distant – that could broadcast video and content with a throughput of at least 200 Mbps, whilst operating in the harsh climate that the region is known for in the winter months.

Rather than take the more expensive and cumbersome approach of laying a direct copper or fiber link across the 15 km stretch, Infinet Wireless proposed a wireless alternative using their InfiLINK 2x2 Point-to-Point wireless broadband system to the monastery. The wireless link has easily been able to cope with the harsh climatic challenges – not only those of extreme temperatures, but also problems that the severe weather creates for wireless Line-of-Sight systems such as signal dispersion or interference from heavy snowstorms and freezing fog – and through sun, rain, wind and snow, the monastery has been able to provide comfort and support to its widespread congregation, wherever they may be.

REQUIREMENTS

- Direct Line-of-Sight communications link of at least 15 km
- Performance – up to 200 Mbps, low latency for live video streaming
- Ability to work at sub-zero temperatures – potentially in excess of -30°C in winter months

CHALLENGES

- The monastery is located in a remote area, some distance (at least 15 km) from the nearest populated areas and major communications hub
- Difficult climatic conditions

SOLUTION

- InfiLINK 2x2 Point-to-Point

CUSTOMER BENEFITS

Scalable design, allowing for additional features to be easily added in the future

Flexible and easy to maintain platform

High capacity connection essential for real-time video and voice traffic

Highly reliable solution

Enabling Wireless Health Systems

Social/Government   Hungary   Toldy Ferenc Hospital

The Toldy Ferenc Hospital at Cegléd in Hungary provides medical and hospital facilities to nearly 170,000 in- and out-patients across the region. It has grown rapidly in recent years, and the expansion of its facilities has included the acquisition and development of a number of satellite buildings around the city to house many of its specialist departments, although the overall administration of the hospital still resides at the main central facility.

In 2010, the hospital needed to provision a high-throughput and highly reliable link

between its main location and one of its satellite clinics, some 2 km distance from the main hospital, with the ability to support a minimum of a 100 Mbps full duplex capacity and offering

24x7 availability. The customer approached ICT Systems, based on its previous experience in working with them on previous successful projects, initially proposing to procure a Free Space Optics link because of FSO's renowned high interference protection.

ICT Systems discussed the requirements with the it department at the Toldy Ference Hospital, and understood they needed the ability to transmit both voice and data traffic across a high-capacity link that was around 2 km in distance. Since the link would be carrying voice traffic, it was imperative that it had minimal latency, and also that it had 24/7 reliability, in order that the satellite clinic had uninterrupted access to the main hospital facilities and staff.

REQUIREMENTS

- Provide a stable and highly reliable link between main hospital building and satellite clinical centre
- Required 24/7 operation because of the nature of hospital business
- Needed to be deployed quickly (could not wait for a leased line provision) and cost-effectively

SOLUTION

- InfiLINK 2x2 300 Mbps Point-to-Point solution operating in the 5 GHz spectrum

CUSTOMER BENEFITS

High bandwidth, high throughput link

Low latency for support of voice and video traffic

Highly reliable operation across all types of terrain (including NLOS) and climate

Attractive price compared to traditional leased lines and free-space optic solutions

> " I would like to thank ICT Systems and Infinet Wireless for their enthusiastic support and overall perfor-
> mance in supporting this project. The InfiLINK 2x2 offers the same robustness as a Free Space Optic link
> for a much more reasonable price.
>
> **MARIA KECSKES**,
> HEAD OF IT DEPARTMENT AT TOLDY FERENC HOSPITAL, CEGLED

Wireless opportunities at Najran University

Social/Government   Saudi Arabia   Najran University

The University it department approached Electronic Saudi Networks (e-Saudi), Infinet Wireless' local partner in Saudi Arabia, to discuss and design a brand new infrastructure which would meet the present and future demands of its students and staff, be available 24/7 and enable them to work productively.

The University's previous infrastructure was based on MPLS leased lines supplied by a local service provider and capable of a maximum of only 20 Mbps. This was complemented by wireless WiMAX links which were limited to 54 Mbps and configured as backup for the fixed part of the network which was not stable enough. The LAN and WAN infrastructures at the University were complex, expensive and supplied by different manufacturers, making any seamless integration very challenging.

The University's primary objective was to select a scalable solution that could be deployed rap-

idly and cost effectively, and one which students and staff could rely on at all times. The new solution required by the it management team had to be deployed as an overlay to the existing wired network, be seamlessly integrated with the existing routing and switching back-office hardware, as well as provide future proofing and easy scalability. Such a solution had to connect the existing 32 sites using both Point-to-Point and Point-to-Multipoint topologies, providing a minimum bandwidth of up to 300 Mbps to all remote sites. It had to be robust enough to deliver triple play services (i.e. voice, video and data traffic) and cover distances of up to 37 km from the main campus. After testing solutions from various vendors, the University ultimately selected Infinet Wireless's range of InfiMAN 2x2 and InfiLINK 2x2 solutions to provide the optimum performance to its end users, rapid deployment and excellent value for money, well within the allocated budget.

REQUIREMENTS

- Scalable solution
- High capacity and performance
- Fast deployment
- Cost-effective broadband wireless solution

SOLUTION

- Mmx 28 dBi (with integrated antenna) for long distances
- Mmx 23 dBi (with integrated antenna) for short and medium distances
- Mmxbs Base Station (16 dBi gain and 90' degree sector antenna)

CUSTOMER BENEFITS

Delivery of voice, video and data traffic

Highly reliable solution

Integratation with existing NMS platform

Rapid deployment

> " We compared a lot of wireless solutions but none were as reliable as Infinet Wireless.It was the speed, cost and capacity that prompted us to made use of Infinet Wireless radios as a solution to connect different University faculties throughout the city as well as replacing the existing leased line networks and broadband wireless solutions. We are fully satisfied with the robust performance and availability.
>
> **DR ABDULWAHAB ABDULLAH HUSSAIN ALHAZMI,**
> IT MANAGER AT NAJRAN UNIVERSITY

Infinet Wireless provides reliable connectivity to King Abdulaziz University

👥 Social/Government   📍 Saudi Arabia   💼 King Abdulaziz University

University was founded in 1967 in Jeddah, Saudi Arabia. It is the largest university in the western province of Saudi Arabia and is the only education institution in the region that includes two separate campuses in two different locations – one for male students and another for females. The university has a number of scientific and theatrical fields of study including Ocean Sciences, Nuclear Engineering and Medical Sciences.

The university uses a student portal to link the colleges across the two campuses with its main administration centre. Due to the geography and topology of the area, e.g. the university is located between two large mountains, the deployment of a fibre-based infrastructure was simply impossible to achieve due to terrain, logistics and associated costs.

In 2009, the university approached United Horizon major systems integrator in Saudi Arabia and with support from our local partner Eurotel in Middle East, to conduct an audit of its facilities and recommend a solution that would provide both students and staff with fast and reliable connectivity across its campuses. Infinet Wireless's solutions were quickly identified as the best-fit solution as they were well proven in similar environments, connecting such remote areas and in a challenging desert climate.

United Horizon deployed a number of Infinet Wireless's InfiLINK 2x2 Point-to- Point links to provide extensive network coverage for the whole University.

REQUIREMENTS

- Connect the two main campuses of King Abdulaziz University with the administration quarters
- Provide reliable connectivity in difficult terrain
- Provide connectivity in high temperatures

SOLUTION

- InfiLINK 2x2 Point-to-Point solution

CUSTOMER BENEFITS

Increased productivity for students and staff

Highly reliable solution

Significant reduction in downtime

Rapid deployment

> " We are exceedingly pleased with the reliable connection that the Infinet Wireless solution has provided us with. Our students and staff are now able to work productively with much faster connectivity speeds and downtime has been significantly reduced. The ongoing support from Eurotel has also proven invaluable.
>
> **ENG. ABDULHALEEM ALHELO**,
> NETWORK DEPARTMENT MANAGER AT KING ABDULAZIZ UNIVERSITY

Rapidly Growing Branch Network with Infinet Wireless for Tamer Group

Social/Government   Saudi Arabia   Tamer Group

Founded in 1922 and headquartered in Jeddah, Saudi Arabia, Tamer Group is a leading healthcare, beauty care, prestige products, and fast moving consumer goods company that is focused on meeting the growing needs of the Saudi and Middle East communities.

