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INTRACOM
TELECOM



INTERVIEW

INTRACOM TELECOM GROUP NEWSLETTER

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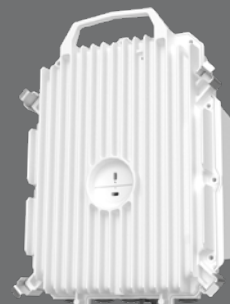
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ITALIAN EOLO EXPANDS WITH INTRACOM TELECOM TECHNOLOGIES

Italian fixed wireless access (FWA) operator EOLO has selected Greece-based equipment vendor Intracom Telecom to supply its WiBAS™ G5 dual-BS base station device for the expansion of its 28GHz wireless network across Italy. EOLO has been using the WiBAS™ platform since 2017 and the new base stations will offer double the subscriber capacity and three times the throughput compared to the previous generation.

Kartlos Edilashvili, Acting CEO of Intracom Telecom, expressed pride in supporting EOLO's growth as Italy's leading fixed access provider and a global connectivity leader and looks forward to implementing the new expansion and connecting Intracom Telecom's brand with EOLO's success. On the other hand, Guido Garrone, CEO at EOLO, highlighted the 6-year collaboration with Intracom Telecom, emphasizing their determination in building a reliable mmWave FWA network for residential, business, and wholesale customers. EOLO's mission is to provide ultra-fast, high-performance internet to Italian families and businesses, even in remote areas, with Intracom Telecom's flexible support and technological expertise enhancing their offerings.

Read the full press release at www.intracom-telecom.com/press or scan the QR code.



TRANSFORMING MUNICIPALITY OF VARI – VOULA – VOULIAGMENI INTO A SMART CITY

Intracom Telecom and the Municipality of Vari – Voula – Vouliagmeni are teaming up for a cutting-edge "Smart City" project, set for completion in Q1 2024. Intracom Telecom will create an advanced Internet of Things (IoT) network using LoRaWAN technology. This initiative will revolutionize the city by monitoring soil moisture in parks, managing utilities, regulating traffic and noise pollution, ensuring safety for vulnerable citizens, and enforcing speed limits. This collaboration promises a connected, efficient, and sustainable urban future for Vari – Voula – Vouliagmeni.

Read the full press release at www.intracom-telecom.com/press or scan the QR code.



STRATEGIC PARTNERSHIP WITH 802 NETWORKS

Intracom Telecom and 802 Networks have joined forces to promote advanced FWA & E-Band solutions in Belgium and the Netherlands. 802 Networks will market WiBAS™ G5 mmWave FWA and UltraLink™-GX80 E-Band radio products, serving WISPs, municipalities, security agencies, and facility management. Intracom Telecom, with 20 years of expertise, meets the global demand for broadband access services, making this partnership a powerful blend of innovation and market presence.

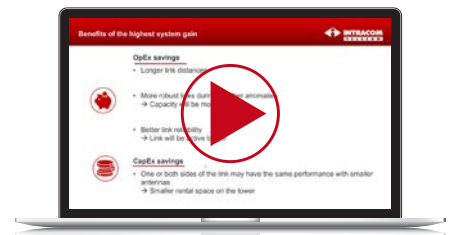
Read the full press release at www.intracom-telecom.com/press or scan the QR code.



RETHINKING E-BAND: DELIVERING 10 GBPS BEYOND 8 MILES

A webinar hosted by Winncom Technologies took place on August 10, showcasing the UltraLink™-GX80's market leading RF performance, as a fiber alternative in rural areas, delivering wireless capacity of 10Gbps with E-Band. Discussed furthermore an actual deployment where our system delivered its outstanding performance at more than 8 mile-distance.

 http://youtu.be/JNtG9i80t_8



SUCCESSFUL PRESENCE IN COMMUNICASIA 2023

In the dynamic sphere of technology events, CommunicAsia in Singapore stands as a testament to the rapid advancements in the digital domain. Intracom Telecom made a notable presence with its exhibition stand at this vibrant event, showcasing the transformative potential of Fixed Wireless Access (FWA). This groundbreaking technology is revolutionizing connectivity by offering swift, dependable, and cost-effective solutions, empowering both individuals and businesses in the digital age. The event garnered attention from thousands of industry professionals, and the company eagerly anticipates participating once more in the 2024 show, further contributing to the ever-evolving tech landscape.



5G CONFERENCE: FUTURE OF HIGH-SPEED INTERNET



An informative discussion about the future of high-speed internet was the second 5G Conference Southeastern Europe, which was held at the Zappeion Megaron, Athens, on Tuesday, September 26, 2023 and Intracom Telecom was there! Our colleague John Tenidis, Product Marketing Director, Wireless Network Systems, delivered a presentation on "Gigabit to the Home," introducing an impressive technology that's revolutionizing the digital landscape in Southeast Europe, with a particular emphasis on Italy, and considering its potential application in Greece.

