Application Note

High-Quality Wireless Broadband Access Services

Summary

Network Area
- Wireless residential broadband access

Architecture
- Microwave PtMP & PtP

Solution
- OSDR
- OSDR-S
- StreetNode™
- WiBAS™-Connect

Synergies
- uni|MS™

StreetNode™

OSDR-S

OSDR

WiBAS™-Connect

Scalability is Key Success Factor!

Offering high-quality broadband services to residential customers, dispersed over a large area, is challenging for operators. Fixed line networking – with fiber, cable access DOCSIS 3.1) or even xDSL technologies – provide the required high capacity and reliability but at a significant CapEx. The long deployment time is also a downside. Modern wireless technologies are already field-proven and operators consider investing in associated solutions to deliver broadband access services as efficiently as possible.

Challenges of Wireless Broadband Services

Operators planning to deliver wireless broadband to large service area footprints are faced with several challenges:

- Fast Rollout
  Ease of installation and commissioning is critical for the OpEx of large deployments. Ideally, such onsite tasks should be carried out quickly, safely and, if possible, by non-telecom personnel.
- Scalability of Terminals
  The higher the number of terminals that can be served in a sectorized area, the faster the ROI. Increase in demand should not obligate spending on additional equipment (i.e. external switches) at the hub.
- Spectrum of Operation (Licensed vs. Unlicensed)
  QoS and capacity are the primary factors to consider. Unlicensed frequencies, such as sub-6 GHz, have lower cost of operation but interference is high enough to impact air capacity. On the other hand, licensed frequencies can guarantee both capacity and service quality at the associated licensing cost.
- Equipment Form Factor
  Service terminal equipment should have small dimensions and discreet aesthetics to match the special characteristics of the living environment.

The Joint Powers of Innovation and Expertise!

Backed up by a multi-decade experience in the design and manufacturing of leading-edge telecommunications products, Intracom Telecom makes available today a Point-to-MultiPoint (PtMP) solution capable to provide up to half-Gigabit capacity in a distance of up to 3 km, cost-effectively and flexibly, like no other solution in the market.

This offering is based on field-proven "block-licensed spectrum" PtMP technology aiming to provide:

- Interference-free operation and guaranteed-high service quality.
- Coverage of non-Line-Of-Sight (non-LOS) areas, such as street-level locations surrounded by high buildings, which are not directly reachable by the hub even when it is installed on a high position.
- Coverage of residential areas having direct Line-Of-Sight (LOS) with the serving hub.

One radio is used per end customer and less equipment is needed compared to purely PtP implementations.

Operators are now able to efficiently "blanket" wide areas and serve multiple end customers using a broad range of available wireless service terminals – up to 60 per sector – without worrying about scalability concerns.

INTRACOM TELECOM

Solution Highlights

CapEx & OpEx Savings

Same hardware for backhaul and less equipment compared to purely PtP deployments

Configurable Operation

Point-to-MultiPoint (PtMP) or or Point-to-Point (PtP) at street level

Flexible Powering

3 x powering options – direct DC, AC PoE, DC PoE – to adapt to the power source available locally (StreetNode™, OSDR-S)

Unified Management

One management suite, uni|MS™, manages everything, from radio equipment to wireless services

Innovative Non-LOS Network Build-up with StreetNode™ Terminals!

Fast Installation

Terminal is installed and run in less than 30 minutes by non-specialized personnel using an Android tablet and Bluetooth

Unique Auto-alignment

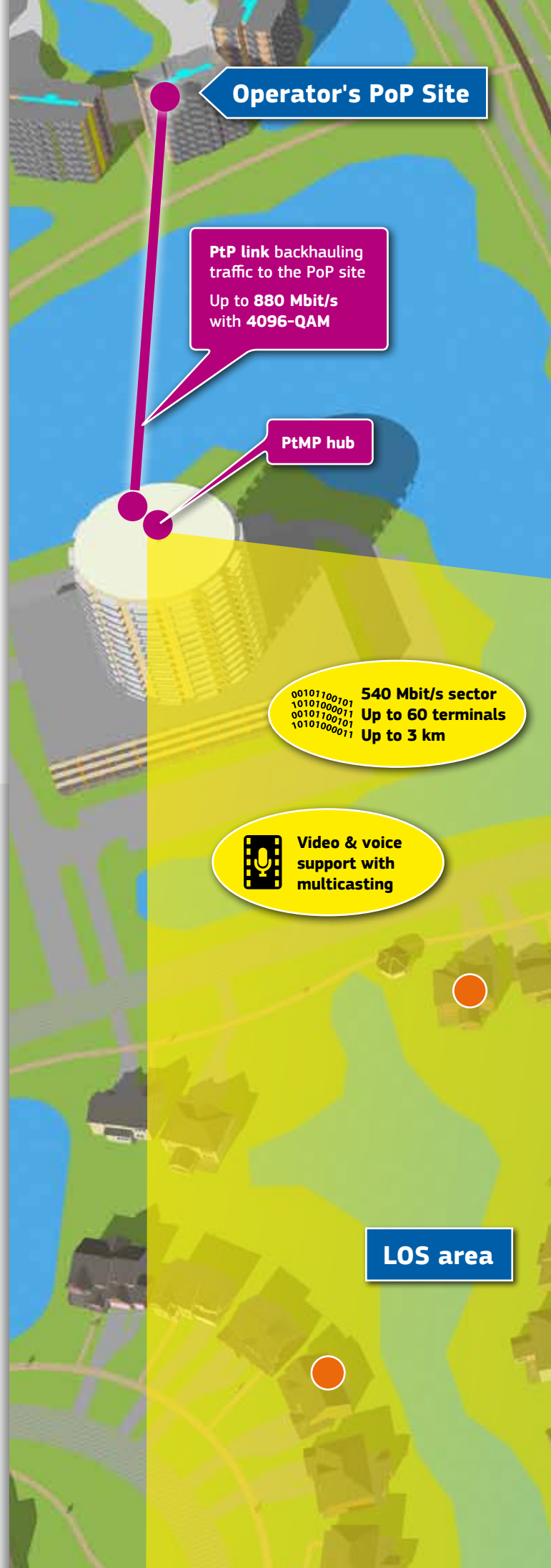
Network is configured automatically when StreetNode terminals are added or removed