In an effort to support the exponentially growing business Tamer Group has opened several new facilities across the Kingdom. In Jeddah the Group's incumbent wireless network was proving to be unreliable and could not provide the bandwidth necessary to support the business. When it came to selecting a vendor for the new wireless network, the decision to go with Infinet Wireless was an easy one. Working with United Horizons, Infinet's partner in Saudi Arabia, Tamer Group conducted a POC at just one of the sites. Confident in the results, they then went

ahead and deployed Infinet's InfiLINK 2x2 PRO and InfiLINK 2x2 LITE 5 GHz family of products across all 20 locations in Jeddah. For the critical connection between their data center and head office, Tamer Group deployed the R5000-Omx model as it could support speeds of up to 300 Mbps over the 50 km distance. For connections between all other sites, the R5000-Smn and R5000-Lmn models were deployed. One of the biggest benefits of the Infinet Wireless solution has been the ability to transmit significant volumes of business critical data between their various sites. They currently depend on the Infinet Wireless solution for exchange synchronization of their Storage Area Networks (SANs) in their data center and disaster recovery sites. The entire deployment process took just 3-4 working days and was managed completely and professionally by United Horizons.

REQUIREMENTS

- Reliable and stable network
- High bandwidth over large distances
- Cost-effective solution

SOLUTION

- InfiLINK 2x2 PRO 5 GHz
- InfiLINK 2x2 LITE 5 GHz

CUSTOMER BENEFITS

Lower Total Cost of Ownership (TCO)

Cost-effective solution

Ability to transmit business critical data over long ranges at high speeds

Rapid deployment

" I am extremely pleased with the Infinet Wireless solutions – the reliability and stability of the network has allowed us to deploy and support several business critical processes. Based on our experience with Infinet Wireless, I am confident that as we expand our operations, we will rely on Infinet Wireless solutions for our wireless network infrastructur".

MR. AL JAMMAL,
HEAD OF IT OPERATIONS & NETWORK INFRASTRUCTURE AT TAMER GROUP

Trésor Public and The National Agency for Digital Infrastructure and Frequencies (ANINF)

Social/Government   Gabon   Trésor Public

Trésor Public, the Treasury of Gabon, experienced major connectivity issues for many years which meant that its workforce often couldn't access the valuable data it needed to do its job properly and efficiently.

In order to fix such unreliable infrastructure once and for all, and enable its financial teams to work productively across its various sites located in Libreville, Port Gentil, Franceville, Oyem and Bitam, the management team at the Treasury consulted with the National Agency for Digital Infrastructure and Frequencies (ANINF).

The requirements set right from the start were demanding and were centred around a solution that would provide high capacity, uncompromised reliability, security, scalability, and ease of management, while being cost effective, and possessing the ability to cater for future requirements as they emerge at a later date.

REQUIREMENTS

- Greater connectivity and improved reliability
- Secure connection
- Easy management

SOLUTION

- InfiMAN 2x2 Point-to-Mulitpoint solution
- InfiLINK 2x2 Point-to-Point solution

CUSTOMER BENEFITS

Robust and reliable infrastructure for critical applications

Increased productivity through the reduction of previous network failures
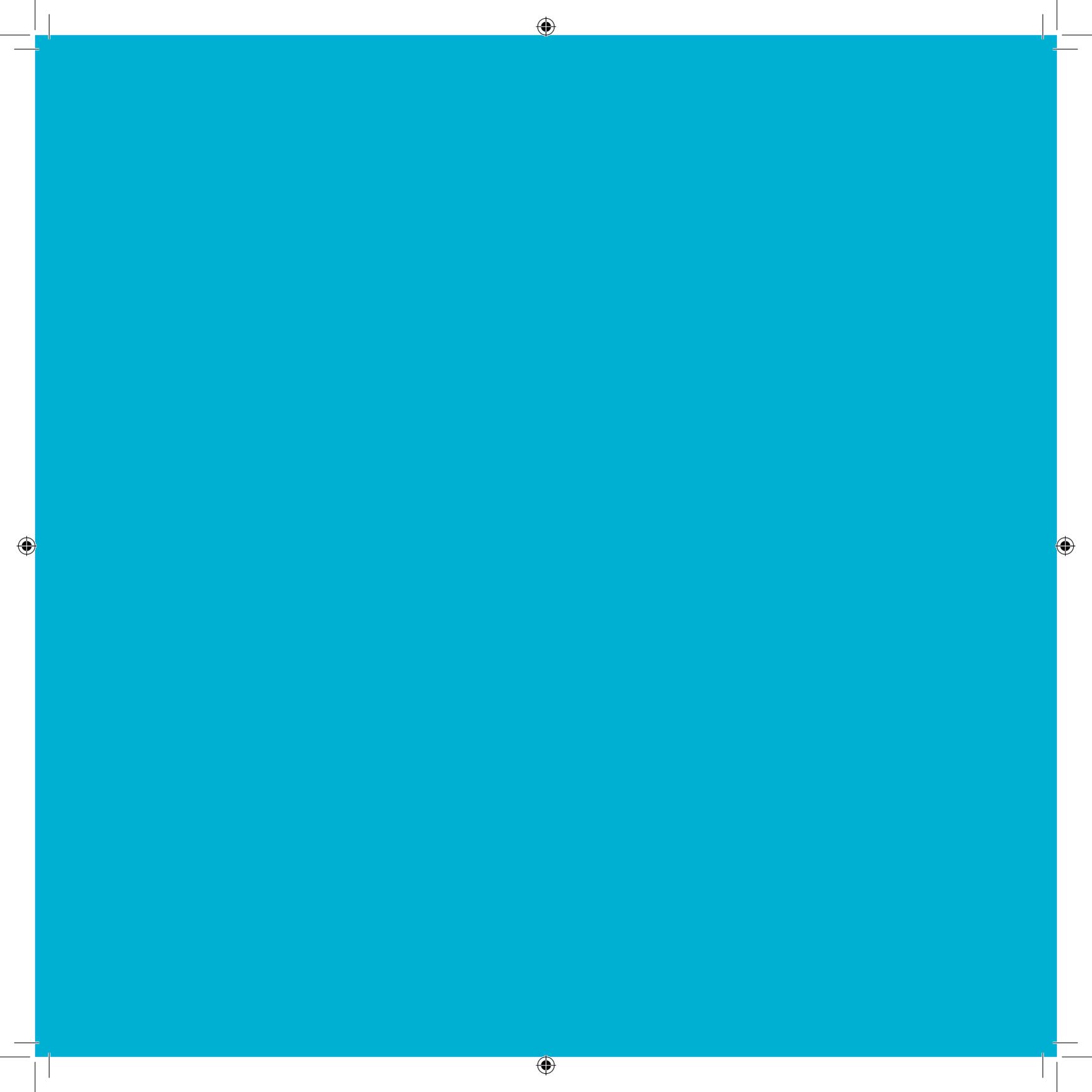
Quick and dependable access to required data

Highly reliable solution

> " The Infinet solution is perfect for Trésor Public's requirements as it can provide robustness, reliability and security and is able to work across harsh terrains. The easy to manage solution is extremely cost-effective, ensuring public funds are used effectively and the network problems of the past are completely eliminated.
>
> **MOUSSAVOU MOUKOUMBI,**
> GENERAL MANAGER OF TMS

Sector
Enterprise/Finance

Development of a fixed wireless network for ABH Miratorg, using Infinet's SkyMAN R5000 solution

Enterprise/Finance   Russia   ABH Miratorg

ABH Miratorg is one of the leading manufacturers and suppliers of meat in Russia. In 2010, with the support of the Government of the Russian Federation and the Ministry of Agriculture in Russia, Miratorg began construction of a modern farm in the Bryansk region which would be able to breed high yields of cattle.

