INFINET wireless

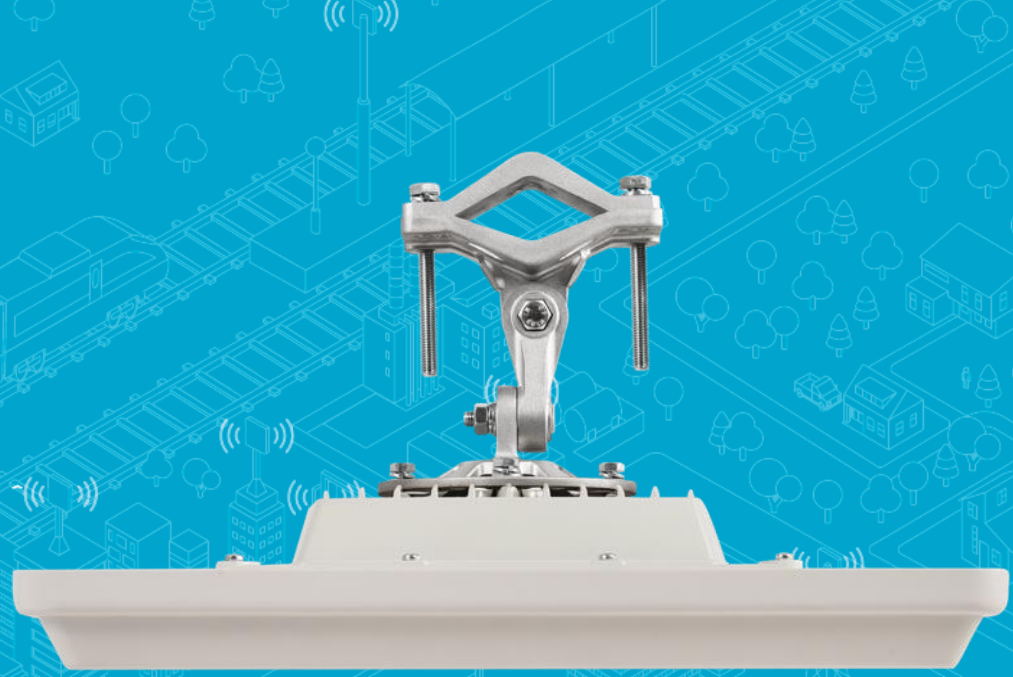
Infinet Wireless

Carrier-Class Fixed Broadband Wireless Access Systems

About

Infinet Wireless

The world’s leading developer and manufacturer of Broadband Wireless Access solutions which are used to create carrier-grade wireless backbones and access networks for service providers.



More than 500,000 deployments in over 130 countries

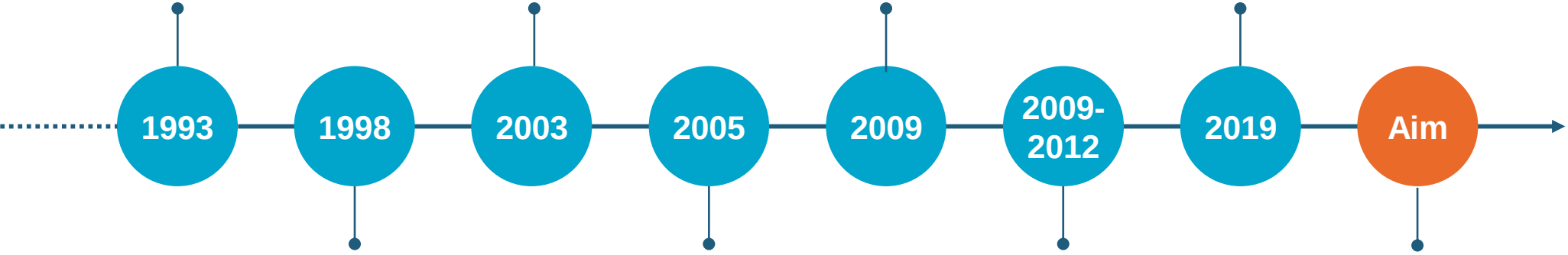
2,300 square meters of own production facilities

180 employees

30 offices around the world, in the strategically important countries

100+ major distributors all over the world

History



intel Capital

Baring Vostok Capital Partners

Infinet's Global Presence

More than 100 partners across 5 continents!

Sales offices

America
- Mexico City, **Mexico**
- Bogota, **Colombia**
- Rio de Janeiro, **Brazil**

Europe
- Moscow, **Russia**
- Valetta, **Malta**
- London, **Great Britain**
- Paris, **France**
- Istanbul, **Turkey**
- Amsterdam, **Netherlands**

Africa
- Yaounde, **Cameroon**

Asia
- Dubai, **UAE**
- New Delhi, **India**
- Beijing, **China**
- Kuala Lumpur, **Malaysia**
- Nur-Sultan, **Kazakhstan**
- Karachi, **Pakistan**

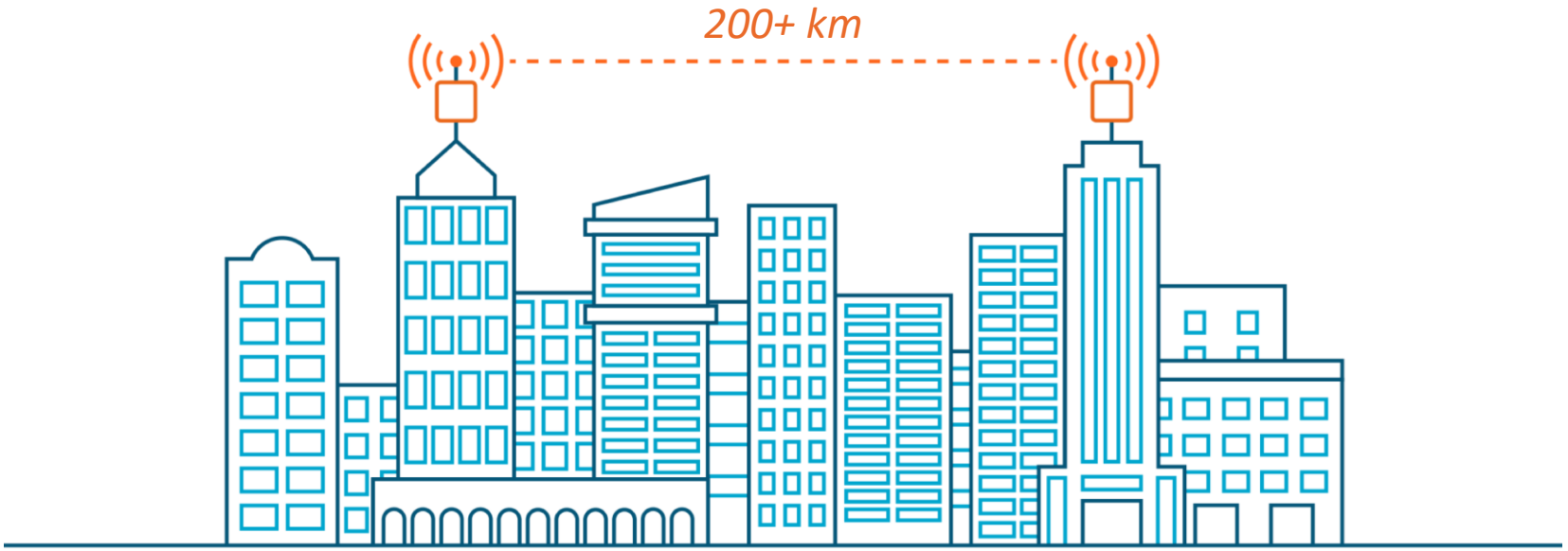
Oceania
- Sidney, **Australia**

Infinet Wireless Solutions

A complete range of wireless solutions for both PtP and PtMP fixed wireless deployments

Point-to-Point Wireless Solution

1. Real throughput – **up to 1 Gbps**
2. Single hop distance – **200+ km**
   High-gain external antennas
3. Unlimited number of hops
4. Full QoS support
5. LOS/nLOS/NLOS connectivity
6. Flexible frequency planning



Quanta 5 & Quanta 6 – high-powered spectral efficient PtP solutions

1. Outstanding performance in high interference environments
2. Consume 30% less spectrum for the same capacity
3. Transmit power in a top-speed mode is 6 dB higher than other solutions

Quanta 5 & Quanta 6 help to build a high capacity last mile or a backhaul in a noisy environment.