INSIGHTFUL PRESENTATIONS AT THE 62ND FITCE INTERNATIONAL CONGRESS



As proud Gold Sponsors, we took an active role in the 62nd FITCE International Congress, held under the theme "Services and Infrastructures towards a smart society" in Athens on 28 & 29 September 2023. During the event, our

team delivered two impactful presentations: "Gigabit to the Home for Smart Societies in Greece" and "AI-powered Network Management: From Energy Savings to Proactive Customer Care." Through these sessions, our colleagues showcased our company's cutting-edge mmWave Fixed Wireless Access (FWA) solutions and AI platforms, including NFV-R1™ and Cognitiva™ Mobile CSI, demonstrating their efficacy in efficient network management.

From left to right: K. Sidiropoulos, President of FITCE Greece, A. Tarnaris, Marcom Director Intracom Telecom, A. Penza, President of FITCE Italy, A. Stavroulakis, Sales Director, Europe.



ADVANCING INNOVATION IN IOT AND EDGE TECHNOLOGIES

Intracom Telecom, in collaboration with esteemed partners, continues to lead groundbreaking initiatives. The IoTfeds consortium (www.ietfeds.gr), comprised of Intracom Telecom, AUEB, CERTH/ITI, and TERRACOM, recently convened at Intracom Telecom's premises to work on their project. IoTfeds aims to create an open source middleware that merges H2020 symbloTe's technology with Blockchain, enabling a fully distributed IoT federation management and marketplace framework, co-funded by the EU and Greek national funds. Meanwhile, the TANDEM project (<http://146.124.114.146:8000/tandem>), spearheaded by Intracom Telecom, presented an innovative approach to cloud computing models at the network edge in Gothenburg, Sweden. Similarly, the MICSYS team (www.micsys.gr), led by Intracom Telecom, held a productive meeting in Athens, working towards developing portable IoT biosensor devices for in situ water quality monitoring. Stay tuned as these projects transform the future of IoT data marketplaces, Edge Computing, and water quality monitoring, shaping a cleaner and smarter tomorrow.

PARTICIPATING IN THE PERMANENT RESEARCH PROGRAM

On July 27, 2023, the Research Project: "Integrated Platform for Intelligent Applications for Operation Monitoring and Sustainable Energy Management of Water Supply Networks" with the acronym "PerManeNt" (www.permanent-project.gr) was successfully completed. The Research Project aimed to develop an integrated application platform for tele-monitoring, evaluating, and visualizing water supply network operations and energy consumption, along with associated projects.

The PerManeNt platform is a commercial product, part of the uiTOP™ platform, which is now addressed to a fairly wide range of potential beneficiaries, such as Municipal Water and Sewerage Companies (MWSCs), Water and Sewerage Associations, Municipalities, but also to large consumers with important water supply infrastructures. In particular, the platform offers, in real time and in a unified manner, functions that include:

- » Supervisory information on the state of water network infrastructure
- » Monitoring the energy footprint of water network infrastructure
- » Creation and monitoring of water network infrastructure performance and loss indicators
- » Detection of malfunctions / failures in the network, with automatic activation of alarms & sending of relevant notifications
- » Detailed monitoring of infrastructure operational status
- » Storage, analysis and visualization of water consumption metric data.

The PerManeNt project was implemented within the framework of "RESEARCH – CREATE – INNOVATE", co-financed by the European Regional Development Fund of the European Union and Greek national funds through the Operational Program Competitiveness, Entrepreneurship & Innovation 2014-2020. The partners of the project were the Municipal Enterprise of Water Supply and Sewerage of the City of Patras, the Hydraulic Engineering Laboratory, Department of Civil Engineering, University of Patras, the Center for Renewable Energy Sources and Saving and Intracom Telecom.

CUSTOMER CARE CONFERENCE IN BUCHAREST



Intrarom & Genesys participated in the 18th edition of Customer Care Conf & Expo, organized by Marketing Insiders Group, which took place on May 2023 at Pentagon Events, Bucharest. At this event, which promises to be an enriching experience for customer care professionals across all industries, Intrarom & Genesys discussed customer experience orchestration in a world of constant change, the key engagement channels of tomorrow, and how to meet customer expectations most effectively for channel preference and personalization.