Practically all of the buildings on this new farm were far away from populated areas and required the use of satellite communication stations to send information back to the company's central office in the village of Aladino. This became problematic because of the high overhead costs and low-bandwidth that the satellite network offered. Miratorg's management decided to build its own secure network on more reliable radio-based technology, WiMAX. The company selected Infinet Wireless's Point-to-Point InfiLINK 2x2 PRO to build the network.

In Miratorg's case, each building has its own autonomous water supply system, including a water tower and an area where the automation control system is located, along with the water distribution system. Infinet Wireless's equipment is installed on the water towers at heights between 12 and 25 metres. The water towers are linked to the administrative buildings by an Optical Fibre Transmission System (OFTS). Currently, there are 20 Point-to-Point links, which link 25 of ABH Miratorg's buildings to a single network. All channels use Infinet Wireless's R5000- Mmx /5.300.2x200.2x28 solutions.

The minimum length of the interval between the antennas is 9.6 km and the maximum is 25 km. Structurally, the whole radio network is divided into five separate fragments in seven districts of the Bryansk region. Each fragment is tied to the network through the existing OFTS. Eventually all the information arrives at the central site in Aladino.

REQUIREMENTS

- High-speed network
- A large number of channels, combined into a single network

SOLUTION

- InfiLINK 2x2 PRO

CUSTOMER BENEFITS

Organised full coverage zone

A general network – 20 Point-to-Point links, connecting 25 buildings

Provided the required bandwidth

Cost-effective solution

Infinet Wireless helps Wessex Water to tap into Renewable communications technologies

Enterprise/Finance   United Kingdom   Wessex Water

Wessex Water is a regional water and sewerage business operating across the south and south-west of England, serving over 2.7 million customers across Dorset, Bristol, Somerset, most of Wiltshire and parts of Gloucestershire and Hampshire.

As part of this huge infrastructure development, Wessex Water required a cost effective telemetry Supervisory Control and Data Acquisition (SCADA) solution to provide communications and control connectivity across their vast network of pipelines, pumping stations and reservoirs. They asked McKelvie Solutions – a telecom system integrator and an IP radio solutions specialist with over 30 years experience in radio networks – to undertake an assessment of suitable microwave technologies, in order to determine the best solution on the market for the project.

Following a full assessment, of a number of vendor options available on the market, McKelvie Solutions selected Infinet Wireless' technology as the optimum solution to meet Wessex Water's requirements.

Low power consumption of the InfiLINK 2x2 LITE solutions, combined with the wind turbine supplied by Leading Edge Turbines, has helped to create a sustainable, eco-friendly, low emission solution to powering the network. Wessex Water now has a wide-area microwave radio network that can operate and be maintained over remote communication environments, that dramatically reduces maintenance and deployment costs, and is highly cost effective compared with other telecoms solutions available in the market today.

CHALLENGES

- Operating on 24 VDC, tying in to existing power infrastructure used across the company
- Support LOS and NLOS radio links, making it ideal for remote solutions across difficult terrains or in urban areas
- Through spare capacity and software-enabled capacity upgrades, microwave network is future proofed for new IP applications such as IP CCTV or voice

SOLUTION

- InfiLINK 2x2 LITE Point-to-Point Solution

CUSTOMER BENEFITS

Low power consumption, as some sites will be 'off-grid'

The ability to use microwave radio in both licensed and license-exempt spectrum

LOS & NLOS capability

The ability to operate at 24 VDC input

Khushhali Bank is reaching a wider audience in its mission to reduce poverty through Microfinance

Enterprise/Finance   Pakistan   Khushhali Bank

Khushhali Bank Limited has grown to become one of the largest banks in Pakistan and specialises in the relatively new field of Microfinance. It was formed as a part of the Government of Islamic Republic of Pakistan's Poverty Reduction Strategy and its Microfinance Sector Development Program (MSDP).

Khushhali Bank initiated a network upgrade and expansion program across its national infrastructure in order to improve the stability and reliability of its inter-branch transactions and communications.

For the wireless portion of the new network, Real Solutions, a trusted Infinet Wireless partner in Pakistan, identified and benchmarked a number of available fixed broadband wireless solutions in the marketplace, ultimately selecting Infinet Wireless's Point-to-Point solutions based on the InfiLINK 2x2 LITE family.

To date, all of the locations identified for the initial network upgrade have been connected through the new mixed fibre-optic / wireless infrastructure, and each location has experienced 100% uptime since the completion of this upgrade.

CHALLENGES

- To provide high quality, 100% uptime wireless connectivity
- Centralised operational infrastructure for remote monitoring and support of remote branch locations

SOLUTION

- Based on Infinet Wireless' InfiLINK 2x2 LITE family

CUSTOMER BENEFITS

Stable broadband wireless platform

Reasonable total cost of ownership and maintenance

Over-the-air Frequency selection for base station units

Improved capacity and services

Cost effective solution to improve the supply chain of Regal fish farms

Enterprise/Finance   Mexico   Regal Springs

In Mexico, all of Regal Springs' facilities are spread out across the country and often located in remote and rural locations. Due to this geographic spread, the company needs a robust communications network to achieve its objectives as a major fish farmer and exporter.

Before Infinet Wireless, Regal Springs' legacy wireless platform was seriously lacking in capacity, thus limiting the company's ability to transmit data and video-surveillance streams in real time. Regal Springs fish farms needed to find a new and cost effective wireless infrastructure, and this had to be done in a short period of time.

INXITE, Infinet Wireless' partner based in Mexico, designed the network taking into account optimum performance and network reliability, as well as the geographical spread of the facilities and the environ-

ment where these facilities were physically located.

The Infinet Wireless comprehensive range of products was selected following extensive field trials, with the ultimate deployment based on both Point-to-Point (PtP) and Point-to-Multi-Point (PtMP) solutions. The PtMP portion of the network today provides a very stable platform, connecting all the company's administrative offices, with omnidirec-tional units used on the fish farms and remote sites such as the boats and camps. as a result of this new platform, Regal Springs now has a stable and high-performance infrastructure. an application such as video-surveillance has now become possible with video streams from all locations being delivered in real time increasing asset protection and employee productivity, efficiency and ultimately the company's return on its investment.

CHALLENGES

- To provide a flexible and reliable wireless platform which can cater for the transmission of voice, data and video surveillance streams between Regal Springs farms production centres and the regional control centres

- To install a solution that is able to reduce manual processes within the company and increase business productivity and the decision making process

SOLUTION

- A number of base stations sectors based on the R-5000 Mmxb/ 5X.300.2x200.2x16 product family

- PtP links based on the InfiLINK XG product range

- A Point-to-Multipoint platform was deployed from the main administration office to various locations

- Solar power was installed in each farm, providing reliable power to the remote wireless units

- The solution was protected against atmospheric discharges and grounded for lightning

CUSTOMER BENEFITS

Reliable and multi-service infrastructure that supports voice, data, video streams

Reduced operational costs

Improved employee productivity with less time spent on manual operations

Improved delivery time of data between production centres

Upgrading existing wireless infrastructure for salt suppliers from the mainland to the coast of Mexico

Enterprise/Finance   Mexico   Exportadora de Sal

Exportadora de Sal is one of the main producers and suppliers of salt for the chlor-alkali industry in the Pacific basin, and is engaged in international dry bulk shipping services via a fleet of vessels of all sizes.