NEW Octopus SDR

Quanta 70 – interference-less last mile access

1. Advanced radio signal processing algorithms ensure the wireless link robustness to precipitation
2. Extremely accurate and easy adjustment on azimuth and elevation thanks to precision mounting kit and RSSI indicator
3. Small form factor model allows low visual impact deployments

NEW Octopus SDR

Quanta 70 has been designed for the last mile access and “light” trunk channels in the 70.5–76 GHz frequency range with the throughput of up to 480 Mbps.

InfiLINK Evolution – next generation system for last mile access

1. Works in 4.9–6.4 GHz frequency bands
2. Thanks to a built-in firewall and rich security features, traffic safety is under control
3. Create expert-level network design with advanced switching and routing features

InfiLINK Evolution allows building stable high-capacity last mile access in 4.9–6.4 GHz bands. It comes with network router functionality, security features, traffic shaping and prioritization.

Infinet Wireless Point-to-Point Portfolio at a Glance

Product Family	Key Features	Frequency Bands
InfiLINK XG 1000 	• Transmit power up to 25 dBm • Net throughput up to 1 Gbps • 2xGigabit Ethernet & SFP interfaces • TDD sync	• 5 GHz
Quanta 5 & Quanta 6 	• Transmit power up to 27 dBm • Net throughput up to 650 Mbps • Gigabit Ethernet & SFP interfaces	• 5 GHz • 6 GHz
Quanta 70 	• Transmit power up to 11 dBm • Net throughput up to 480 Mbps • Gigabit Ethernet & SFP interfaces	• 70 GHz
InfiLINK Evolution 	• Transmit power up to 25 dBm • Net throughput up to 670 Mbps • Gigabit Ethernet interface	• 5 GHz • 6 GHz

InfiLINK XG 1000 Product Portfolio

Models	Xm			Um
				
5 GHz	23 dBi | 25 dBm	26 dBi | 25 dBm	28 dBi | 25 dBm	2x type-N | 25 dBm
Capacity	QAM16: up to 370 Mbps; QAM64: up to 630 Mbps; QAM256: up to 1000 Mbps			
Channel Widths	2x10/2x20/2x40 MHz			
Duplex Modes	TDD Hybrid FDD			
TDD Sync	Via built-in or external (ANT-SYNC) GPS receiver			
Ethernet	2x Gigabit Ethernet, SFP interface			
Distance	10–20 km (max 25 km)	12–30 km (max 40 km)	15–40 km (max 50 km)	60+ km

Quanta 5 & Quanta 6 Product Portfolio

Models	Q5-18 | Q6-18	Q5-23	Q5-25 | Q6-25	Q5-28 | Q6-28	Q5-E | Q6-E
					
5 GHz	18 dBi | 27 dBm	23 dBi | 27 dBm	25 dBi | 27 dBm	28 dBi | 27 dBm	2x type-N | 27 dBm
6 GHz	18 dBi | 27 dBm		25 dBi | 27 dBm	28 dBi | 27 dBm	2x type-N | 27 dBm
Capacity	650 Mbps				
Instant DFS	Supported, 5 GHz only				
Channel Widths	3.5/5/7/10/14/15/20/28/30/40/50/56 MHz				
Duplex Modes	TDD, Hybrid FDD (5 GHz only)				
Network Functionality	VLAN, QoS				
Ethernet	1x Gigabit Ethernet	Combo: 1xGE(RJ45), 1xSFP			
Distance	Up to 20 km	Up to 40 km	Up to 60 km	Up to 80 km	200+ km

Quanta 70 Product Portfolio

Models	Q70-39	Q70-50
		
Frequency range	70.5–76 GHz	
Antenna gain | Transmit power	39 dBi | 11 dBm	50 dBi | 11 dBm
Capacity	480 Mbps	
Channel Widths	125 MHz	
Duplex Mode	TDD	
Interference Mitigation Techniques	ARQ	
Network Functionality	VLAN, QoS	
Ethernet	Combo: 1x Gigabit Ethernet port (RJ45), 1x SFP	
Distance	Up to 10 km	Up to 20 km

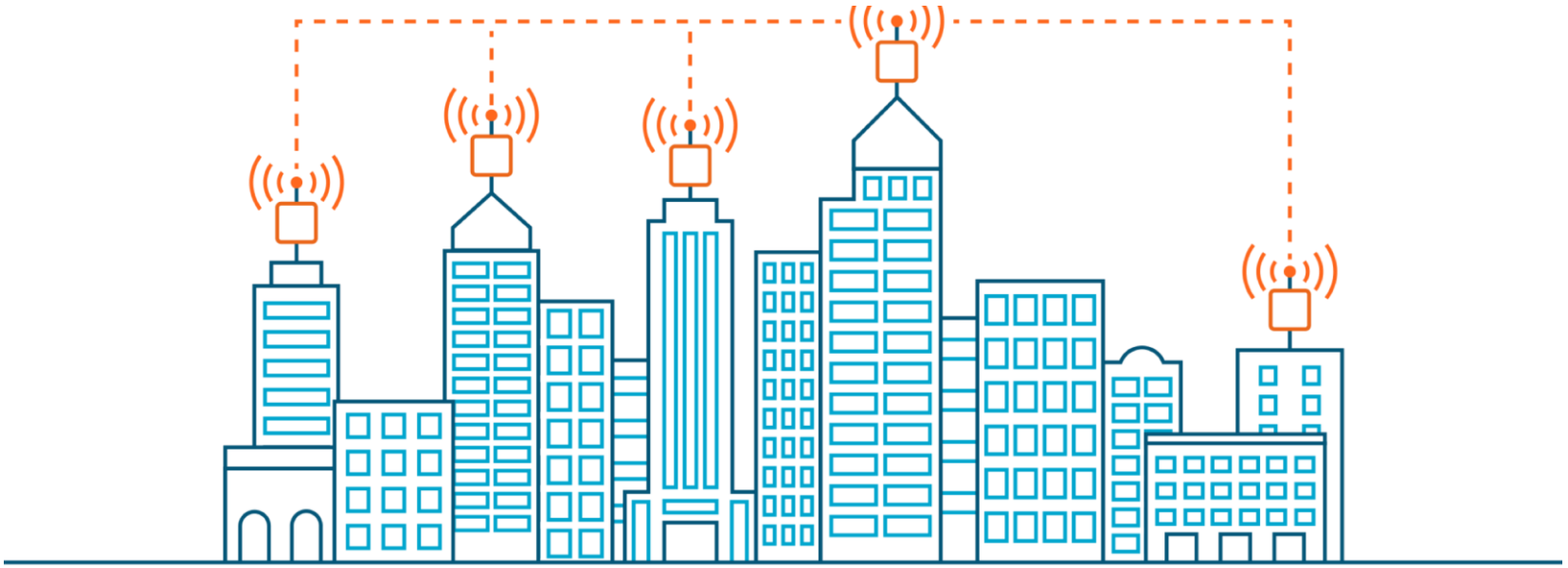
InfiLINK Evolution Product Portfolio

	E5-ST18 | E6-ST18	E5-ST23	E5-ST25 | E6-ST25	E5-ST28 | E6-ST28	E5-STE | E6-STE
Models					
5 GHz	18 dBi | 25 dBm	23 dBi | 25 dBm	25 dBi | 25 dBm	28 dBi | 25 dBm	2x type-N | 25 dBm
6 GHz	18 dBi | 25 dBm		25 dBi | 25 dBm	28 dBi | 25 dBm	2x type-N | 25 dBm
Capacity	670 Mbps				
Channel Widths	20/40/80 MHz				
Duplex Modes	TDD				
Interference Mitigation Techniques	ARQ				
Network Functionality	VLAN, QoS				
Ethernet	1x Gigabit Ethernet				
Distance	Up to 10 km	Up to 15 km	Up to 20 km	Up to 30 km	40+ km