APPOINTMENT OF A NEW HR DIRECTOR

Intracom Telecom Group is delighted to announce the appointment of Mrs. Renia Kremali as our new Human Resources Director, effective from October 9th. Renia brings a wealth of experience and expertise to our organization, having held key roles in esteemed companies such as Saracakis Group, Toyota Hellas, Alfa Alfa Energy, Shell Group & Procter & Gamble. She has graduated from the National Technical University of Athens with a Diploma in Chemical Engineering in 1999, and obtained a Professional Diploma in Human Resources Management from Hellenic Management Association in 2014. Currently she is pursuing an MSc in Tourism Business Administration at Hellenic Open University. Renia's blend of technical expertise and HR proficiency perfectly aligns with the new era of growth and development at Intracom Telecom Group. Welcome aboard, Renia!



INTRACOM TELECOM'S SUCCESS AT DTW, COPENHAGEN

Intracom Telecom actively participated in the recent DTW event in Copenhagen, a crucial platform for the telecommunications industry. This insightful show, focused on the platforms/IT sector, fosters collaboration, innovation, and industry alignment. For telco vendors, this event is pivotal, offering opportunities to showcase technologies, gain insights into trends, and engage with stakeholders, enhancing credibility and fostering potential partnerships. The 2023 event centered around Artificial Intelligence, experienced increased attendance compared to 2022. Visitors engaged face-to-face with our team, discussing their future challenges, making the event a valuable experience.



SMART CITIES EXPO

At the 1st Smart Cities Expo that was held in Athens Greece last week, we demonstrated our comprehensive Smart Cities portfolio that enables municipalities to provide life improving services to citizens through cutting-edge technologies. Our representative Zinovia Boulogiorgou, Senior IoT & Smart City Solutions Presales Engineer, spoke about Company's innovations, multiyear experience and IoT platform, uiTOP™, which monitors and analyzes all the critical factors of a modern city, providing insights to the Authorities in order to make the right decisions, with the right information, at the right time.



SMART CARPORT WINS RECOGNITION

Intracom Telecom's Smart Carport received an award as the Ideal Electric Vehicle Charging Solution for Businesses and Municipalities. Combining hybrid energy sources and smart applications with remote management, it promotes environmental sustainability and business viability in open parking spaces. The celebration ceremony, held in Athens, Greece, as part of the Mobility Awards 2023, honored Intracom Telecom with a distinction in the EV Charging Infrastructure category.

TELECOM REVIEW MAGAZINE

ULTRA-BROADBAND FWA ESSENTIAL FOR NEXT-GENERATION CONNECTIVITY



Revolutionizing connectivity, Fixed Wireless Access (FWA) is paving the way for fast, reliable, and affordable connections, empowering individuals and businesses in the digital age. During ATxSG 2023, an event where Intracom Telecom showcased its expertise, Telecom Review Magazine had the opportunity to speak with Andreas Serras, Chief Executive Officer of Intracom Middle East. He shared insights into the company's innovative solutions, particularly in the realm of mmWave technology and ultra-broadband FWA, designed to enhance the connectivity landscape for operators and communities alike. To delve deeper into Intracom Telecom's cutting-edge offerings.

Telecom Review Magazine » Can you tell us about Intracom Middle East as well as the company's latest solution developments in 2023?

A. Serras » Intracom Middle East is a leading telecom solutions provider in the Middle East, Africa and Southeast Asia regions, operating for over two decades in the market with regional teams and a network of partners. We have a proven track record in deploying large-scale complex projects integrating in-house designed and developed products, as well as third-party systems for delivering state-of-the-art telecommunication solutions. We are promoting Intracom Telecom's solutions portfolio in the region, and this year we are introducing enhancements to Intracom Telecom's fixed wireless access (FWA) and E-Band offerings, with more capacities at longer ranges and with more configurations.

Telecom Review Magazine » In terms of strategic focus, where is the company directing its efforts?

A. Serras » We focus on providing network infrastructures to our customers for the 5G era. We have solutions for connectivity between the last mile and the core of the 5G mobile network that require high-capacity, long-range mmWave and microwave radios acting as xHaul modules (back-

haul and fronthaul). An example is our UltraLink™-GX80, an E-Band radio that delivers 10 Gbps capacity. Moreover, our offering also addresses the gigabit connectivity needed for fixed subscribers in mmWave ultra-fast broadband fixed wireless access networks at 26/28 GHz. The Asia Pacific and Southeast Asia regions are now at the global forefront of network developments, and our company continues its activity that started a decade ago.

Telecom Review Magazine » Can you elaborate on the significance of mmWave FWA in today's landscape?

A. Serras » The mmWave frequency band is the catalyst for the deployment of gigabit access networks. Our fifth generation FWA technology, WiBAS™ G5, operates at the 26/28 GHz frequency band, coexisting with 5G in adjacent channels. The WiBAS™ G5 technology can be used for networks with gigabit/s speeds of download and to long-range rural and semi-rural subscribers. While focusing on evolving the product line with new base stations and terminal devices, increasing density to 1,000 subscribers per site, range of connection, quality of service and spectrum reuse, we also work on maintaining leadership at the FWA networks operating at licensed microwave bands. The

10.5 GHz is a typical case in Southeast Asia and is being selected by many of our customers in the region. From Intracom Telecom's global footprint of more than 50 FWA networks, a significant portion is within the area of responsibility of Intracom Middle East.

