Creating Smart Mobile Cell Sites

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Russia

MTS Russia selects Intracom Telecom's ultra high capacity radio

Intracom Telecom, through its Moscow-based subsidiary Intracom Svyaz, announced the signing of a 2-year, USD 25 million contract to supply UltraLink™-FX80, its new E-Band, ultra high capacity Ethernet radio, including network management software and support services, to MTS Russia, the country’s largest mobile operator.

With this investment MTS Russia will not only deliver superior quality services and high speed 4G connectivity to its customers but will also address its future wireless backhauling needs for LTE and LTE-A deployment in the most efficient way possible.

Moreover, the introduction of the advanced technology of UltraLink™-FX80 into the MTS backhaul and transport network will enable the delivery of next generation mobile services at 4G+ service speeds of 1 Gbps or more, providing fast Internet surfing and file downloads and uploads, high definition video streaming and rich multimedia e-services over an ever increasing variety of mobile devices.

Andrei Ushatskiy, MTS Vice President, Chief Technology and Information Officer, commented: “We are very satisfied with the scale and results of cooperation with Intracom Telecom, our longstanding partner. The vendor supplies us with variety of innovative equipment and we have selected Intracom Telecom’s Ethernet radio UltraLink™-FX80 because it fully meets our key backhauling needs in dense urban areas, - the compact all-outdoor multi-Gigabit Ethernet PtP radio platform operates in non-licensing spectrum and offers high capacity for heavy loaded 3G/4G sites. Moreover, it is easy to install, flexible in use that also minimizes operational costs.”

Athanasios Antoulinakis, Intracom Svyaz General Director, noted: “The advanced technical and operational features of our new compact all-outdoor multi-Gigabit PtP radio platform meet all current and future requirements of the MTS transport network, offering the highest capacities per link available in the market today. We are in the unique position of being able to offer our customers a complete range of PtP and PtMP microwave solutions, from 6 GHz to 80 GHz, that can all be monitored by the uniMS™ network management suite. With this technology Intracom Telecom can effectively respond to any type of wireless backhauling requirement related to 3G, LTE, LTE-A, Macro/Micro Base stations and Small Cells.”

Romania

“20 Years of Excellence in Communications” Award

In May, during the 2016 Communications Day, Intracom received the “20 Years of Excellence in Communications” award for its 20 years of dynamic presence in the Romanian ICT arena marked by the development of large-scale complex projects, covering a wide spectrum of activities from the production of wireless equipment to the delivery of innovative customer care solutions for telecom operators. Intracom’s Commercial Director Kostas Fiakas noted, “We are delighted to receive this distinction. Operating since 1993 Intracom has delivered a wide range of large and complex projects to telecom operators, and has been continuously investing in the development of new products and solutions.”
**Innovative NFV platform for virtualized Wi-Fi access**

Intracom Telecom recently introduced its new NFV platform enabling Communication Service Providers (CSPs) to deploy virtualized access services on-demand, minimizing time-to-market and upfront investments. This fully ETSI NFV-compliant virtualized Wi-Fi solution, seamlessly integrates with and virtualizes both indoor and outdoor access points within a fully customizable cloud environment. At the click of a button each hosted operator can deploy virtual network functions (VNFs) either from a pre-configured, out-of-the-box library of VNFs or from any third-party VNF vendor. Through NFV-enabled Wi-Fi access points, deployed across a Smart City system, multiple CSPs can simultaneously utilize virtual slices as if each of them were the sole owner of the respective physical resources. By sharing the same infrastructure, CSPs can benefit from cost savings, while leaving room for service innovation and differentiation.

Intracom Telecom’s Telco Software Solutions Marketing Director Sotiris Bithas commented that “We are committed to continuous technical excellence and innovation, and carry out advanced R&D in the Software Defined Networks & Network Function Virtualization (SDN & NFV) areas. As NFV migrates from labs to live implementations, CSPs are keen to deliver new services at minimal time-to-market and cost. With our new NFV orchestration platform CSPs can now become enablers of the emerging Smart Societies.”