** Roadmap item*

Point-to-Multipoint Wireless Solution

1. BS sector coverage: up to **40 km**
2. Sector Capacity: up to **800 Mbps**
3. Subscriber terminal capacity: in excess of **670 Mbps**
4. **TDD** synchronization and frequency reuse
5. **QoS** support
6. Sophisticated **L2/L3/L4 networking** functionality
7. **Interference mitigation** tools



InfiMAN Evolution – highly secured next-generation PtMP solution

1. Subscriber terminals work in 4.9–6.4 GHz frequency bands
2. Thanks to a built-in firewall and rich security features, traffic safety is under control
3. Value for money thanks to advanced switching and routing features
4. Compatible with base station sectors and subscriber terminals of the previous generation
5. Cost-effective base station for low-density sectors

InfiMAN Evolution allows to build stable high-capacity connectivity in 4.9–6.4 GHz bands. It comes with rich network router functionality, security features, traffic shaping and prioritization.

Base Station Sectors InfiMAN Evolution at a Glance

Product Family	Key Features	Key Features
InfiMAN Evolution E-BSI 	• Integrated 90 deg sector antenna • Sector throughput up to 800 Mbps • Gigabit Ethernet interface & SFP & SYNC	• 5 GHz • 6 GHz
InfiMAN Evolution E-BSI-L 	• Integrated 90 deg sector antenna • Sector throughput up to 360 Mbps • Gigabit Ethernet interface & SFP & SYNC	• 5 GHz
InfiMAN Evolution E5-BSQ 	• Integrated 90 deg sector beamforming antenna • Sector throughput up to 800 Mbps • Gigabit Ethernet interface & SFP & SYNC	• 5 GHz
InfiMAN Evolution E-BSE 	• External antenna • Sector throughput up to 800 Mbps • Gigabit Ethernet interface & SFP & SYNC	• 5 GHz • 6 GHz
InfiMAN Evolution E-BSE-L 	• External antenna • Sector throughput up to 360 Mbps • Gigabit Ethernet interface & SFP & SYNC	• 5 GHz

InfiMAN Evolution Base Station Sectors

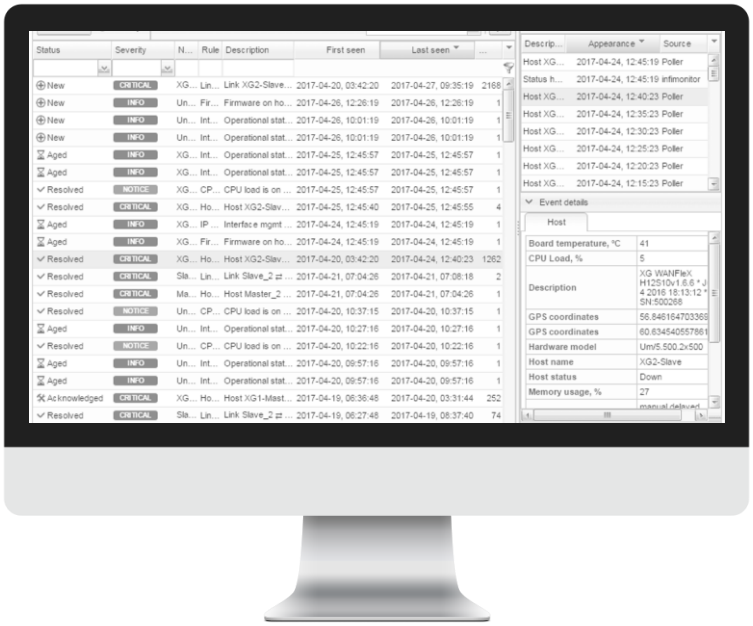
Models	E5-BSI E6-BSI	E5-BSQ	E5-BSE E6-BSE	E5-BSI-L	E5-BSE-L
					
5 GHz	16 dBi, 90° 27 dBm	21 dBi, 90° 25 dBm	2x type-N 27 dBm	16 dBi, 90° 27 dBm	2x type-N 27 dBm
6 GHz	16 dBi, 90° 25 dBm		2x type-N 25 dBm		
Capacity	Up to 800 Mbps, net			Up to 360 Mbps, net	
Channel Widths	20/40/80 MHz			20/40 MHz	
Modulation coding schemes	9 MCS – from BPSK 1/2 to QAM256 5/6				
Duplex scheme	TDD				
Ethernet	Gigabit Ethernet & SFP & SYNC				

InfiMAN Evolution Subscriber Terminals

Models	E5-ST18 E6-ST18	E5-ST23	E5-ST25 E6-ST25	E5-ST28 E6-ST28	E5-STE E6-STE
					
5 GHz	18 dBi 25 dBm	23 dBi 25 dBm	25 dBi 25 dBm	28 dBi 25 dBm	2x type-N 25 dBm
6 GHz	18 dBi 25 dBm		25 dBi 25 dBm	28 dBi 25 dBm	2x type-N 25 dBm
Capacity	20/50/670 Mbps, net (20/50/670 Mbps bitrate) – license upgradeable				
Channel Widths	20/40/80 MHz				
Modulation coding schemes	9 MCS – from BPSK 1/2 to QAM256 5/6				
Duplex scheme	TDD				
Ethernet	1x Gigabit Ethernet				

** Roadmap item*

InfiMONITOR



Key features

Host data

- Display of key parameters values in real time

Link data

- Ability to view detailed information about downlink and uplink streams

Incidents

- Display of events in the feed with priority and object for which the event was created
- Ability to assign individual rules for creating events for different groups of hosts
- Email notifications about events to the employees in charge

Charts

- Charts with different parameters for hosts and links within arbitrary period of time

Automatic discovery

- Automatic discovery and adding of hosts and links from the same MINT network

Management & Operations

Unit Level

Web GUI

- Device settings
- Detailed statistics and diagnostics data
- Visual spectrum analysis, antenna alignment and throughput measurement
- Maintenance:
  - configuration/firmware upload/backup
  - factory reset
- Secure access using HTTPS protocol

Telnet/SSH

- In-depth configuration, diagnostics, monitoring and maintenance for advanced users, full functionality available

Network Level

InfiMONITOR – monitoring system

- Display of the wireless network structure with metrics about hosts and links in real time on the network map
- Creation of diagrams based on different parameters of hosts and links
- Automatic tracking of changes and creation of events according to the configured rules
- Email notifications to the employees in charge about critical events
- Lists of hosts and links with ability to view values of all parameters
- Automatic discovery of hosts and connections between them using WANFleX OS features, which provide information on neighboring hosts