Over the years, the salinity of the area had greatly affected the functionality of outdoor equipment and machinery used by Exportadora de Sal. This included security cameras and legacy wireless units. In addition to this, the company's scattered operations needed to be reliably connected in order to protect its heavy investments and keep business flowing without interruption. to achieve these objectives, it undertook extensive market research to identify the most suitable and cost-effective wireless solution, seeking the assistance of Excel Distribuidora, a leader in wireless video surveillance solutions in Mexico. The latter turned to Infinet Wireless.

Infinet Wireless deployed a comprehensive platform consisting of both Point-to- Point and Point-to-Multipoint links, providing wide coverage across several sites of Exportadora de Sal, all connected with at least 300 Mbps, compared to the previous 50 Mbps they were used to. The company's mobile and nomadic units were also seamlessly connected to the central processing and machinery sites, thus enabling all terminals to be connected to the Enterprise Resource Planning application, wherever they are located, and at any point in time.

CHALLENGES

- Fast and reliable solution that wouldn't be affected by the saline environment in which they operated
- Improving surveillance across the sites and increasing wireless links capacities

SOLUTION

- InfiLINK 2×2 LITE product family was used across several sites, each capable of supporting 180 Mbps, and transmitting across distances of up to 70 km
- InfiMAN 2×2 platform was used to provide "last mile" connectivity, eliminating undesired radio interference thanks to its advanced built-in beamforming capabilities

CUSTOMER BENEFITS

A reliable and future-proofed network

CCTV transmission across all remote operational areas

Transmission that exceeds the client's expectations across all operational areas

Reduced operational costs

> " We were looking for a reliable solution, with a proven track record of high performance and stability. It quickly became evident through the formal bidding process that Excel Distribuidora and Infinet Wireless ticked all the relevant boxes and were the best choice for our mission-critical project. The cooperation now means we have more eyes on the ground and we are able to connect our business units for faster decision making and productivity. Thanks to the reliability of Infinet Wireless' solutions, and to Excel Distribuidora's knowledge and experience in our local market, we are now able to provide our customers with excellent service and ensure a higher degree of safety in all of our remote operational areas.
>
> **LIC. LUIS ANTONIO CASTRO LEREE**,
> IT MANAGER AT EXPORTADORA DE SAL

Updating SAPAL's network infrastructure and last mile links to improve connectivity and capacity

Enterprise/Finance   Mexico   SAPAL

SAPAL is the main municipal public water administration and provider in Leon City, Mexico, and is ranked as one of the three best providers in the country, supplying water to 99% of the city.

SAPAL needed to improve its resource management system to ensure that there was no wastage in the pipeline for customer service and the collection of outstanding fees. Another challenge that SAPAL wanted to address while updating its previous network was the need for VoIP integration of its service points with the main branches, thus enabling them to connect with the main switchboard located in the head office. on completion of the tests, SAPAL agreed to deploy

Infinet's products in its network as it was very satisfied with the quality of service achieved, along with the two-year guarantee offered by Infinet and the net throughput achieved, e.g. 500 Mbps for backbone links and 180 Mbps for last mile links, a much higher figure than those achieved using products from other manufacturers.

The final solution included the InfiLINK XG, used mainly to create the backbone of the network and to support the larger scale operation of access points. The InfiLINK 2×2 LITE was used for the last mile connectivity, linking all remote locations to the head office, relaying vital data streams and ensuring prompt and accurate delivery of every single packet of data transmitted.

CHALLENGES

- Integrating a series of branches for online payments to SAPAL while keeping data traffic consistent and uninterrupted;
- Better quality VoIP, video surveillance and resource planning throughout the branches, main office, treatment plant and strategic wells

SOLUTION

- InfiLINK XG for a robust backbone structure linking all branches to the network
- InfiLINK 2×2 LITE for last mile connectivity, carrying smaller data packets to a central location

CUSTOMER BENEFITS

All control systems at the residual water treatment plants now operate effectively

Faster connectivity than any previous solutions ever deployed by SAPAL
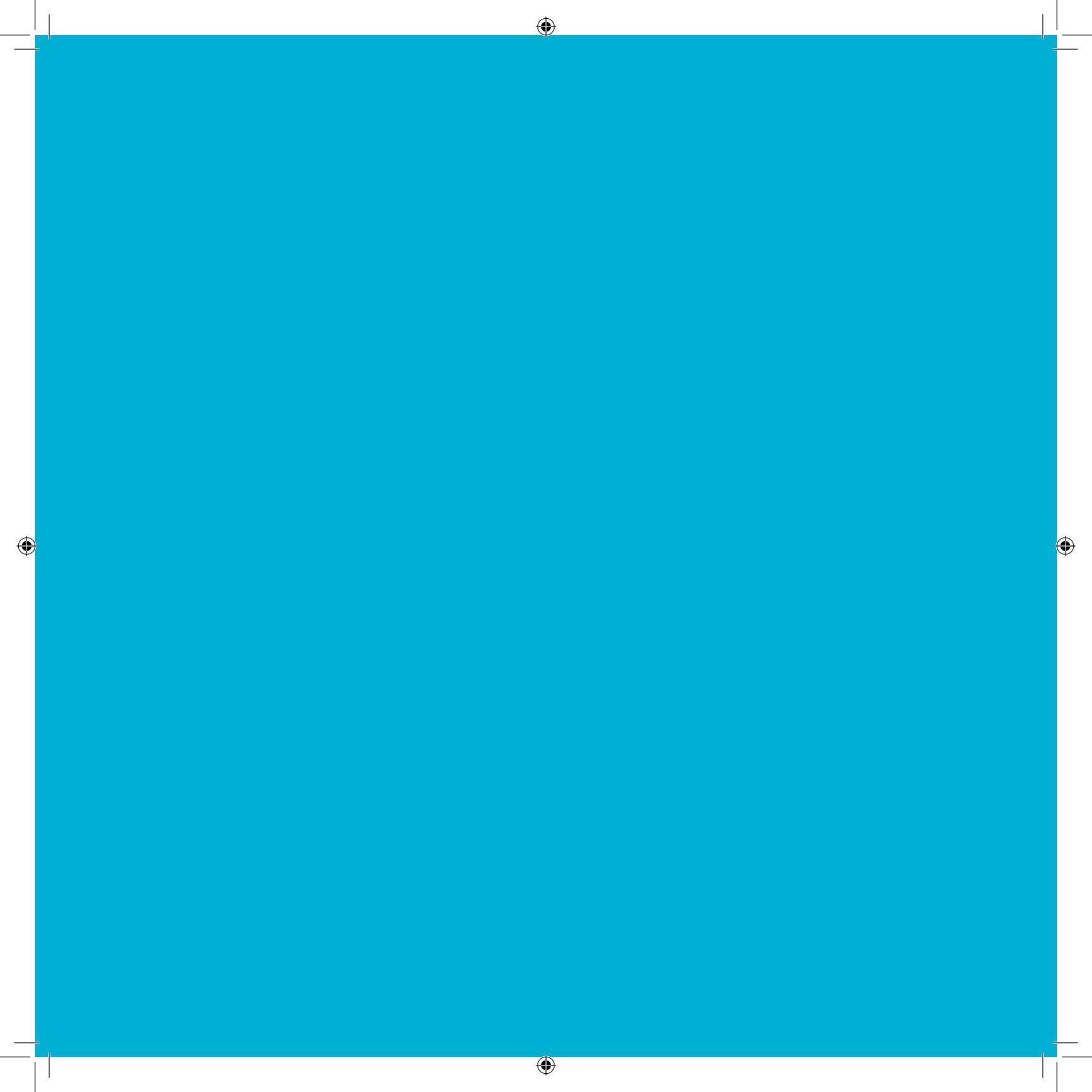
VoIP has improved significantly
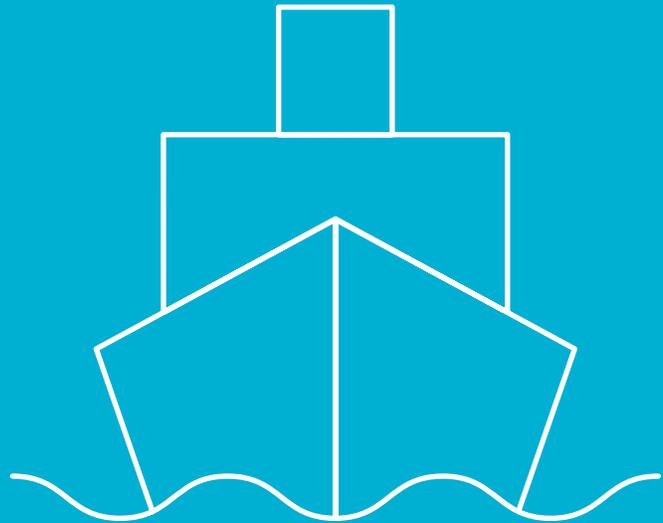
Reduced operational costs