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**Romania**

**“Best Technology Solution Provider for Banking Sector” Award**

Intrarom, jointly with its partner Genesys, received the “Best Technology Solution Provider for Banking Sector” award at the Romanian Contact Center Awards, held last March in Bucharest, for successfully implementing the deployment of the Genesys Customer Experience platform in one of Romania’s largest banks. In 2016 both companies strategically focused on the demand by banks for innovative technology solutions that can be easily implemented and integrated to deliver world-class customer experiences through every customer interaction, touchpoint and channel, reducing costs and better managing regulatory compliance. As noted by Apostolos Kemos, Sales Director at Genesys, “by providing amazing customer experiences and customer satisfaction, banks and insurance companies can differentiate in an increasingly competitive environment.” Magda Mischie, Intrarom’s Marketing Communication Manager, added that “the future of banking is combining innovative technology and human capital to provide a unique banking experience.”

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**Greece**

**Athens International Airport operational network upgrade**

Intracom Telecom recently signed a contract with Athens International Airport (AIA) to replace the existing campus data and voice network, telephony system and related applications with a unified state-of-the-art infrastructure able to support VoIP, video and data services, a Single Call Control entity with enhanced Unified Communication and Collaboration (UCC) and Mobility services, as well as a Contact Center with multitenant functionality. Due to the criticality of the airport operations and specific operational KPIs in place, the project is a very demanding one thus AIA requires a phased migration approach providing parallel operation between the current and future voice & data network environment. The project is expected to be completed within two years and maintained for another three years.

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**USA**

**Enabling Southern Fibernet to launch TV Anywhere services**

Conklin-Intracom announced an additional order from Southern Fibernet to provide branded, easy-to-use, intuitive apps for Android & iOS powered devices, Roku devices, and web browsers available on the fcdn Anywhere IPTV platform. These TV anywhere features will allow Southern Fibernet, a company that provides fiber to the home (FTTH), Internet and video content services across the Southeastern United States and specializes in servicing multiple, unique communities with temporary residents, to optimize their current video services on mobile devices and simplify installation and residential equipment management within each community. "Our goal is to provide high quality video services to subscribers on the devices they want to use,” said Bryan Sumner, CEO and owner of Southern Fibernet. “With Conklin-Intracom’s IPTV platform we have the flexibility to build a business model for our video services that makes sense for our company, our clients and end-users.”

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**USA**

**fcdn Anywhere launched at Socket Telecom**

Conklin-Intracom’s technologically superior fcdn Anywhere IPTV platform, which supports seamless live TV, encryption and Restart TV solutions and offers outstanding value for money, was successfully launched at Socket Telecom, a Missouri-based telephone and Internet service provider with the largest service area in the state. “We selected Conklin-Intracom after extensive testing in our labs,” said George Pfenenger, CEO of Socket Telecom. “Throughout the process Conklin-Intracom provided superb technical and operational support to allow us to launch video services – reinforcing our belief that they are a great technology partner.”

Michael Agostinelli, Vice President of Sales for Conklin-Intracom, stated that “Conklin-Intracom is excited to help Socket Telecom add full featured video services to its bundled offerings.”
Italy
Coalition of Fixed Wireless Access
Intracom Telecom has become a member of Italy’s Coalition of Fixed Wireless Access (CFWA), which brings together more than 60 companies representing the country’s entire supply chain of fixed wireless connectivity. Intracom Telecom enhances its presence in the Italian WiSP market through its Italian subsidiary Faini Telecommunication Systems, which is a founding member of CFWA (www.cfwa.it). As stated by Giampaolo Faini, COO of Faini Telecommunication Systems and member of the CFWA Council, “entering the Ultra High Capacity (UHC) era, the Intracom Telecom Group is committed to continue investing in intelligent wireless network solutions and future-proof open platforms for revenue-generating applications and services. Having realized that big project implementation requires the participation and synergies of more than one company, we are proud to become a member of the Coalition of Fixed Wireless Access in Italy and look forward to supporting its goal.” The primary objective of CFWA, which was established in April 2016, is to bring the ultra-wideband even in the most remote areas of the country. Its role is necessary and complementary to the National fibre optic networks for the larger urban areas, enacted by the Italian Government, according to the EU Directive.