Telecom Review Magazine » Can you please highlight your top Asian deployments and the challenges you have successfully addressed?

A. Serras » Since 2014, we have been supplying Dialog, Axiata's subsidiary in Sri Lanka, with our 10.5 GHz solutions for the modernization and expansion of their network. Also, since 2014, we have been supplying Lintasarta in Indonesia with our WiBAS™ technology again for high-quality connectivity services. In all cases, the challenge remains the same: to secure for the operator the highest capacity in the industry and a competitive cost per Mbit. When it comes to ultra-broadband FWA, our WiBAS™ brand stands out, and that is something that our customers worldwide refer to. With 16,000 hubs and more than 400,000 terminal devices delivered, we can claim a success story for our FWA solutions. Likewise, with 35,000 radios of E-Band technology delivered to this day, we are part of large network deployments. ■

ARTICLE

ENABLING THE TRANSITION TO SMART ENERGY THE CHALLENGE IN TODAY'S ENERGY LANDSCAPE

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INTRODUCTION

The energy landscape is undergoing an immense transformation, reshaping the way we generate, distribute and consume electricity. Shifting from the traditional concept of electricity generation, modern power systems have increased Renewable Energy Sources (RES) based production, which creates challenges for grid stability and reliability, due to its intermittent nature and decentralized approach.

At the same time, electrification of heating and transport sectors are significantly increasing electricity demand. In this context, consumers and producers are assuming a more active role in the efficient management of the grid through flexibility.

Flexibility refers to the ability to reshape energy profiles (generation or demand) based on market signals, shifting for example consumption at times where generation costs are lower or reducing PV production to relief a local grid congestion. Some examples of resources of flexibility include electric vehicles, battery energy storage systems, industrial loads, heat-pumps, hot water boilers and others.

Demand Response (DR) is an instantiation of energy flexibility mechanisms, which specifies incentives for reshaping the demand in two different options: price-based and incentive-based. In the former, consumers are exposed to time-varying electricity prices and/or network tariffs and react according to their own preferences and constraints. In the latter, consumers receive direct payments to change their consumption upon request (i.e., consuming more or less).

In the dynamic realm of energy management, aggregators are the key players being intermediaries between grid operators and individual energy consumers/producers. They aggregate multiple flexible resources and coordinate their participation in different schemes, providing a consolidated and controllable resource to the market.

ALLEVIATING CHALLENGE VIA DEMAND FLEXIBILITY

To accomplish their business objectives around flexibility, Aggregators need ICT tools that support a diverse set of functionalities:

- » Flexible resource monitoring, forecasting and control;
- » Optimal planning of the operation of aggregated flexible resources;
- » Measurement and verification of flexibility activation;
- » Strategical placement of bids of the aggregated flexibility in the markets.

These tools are innovatively combined, analyzing the flexibility portfolio and dynamically calculating proper incentives that ensure profitability for the stakeholders.

The heart of these functionalities – in the context of DR – is the Demand Response Management System (DRMS), acting as the catalyst to deploy related business processes. Enabled by granular (e.g., hourly) energy measurement data sourced from Advanced Metering Infrastructure (AMI), like Smart Meters and/or sub-meters, along with the sensing and control capabilities of IoT devices, the DRMS emerges as a pivotal force in the dynamic world of Demand Response.

USE CASES

Moving away from the traditional, linear electricity production-consumption scheme and with the constant increasing presence of rooftop solar photovoltaic (PV) systems and battery storage systems in residential, commercial and industry premises, the DR process are becoming vital.

1. **Industrial and commercial sector:** Leveraging the synergies of PV and energy storage systems as well as the adaptation to price fluctuations, the sector can benefit from demand side management. By strategically shifting energy-intensive processes to coincide with low-price periods and by drawing power from storage facilities during DR events (e.g. when peak tariffs apply), industries can harvest financial and environmental benefits.
2. **Residential sector:** It accounts for over a quarter of the final energy usage in the EU. The participation of residential users in DR schemes can improve the utilization of household resources, enabling the reduction of energy bills and on an aggregated level (e.g. community), provide adequate impact in the energy market.
3. **E-Mobility sector:** The rising penetration of electric vehicles (EVs) in the market is expected to significantly increase, posing both a challenge and opportunity for the management of the power grid. The increased loads of uncontrolled charging of EVs can stress grid equipment, whereas, if charging management is done under DR schemes, it can support the grid's optimal operation. The deployment of DR schemes could enable the active participation of consumers in the energy market, reducing their energy costs, and increasing the production of RES, acting as a buffer of energy through their batteries. Considering that most vehicles remain parked for a significant amount of their lifetime, their EVs' energy capacity and their expected massive roll-out, consist of a significant flexible asset.