> " We tested several wireless vendors which achieved different results, and today we consider Infinet Wireless' solution to be the most robust solution in terms of capacity, reliability and ease of deployment. These characteristics helped the network design of SAPAL, getting immediate results with clear advantages to the customers.
>
> **ABEL PONCE,**
> WIRELESS PRODUCT MANAGER AT SAPAL

Sector

Transportation

Technological radio network in the Gulf of Finland

Transportation   Russia   Rosmorport

Rosmorport was founded in 2002, aiming to speed up the development of Russian sea transport infrastructure, providing safe navigation through navigable waters of Russian seaports and increasing the competitiveness of Russian seaports under its remit.

The project aims to deliver a technology upgrade to communications services and overall operations efficiency to a number of Rosmoport's divisions including the Port Administration Authorities through to radio engineering posts, customs, marine operations – and even extending out onto seaborne vessels such as icebreakers, harbor pilot services and merchant ships operating in the Gulf of Finland. The most challenging part of a system was to provide a seamless and reliable wireless

communications to moving vessels at the sea. Multiple extensive trials were conducted aboard two icebreaking vessels as well as the pilot boat verified the network's ability to providing lossless and high-capacity bandwidth in a variety of weather conditions: travelling at a minimum of 12 knots, the transmission speeds were measured between 4 Mbps and 42 Mbps for uninterrupted data, voice and video services, concluding that the system was completely viable for seaborne wireless broadband communications. Following the success of the initial trials of the system, the network was commissioned and installed. Now 33 Base Stations supporting 200 stationary subscribers have been installed at numerous seaport locations across the region.

OBJECTIVES

- To provide a flexible wireless coverage
- To improve the network efficiency and technical operating characteristics of the existing WipLL
- The consolidation of all government organization network infrastructures around the Gulf of Finland region into a single, cohesive network infrastructure
- To provide network users with high speed Internet access

SOLUTION

- 33 InfiMAN 2x2 Base Station sectors
- 200 InfiMAN 2x2 subscriber terminals

CUSTOMER BENEFITS

Dynamic management of both mobile and fixed location subscribers

Provide full coverage of the entire area, with no black spots

24x7 reliability, even in the harshest environment conditions

Reduced operational costs

"This was both a very interesting and a very challenging project, and proved the immense capabilities and flexibility of Infinet Wireless wireless broadband technology and expertise. Before the project could even start, a range of complex tests had to be undertaken to prove the viability of the technical design solution proposed by Infinet Wireless. Having proven it in the field, the application of this technology to marine systems' radio networks has now given us the confidence to extend into more similar scale projects – both in Russia and beyond – with Infinet Wireless proving it can tackle and solve the toughest of technical challenges.

IGOR MALYGIN,
DEP. HEAD OF GEYZER-TELECOM'S SYSTEM INTEGRATION & DEVELOPMENT DEPARTMENT

High-Speed Ethernet Network Connectivity for Red Funnel Ferries

Transportation   United Kingdom   Red Funnel

Red Funnel is one of the UK's oldest ferry operators, running a modern fleet of passenger and vehicle carrying ferries 24 hours a day, 365 days a year. They wanted to establish a new platform which would allow it to have uninterrupted connectivity with all its ferry routes running between Southampton and East and West Cowes on the Isle of Wight.

Red Funnel approached Trellisworks, a UK-based company that specialises in wireless connectivity, IP-CCTV and mobile data routing to find the best fit solution, one that is future proof and scalable. After an initial consultation period, detailed surveys and operational field trials, Trellisworks selected the Infinet Wireless InfiMAN 2x2 Point-to- Multipoint, coupled with the InfiMUX, a special switch designed specifically by Infinet for nomadic units

and mobile vessels.

The Infinet ship-to-shore communication solution deployed in the end utilises multiple channels of communication between the mobile vessels and the on-shore base stations, in such a way that before the vessels move away from one base station, a second connection is automatically established with the next base station, thus ensuring trouble free roaming and uninterrupted connectivity.

Thanks to Infinet Wireless robust solutions, complemented by Trellisworks' expertise in designing and deploying mobile solutions for the sailing market sector, the entire fleet of Red Funnel has been upgraded with the same solution, ultimately resulting in a significantly improved user experience on all vessels.

CHALLENGES

- To guarantee stable and continuous connectivity between moving vessels and an on-shore control centre
- To provide uninterrupted Wi-Fi connection to passengers on board all the vessels

SOLUTION

- InfiMAN 2x2 backbone consisting of a number of high capacity base stations deployed all along the ferry routes
- Remote wireless units installed to every vessel, allowing it to connect with the operator's network regardless of actual location or sailing direction

CUSTOMER BENEFITS

Red Funnel now offers free Wi-Fi to all its passengers

A stable connection during the voyage from the UK mainland to E. and W. Cowes

A vastly improved ship-to-shore communication

Cost-effective solution

" Working within the constraints of physics and regulations, we are extremely proud that we have overcome the specific obstacles we encountered for this requirement. Now, Red Funnel can deliver seamless, high-speed connectivity and secure internet access throughout the vessels' journeys, ultimately enhancing the user experience. It's great to see that Red Funnel are exceptionally happy with the outcome and services we have provided using the Infinet Wireless solutions and the positive impact this has had from day one on their level of service.

GRANT HOLMAN,
TRELLISWORKS PROJECT MANAGER

Mobile wireless broadband connectivity for Italian Railways

Transportation   Italy   Italian Railways

Headquartered in Puglia, Italy, Ferrotramviaria manages North Bari's railroad and public bus transport services over a 1,400 km area, home to approximately 700,000 residents.

After installing a video surveillance system using leased lines, Ferrotramviaria SpA decided to implement a more advanced solution. Ferrotramviaria wanted to provide broadband interconnection among all its railway stations and to replace the existing leased line network. It wanted to run communication, security and safety applications while reducing operational costs. I-TEC Srl and partner Teckne Srl were chosen to design this new network infrastructure. Ferrotramviaria was looking to find the most efficient, cost-effective way to improve the performance of its network and become the technological leader among Italian railways.

Ferrotramviaria also required a cost effective and modern broadband network to support many different services, e.g. video, voice, data. It also needed to enable fixed-mobile communications between the stations and trains. This would allow the driver to see video images of passengers embarking and manage train carriage communications for service, location and emergency messages. The main challenge was bandwidth management and Quality of Service (QoS) across the whole network. to accomplish this, Teckne Srl asked I-TEC Srl to provide an FBWA solution to replace the existing leased lines. I-TEC Srl and partner Teckne Srl designed a new broadband communications network based on Infinet Wireless solution. It provided not only CCTV surveillance from a central location, it also enabled Ferrotramviaria to implement a fixed mobile network between the railway stations and the trains. This network transports voice, data & video for in carriage services such as announcements and emergency messages.