Radio Planning

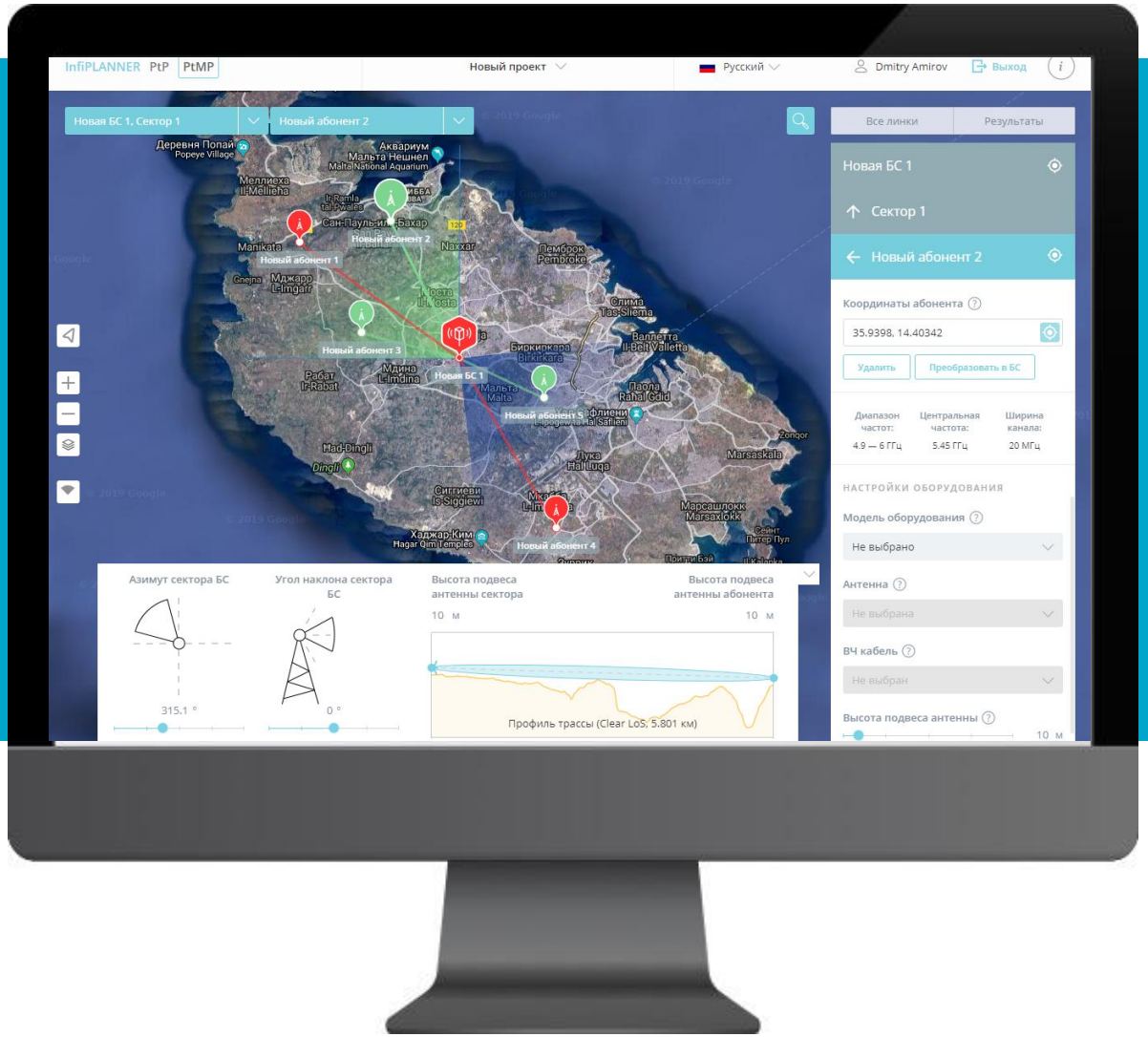
InfiPLANNER

- Web-based PtP & PtMP estimation tool
- Key features:
  - Visual planning based on Google Maps integration
  - Complex radio propagation model ITU-R and Longley-Rice
  - Relief and Fresnel zone visualization
  - Throughput, link availability and expected modulation estimations
  - Detailed reporting
  - Assembling guide in PDF (PtP mode only)
- Available at http://infiplanner.infinetwireless.com

InfiPLANNER

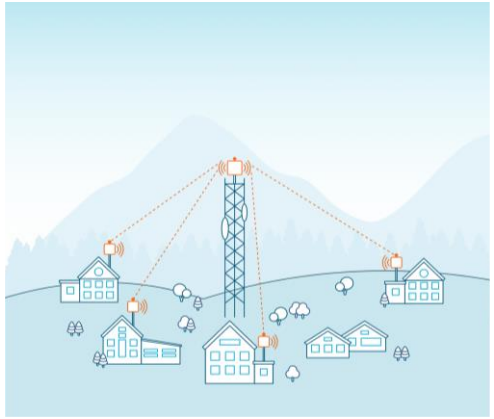
Point-to-Point

InfiPLANNER

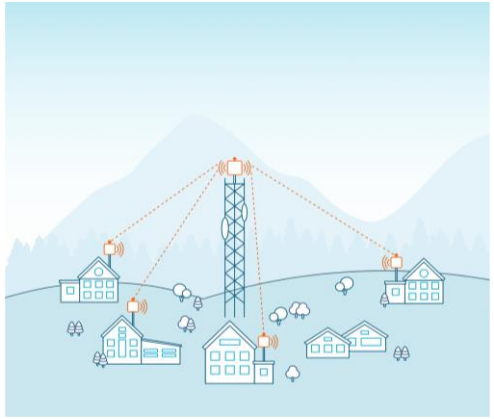


Point-to-Multipoint

Infinet’s Target Markets

Service Providers	Energy	Government	Transportation
			
• Fixed line operators • Mobile operators • Broadband ISPs	• Oil and gas companies • Mining companies • Electricity production companies	• Ministries • Local authorities	• Railways • Intelligent Traffic Systems • Transportation management • Passenger transportation