Flexibility refers to the ability to reshape energy profiles (generation or demand) based on market signals, shifting for example consumption at times where generation costs are lower or reducing PV production to relief a local grid congestion

INTRACOM TELECOM'S APPROACH FOR SMARTER DEMAND FLEXIBILITY

To tackle the aforementioned challenges, Intracom Telecom can leverage its existing knowledge and solutions for creating new value offerings:

- » **Energy Monitoring Solution:** Intracom Telecom's cloud-based Energy Monitoring Solution (EMS), powered by uiTOP™, offers a comprehensive approach to monitoring energy consumption of flexible assets.



- » **EU Projects:** Stemming from our participation in EU Research and Innovation projects related to smart energy systems, we have designed and implemented solutions enabling managing flexibility such as the DRMS for residential users in iFLEX project [1,2].

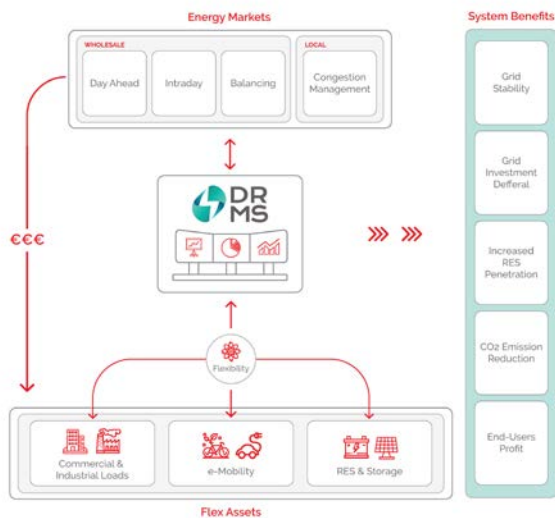


- » **Smart Carport:** The newly developed Smart Carport solution expands the traditional use of a Carport into an energy-hybrid smart charging solution for electric vehicles, in which RES are used as an additional energy source with optional battery storage capabilities.



» **Data Analytics:** Our Big Data engineers are experienced in collecting, processing, cleaning and analyzing large data sets, helping organizations to operationalize their big amount of data

Intracom Telecom's holistic solution for Demand Response Management (DRMS) aims to enable new business in the energy market, new revenues streams and increased environmental sustainability.



Aggregators may leverage the advanced functionalities of Intracom Telecom's DR Management Solution to monitor a range of flexible assets, including EV chargers, PVs, Batteries and Energy Loads.

By utilising data analytics, they can pinpoint opportunities to enhance efficiency, track progress over time, and optimize real-time energy utilization. Additionally, through an understanding of diverse end-customer profiles, tailored interaction relationships can be established. Furthermore, it employs gamification techniques to actively engage end-customers and foster commitment to DR contracts. This engaging approach not only cultivates customer loyalty, but also contributes to the success of DR initiatives.

The DRMS tunes in to grid conditions and energy market, enabling Aggregators to orchestrate the optimal operation of flexible assets, meeting their strategic goals, but also contributing to grid stability and environmental sustainability. Most importantly, with the adoption of the DRMS, the aggregators pave the way for economic benefits for end-customers.

CONCLUSIONS

Demand Response empowers end-customers to undertake an active role in grid operations, serving as a strong tool towards the optimization of their electricity usage. By strategically shifting demand to off-peak hours following the proper incentives, participants can earn financial rewards. In addition to the economic benefits, DR aligns seamlessly with sustainability goals. It facilitates the integration of renewable energy sources into the energy mix, diminishing dependence on carbon-intensive power generation. The result is a reduced carbon footprint and a more efficient energy system.

With the anticipated surge in RES and electric vehicles, accompanied by heightened uncertainty in power systems regarding electricity prices and available power, along with the decreasing capital and operational costs of energy storage systems and the development of Information, Control, and Communication Systems, flexibility emerges as a profitable, reliable, and viable resource. It opens doors to new revenue streams through balancing and regulation services to the grid, benefiting both existing participants and newcomers.

In the landscape of evolving energy markets, DR presents all these benefits, which can be unlocked by targeted infrastructure investments, proper regulatory changes and increased end-consumer awareness; it holds however the key to transforming the business models in the sector. ■

[1] <https://www.iflex-project.eu>

[2] http://youtu.be/eNJ9f_16mOY

BREAKING THE DISTANCE BARRIERS FOR E-BAND

Rapid Systems combined its microwave infrastructure with Intracom Telecom's innovative UltraLink™-GX80 radios to achieve an impressive 9 Gbit/s capacity at ranges over 8 miles!