Greece
Java EE workshop to university students
On March 28-30, Intracom Telecom, in collaboration with the Electrical Engineering Students’ European Association (EESTEC), organized a six-hour Java Enterprise Edition workshop for university students in Athens led by Michael Makidis, Senior Engineer at Intracom Telecom’s O/BSS Department. The workshop, which was offered free of charge, was attended by IT/Telematics students with basic Java knowledge and received very positive feedback. “This initiative was launched as part of our corporate social responsibility to bridge the gap between the students’ theoretical background and the expertise required in the Greek labor market,” commented Marina Prifti, Intracom Telecom’s Recruitment & Succession Planning Manager.

Romania
“e-Technology for Banks” Award
Last January, Intracom received the “e-Technology for Banks” award at the eFinance Gala Awards for its range of advanced Contact Center services and solutions offered to the banking sector. Having been actively involved in the development of customer care services from the very beginning, Intracom recognized their applicability in the banking & finance sector early on. For the last 8 years, the company has been contributing to this wave of technological change, developing customer service solutions in cooperation with major vendors. Commenting on this important distinction, Intracom’s Commercial Director Kostas Fiakas noted, “We are honored and proud of this recognition and remain focused on offering targeted value added solutions to banking and finance institutions.”

Albania
Celebrating 15th anniversary
The year 2016 marks the 15th anniversary of Intracom Telecom Albania, established in 2001 under the name Intralban and renamed in 2009. In these 15 years the company navigated through challenges, claimed successes and delivered important projects, growing steadily and boosting its sales in the Albanian telecom market. This 15th anniversary finds Intracom Telecom Albania positioned as the leading ICT integrator in the telecom, enterprise and public domains, having completed a number of major telecommunications and IT projects, and being ISO 9001:2008, OHSAS 18001:2007, ISO 14001:2004 and ISO 27001:2013 certified.

As noted by CEO George Blekas, “Throughout these 15 years, we’ve been offering our customers added value, delivering and supporting their business goals to provide superior customer experiences. We’ll keep promoting the Group’s comprehensive smart city portfolio, which apart from the IT and telecom domains, also addresses other vertical markets such as energy and eHealth.”

Recently, Intracom Telecom Albania received the honorary award for its 15 years business excellence in the local market. The ceremony award took place during the InfoCom Albanian Telecom Forum, before an audience of government and business representatives.

Receiving the award, Mr. Nikolaos Velentzas, Deputy General Manager of Services Business Division at Intracom Telecom, noted, “This distinction acknowledges Intracom Telecom Albania efforts in delivering excellence in the region. We look forward to continue offering high-standard ICT services and innovative solutions in Albania and support our local team to further provide added value to its partners and customers.”

UK
SPEED-5G delegation at the UK regulatory body
Intracom Telecom was part of the SPEED-5G project delegation that visited the UK’s Ofcom regulatory body to consult on issues regarding potential 5G technologies and - reversely - to inform them on project goals. During the visit, company representatives had the opportunity to discuss backhaul related 5G issues, such as potential conflicts with millimeter-wave access networks, full-duplex and self-backhauling technologies, and elaborate on the development of its innovative backhaul technologies in order to meet SPEED-5G performance metrics in terms of latency, data rate, load balancing and reliability. SPEED-5G (www.speed-5g.eu) completed its first year, during which major studies have been conducted finalizing the use cases on which the partners focus and defining the performance metrics that the implementations will target.
At Mobile World Congress 2016, Intracom Telecom presented a range of new wireless access & transmission, telco software and IoT enabling products and solutions, as well as cloud solutions with emphasis on eHealth, all serving and powering Smart connected City necessities. During the event, the company showcased:

- Its newest StreetNode™ mmWave product as a Gigabit-To-The-Home solution, featuring the convenient installation of wireless terminals on subscriber rooftops.
- Its smart end-to-end Revenue Management NGINius™ platform, specifically developed for the IoT era. The company also demonstrated how it empowers service providers to achieve the intelligent orchestration and smooth migration of complex networks to the NFV paradigm, enabling them to reap the benefits of these disruptive, game-changing technologies. One of the first such real-world applications offering “virtualized WiFi access” was demonstrated live.
- An intelligent smart city infrastructure that consists of a smart lighting solution coupled with a solid network infrastructure that not only helps save energy, but also builds a future-proof open platform for revenue-generating applications and public services. The company also demonstrated a broad range of private and public cloud building services and e-health solutions.

In February, Conklin-Intracom exhibited at the 2016 Winter Education Conference for members of the NCTC cooperative that serves independent cable companies across the United States. The company demonstrated to the NCTC engineers and top executives in attendance its fs|cdn anywhere functionality for TV services delivered to set-tops and mobile devices.

Intracom Svyaz presented Intracom Telecom’s latest developments in serving and powering the Smart Connected City necessities at the 29th International Sviaz Exhibition for Information and Communications Technology held last May in Moscow. This year’s show hosted over 300 companies from 17 countries covering all sectors of the communications industry.

Last May, Intracom Telecom and its India-based subsidiary participated jointly in the 2nd Smart Cities India 2016 Expo held in New Delhi, offering municipality officials, system integrators and other stakeholders in the Smart City concept the opportunity to examine our comprehensive smart city portfolio from vision to today’s reality. Yaniss Kalogerias, CEO and Managing Director of Intracom Telecom’s India-based subsidiary, noted, “Our participation in this year’s show enabled us to promote our Group’s smart city strategy as well as innovative products and solutions in the cost sensitive Indian market.”
Romania » Bucharest

**Mobile Innovation Conference**

In March, Intrarom participated in the Mobile Innovation Conference in Bucharest that highlighted specific areas of growth, showcased the latest technological developments in next generation services and outlined growth strategies. During the event, John Tenidis, Intracom Telecom Wireless Systems & Solutions Marketing Director, presented company’s recently launched products and solutions for Smarter Connected Societies and elaborated on the top-notch services for converged networking as well as Intracom Telecom’s cloud computing solutions aimed at mobile operators, business enterprises and the public sector.

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Greece » Athens

**Infocom Security Conference**

Last April, Intracom Telecom sponsored the 6th Infocom Security Conference held in Athens. During the event Dr. Theodoros Stergiou, Intracom Telecom Security Solutions Product Manager, delivered a presentation entitled “Industrial IoT security - convergence of IT and OT worlds” that focused on Industrial IoT (IIoT) and elaborated on the approaches adopted by Intracom Telecom, which aims to be the trusted advisor of industrial organizations in their journey towards a connected world.

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Greece » Athens

**Smart Cities - Digital Citizens**

In March, Intracom Telecom sponsored the Smart Cities - Digital Citizens conference during which the company organized a workshop entitled “Contemporary Telecom Infrastructures & Solutions for the Smart City” that focused on how contemporary digital infrastructures can play a vital role in providing new services. Moreover, two presentations were delivered by company executives. Services Marketing Director Anastasios Igoumenidis outlined innovative solutions and applications for the development of smart and energy efficient cities in his “Developing Smart Cities” presentation, while Smart Grids Director Athanasios Vamvakas presented strategies and case studies of energy-related Smart Grid developments in Greece during a presentation entitled “Bringing the International Experience of Smart Grids to Greece”.

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UK » London

**M2M World Congress 2016**

In April, Intracom Telecom participated in M2M World Congress 2016, a leading IoT/M2M conference and summit focusing on the IoT market and related technologies, held in London. Company experts presented Intracom Telecom’s IoT Enablement and Monetization solution, including revenue management, analytics, and security & process automation, attracting the interest of many communication and IoT service providers as well as IoT consultants and the international press.