Infinet's Target Markets

Service Providers	Energy	Government	Transportation
			
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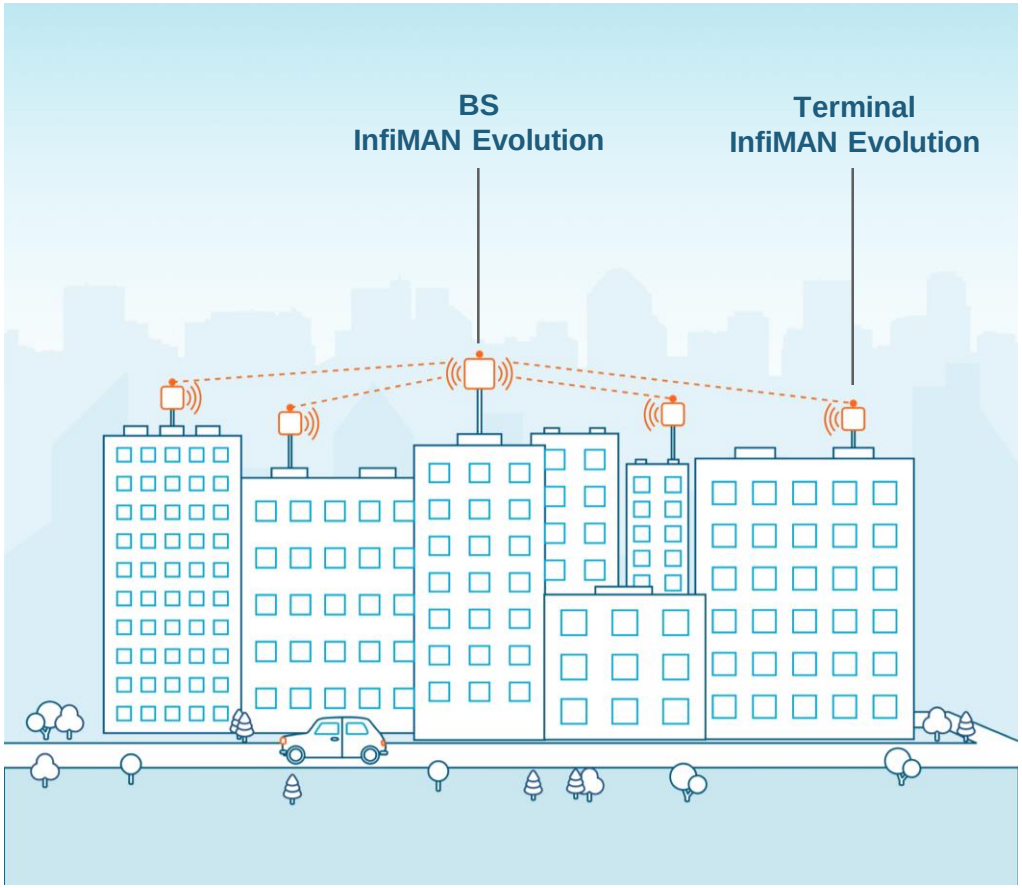
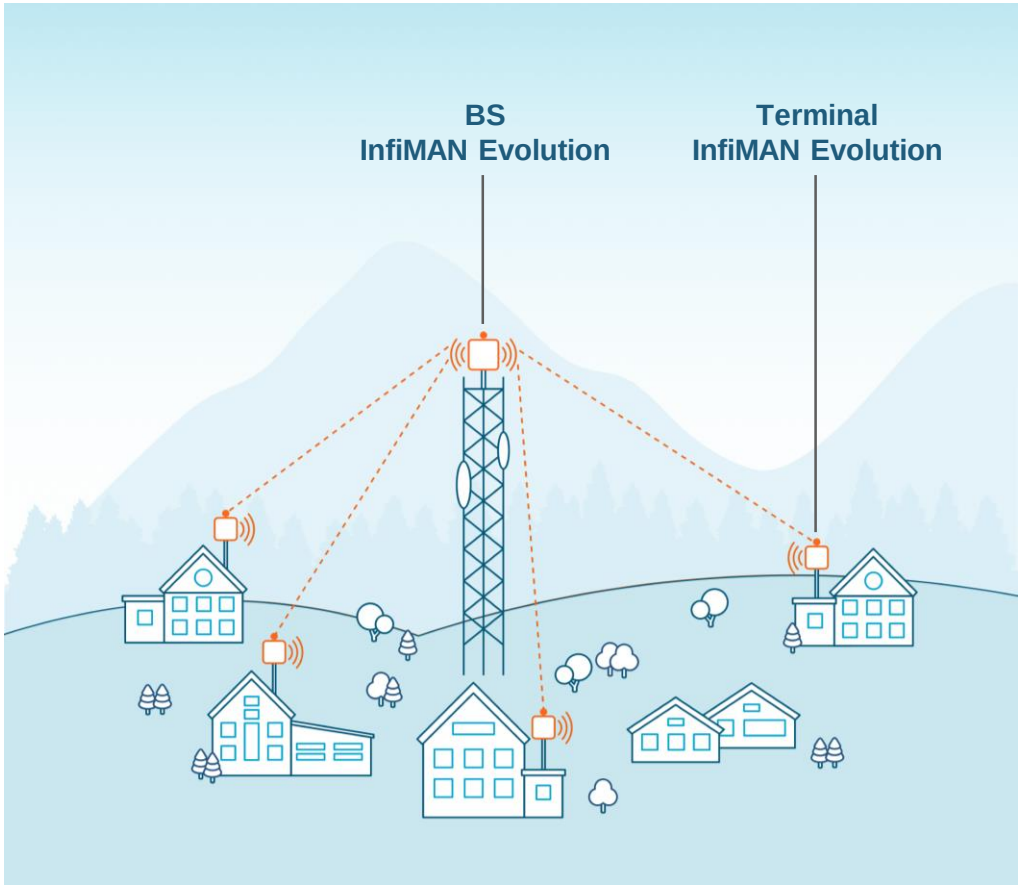
Connectivity for corporate clients and residential areas



Applications

- Telecoms services for corporate customers in urban environments
- Internet access, VoIP and IPTV services
- Service plans for up to 100 Mbps real throughput per subscriber
- Coverage range: up to 10 km (in dense urban conditions)

Network integration for remote areas



Applications

- Connectivity for remote communities
- Ranges of up to 80 km for PtP links and 30 km for PtMP configurations
- Subscriber terminals with real throughput of up to 100 Mbps

Project examples: Service Providers

Nawras (Oman)

It's a 1st privately owned country-wide operator in the country, providing 4G/LTE services and covering more than 87% of households.

- Internet connectivity. Fixed broadband wireless network.
- Voice, High Priority services and Internet.

Du (United Arab Emirates)

One of the Middle East largest service providers. The company provides Full blown 4G services offered to subscribers, as well as telephony and data services.

- 4G data offloaded from existing microwave links.
- Hosted Voice – corporate VoIP service.

Telkomsel (Indonesia)

One of the biggest cellular telecommunication operators in Indonesia.

- IW solutions delivered the aggregated 108 Mbps service with the longest link ever, which at 180 km is a record-breaking length.

MADA

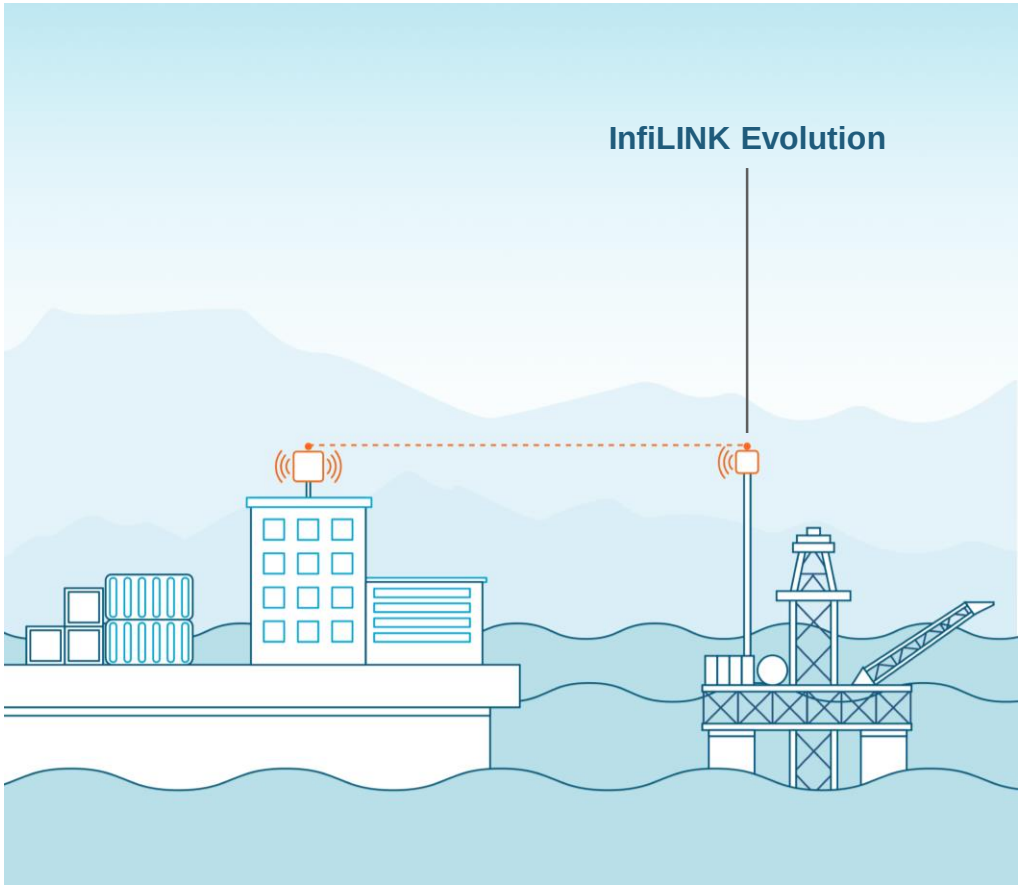
№ 1 WISP in Kuwait, offers broadband and Internet services to both business and residential customers, fixed and mobile.

- Internet access. L2 VPN/Ethernet. Voice transmission with transfer rates of 4-30Mbps.
- More than 1 000 Infinet Wireless units.