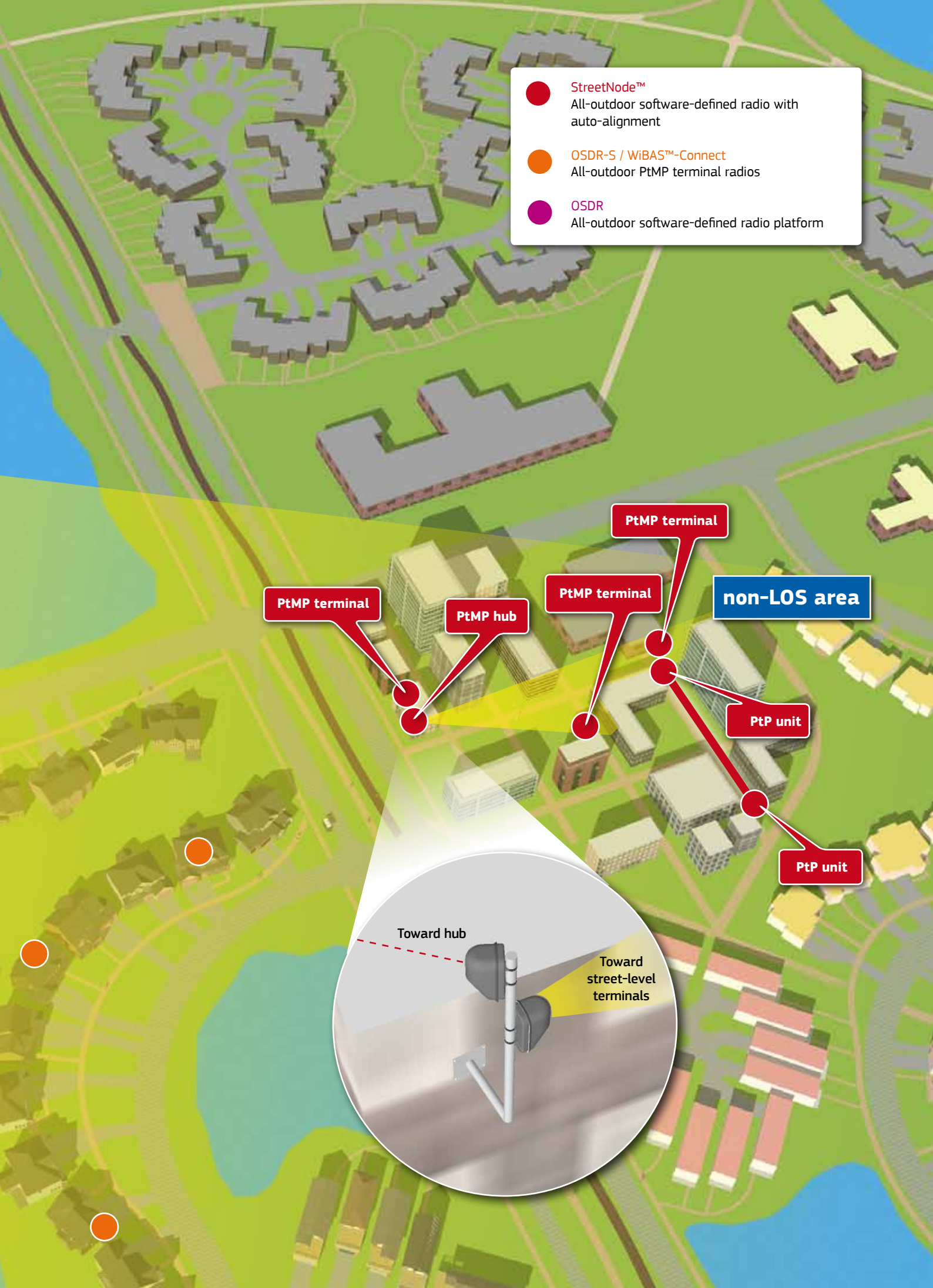
Advanced Features

3 x Gigabit interfaces and an embedded switch make additional external Ethernet switches unnecessary