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Romania » Bucharest

**Communications Day 2016**

In May, Intrarom participated in Communications Day 2016 held in Bucharest. Vangelis Foukalas, Intracom Telecom BSS Marketing & Presales Manager, participated in the “IoT, trends and value creation” panel, where he presented Intracom Telecom’s approach to the IoT that features horizontal enablement and monetization solutions, as well as e2e industry specific solutions in selected verticals like energy, smart utilities and smart city infrastructures. Moreover, Calin Muntean, Intrarom’s Telco Sector Business Development Manager - Eastern Europe, presented Intrarom’s approach to the IoT and smart city concepts that will drive the evolution of the company’s portfolio and generate added value for both the public and private sectors in Romania.

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Romania » Bucharest

**Fiber Optic Day 2016**

As part of Intrarom’s participation in the Fiber Optic Day Expo held last March in Bucharest, Intracom Telecom Senior Product Marketing Manager, Telco Software Solutions, Nikos Tsantanis delivered during the “How to optimize and monetize your network infrastructure via Telco Software” workshop session, a presentation entitled “Powering Smart Cities with Virtualized Wi-Fi”, outlining company’s innovative NFV-based application that enables operators to transform legacy Wi-Fi access points into a powerful, revenue-generating virtualized platform.
**Greece » Athens**

**Enterprise IT Security Conference**

In March, Intracom Telecom sponsored the 2nd Enterprise IT Security Conference held in Athens. Dr. Theodoros Stergiou, Intracom Telecom’s Security Solutions Product Manager, delivered a presentation entitled “Digitizing and securing the Utilities sector” outlining the company’s holistic solution portfolio, tailored to meet the evolving requirements of the utilities sector.

**India » New Delhi**

**India Smart Grid Week 2016**

In March, Intracom Telecom’s India-based subsidiary and Ether, participated in the India Smart Grid Week 2016 conference and exhibition, organized under the auspices of the Ministry of Power and the India Smart Grid Forum (ISGF), during which interoperability, interchangeability and meter data management as well as integration engines and revenue management for utilities were showcased. Intracom Telecom’s stand was visited by the Honorable Shri Piyush Goyal, Minister of State with Independent Charge for Power, Coal, New and Renewable Energy, and Dr. Reji Kumar Pillai, President of ISGF.

**Romania » Bucharest**

**Executive Dinner Event**

In May, Intrarom and its partner Genesys jointly organized a customer experience event entitled Executive Dinner, inviting executives from leading Romanian companies in the telco, banking, utilities, retail and public sectors to one of Bucharest’s most exclusive dining spots. Apostolos Kemos, Sales Director at Genesys, opened the event with his “Back to the future. Customer Experience and beyond. Customer Journey Design” presentation being introduced by Andrei Calin, Senior Contact Centers Solutions Consultant at Intrarom.

**Romania » Bucharest**

**Energy Awards 2016**

Intrarom was a proud sponsor of the Romanian Energy Awards 2016, held in Bucharest, in recognition of the best businesses in Romania’s energy and natural resources sector as well as the industry’s brightest leaders. Intrarom’s technology is now ready to support customer-centric initiatives in the energy sector and support utility operators in upgrading their infrastructure to enter new markets.
Introduction

Mobile operators continuously roll-out networks to improve quality and coverage, while striving to maintain their existing infrastructure. Cell sites are at the heart of a mobile operator’s network, and consist of critical and expensive equipment that needs to be in operation on a 24/7 basis. It is vital to avoid service and system outages due to malfunctioning infrastructure that could result in customer and revenue loss, but at the same time business profits depend heavily on controlling maintenance costs. This requires smart solutions that can minimize site visits and maximize the life cycle of equipment.

Challenges of mobile cell site management

The challenges a Mobile Network Operator faces when it comes to cell site management are diverse and complex, involving operational and financial issues. Cell sites, being the front end of a mobile network, become a significant source of operational expenditures (OpEx) that need to be controlled. Maintaining the mobile cell site infrastructure, involves both active (base stations, backhaul DCN, etc.) and passive (batteries, fuel tanks, generators, etc.) devices, and thus it can become more and more complex and time consuming.