Infinet's Target Markets

Service Providers	Energy	Government	Transportation
			
• Fixed line operators • Mobile operators • Broadband ISPs	• Oil and gas companies • Mining companies • Electricity production companies	• Ministries • Local authorities	• Railways • Intelligent Traffic Systems • Transportation management • Passenger transportation

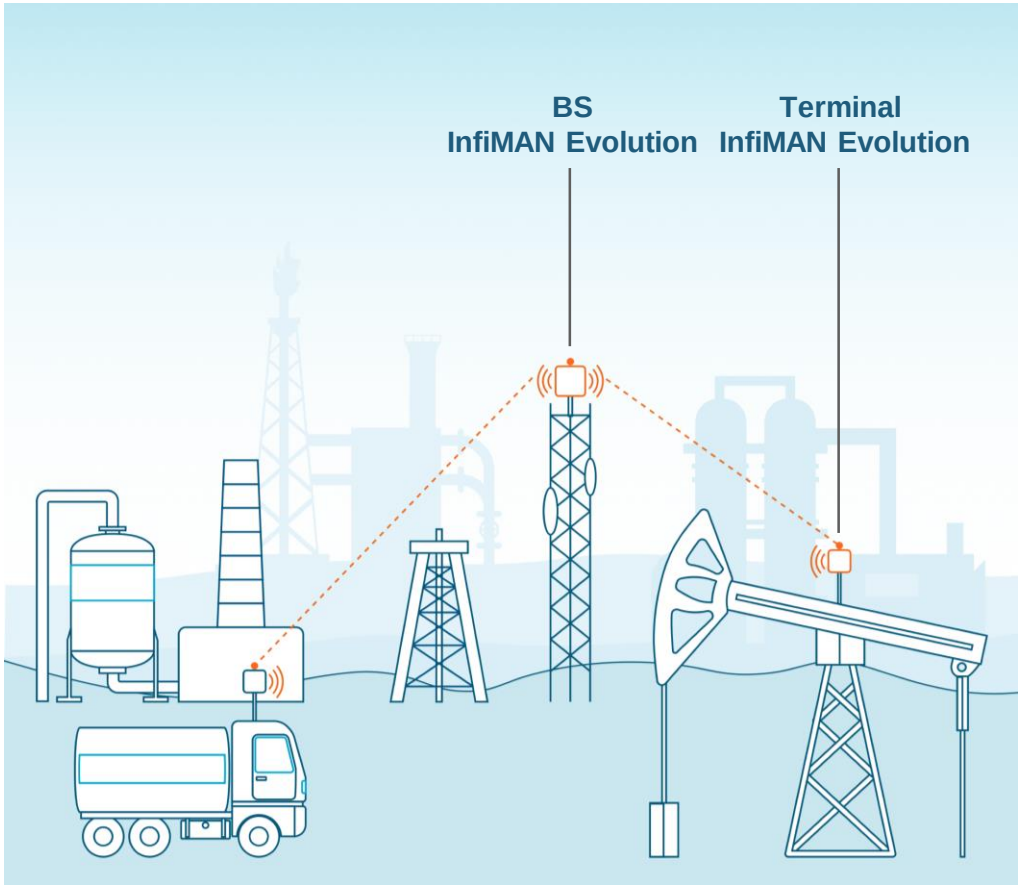
Communication links between offshore platforms



Applications

- Over-the-water communication links to remote offshore platforms at distances of more than 50 km
- Transmission of voice, video, telemetry and data streams

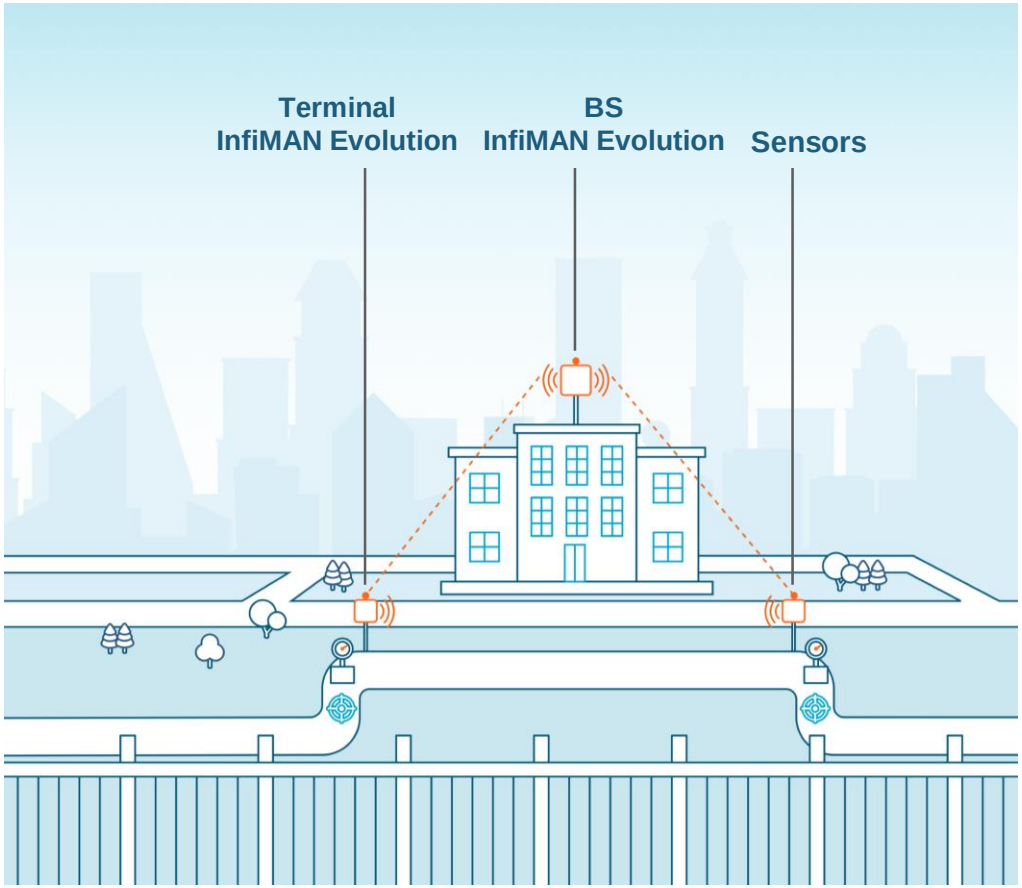
Connections between production fields



Applications

- Connections between production fields

Connection of telemetry sensors



Applications

- Telemetry data acquisition from sensors and other devices
- Distances between backbone and data acquisition sensors can be over 15 km
- Real-time data transmission for CCTV network
- Backbone for data transfer to the network control center

Project examples: Resource extraction

Lukoil
It's Russia's second largest oil company and provides approximately 2.1% of the world's oil.

- Telemetry. Voice. Data transfer. E1.
- More than 800 units of Infinet equipment.

Rosneft
One of the largest public Russian Oil & Gas company.

- VPN. Video surveillance. VoIP and video transfer.
- More than 3000 Infinet units.

Gazprom Neft
One of the largest oil producers in Russia. It comprises more than 70 enterprises (oil production, oil refining, sales) in Russia and abroad.

- Telephony. Video surveillance. Internet-access. Wi-Fi.
- More than 200 Infinet units.

EVRAZ KGOK
An ore mining and processing enterprise in Kachkanar, Russia.

- Telemetry. Video surveillance.
- 20 BS (31 sectors). Throughput of up to 240 Mbps.

Saudi Aramco
One of the largest oil producers in the world.

- Internet access. VPN – services. Video surveillance.
- More than 200 Infinet units.