THE CUSTOMER

Rapid Systems, founded in 1996, is a full service Internet and Information Technology company providing fixed wireless to 11 counties in Florida. The company specializes in rural communities and permanent as well as temporary broadband solutions. Rapid Systems engineering designs, builds and manages infrastructure services for public and private entities. Its broadband solutions are customized for a variety of industries from mining to healthcare incorporating the latest technologies including automation and AI.

THE CHALLENGE

The company uses licensed microwave links at 11 GHz to interconnect their network towers, with a capacity of around 1 Gbit/s per link. Those links, however, needed to be upgraded to up to 10 Gbit/s in order to support the company's expansion plans. In absence of additional licensed spectrum, Rapid Systems considered E-Band as the proper solution, due to its lightly-licensed nature.

The challenge though was the distance between the company towers that in some cases exceeded 7 miles. Synchronization at such hop lengths and target capacities, proved to be a severe obstacle for E-Band radios, especially at the rainy state of Florida. Any other alternative to E-Band would increase the deployment cost significantly, making the solution of the problem infeasible.

THE SOLUTION

UltraLink™-GX80 radios were installed in parallel to the existing 11 GHz licensed microwave links so that the microwave infrastructure, including its antennas, remained intact. UltraLink™-GX80 links, which were used as the primary capacity transport medium, have managed to successfully deliver multi-Gigabit service at a distance of over 8 miles with stable synchronization during clear-sky conditions and at 9 Gbit/s capacity, exactly as predicted in the RF plan study. This extraordinary achievement was furthermore complemented by the UltraLink™-GX80's failover license package. Failover is designed to switch priority traffic during adverse weather conditions from the E-Band path to any interconnected microwave link, and back to multi-Gigabit E-Band upon good weather restoration. As a result, Rapid



Systems effectively upgraded their existing 11 GHz links to up to 10 Gbit/s capacities using the innovative E-Band technology of UltraLink™-GX80 radios.

The main reason of success is UltraLink™-GX80's market-leading system gain that exceeds 70 dB at 10 Gbit/s. Such high levels of system gain enable the synchronization of the E-Band links beyond 8 miles in rainy regions and maintain stability of the delivered multi-Gigabit capacities.

UltraLink™-GX80 is a high-performance, high-capacity E-Band (71-76 / 81-86 GHz) radio designed for use in demanding transport applications requiring capacity up to 20 Gbit/s (in XPIC configuration) as an alternative to optical fiber. It is a uniquely versatile fully-outdoor radio suitable for a wide variety of applications. It supports Ethernet/IP, eCPRI or CPRI traffic transport, while offering a rich set of standards-based L2 and L3 networking features for the delivery of Carrier Ethernet and IP/MPLS-based services.

Intracom Telecom's UltraLink™-GX80 radio, already widely deployed in MNO and WISP networks worldwide, is at the forefront of performance in terms of link range, spectral efficiency and operational flexibility. It can even be combined with third-party vendor radios, licensed or unlicensed, to enable capacity enhancement of existing MW links in a more effective and economical way, compared to adding one or more MW links. Furthermore, Intracom Telecom can offer a dual-band antenna capable of supporting both third-party vendor MW radios, as well as the UltraLink™-GX80, greatly facilitating the deployment of such a dual-band solution. ■

ARTICLE

INTRAROM: 30 YEARS OF MILESTONES AND COMMITMENT

Founded in November 1993 with the opening of a factory for electronic and telecommunication equipment, Intrarom celebrates its 30th anniversary this autumn, being one of the first technology companies in Romania. It is the subsidiary and the sole production facility of Intracom Telecom, a global provider of telecommunications systems and solutions with 45 years of experience in the market, a strong regional presence in EMEA, and exports to over 70 countries. The company is located in Bucharest, and its facilities cover a total area of 33,000 square meters, including 2 Production Areas.



The first Intrarom logo (1993-2000)

Since its establishment, Intrarom has largely contributed to the modernization and digitalization of Romania's national telecommunications network. Moreover, it has strategically invested more than 30 million euros in the development of advanced infrastructure, required to produce state-of-the-art telecommunication systems.

In the past few years, the Group made multimillion investments in the factory acquiring advanced equipment, that drove to an increase in the overall production capacity of at least 70%. Intrarom's new SMT line, the Automatic Optical Inspection equipment for quality assurance on the SMT line, the new Testers, and the Robots in equipment assembly are some of the mentioned investments. These investments together with the dedication and commitment of the Production's team made possible the achievement of very

aggressive and competitive targets, despite unforeseen circumstances such as Covid-19 pandemic and the related shortage of raw materials.