Access control and site security has also become an issue for Operators, as cell sites are not only distributed at distant and inaccessible areas but also host expensive equipment that is subject to theft and vandalism.

The roadmap to smart mobile cell sites

In terms of maintenance and network integrity significant improvements can be achieved through the proactive monitoring of the cell site infrastructure, which should be continuous and allow the forecasting of threats and malfunctions, such as high operational temperatures, corrosion or static electricity due to increased humidity, before they become actual problems.

Reliable and analytical infrastructure monitoring and control requires next-generation management systems which should allow operators to perform control procedures to resolve the majority of problems remotely, automatically perform scheduled procedures that prolong equipment lifecycle and therefore minimize number of site visits only when it is really necessary.

Combining infrastructure monitoring, analytical energy monitoring and remote surveillance in a single unified management solution is also an important improvement, which should allow operators to analyze energy consumption, identify sources of power usage that can be optimized and perform site audits using detailed logging of maintenance procedures.

These automation and unified management capabilities can transform existing sites to “Smart Mobile Cell Sites”.

Creating Smart Mobile Cell Sites

Christos Rizos (Product Line Manager, Wireless Network Systems, Intracom Telecom)
Innovations for Smart Mobile Cell Sites

A solution that provides multiple benefits and meets all Mobile Operator requirements, featuring advanced cell site management capabilities, and designed as a unified single-pane-of-glass management platform is highly desired in most cases. Operators are looking for an infrastructure-agnostic solution, that can be bundled with various demand/response controllers, power meters and sensors to monitor the environment, fuel levels, batteries, doors, etc. Furthermore, detailed and timely energy consumption and quality reports enable Mobile Operators to improve infrastructure reliability through scheduled and automatic maintenance procedures and to constantly monitor cell site security and environmental conditions.

A feature-rich and modular solution

Intracom Telecom’s flexible and modular smart cell site management solution, based on uni|MS™, offers advanced and feature-rich capabilities to cover all critical aspects of a cell site including:

- **Energy Monitoring**
  Collect data from and synchronize periodically with energy meters and sensors to monitor energy consumption, phase voltage, active & re-active power, DC voltage, environmental temperature, etc.

- **Fuel-level Monitoring**
  Improve reliance on power provided from generators and minimize fuel theft through fuel tank monitoring.

- **Security Surveillance**
  Improve physical security with continuous monitoring of doors, motion detection and cameras (CCTV) with infrared capabilities and face recognition.

- **Power Generator Monitoring**
  Improve generator efficiency and reduce operational cost through continuous automatic monitoring.

- **Battery Cell Maintenance**
  Perform remote and scheduled maintenance of battery cells to improve their reliability and prolong their life cycle.

- **Environmental Monitoring**
  Protect your investment through continuous monitoring of temperature for early detection of failing air conditioning units, humidity for avoidance of corrosion or static electricity build-up and smoke for improved security.

The uni|MS™ inherent capabilities in terms of network discovery and modeling, topology and visualization, fault, performance, inventory, audit and security management ensure a rich functionality that supports the in-depth management of smart cell sites.

Infrastructure agnostic and cloud-based

Cell site monitoring and control equipment includes controllers; energy meters and sensors that can be provided as parts of a turn-key project as uni|MS™ is infrastructure-agnostic. Moreover, uni|MS™ can also be used to manage mobile cell sites where meters, sensors and controllers have already been installed, and can be deployed either locally or on the cloud to further simplify administration and minimize maintenance costs.

In summary, uni|MS™ cloud-based smart cell sites solution currently in trial with many operators offers a powerful set of tools that can help an Operator optimize its business. It is a valuable solution not only to field and Network Operations Center (NOC) engineers, but also offers key benefits to Operators based on the intelligence that is gathered that can enhance all related processes, schedules and decision making.
Article

Introduction

We are living in an era in which advanced technology plays a key role in the pursuit of economic growth, the reduction of energy consumption and the improvement of city-life quality.