Infinet’s Target Markets

Service Providers	Energy	Government	Transportation
			
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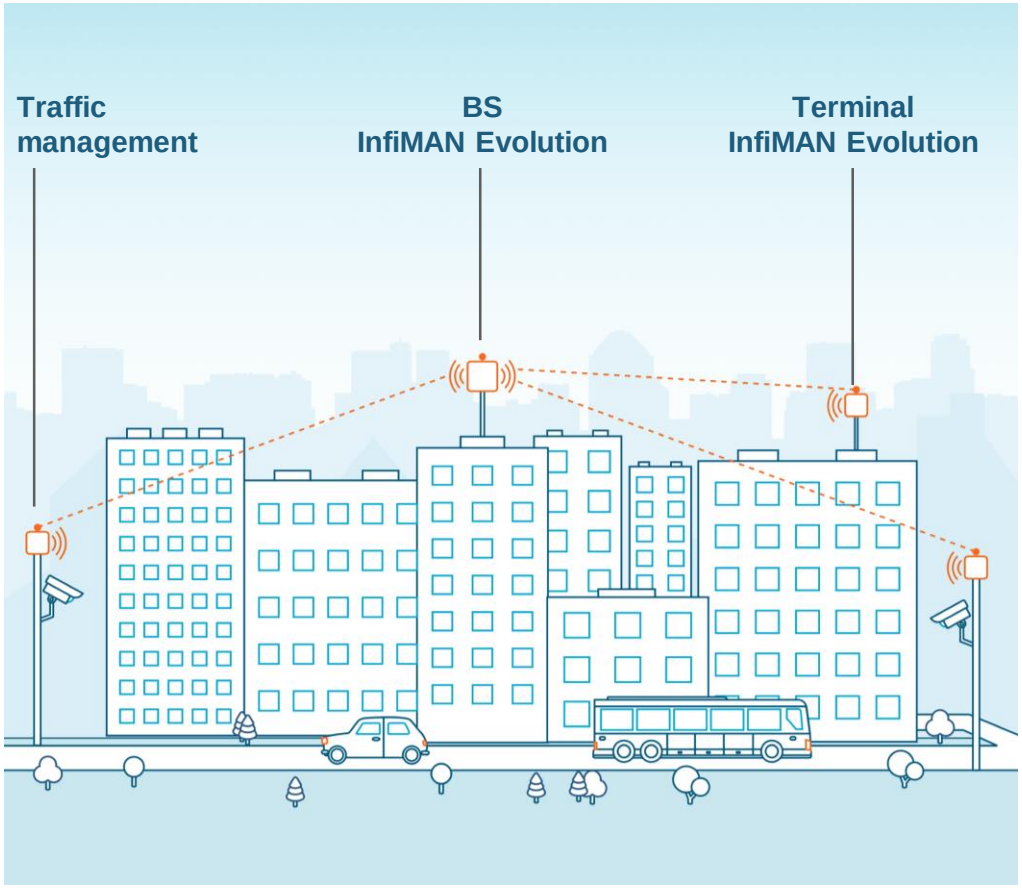
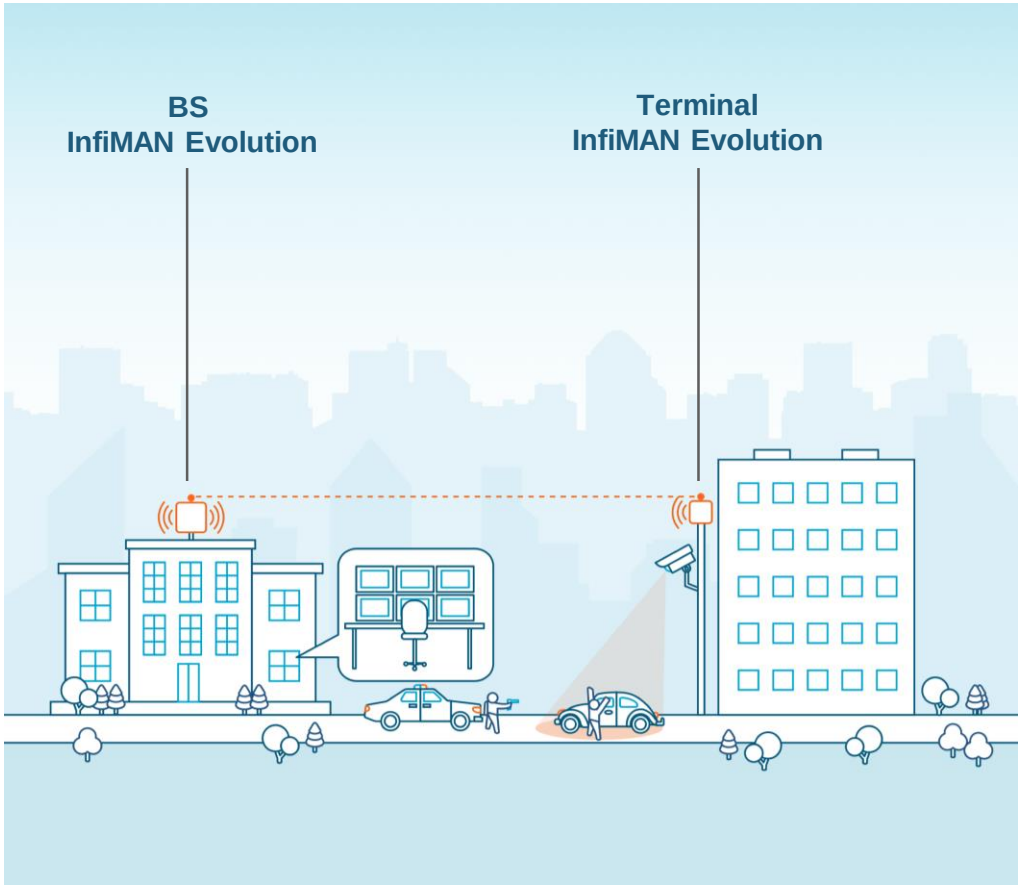
Federal “Safe city” programme



Applications

- BS coverage of up to 10 km in urban conditions
- Direct connection of IP video cameras to subscriber terminals
- Possible connection of Wi-Fi access points to subscriber terminals
- Real-time transmission of multiple HD video streams from each terminal

Communication with the emergency services



Applications

- Backbones for simultaneous transmission of data, telemetry, video and voice
- Links covering distances of up to 50 km or more

Project examples: Security

Public Safety and Video Surveillance for London 2012 Olympic Games
United Kingdom

- Reliable wireless data transmission links for video streams originating from fixed and mobile points.

Public Safety and Video Surveillance system throughout
Rio de Janeiro, Brazil

- Broadband wireless network for the provision of Video Surveillance coverage in 26 districts of the city.
- 127 cameras connected using Infinet's solutions.

Federal "Safe City" program
Moscow, Russia

- Public safety and video surveillance system with high-speed backbone and last mile segments for signal transmission from a large number of outdoor cameras.
- 70 Infinet Wireless Base Stations.

SWINDON
BOROUGH COUNCIL

Public Safety and Video Surveillance system in public places, on public transport and on emergency vehicles
Swindon, United Kingdom

- High-speed multi-service infrastructure. Wi-Fi access points in public zones and on the Council buildings, Internet access, IPTV and video surveillance.