Besides Telecom Equipment production, Intrarom offers a wide range of solutions and services addressed to the Banking, Financial sector, Public Sector, Utilities, and Law Enforcement Institutions.

Over the last 30 years, Intrarom has successfully implemented complex ICT deployments for some of the largest Romanian organizations, and keep increasing the number of satisfied customers. The company has developed new businesses's areas and launched new solutions to the Romanian Market contributing to the professional development of its customers.

Currently, the company offers a wide range of solutions, that should be summarized but not limited to:

- » Production of telecommunications equipment for wireless access, transmission, and transport
- » Integrated IT&C solutions and customized applications for the public sector, enterprises, utilities, and banks
- » Customer Experience solutions
- » Cyber Security solutions
- » Smart City solutions



Production facilities (2001)

Intrarom has made significant progress in the customer experience area. We have developed a local center of expertise that improves the delivery of customer experience through deep integration of applications and functionality.



In addition, Intrarom has also expanded its portfolio of services and solutions for the banking and finance sector, using innovative technologies and digital transformation in the Customer Care area.

Keeping abreast of the latest technology trends, our company offers cloud and big data solutions for industries such as energy, telecommunications, banking, and utilities, and has developed a smart city portfolio to power and serve smart cities. Our offering is targeted at city governments

as end users and is comprehensive, consisting of smart lighting, smart parking, noise monitoring, traffic monitoring, waste management, smart metering, personal security, eHealth services, Wi-Fi liberation, enablement & monetization, pervasive connectivity, and cloud assurance.

Cybersecurity is one of the largest and most complex challenges facing organizations in any networked environment, and Intrarom helps clients achieve their goals easily and cost-effectively through a combination of high expertise and integration capabilities. Furthermore, we strategically endorse Intracom Telecom's physical security solutions, notably the modular and scalable SISC² platform, for CIP Security & Border Surveillance and operations management.

Intrarom remains dedicated to delivering cutting-edge technology and enhancing the security and efficiency of organizations in this ever-evolving digital landscape. ■

I'm delighted to find myself in Romania, collaborating with a dedicated team of Romanian professionals who are resolutely committed to achieving success. With a track record spanning three decades, we've successfully navigated through various challenging economic landscapes. Today, we stand as the exclusive production hub for wireless systems within our corporate Group, holding a position of strategic significance. Our unwavering dedication remains steadfast, seamlessly aligning with the collective experience of the Intracom Telecom Group. Our ability to seamlessly integrate multi-vendor systems, is enhanced by our extensive range of experiences. Our aspirations align effortlessly with Romania's rapidly developing economic path. We're determined to contribute to this growth by leveraging the Group's extensive experience in implementing large-scale projects and our adeptness in multi-vendor systems integration. I take this opportunity to extend our sincere appreciation to our valued customers and esteemed partners for entrusting us. As we move forward, driven by our strong dedication to continuous improvement, our journey continues with renewed energy.



George Roussos
CEO, Intrarom

1993-2023



57%

WOMEN (AVG.)



450

EMPLOYEES (AVG.)



1,000 HOURS

ANNUAL TRAINING



€ 30,000,000

SOCIAL CHARGES



78%

EXPORTS



33,000 M²

INDUSTRIAL AREA

30
1993-2023
YEARS

ULTRA FAST INTERNET WITH 300 MBPS SPEEDS TO SERVE RURAL AND MOUNTAINOUS AREAS

EOLO implements the largest ultra-broadband wireless residential network across Italy using Intracom Telecom's WiBAS G5™.

THE CUSTOMER

EOLO SpA was founded in 1999 in Italy. Today, it is a telecommunication operator and a market leader in internet connectivity services, VoIP telephony and added value services. EOLO is leading the wireless broadband business, thanks to the wholly owned EOLO network. EOLO is the high-speed independent wireless network that delivers internet access not only in towns and villages but also in rural areas where the Digital Divide exists.

EOLO's infrastructure, which is totally independent from other Italian telco companies, uses wireless radio repeaters that transmit the signal throughout the national territory of Italy. Their services address both domestic and business markets. Business sector broadband speeds reach up to 1 Gbit/s. EOLO's headquarters is located in Busto Arsizio, North Italy, housed in a 20,000 sq.m. campus with over 600 employees.

THE CHALLENGE

EOLO's mission is to offer ultra-broadband speeds on a fixed wireless network even in the most remote areas and support sustainable and inclusive development in Italy. For this reason, the company acquired, on a national scale, the usage right for 224 MHz at the 28 GHz spectrum band, which is ideal due to transmission and capacity characteristics. EOLO expands its geographical coverage and subscriber base in suburban and rural areas, impacted by the digital divide. These areas are the most challenging because of lack of infrastructure that can support high capacity, services.