REQUIREMENTS

- Use of Fixed broadband wireless access (FBWA) to provide broadband connection between railway stations and train carriages
- Run communication, security and safety services
- Replace existing leased line network

SOLUTION

- Infinet Wireless R5000-O single radio 36 Mbps, 5.4 GHz
- Infinet Wireless R5000-O dual-radio 36 Mbps, 5.4 GHz
- Stella Doradus parabolic and panel antennas

CUSTOMER BENEFITS

Saved up to 90% in operational expenses

Reduction in initial outlay and increased speed of network deployment

Reliable alternative network based on leased line

Guaranteed bandwidth provision across the whole link

High capacity connectivity for the Kazakhstan Railway Network

Transportation Kazakhstan The Republican State Enterprise

Over the past few years, The Republican State Enterprise (also known as KTZ) which has operated the national railway, experienced an increasing demand for wireless broad-band connectivity on board its rolling stock, a demand which simply could not be satisfied via its existing infrastructure.

The train operator contacted Infinet Wireless' partner in the region, KRIS-Service, to identify and design a suitable solution for this new value added service. as part of a pilot project to demonstrate its networking capabilities, Infinet Wireless deployed a small network connecting trains and railway stations, covering over 250 km. The Infinet

Wireless subscriber terminals were installed externally on the top of the trains, base stations were installed on exist-ing poles along the railway line, every 2–4 km.

The new pilot network deployed by Infinet Wireless provided uninterrupted data transfer with performance between 60 and 80 Mbps, all delivered with very low latency. Even when the trains reached a speed of 200 km/h or entered a mountain tunnel, data transfer remained unaffected and constant. This pilot project allowed all train passengers to enjoy seamlessly high-speed Internet connectivity whilst at the same time supporting high quality voice communication.

CHALLENGES

- Provide each train with data transfer connectivity of not less than 60 Mbps at any point in time
- Ensure uninterrupted connection at speeds of up to 200 km/h for trains with data transfer remaining constant in tunnels and repair depot
- Keeping cost as low as possible by installing reduced form-factor wireless devices externally on the carriages

SOLUTION

- Train-to-Ground technology which fully meets the requirements of the train operator
- Base stations were installed every 2-4 km along the railway tracks
- Every carriage was fitted with the subscriber terminals and external antennas

CUSTOMER BENEFITS

Network speeds achieved up to 80 Mbps for every train with very low latency

High reliability of the links

Small form factor and low wind load of the external units

Reduced operational costs

> " Today, an increasing number of modern train carriages need reliable high speed connectivity to allow passengers to remain in touch with families, friends and colleagues. We worked very closely with Infinet Wireless to successfully test then deploy a broadband wireless platform that is far exceeding other available wireless solutions. This new technology has allowed to better manage our rolling stock and provide seamless connectivity for our trains, with uninterrupted speeds of up to 80 Mbps, even when the trains reach speeds of up to 200 km per hour.
>
> **VLADILEN YAKUNIN**,
> DIRECTOR AT KRIS-SERVICE COMPANY

Infinet Wireless improves vessel traffic system for the busiest shipping port in Indonesia

🚢 Transportation   📍 Indonesia   💼 Distrik Navigasi Kelasi I Port

The Distrik Navigasi Kelasi I Port in Surabaya is the second busiest shipping port and city in the East Java island of Indonesia. Before Infinet Wireless was consulted, the port already had a Vessel Traffic System (VTS) implemented but it did not support the current recommendation by the International Association of Lighthouse Authorities (IALA) for operational and technical performance.

One of the greatest challenges faced by this project was the distances that needed to be covered. a solution based on Infinet Wireless' products was proposed in order to provide the port operators with a stable platform, enabling multiple high capacity connections to be seamlessly established with all remote locations and capable of transmitting very large volumes of real-time data.

The first trial consisted of a single link to connect in a Point-to-Point topology the Port of Surabaya with the remote lighthouse located in Sembilangan, swapping out the previous microwave links that were deployed previously. to further complement this link, a third location fitted with an InfiMAN 2x2 base station was installed in Karang Jamuang. This small network alone covered a total area of 20 nautical miles, which corresponds to approximately 37 km, and far exceeded the required minimum of 20 Mbps. By using Infinet Wireless solution, the port authority was able to deploy the selected solution in record time.

With this new solution in place and the higher performance it offers, the port authority is now able to transmit not only the existing CCTV footage, but also CCTV footage in unmanned areas, with a 30% to 40% spare capacity to cater for any future data transmission requirements.

REQUIREMENTS

- To provide a complete and reliable, fully integrated VTS that supports database access, CCTV real time monitoring and Radar tracking and display

SOLUTION

- InfiMAN 2x2 Point-to-Multipoint base stations
- InfiLINK 2x2 Point-to-Point units, providing reliable coverage of approximately 37 km between Surabaya Port and the Sembilangan and Karang Jauang remote locations
- A solution with a 30-40% spare capacity for future network expansions

CUSTOMER BENEFITS

The overall platform deployed now provides always-on high speed solution

Significantly improved all aspects of the port operation

Easy to deploy

Cost-effective solutuon

> " This project was a challenge due to the location and distance of the area we wanted to cover, but we are very happy with the Infinet solution deployed. Not only did we manage to provide Surabaya Port with the required bandwidth capability it needed for the VTS systems to run correctly, but we have also future-proofed the whole wireless infrastructure network for further expansion.
>
> **IMRAN AKRAM**,
> PROJECT MANAGER, PT. WARGA KUSUMA JAYA

Infinet Wireless improves connectivity in Thai Airports

Transportation   Thailand   Airports of Thailand plc (AOT)

Airports of Thailand plc (AOT) is the governing body of Thailand's six international airports and is responsible for the management and development of the airports. The legacy solution that was used by the busiest airports — Suvarnabhumi, Don Muang, Ubon Ratchathani and Phuket Airport.

As it is important for each airport to be able to transfer passenger details and CCTV footage in real time, AOT decided to deploy a more reliable platform which would be based on the wireless technologies. AOT approached Easy Networks, a long-time Infinet Wireless partner in the country, to design a reliable, comprehensive and future-proofed wireless solution that could be easily deployed in each of its airports.

The ultimate solution selected by AOT included many Point-to-Point links from Infinet's InfiLINK 2x2 product family, which deliver throughput of up to 280 Mbps over distances of 80 km or more.

All the PTP backhauls were fitted with standard E1 converter modules, delivering up to 2 Mbps for the seamless transfer of existing analogue video, voice and passenger data between different sections of each airport.

CHALLENGE

- Finding a cost-effective solution to replace a cabled network at four of Thailand's busiest airports
- · Future-proofing the airports in view of further expansion
- · Providing a high capacity wireless network that can transfer reliably real-time voice, video and passenger data

SOLUTION

- Interference-free wireless links were deployed throughout each airport
- InfiLINK 2x2 platform consisting of various types of high-capacity wireless units

CUSTOMER BENEFITS

Seamless voice, video and passenger data transfer within each airport

High speed, reliable wireless network

Real-time video monitoring for passenger safety

Reduced operational costs

> " By using Infinet Wireless solutions, we are now able to deliver a future-proof solution to AOT in all its various networks in each airport, allowing them to transfer seamlessly and reliably data streams of all types, voice conversations and high resolution video signals. With this new and significantly improved solution, AOT can monitor and manage in real-time all aspects of passenger movement with great confidence, at the same time enhancing security and safety in all its airports.
>
> **WARACH WATANAKULCHAI,**
> MANAGING DIRECTOR AT EASY NETWORKS

Security in the fast lane at Ain Sokhna Free Road

Transportation   Egypt   Ain Sokhna

The National Company for Building, Developing and Operating Roads which required a high-capacity broadband infrastructure to provide real-time surveillance across the strategic Ain Sokhna Free Road, which is 120 km long, including monitoring of all of its exit junctions and toll gates. The road has a total of 28 exits that require monitoring 24 hours a day to meet the strict control, safety and security requirements. In addition to this, the road operator also wanted an easily scalable network that it could add new sites and services to in the future.