Infinet’s Target Markets

Service Providers	Energy	Government	Transportation
			
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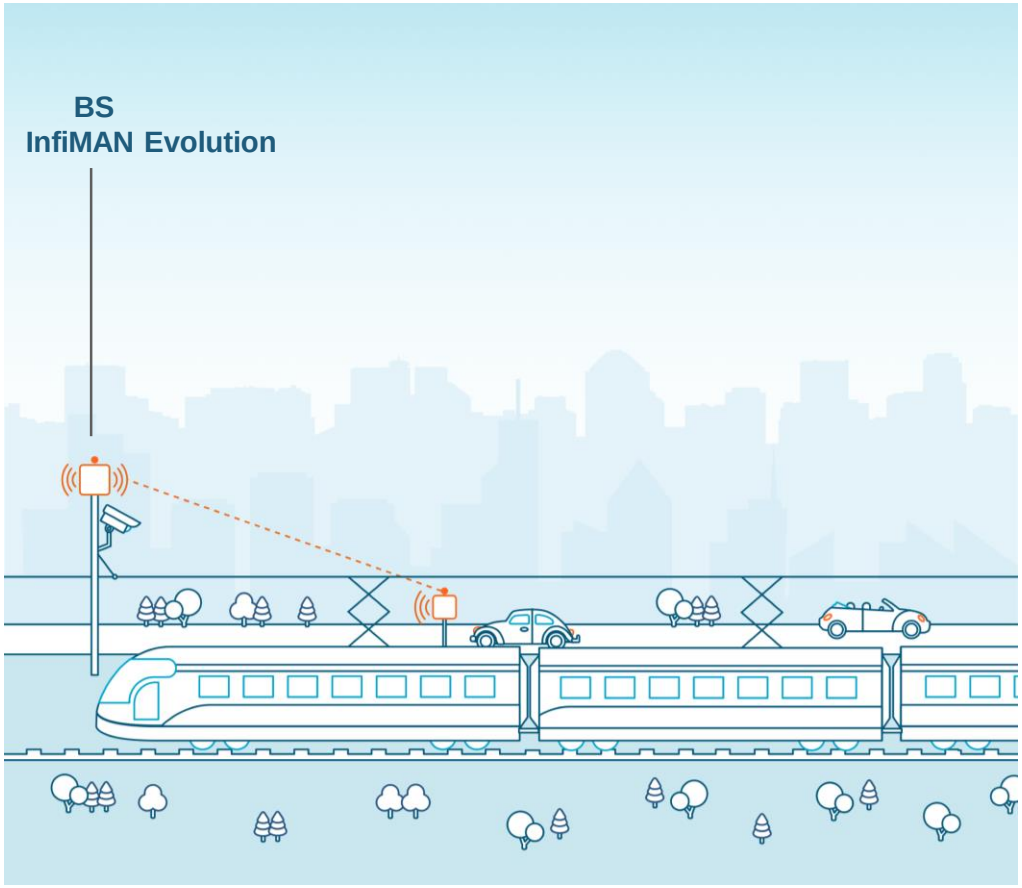
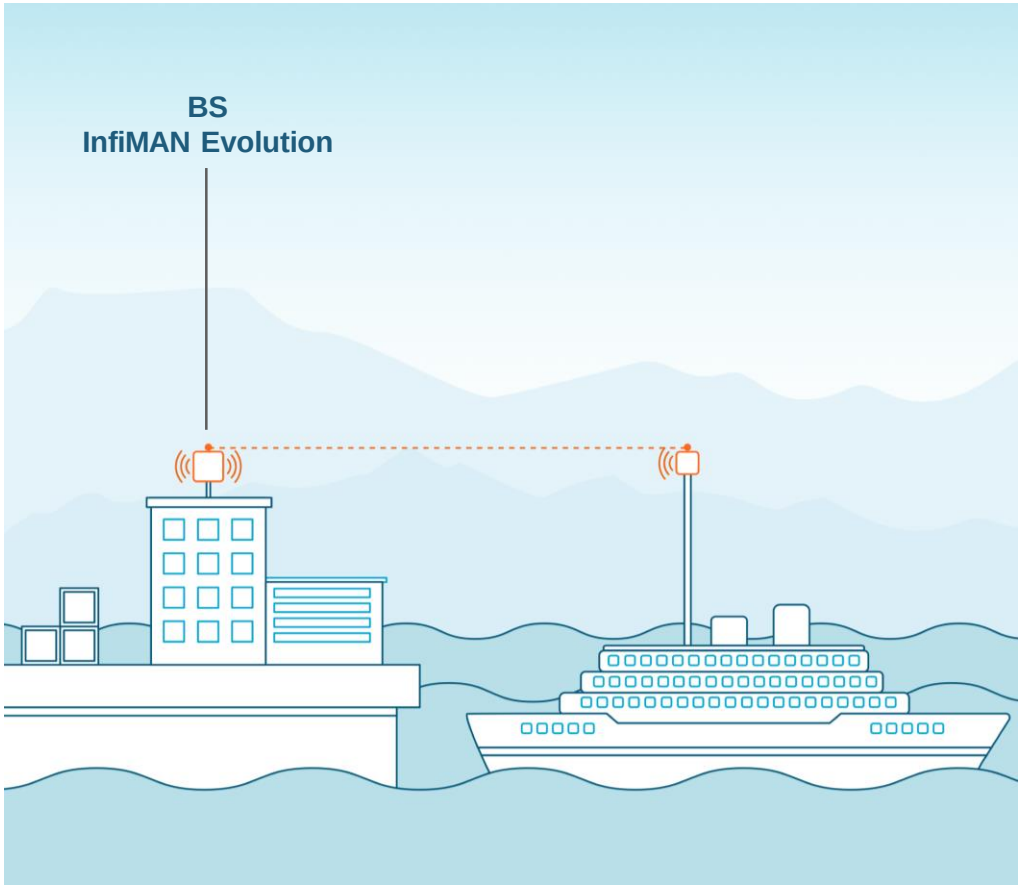
Mobile broadcast access along the railway



Applications

- Seamless coverage for duplex data transmission between backbone and rolling stock
- Stable operations at speed of up to 120 km/h
- Backbone to the rolling stock for telemetry, data acquisition and for providing Internet access to passengers.

Mobile broadcast access in ports



Applications

- Seamless coverage for vessels at a distance of 25-30 km from the port terminal
- Real-time transmission of data, voice, video and telemetry between the port terminal and vessels

Project examples: Transportation

Ferrotramviaria SpA
Italy

- Reliable high-speed wireless network for connection between railway stations and trains plus a video surveillance system.

Georgia Department of Transportation
USA

- Real-time video surveillance. Traffic light signals management.

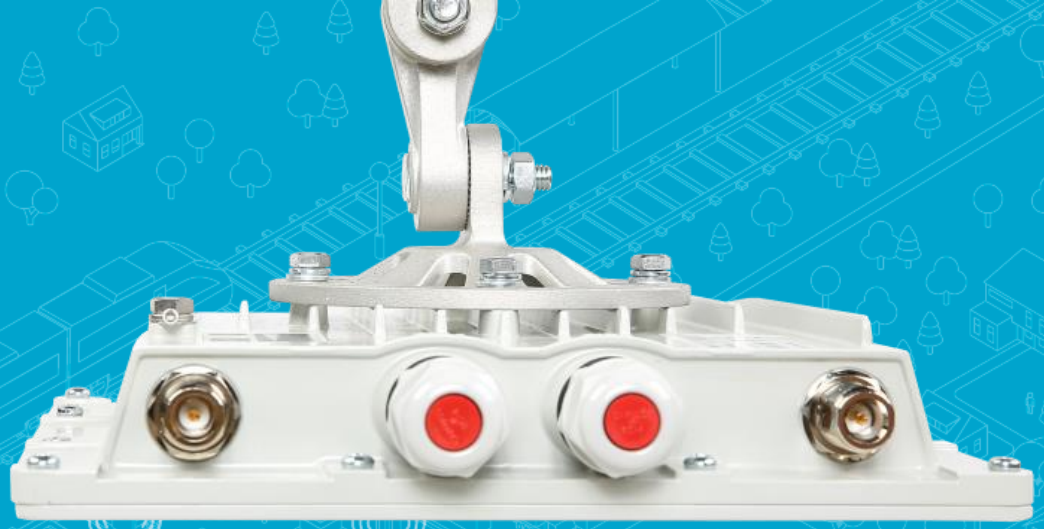
Port Dakar
Senegal

- Real-time IP video surveillance across four terminals of the Port.

Any-Port
France

- Reliable broadband wireless network for Internet access in the port. High speed and long range with a low probability of link disconnection.

Infinet's highlights



Outstanding solutions with the best performance

Thousands of successful deployments around the world

One of the world's Top 5 FBWA equipment manufacturers

Product development in our own world-class laboratory

Universal solutions for various industry sectors


INFINET
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