EOLO is the first operator worldwide to use the 28 GHz frequency on such a massive scale to connect homes and SME at 5G speeds across Italy. From a social point of view EOLO is dedicated towards making Italy more competitive in Europe and improving its current ranking related to economic and digital development, by providing a cutting-edge infrastructure and expertise.



THE SOLUTION

EOLO has been using the WiBAS™ platform since 2017 fueling its success in providing its subscribers with high quality ultrabroadband Internet connection. This first PtMP deployment enabled EOLO to offer internet speeds of 100 Mbps to its subscribers whereas competitors could only achieve 30 Mbps with their FWA network. Throughout the years the FWA network has been enhanced, and Internet speeds increased gradually to 200 Mbps and 300 Mbps.

Today the 5th Generation WiBAS™ G5 dual-BS base station is used at 28 GHz as part of a multimillion expansion investment program. WiBAS™ G5 dual-BS base station has been selected following a lengthy testing at the laboratory and the field satisfying a long list of technical criteria. With the advanced features of WiBAS™ G5 dual-BS base, EOLO aims at staying at the top of Italian FWA service providers offering a portfolio of high-quality, ultra-broadband services to residential and SME subscribers. The WiBAS™ G5 dual-BS interoperate with Intracom Telecom's Connect and Connect+ terminal stations already installed and operated by EOLO. Thanks to novel technologies, such as MU-MIMO, it offers total aggregate capacity of more than 2.6 Gbps.

Intracom Telecom's WiBAS™ G5 platform can be leveraged by operators to build gigabit services through software upgrades and achieve download speeds equivalent to 5G. The provisioning process of the device is performed via uniMS™ SON Gateway, a software platform accelerating the service activation by automatically discovering terminals and instantly provisioning the subscription profile. ■

MICROWAVE BACKHAUL AND TELCO SERVICES IN REMOTE RURAL AUSTRALIA

Connecting remote Renewable Energy Site requiring stable, reliable & speedy installation for Acciona Group's Macintyre Wind Farm Construction.

THE CUSTOMER

Acciona is a Spanish Multinational Conglomerate leading in Renewable Energy Plantations. Rooted in a merger of MZOV (1862) and Entrecanales y Tavora (1931), Acciona operates through four core groups: Infrastructure, Energy, Water, and Other Businesses. Acciona Energy achieved a milestone, producing 21 Terawatt-hours of renewable electricity in October 2020. Listed on IBEX 35, Acciona employs 30,000 professionals across 30 countries, driving global sustainable progress, including Australia.

THE CHALLENGE

In the remote expanse of Queensland, Australia, Acciona Construction grappled with monitoring power output and providing internet access for their Macintyre Wind Farm. With a team in Spain overseeing operations, remote monitoring was a challenge. The case showcases how innovative technologies and strategies can conquer geographical barriers, to ensure optimal wind farm performance in a remote location.

THE SOLUTION

Acciona Construction faced a significant communication challenge at the remote Macintyre Wind Farm site. To tackle this issue, they enlisted the help of Wave1 Pty Ltd, a trusted collaborator from previous projects. Given their successful track record, Acciona believed Wave1 could devise a solution for this complex problem.

Through a collaborative effort between Acciona Construction and Wave1 Pty Ltd, a reseller of Intracom Telecom in the continent, a highly functional communication network was established at the Macintyre Wind Farm construction site.

Upon conducting a thorough site survey and path calculations, Wave1 set out to design a stable and effective communication network. Their solution involved creating a Fixed Private Wireless Network that exceeded Acciona's initial expectations. The network was intended to facilitate seamless communication across the expansive site, with the added capability of remote monitoring via the internet.

The implementation process was intricate yet impressive. The network relied on site hops, connecting various demountable sheds and structures. A pivotal component was the Solar Container Shed, purpose-built and equipped with cameras and communication gear. This solar-powered container served as the central hub for the network. Using Intracom Telecom's OmniBAS™-4Wcx MW system at this central point, connections were established to multiple locations.

For instance, the Rabbit Hill Tower acted as a crucial link to the NBN Connection, utilizing Intracom Telecom's E-Band system, the UltraLink™-FX80, to provide high-speed internet across the network. At the Solar Container, an OmniBAS™-2Wcx radio was employed to create connections to the Camp Site. From there, the network split into two branches, one utilizing the reliable StreetNode™ V60-PTP system to connect the main office and the other employing a smaller radio system for the Temporary Construction Office.

Overcoming challenging weather conditions and rugged terrain, the network consistently achieved remarkable results. Operating in the extreme temperatures of Queensland, Australia, the network maintained an impressive average speed of 1237 Mbps Full Duplex across the vast 51 km span, with a combination of products from Intracom Telecom's wireless portfolio. ■

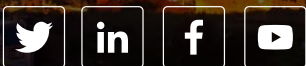


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