It approached NextGen Communications, one of Infinet Wireless's channel partners in Egypt, to design, implement and commission the entire Fixed Broadband Wireless Access (FBWA) network. NextGen recommended solutions from Infinet Wireless which are known to be the most

flexible and easily scalable solutions available today in the marketplace, solutions which can seamlessly carry both video and voice traffic with no detriment to the speed of the network. Infinet Wireless R5000-Mmx and R5000-Smn Point-to-Point FBWA wireless infrastructure was selected to provide a series of secure communications links, ranging from 50 Mbps to 300 Mbps, offering high speed connectivity to carry the traffic from the IP cameras to the main operating centre in Cairo. Almost immediately after the initial deployment of the network, the ease of scalability was demonstrated to road operator when they needed to implement a new IP telephony system on all exits. The Infinet Wireless network simply and smoothly accommodated the new requirement without the need to add any further hardware or software.

CHALLENGES

- To provide a reliable high-speed network for traffic management
- To provide a large number of data transmission channels, seamlessly combined into a single and manageable platform

SOLUTION

- InfiLINK 2x2 Point-to-Point

CUSTOMER BENEFITS

Scalable design, allowing for additional features to be easily added in the future

Flexible and easy to maintain platform

Cost-effective solution

High capacity connection essential for real-time video and voice traffic

> " Infinet Wireless offers the network stability and performance required to provide safety and security to both staff and users of the Ain Sokhna Free Road. Not to mention, the National Company for Building, Developing and Operating Roads is impressed with its ease of use, network management and potential for scalability as and when required in the future. Infinet Wireless really does offer the best solution to securely carry voice, video and data over a reliable and future-proof wireless infrastructure.
>
> **AHMED ABD EL-FATTAH**,
> NEXTGEN'S GENERAL MANAGER

Traffic flows improves with Infinet Wireless

🚢 Transportation   📍 USA   💼 Georgia Department of Transportation

By improving the signal timing between traffic lights, Georgia's Regional Traffic Operations Program (RTOP) aimed to improve traffic flow and reduce vehicle emissions. to achieve this, it needed the fastest possible communications infrastructure.

The Georgia Department of Transportation (GDOT) has fine-tuned traffic flow by dedicating signal timing experts to focus solely on Atlanta's busiest arterial roadways. These signal timing experts are assigned corridors that cross city and county boundaries. They work with each local jurisdiction to make signal timing seamless as motorists cross them.

Georgia's road network has become as fast, fluid and responsive as an it network. Having networked major arterial roads, new possibilities opened up. The fast communications that now run on the North-South and East-West arterials, for example, were originally intended to bridge communication between traffic signal controllers.

The capability offered by Infinet Wireless helped the City of Roswell to expand its network to 50 Mbps and now the City and GDOT can share their video wirelessly. Eight to 15 separate MPEG-4 video feeds are achievable across one link.

The fluid infrastructure created by Infinet Wireless will help the network to adapt and scale as requirements change. It offers the most adaptable, scalable and yet cost effective solution in an environment that is constantly moving.

REQUIREMENTS

- Fast, reliable communications that contribute to better traffic flow
- High bandwidth networking that is able to transport data rapidly across city and county borders
- A system quick enough to synchronise signal timings across a vast metropolitan area
- A flexible system that can be adapted as the infrastructure changes
- A networking infrastructure that is cost effective to install, reliable and can be managed with maximum economy
- A good local support team

SOLUTION

- Installation of high-capacity Point-to-Point wireless network
- Specifically, Infinet Wireless InfiMAN 2x2 R5000-Smc/54.300.2x63.2x21 | 4 licensed as a Point-to-Point, across 30+ km locations in the region covered by the Georgia Department of Transport

CUSTOMER BENEFITS

More efficient management

Local support with rapid response and fault management

Better traffic flow, less congestion

A system better suited to urban landscapes

Infinet Wireless and Tec45 Improve Public Safety with Optibus Transport Company

 Transportation   Mexico   Optibus

León is a city and municipality in the Mexican state of Guanajuato. The metropolitan area surrounding the city is home to approximately 1.8 million people, making it the seventh most populous area of Mexico.

Optibus operates the cities bus rapid transit (BRT) system, founded in 2003, they were the first city in Mexico to implement such a system. It operates a large network of buses within the city and its municipal areas running across 65 stations, 5 different lines and with a daily ridership of around 350,000 people. In order to keep passengers safe, the company maintains a network of CCTV cameras to monitor and prevent crime. Tec45 – an approved supplier of Infinet Wireless solutions – provided total support to Optibus during the process of implementing the changes:

putting together the proposal, engineering the process and overseeing the project, integrating OptiBus' systems and providing after-care, post-sale services and technical support.

Optibus has seen a significant improvement since the overhaul. Cameras at bus stations are supported by a network with the bandwidth capacity to transmit data in real time, and staff is able to monitor and collect data and passenger billing information remotely. With one monitoring centre in the Optibus head office, staff is able to collate data from 53 connected bus stops across five separate Base Stations. The new technology has allowed Optibus to bring its avoidance alarm, telephone usage, report collection system, video security and overall system monitoring completely online – providing a much more efficient and reliable network.

CHALLENGES

- To provide an improved network with a larger amount of bandwidth capacity which can satisfy the needs of a large network used for a transport company operating in Mexico

SOLUTION

- 5 InfiMAN 2x2 Base Stations
- 55 InfiMAN 2x2 subscriber terminals
- 3 InfiLINK 2x2 Point-to-Point

CUSTOMER BENEFITS

A more efficient and reliable network, enabling all systems to be utilised

Improved bandwidth capacity, enabling staff to collect and monitor real time data

Reduced costs in employment due to the system being completely online

After-care, technical and post-sale service

" Before we started using the Infinet Wireless network, we couldn't see real-time video and it was practically impossible to monitor security in the city. Today, the Infinet Wireless equipment helps us to collect billing information and utilise IP telephony and station alarms. Now, we can monitor security cameras in real-time which are linked to security agencies across the city and we work together to provide a safe and secure city for citizens.

FERNANDO HERNANDEZ GARCIA,
OPTIBUS DIRECTOR

Fast and reliable connection in Guaymas port helps improve Mexico`s national security

🚢 Transportation   📍 Mexico   💼 Administracion Portuaria Integral (API)

Administracion Portuaria Integral (API) de Guaymas is the port authority of Guaymas, a city located in north-western Mexico. The port exports and imports a wide range of products such as petroleum, chemicals and agricultural bulk to and from Europe, Asia and Africa.

API Guaymas recognised that it needed a security solution with a much wider coverage area, especially for backhauling live video streams from cameras located further from the control centre. Such a solution would also need to support high definition pictures and videos, as well as have access to a reliable power supply for the cameras and their associated wireless connections.

Infinet Wireless provided its carrier-grade InfiMAN 2x2 Point-to-Multipoint solution with a number of high-capacity base station sectors feeding data and video streams to a central control room. The InfiMAN 2x2 is a field-proven family of wireless solutions designed for various applications.

API Guaymas' new, robust monitoring system supported by new video, communication and storage technology has helped significantly improve the port security, and that of surrounding areas. The selected solution can now provide full port security, resulting in a significant impact on the control of goods coming in and out of the country.