All-in-one

Compact and aesthetically-pleasing box with embedded antenna; custom finishes on demand




StreetNode™
All-outdoor software-defined radio with auto-alignment
OSDR-S / WiBAS™-Connect
All-outdoor PtMP terminal radios
OSDR
All-outdoor software-defined radio platform
PtMP terminal
PtMP terminal
PtMP hub
PtMP terminal
non-LOS area
PtP unit
PtP unit
Toward hub
Toward street-level terminals

Why this Solution is for You

- Market-leading features – the best technology that can be offered today for a high-quality MW system:
  - Highest capacity per radio (540 Mbit/s)
  - Longest range (half Gbit/s at a 3 km distance)
  - Hitless adaptive modulation (no bandwidth-consuming retransmissions are needed)
  - Highest terminal capacity (60 terminals without any additional IDU)
- Unique offering of PtP and PtMP radios:
  - Terminals can switch between PtP and PtMP operation – same hardware, only software upload
- Frequencies of operation:
  - PtMP radios operate at area-licensed bands (10.5 / 26 / 28 / 32 and 42 GHz)
- Versatile "street-level terminal" full of unprecedented innovations:
  - Automations for fast, error-free and cost-efficient deployment in the served areas:
    - Link auto-alignment
    - Zero-touch configuration through Bluetooth
  - Mounting-friendly units for hassle-free installation in street-level environments
  - Powering type flexibility – direct DC, DC PoE and AC PoE
- Same Hardware at the hub site for PtMP operation and backhauling:
  - The OSDR all-outdoor radio can turn from PtMP hub to PtP backhaul operation with only antenna change and software upload
  - Leading backhaul capacity (880 Mbit/s with 4096-QAM capability)

Participating Products Specifications Summary

OSDR / OSDR-S / StreetNode / WiBAS-Connect

- Radio
  - Up to 540 Mbit/s throughput
  - Up to 1024-QAM hitless adaptive modulation
- Mechanical & Electrical
  - Dimensions (H x W x D), mm:
    - 290 x 238 x 96 (OSDR)
    - 300 x 150 x 97 (OSDR-S)
    - 298 x 151 x 176 (StreetNode™)
    - 200 x 200 x 30 (WiBAS™-Connect)
  - Weight:
    - 4.5 kg (excluding the mounting kit) (OSDR)
    - 2.5 kg (excluding the mounting kit) (OSDR-S)
    - 3.0 kg (excluding the mounting kit) (StreetNode™)
    - 2.0 kg (excluding the antenna) (WiBAS™-Connect)

uni|MS™

- Unified multi-vendor and multi-technology management
- Unprecedented network visualization through Web-based user interface
- Out-of-the-box dashboards & reports with network bandwidth & performance analysis
- Highly-automated network rollout through self-organized networks
- Network and RF planning tools closing the loop between "as-planned" and "as-built"

Why Intracom Telecom

- One-stop Shop
  - Comprehensive portfolio of end-to-end radio access & backhaul solutions
  - Proven integration & interoperability
  - State-of-the-art end-to-end management suite
- Established Wireless Vendor
  - Growing and continuous presence for a variety of access and transmission solutions
  - Growing brand name recognition for PtP and PtMP solutions
- Recognized for Service Excellence
  - Extensive implementation track record
  - Specialized & highly experienced personnel
  - Consulting, design, implementation & support
  - Commitment to adding customer value
- Continuous Innovation
  - Innovating in the wireless access and transmission field for over one and a half decade
  - Successful development and deployment of PtP and PtMP systems with numerous operators in Europe, the Middle East, the CIS, Asia and Africa
  - Investing heavily on the continuous evolution of its wireless product lines

About Intracom Telecom

Intracom Telecom is a global telecommunication systems and solutions vendor operating for over 35 years in the market. The company innovates in the areas of small-cell backhaul, wireless transmission and broadband wireless access and has successfully deployed its industry leading point-to-point and point-to-multipoint packet radio systems worldwide. Moreover, Intracom Telecom offers a competitive portfolio of revenue-generating telco software solutions and a complete range of ICT services, focusing on big data analytics, converged networking and cloud computing for operators and private, public and government clouds. The company invests significantly in R&D developing cutting-edge products and integrated solutions that ensure customer satisfaction. Over 100 customers in more than 70 countries choose Intracom Telecom for its state-of-the-art technology. The company employs more than 1,900 people and operates subsidiaries in Europe, Russia and the CIS, the Middle East and Africa, Asia and North America.

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