During the past 20 years, several trends have attempted to enhance the quality of life in urban areas (M2M) but the absence of the appropriate ICT infrastructure convergence led to slow progress and poor results.

Nowadays, a new concept has been extremely promising in terms of sustainable economic development and improved quality of life: Smart City through IoT (Internet of Things) or the Connected City. In simple words, internet-enabled (broadband or wirelessly connected) devices and sensors working in sync to deliver:

- **Advanced public services** like smart street lighting, traffic management, smart waste management, fleet management and smart parking.
- **Smart infrastructure** to reduce energy costs and improve water management in both urban and rural environments.
- **Agricultural modernization** to support enhanced quality crops, minimize the use of fertilizers and pesticides and reduce production costs.
- **Enhanced city-wide security** resulting in elevated quality of life.

For such an Eco-System to be established, highly sophisticated low-rate wireless personal area network protocols had to be implemented. The IEEE 802.15.xx standard (Zigbee) and the LoRaWAN protocol were recently developed to support such sophisticated networks. These protocols specify in detail the Physical Layer and Media Access Control of the connected devices and sensors.

The goal is to preserve quality of life, natural resources, economical sustainability and respond to multiple challenges by using a single “transactional” relationship with the citizens.
Smart City’s Fundamental Elements

**Smart Lighting**
A Smart Lighting solution, that incorporates an all-in-one highly sophisticated LED driver, capable of delivering flexible network connectivity, including 2G/3G, Wi-Fi, Ultrasonic sensors for intruder detection, traffic flow applications and smart parking, is what cities and municipalities are currently considering in their attempt to transform their existing infrastructures to smart. Furthermore, Smart Lighting Network administrators are looking to apply dimming schedules or other lighting scenarios to reduce power consumption during low traffic hours. This need can be addressed with a single box solution (LED Driver) which can replace or be retrofitted on any existing street lamp.

**Renewable & Energy Management Solutions**
Smart energy and water metering are the most promising cost saving trends in a Smart City ecosystem, and constitute a fundamental approach in IoT based solutions. The delivery of advanced smart grid and energy management solutions through an experienced vendor that offers a comprehensive energy and utilities portfolio is essential.

**Wireless Access & Transmission Solutions**
As ICT infrastructures become vital prerequisites in implementing Smart City ecosystems, the need for fast and secure networks has increased dramatically making the vendor selection process even harder as vast experience in the areas of small cell backhaul, wireless transmission and broadband wireless access is required to support these emerging technologies and protocols used in Smart City projects.

**ICT Services and Solutions**
Smart City ecosystems generate huge amounts of data; therefore, it is mandatory to have the appropriate infrastructure in place to support this exponential increase in data generation. The usage of cloud, SDN/NFV solutions and big data analysis, to support any data center or IT infrastructure optimization project, as well as public or private cloud, backup, storage, desktop and disaster recovery projects is definitely an issue that must be considered when deploying such projects.

**eHealth Services**
As digital technology penetrates the medical equipment and services industry, the need of Information and Communication Technologies (ICT) involvement in the area of Health has become more than essential helping healthcare institutes to achieve a number of benefits including high-technology training & telemedicine services as well as remote diagnosis and second medical opinions.

**Are we there yet?**
Although the development in IoT and smart grid technology is advancing, there are still many engineering challenges ahead on the road to creating a truly smart city. But the goal is crystal clear. As urbanization continues, we must preserve our quality of life, natural recourses, security and economic sustainability. And this will be achieved only if our cities become technologically integrated and thoroughly planned, with particular emphasis on the use of information technology to improve efficiency and reduce harmful emissions.

**Value proposition**
Intracom Telecom’s proposition, enabled by a comprehensive product and solution portfolio, ingeniously integrates Smart Infrastructure, Data Transmission & Storage and Services, and empowers Service Providers, Utilities, Municipalities and Large Enterprises/Institutes to transform the Smart City concept from vision to reality, today!