CHALLENGES

- To provide API Guaymas with a cost-effective straightforward solution to improve surveillance of the port via CCTV cameras

SOLUTION

- InfiMAN 2×2 Point-to-Multipoint wireless solution with high-capacity base stations

CUSTOMER BENEFITS

Easy to deploy and cost-effective

High reliable solution

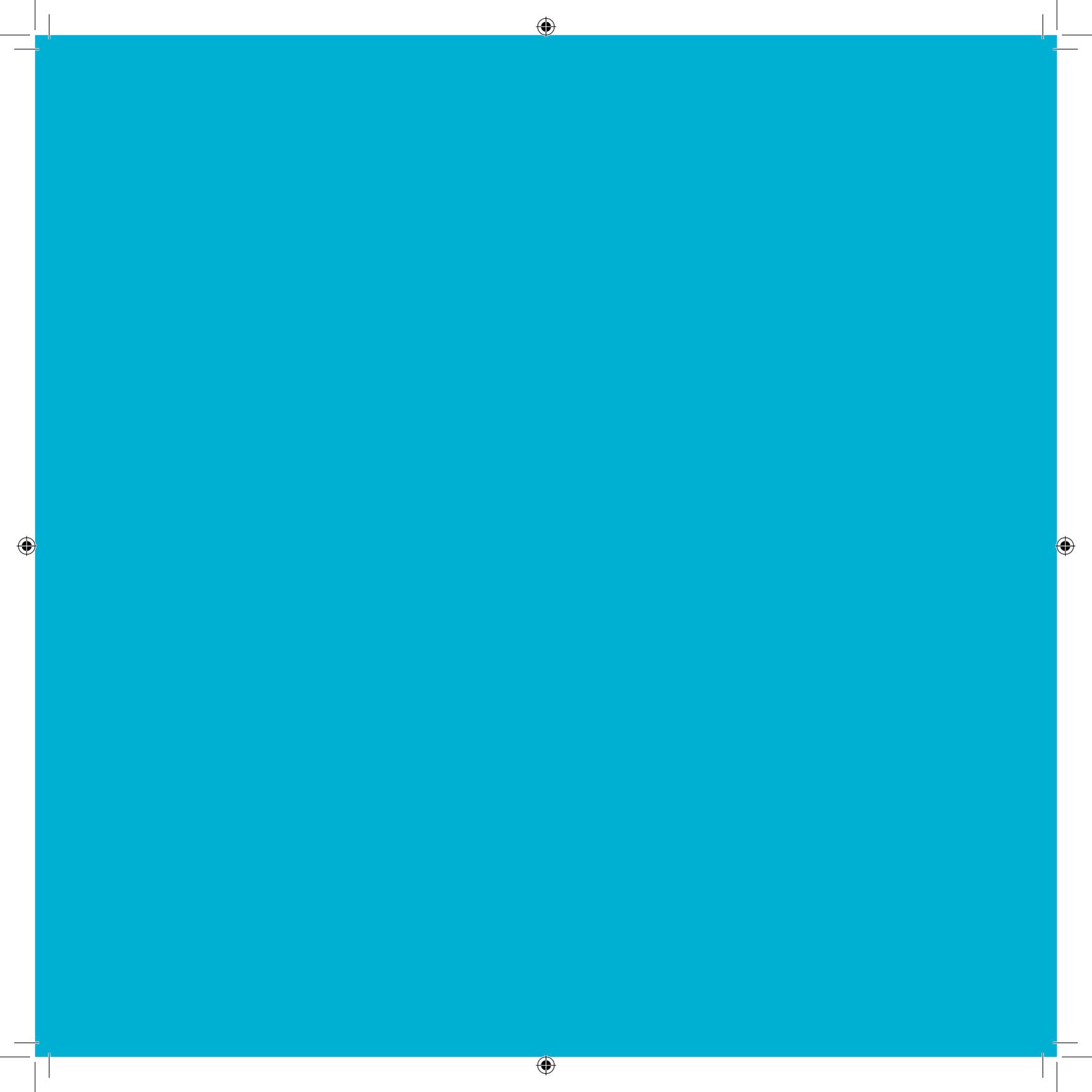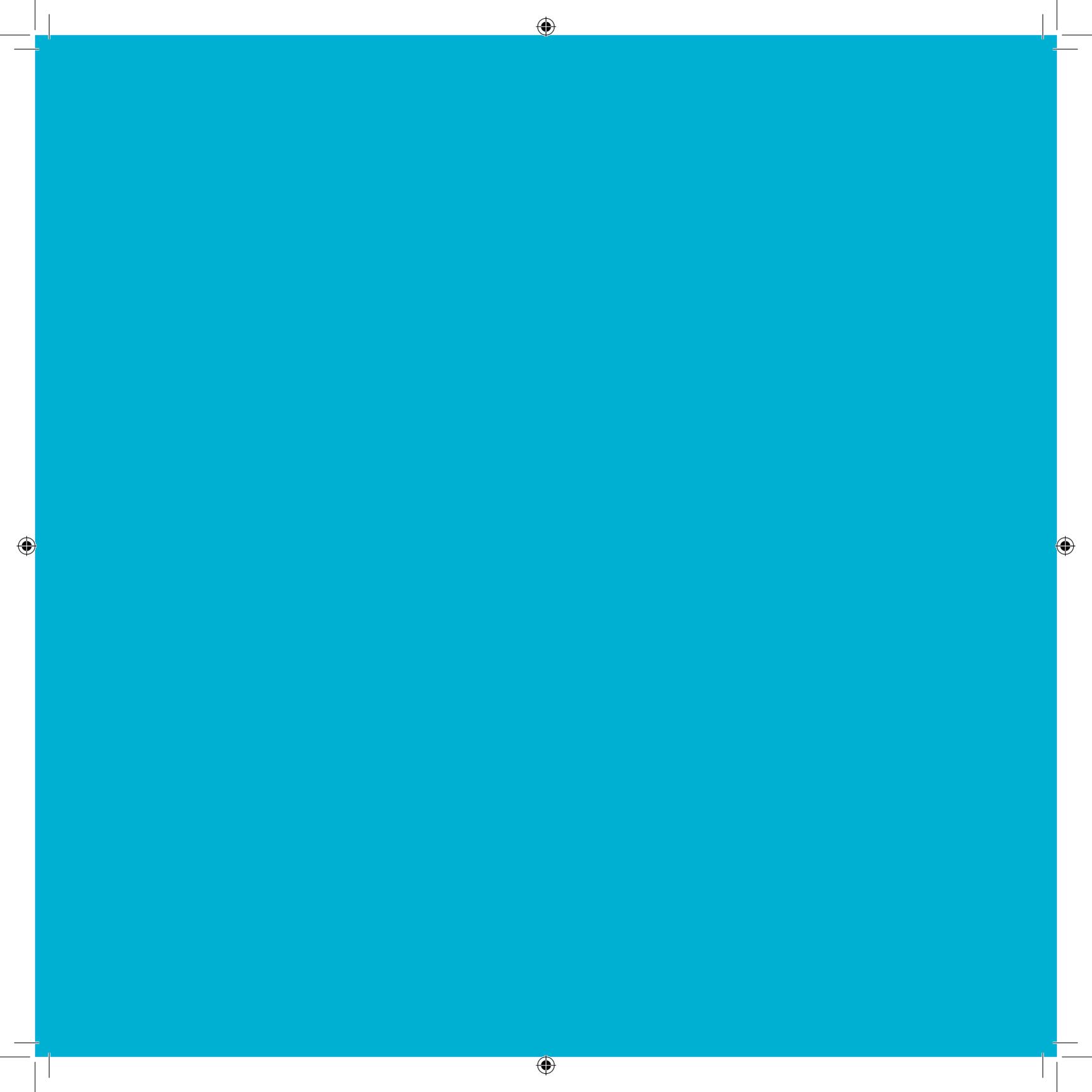Constant monitoring of the perimeter area which decreases the theft of goods

Reduced operational costs

"

It is extremely important that the operations team of the port is able to remotely and dynamically monitor all activities in and around the port area, to keep people safe and to prevent crime and trafficking of all types. Global VoIP and Infinet's local support has allowed our security staff to have a wider visibility around the port and enabled them to pre-empt criminal activities and even to apprehend potential criminals much quicker than ever before.

AXEL HUMBERTO PEREZ FLORES,
HEAD OF THE IT DEPARTMENT

www.Infinetwireless.com